Hobbies WEEKLY

CONTENTS

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A PAIR OF FOLDING LATTICE STEPS

THIS particular design of household steps is light in weight, and particularly suitable in the house where the steps have to be carried from room to room. They are 5ft. high and fold flat. Much less wood is required also, and readers who can get a few lengths of suitable matchboarding or shelving, can rip it into strips and make the article.

Side Pieces

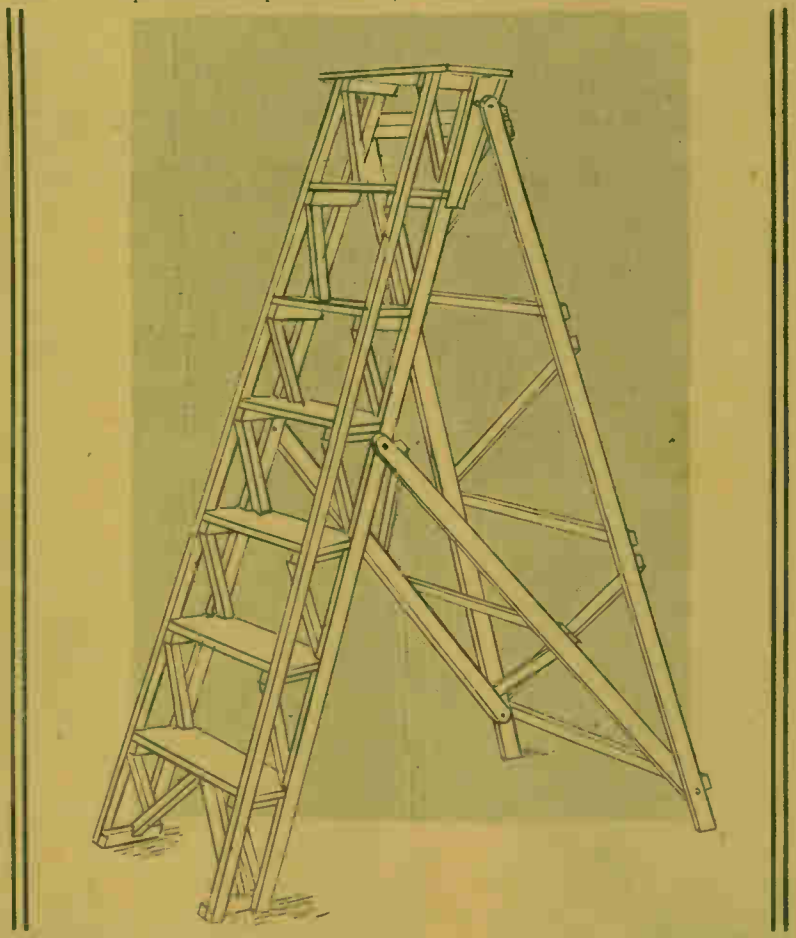
Fig. 1 shows a side view of the steps. For the side pieces cut four lengths of 1in. by ½in. wood to a few inches over the given length. Nail together in pairs, with a batten at top and bottom, as at A. Set a bevel at 70 degrees, and starting at 1½ins. above the bottom batten, mark off 7 lines across. Touching these lines screw fillets of 1in. by ½in. wood across to support the treads.

When all are fixed, cut off the surplus above and below the battens and trim off the ends of the fillets level with the sides. Note that the fillets fixed to the second side piece should slope in the opposite direction to make a pair.

The Treads

The treads can now be cut and fitted across between the sides. It is usual here to fit the top and bottom treads first. The top tread, B, and bottom tread, C, are shown in Fig. 2. Cut them from 5½ins. by ⅞in. wood, and saw a piece from each corner to fit between the framework. Owing to the slope of the fillets, the corner bits should not be cut square across but at a suitable angle.

Having fixed these treads across, the lengths for the remaining treads can then be measured off individually and be fixed similarly. Turn the steps over and plane the back edges of each tread level with the sides. Then, at the front, bevel off the corners with a chisel.



The diagonal braces between the treads are cut from 1in. by ¼in. wood and sawn to fit accurately between the fillets and treads, as will be plainly seen in the general view. The top of the steps is cut long enough to extend over each side 1½ins. It is screwed to the top fillets. Diagonal braces are also fitted below the bottom tread, meeting in the centre and being notched over the bottom fillets, shown in the general view.

Rear Support Frame

The steps are supported in the open position with rear struts, framed. Connection is not made by the usual ropes, but by a framed middle part, shown at D, Fig. 2. Ignore the cross-bars and braces of this part for the time being and just cut the two side bars from 1½ins. by ⅝in. wood.

Round the ends neatly and bore a ¼in. hole at 1in. from each end, for attachment to the steps and strut. Fit them to the steps at a distance from the bottom of 3ft. with iron rivets. Deck chair rivets, cut down a little, will suit.

Now cut the sides of the strut to the length given in Fig. 1 and rivet the bottom ends of the middle part to these at 3ins. from the bottom. At the top ends of the strut a steel pin should be fixed, pointing inwards. Its position should be 1in. full from the back edges and 1½ins. down from the top.

A stout screw, driven partly in, with its head filed off, would do for each pin. These pins run along the face of a strip of wood, screwed at the top of the steps and shown at E—E, in Fig. 3, and in detail, G, which shows how the pins on the strut fit against it.

Strips, E—E, are cut from ⅞in. wood and are 1½ins. at top and ⅝in. at bottom. Close the strut and middle frame sides to the steps, as in Fig. 3 (a rear view of the steps, minus the treads) and connect the strut sides at top and bottom with cross-bars of 1½ins. by ⅝in. wood.

Now screw the cross-bars and diagonals shown across both strut sides and middle frame, arranging them so that they do not foul each other when the steps are closed. Study the rear view, Fig. 3, and it will be clear what is meant.

The top cross-bar, H, already fixed, should, by the way, have its upper edge slightly bevelled. Open out the steps, and where bar, H, touches the back of the steps, make a pencil mark. Cut a second and similar bar, I, and screw this across the back of the steps, touching the pencil marks. This takes the thrust of bar, H, when the steps are extended.

The lattice method of framing makes for great strength, as well as lightness, but to ensure this, firm screwing and accurate fitting are essential.

TIMBER REQUIRED

Step sides, fillets and braces—1in. by ¼in. 50ft. run.
Treads—5¾ins. by ⅞in. 9ft. run.
Struts and middle frame sides—1½ins. by ⅞in. 18ft. run.
Strut cross bar and bars H and I—1½ins. by ⅞in. 6 ft.
Strut bars and diagonals—⅝in. by ⅞in. 6ft.
Middle frame bar and diagonals—⅝in. by ⅞in. 7ft.
All lengths approximate.

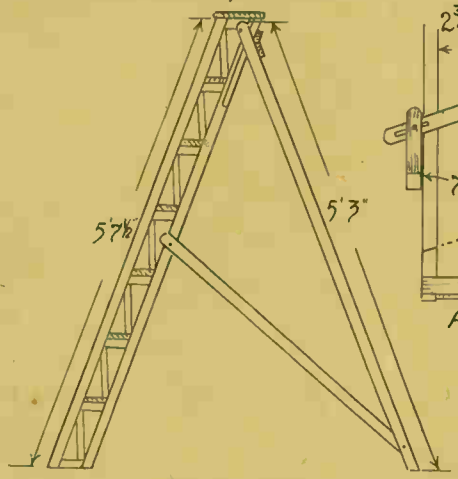


Fig. 1—Side view and angle of steps detail

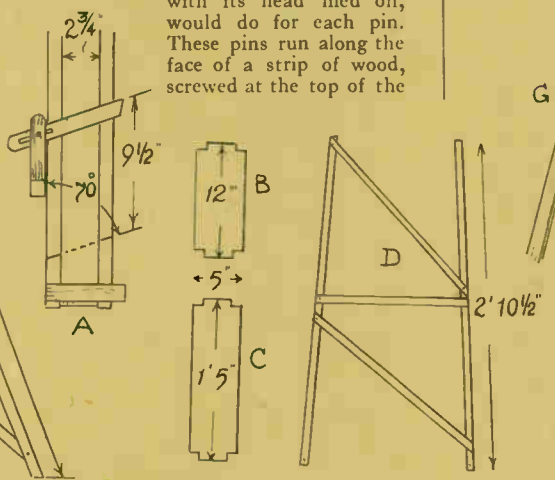


Fig. 2—Detail of frame and steps size

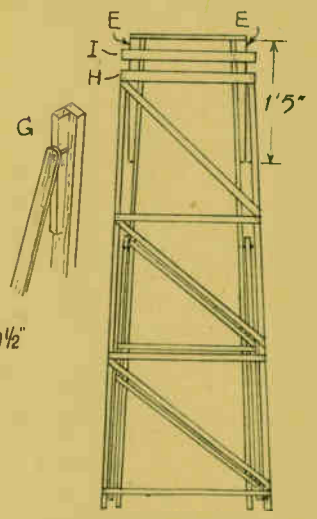
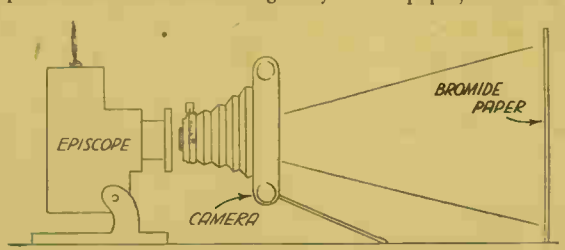


Fig. 3—Rear view of steps closed

Reader's Suggestion for Episcope Enlarger

AS a reader of over 30 years (writes R. H. Welch of Peacehaven) I feel I must write to you regarding the episcope published in an issue, last year, as it may be very interesting to readers who are photographers. I made the episcope as pattern and have used it regularly in the following manner for the reproduction of photographs.

I put the photograph to be produced in the episcope, using the camera itself for a lense. When the picture is focussed correctly on to a sheet of paper fastened to a board, I draw a line where it comes on the paper, switch off the light and pin a sheet of bromide paper in extreme corners where the picture comes.



Switch on the light for 12 seconds, then switch off and develop by red light and fix as usual. I have now a paper negative. This in turn is put in the episcope and projected to the desired size, focussed, exposed, and developed as with the negative.

It is quite easy to make an enlargement of any photograph. I have been able to make copies and enlargements for parents who have lost a dear one in the war and have had only one picture. They have been very grateful to say the least.

The paper negative need not be enlarged from the original, or at least very little. An advantage also is that if the person is on a photograph of a group it is quite easy to black out the unwanted portion on the negative.

The drawing here gives an idea of the contraption I used. Any escape of light between episcope and camera was blotted out by covering the whole gap with a black cloth.

Help to furnish the doll's house kitchen by adding

A DOLL'S DRESSER

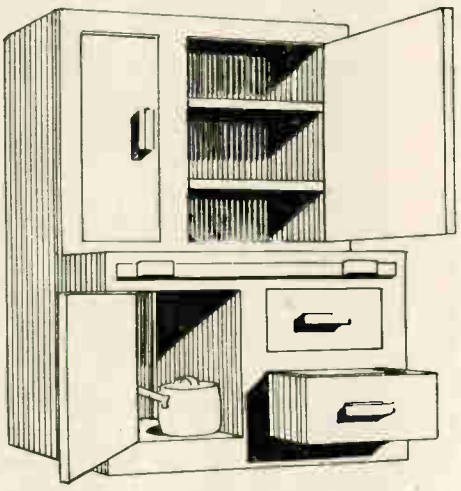
FULL details are given here for making the attractive little toy dresser shown. The height of the dresser is 10¼ins., and its width across the front 7ins. So there is ample space in the cupboards and the drawers for all the miniature saucepans, plates, brushes, etc. Above, the larger cupboards would be just the place for jars and containers, and the long narrow cupboard on the left for the flour sifter and bowl.

Pull-out Pastry Board

There is also a pull-out board, complete with handles for making pastry. If some pieces of 3/16in. plywood can be procured, then a sound job may be made, regardless which way the grain will show on the face.

If, however, ordinary 3/16in. thick wood is used, then careful watch must be made to see the grain of the wood runs in the strongest way. An indication of this has been given in the various working diagrams.

The sides should be the first pieces to mark out and cut. The shape and measurements shown in Fig. 1 will be ample guide for this. See the grain of the wood runs upwards. Cut first the one side and then use this as a template for marking round to get the other side.



In fitting this piece do not strain the sides outwards or the other parts below will not fit properly. Glue the back edge of the shelf to the main back and drive in one or two fine pins. Then mark out and cut the upright partition separating the two top cupboards. This partition measures 5½ins. by 1¼ins. and it is glued and pinned to the main back and to the table top and main top.

The two shelves to the cupboard measure 3⅞ins. by 1¼ins. and are held by glue and pins to the back and side. These are put in and the main floor then cut, eased in, and glued and pinned. The floor is 6⅝ins. by 2½ins. When fixing it, note that it is kept up ¼in. from the lower edges of the sides (see Fig. 2).

The main front to the top portion is shown in detail in Fig. 3. Square up accurately the piece of wood for this to the overall sizes given, and then set out the doors and rails to the given dimensions.

After cutting out the doors, fix them again in their respective openings with small pieces of tape as hinges, glued along the edges of both doors and uprights. Glue a little piece of wood along inside the lower rail of the frame of the smaller door to prevent the hinges being strained. The shelves in the larger cupboard will suffice to hold the door flush.

Centre Partition

In the lower portion of the dresser, the central partition, measuring 3⅞ins. by 2½ins., is cut and fixed. Glue and pins on the back edge, and to that edge resting on the floor, will secure it. From Fig. 2 it will be seen that this partition does not quite reach the underside of the table top. The gap allows for the pull-out pastry board to slide in.

This pastry board is shown at A in Fig. 4, with measurements ready for marking out direct on to the wood. Note the small projections at the front corners which leave the correct amount of projection along the front. Two square 3/16in. fillets glued to the sides inside the cupboard act as runners for the board.

Drawer Runners

Inside the right-hand cupboard there will have to be fitted and glued a pair of guides and runners for the upper drawer to rest upon. Each guide and runner is made up of one ½in. by 3/16in. piece, with a piece glued to the top of it measuring 3/16in. by ¼in. They may be seen as G and R in Fig. 2.

In the case of the lower drawer, the floor itself acts as the runner for it and the two small fillets shown in the angles act as guides. Space out the

(*Continued foot of page* 186)

Main Back

Next cut the main back to the dresser, 10¼ins. by 7ins. Glue the sides to this piece flush (Fig. 2), and add one or two fret pins. The top is 7ins. by 1⅝ins. It is kept flush at the back and sides and will cover the top edge of the upper front of the dresser, just as seen in Fig. 2. The table top pushes between the sides, and measures 6⅝ins. by 2½ins.

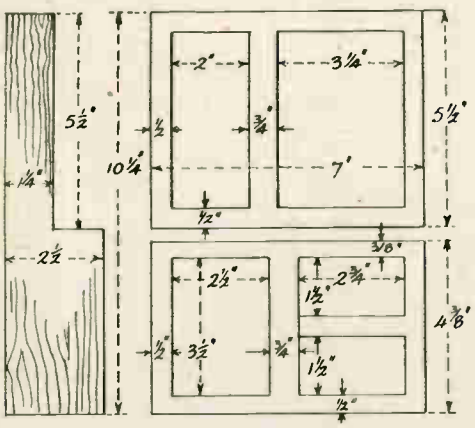


Fig. 1—The sides

Fig. 3 (above) The dresser front
Fig. 4 (bottom) Drawer and cupboard front

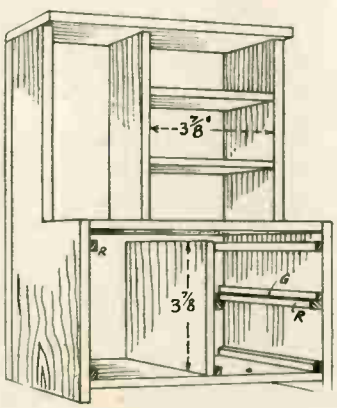


Fig. 2 Construction of casing

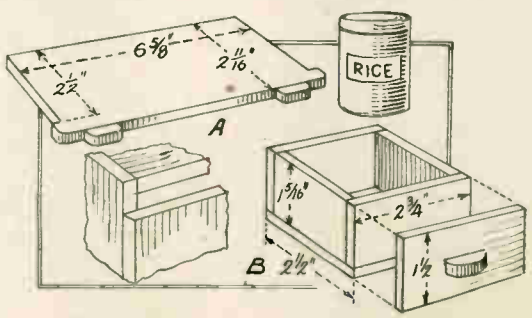


Fig. 5—Pastry board, drawer construction, etc.

It is a worth while job making this useful

UPHOLSTERED STOOL

READERS will find it greatly to their advantage to have some knowledge of the craft of upholstery. It is invaluable to be able to repair your own chairs and settee, as such work nowadays is difficult to get done professionally. The upholstered stool illustrated provides a lesson in elementary work of that nature, and also makes quite a useful little piece of furniture.

The framework, Fig. 1, is of the simplest kind. Use wood of some 1in. thickness, a hardwood if possible, but deal if nothing better is obtainable. It will probably be necessary, owing to the width, to glue and dowel two pieces of board together to make legs.

Cut two of these, one having the middle slot cut from the top, as in the diagram, and the other having its slot cut from the bottom, upwards, as shown dotted. The width of the

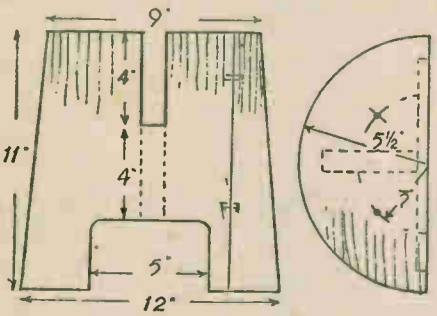


Fig. 1—Shape and sizes of cross legs and top

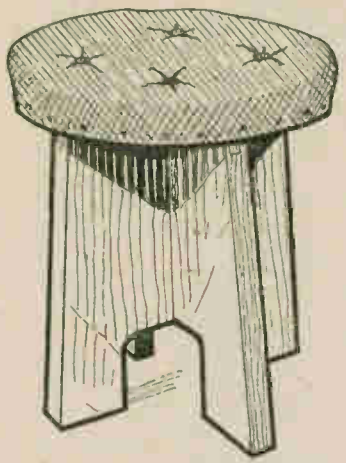
slots will be exactly the same as the thickness of the wood. The two pieces should then fit tightly together at right angles. Use good glue and get a firm joint.

The top of the stool, half of which is shown, is also made of two pieces, glued together. You can avoid the trouble of dowelling together if the glued joint is made to come exactly across the centre and so rest upon one of the cross pieces underneath.

Stuffing

The position of these is shown by the dotted outlines. Cut to a correct circle. Strike a second circle to the smaller radius shown and on this bore four holes with a gimlet, just large enough to admit the passage of the upholsterer's needle. Now screw the top to the legs.

For the first stuffing you can use flock or any such cheap material. Pile this on the top, using a generous quantity, and cover over with a coarse canvas, such as cheap sacking. Allow plenty of room so that the stuffing can be worked to the edge, making that as thick or thicker than the middle.



You can assist in this by tacking the canvas only two-thirds round at first, so leaving a space into which the hand can enter to push the stuffing round. When the whole is evenly arranged, finish the tacking.

This first stuffing has to be stitched into shape, and for that purpose an upholsterer's needle, with a double point as at A, Fig. 2, will be needed. Two rows of stitching are necessary. The first row is known professionally as "blind" stitching—this is the way to do it.

Thread the needle with a long length of upholsterer's twine and starting just above the edge of the wood top, push the needle through at an angle, roughly, of 45 degrees to the left, as at B. Draw the needle through as far as the eye only, then twist the needle to the opposite angle, shown by dotted outline, and push it back until the point at the eye end emerges some 2ins. to the left of its original entry. Draw it right through, and draw tight, so that the loop of twine inside brings the stuffing to the edge.

Now, at a point ½in. to the right, from where the needle emerged, repeat this process, and continue until the round is finished. The second row of stitching is started ½in. higher

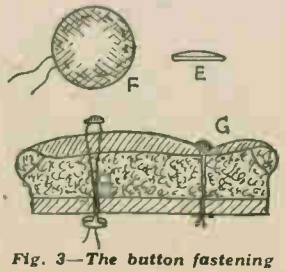


Fig. 3—The button fastening

up, and goes right through the canvas, as at C.

Draw the twine stitches tightly to form a kind of "roll" edge all round, as at sectional detail, D. The result should be a firm edge of stuffing all round, that will keep its shape however sat upon.

The Top

Now for the top stuffing. For this you can still use flock, but a softer material, like kapok, would be better. Pile this on the first stuffing and press down with the hands to make it a smooth firm curve over the stool. When satisfactory, cover it with the material chosen for the finish of the article. A small piece of leather cloth, Rexine, cretonne, tapestry, or what you will, all are equally suitable.

Draw it over the stuffing and tack down round the edge, then cut off the surplus. The tacked edge, should if possible, be hidden by a length of banding or gimp, secured round with the small black nails known as gimp pins, or fancy brass headed nails.

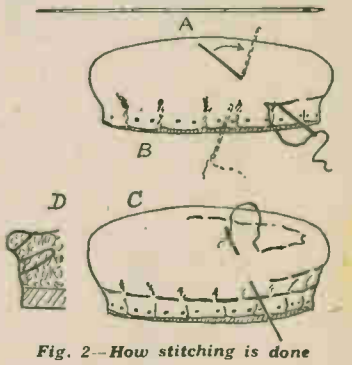


Fig. 2—How stitching is done

The seat should now be buttoned, to keep its shape better. Buttons to match can, perhaps, be bought, but if not, make four moulds to shape shown at E, Fig. 3 from thin fretwood. Make them some ⅜in. diameter, and shave them down to the edge.

Cut circles of the upholstering material to 1½ins. diameter and at ⅛in. from the edge, run a circle of thread tacking round, as at F. Place these over the moulds and draw the threads to bring the material over the moulds and underneath. Then tie off.

Push the needle through the wood seat from underneath, pass it through the material under the button, and then push the needle back again. Make a slip knot with the twine, insert between the twine a leather tuft, like those used in buttoning mattresses, and draw tight until the button goes deep enough in the upholstered top of the seat. Then tie off underneath.

Novel moving figures can be made with these

ANIMATED DISCS

THIS is an amusing article to make, and would interest any youngster for hours. It consists of a master disc, to which smaller discs can be attached of different subjects. Held in front of a mirror, and viewed through the radial slots whilst being rotated by the fingers, the figures come to life and perform many antics. The subjects are endless, and the making of the discs is quite as fascinating as the subsequent view of their performance.

The general view shows the discs, front and back. The master disc, one only of which is required, is cut to the diameter from stout cardboard, a pattern of which is shown in Fig. 1. Strike the two dotted line inner circles, divide into 12 equal parts and on each part cut out the slots ¼in. wide.

Cutting the Slots

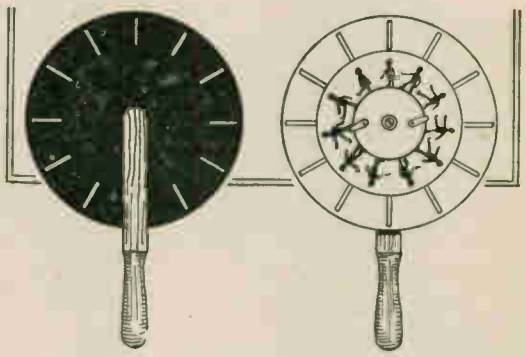
The best method of cutting these slots is to lay the cardboard on a spare bit of wood and to cut through the card with a sharp chisel and mallet. In the centre of the disc strike a 3in. circle. Cut out a 3in. diameter disc of thin cardboard, and glue this on the circle.

Cut a similar disc from fretwood and glue this to the back of the master disc, truly central, then bore a small hole through the lot. The back of the disc should be blackened with ink or other stain, unless you have a piece of black paper, in which case the paper can be pasted over the disc.

The animated paper discs (really rings, of course), slip over the smaller cardboard centre on the master disc, and are secured there with a pair of small clips as shown, cut from thin brass or tinplate; and fitted to move rather stiffly with round-headed brass screws.

The handle, Fig. 2, is a length of ⅜in. wood, shaped up as shown. At ½in. from the top make a small hole with a bradawl. Glasspaper the handle smooth and varnish.

The master disc is attached to this with a suitable brass round-headed screw, as shown in the detail, A, a thin washer being interposed between and a second washer under the screw head. The disc should be free enough to spin round with a touch of the finger.



For making the animated discs, Bristol board is decidedly the best material to use. Unfortunately it is in scarce supply, and about the best substitute is good thick writing paper, two thicknesses pasted together. Cut into 6in. diameter discs first, then strike the inner circles. These inner circles are cut out after the figures are put in, not before. Divide the circles into 12 equal parts, pencilled in, and it will be helpful to add other pencilled circles, as shown in Fig. 3, as a guide to drawing the figures alike, as regards heights, etc.

Endless Subjects

As stated, the subjects possible are simply endless. That illustrated in Fig. 3 shows a figure performing some physical jerks. The complete exercise must be finished in 12 movements, each, of course, different. The different attitudes necessary should be lightly pencilled in as a guide before finishing them in ink.

They should then be filled in full black to show up better. Use Indian ink instead of the ordinary kind for preference. In the view of the completed discs, the subject there shows a figure walking, the whole action comprising two strides starting from one division, the first, and finishing at the opposite side of the 11th division.

To get a lifelike representation, the actual movements made by the action of walking should be carefully noted by getting a helpful pal to walk very slowly, a stride or two across the room, and then to pencil roughly in the motions. The figure advances a little in each division, of course. When viewed in the mirror the result shows a number of figures, more or less rapidly walking after each other in a circle.

The actions of running, jumping, etc., are equally entertaining. When a little practise is obtained, more ambitious attempts can be tried. Both sides of these discs can be drawn upon, so saving paper.

For Smooth Motion

Larger master discs than that shown can be made, with a proportionate larger number of slots. The greater the number of slots allows a greater number of frames on the animated discs, resulting in a smoother motion of the figures.

Animals can also be included, a galloping horse for instance or a greyhound. Readers will doubtless exercise their own ingenuity in devising subjects. One very amusing subject the writer remembers seeing some years ago represented his satanic majesty, scuttling round the ring, holding an umbrella, as some protection against a rain of pitch forks.

As already mentioned there can be as much amusement devising and drawing the animated rings as watching them in motion afterwards.

You will soon get the "hang" of making the figures realistic in their movement although they should be kept clear and simple in outline.

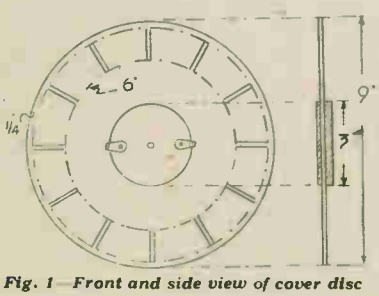


Fig. 1 Front and side view of cover disc

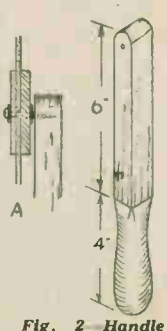


Fig. 2 Handle and pivot

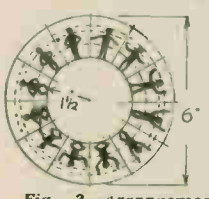


Fig. 3 Arrangement of figures

Model Motor Cruiser Design Next Week

What the handyman should know about
STATIC ELECTRICITY

WIMSHURST machines, of course, are electrical contrivances for producing large charges of static electricity by friction. Static electricity, unlike ordinary electricity as produced by a dynamo or chemicals (dry batteries), has the power to "magnetise" such things as paper, glass, amber, etc. It is created by rubbing paper, glass rods, pieces of amber, etc., with a piece of silk or the fingers—even one's clothes or hair.

Natural Electricity

The most common instance in the production of static electricity is when we comb our hair briskly, using a vulcanite or plastic comb. Several strokes through the hair, particularly dry hair, free from hair-oil or water, with such a comb creates magnetism in the comb.

After running the comb over the head, to stroke the hair back, small, invisible, discharges of static electricity will take place, especially if the teeth of the comb are touched against the forehead.

There will be unmistakable "clicking" noises—but you will have to listen carefully to hear these mild explosions. Some of the clicking is caused by sudden contact of hairs drawn by the magnetism created in the comb, these hairs sticking to the comb.

If the comb, once charged, is held about an inch above the head, hairs will be drawn up to it, just as metal is attracted to a magnet. Some hairs will stand on end simply by raising the comb several inches above the head. You can even "sway" hairs on the back of your hand by moving the comb over them to and fro about ½in. high.

Brown-paper Experiments

A more interesting experiment can be conducted by means of a sheet of brown paper, or newspaper. Get a piece about 18ins. square and dry it thoroughly on both sides at a fire. Fold the sheet in half, heat it, then fold the paper again to make a strip 3½ins. wide.

Heat the strip on both sides, then turn out the light and, standing with your back to the fire (which should be glowing only) or going into a darkened room, hold the strip up by the left hand and grip it with the finger and thumb of the right hand.

The fingers are drawn down the folded strip of paper rapidly several times, squeezing the paper between the thumb and finger rather tightly each time. At first, nothing will occur, but as you continue with the brisk rubbing, you will feel the pads of the thumb and finger becoming hot, due to the friction.

Thumb Sparks

Then, quite suddenly, much to your surprise, you will begin to notice that a trail of tiny, minute sparks follows the thumb of your hand. Press the paper tighter, and draw the hand down the paper very quickly, and you will see, for a fraction of a second, a flash of white light—a fluorescent glow, rather like the glow of green light produced by phosphorous paint after being charged with light.

The light emitted is not bright or green-coloured. It is a dull white glow, created by a multitude of tiny sparks, and it is instantaneous.

You can, however, repeat the performance continuously until the paper is affected by dampness in the air or dampness from a hot, perspiring hand. It is only a matter of heating the paper again, and the hand, and continuing with the experiment.

Sparking Finger-tips

Assuming you have worked up a good trail of sparks from the thumb by using rapid movement, try doing it quite slowly. In this case, you can actually hold the paper quite close to the eye to follow the movement of the thumb. You will see the tiny sparks more plainly and also hear them crackle faintly.

If the fingers are drawn down the paper rapidly and the forefinger immediately pointed towards the paper, touching it very lightly, a bright spark will be emitted. The "crackle" is unmistakable.

Your hand is charged with static electricity, as is the strip of paper, but the strange thing about this form of electricity is that, while magnetising paper, it can be conducted through metal.

Needle Attraction

For example, by holding a large darning needle in your right hand and rubbing the paper several times, as explained, the tip of the needle will glow white for a moment if you immediately point it closely at the paper. There is no need to touch the paper with the needle point.

It is useless, by the way, to use a knitting needle instead of a darning needle, to make the experiment. You will not obtain a better, bright glow of light. Nothing is likely to happen, as there is insufficient static electricity in your hand—not a big enough charge, in other words.

The charge is also effected if another person's body is in contact with your body while these experiments are being conducted. People with damp hands cannot perform the experiment successfully. Hands, especially finger tips, must be quite dry. They must not be contaminated with grease, oil, paint, etc. People whose hands are always in water, paraffin oil, etc., will be unable to produce sparks.

A Cardboard Strip

While the folded strip of brown paper gives the best results, quite a lot can be done with a thin strip of cardboard measuring about 15ins. by 4ins. by 1/16in. thick. The cardboard, like the paper, must be thoroughly dry. It must be heated before each experiment. A dry, hot room is the best place for experimenting.

The paper or cardboard provides quite as much interest as a complicated Wimshurst machine, with its revolving discs, contacts, or collectors, and ball spark-gap. Why not get a piece of paper and try out the experiments right away to-night? It will pass a few interesting hours.

A Doll's Dresser (*Continued from page* 183)

pieces carefully before gluing them inside the cupboard. The main lower front of the dresser is drawn and cut according to Fig. 5.

Finally, clean up the edges of the piece and fix it to the front of the cupboard with glue and pins. Put tape hinges on the door of this lower cupboard in a similar manner to those above and glue on a small fillet inside as door stop.

The two drawers are simple to make up, and B in Fig. 4 shows their construction. All parts for the drawers are of 3/16in. wood. The main fronts of the drawers consist of the pieces of wood cut from the lower front of the dresser. They are simply glued to the tray or box forming the drawers.

All parts of the drawers are glued together, and time must be allowed for the glue to harden before each face of the drawer is glasspapered. The handles for the drawers and cupboards can be made from small shaped strips glued on as shown in the sketch.

The whole dresser, when finished, should be glasspapered all over and given a coat of white enamel. A second coat of enamel after a light glasspapering should bring up a delightful surface.

Containers for the good things which are to be stocked in the cupboards can be made up from spare wood. Circular tins can be represented by cutting off lengths of ¾in. round rod and painting them up realistically as suggested in Fig. 4.

A pleasing range is easily made.

MISCELLANEOUS ADVERTISEMENTS

The advertisements are inserted at the rate of 3d. per word prepaid. Name and address are counted, but initials or groups, such as E.P.S. or £1·11·6 are accepted as one word. Postal Order and Stamps must accompany the order and advertisements will be inserted in the earliest issue. Announcements of fretwork goods or those shown in Hobbies Handbook are not accepted. Orders can be sent either to Hobbies Weekly, Advert. Dept., Dereham, Norfolk, or Temple House, Temple Avenue, London, E.C.4

PERSONS required immediately to make leather shopping bags in spare time. Write (Dept. 11), Empire Co., 117 Nottingham Road, Loughborough.

50 EARLY stamps 6d. ; ask for approvals, from ½d. Cogman, Potter Heigham, Gt. Yarmouth.

STAMPS. Send for my approval sheets, for small and medium collectors. Enclose 2½d. stamp for postage. Free gift of eight stamps. — D. Mellenfield, S.D.A. (H.W.), 14 Kings Road, Barnet, Herts.

SPARE-TIME workers required to manufacture plastic fancy goods. — Dept. S.3, Somat Plastic, 8 Middle Marsh, Nottingham.

LEKTRON assists collectors get greatest pleasure from their hobby! Write now for Free Stamps and Approvals, enclosing 2½d. postage. Lektron Philatelist Service, 15 Earl St., Barnoldswick.

LONELY? Join Friendship Circle. Details 6d.—Secretary, 34 Honeywell Road, London, S.W.11.

NOTEPAPER! 100 sheets, printed—your address 4/3. — Holgate, 7 Hawthorn Terrace, Halifax.

MORSE Telegraph Keys. Genuine U.S. Army Signal Corps, 5/6 each, plus 6d. postage. Special torches with flexible lamp extension, less dry battery (No. T12), 3/6 each, plus 4d. postage.—Allan Levin Limited, 1 Mayfields, Redditch.

WHY not make a smashing model Fort? We are able to supply walls 18ins. by 6ins., turrets 9ins. by 2ins. by 2ins., ready shaped, with instructions to complete, 5/6 post free.—'K' Toys, Brookfield Rd., Bristol 6.

"WOOD TOYMAKING". A practical handbook with 180 designs and illustrations, 2/3 posted. — Industries, 2 Waldegrave Park, Twickenham.

SEND stamp for extensive list of Handicraft Tools and Materials now available. — Dept. Y, 3 Torob Agency, 53A Broad Marsh, Nottingham.

POCKET Magnet, small permanent magnet equal in power to old style one of six times its size, 2/6 post free.—The Hobby Shop, Bold Street, Southport.

GALLEON Designs. Range of 8 historical models. Plans, materials and instructions. Write for list. — Hobbies Ltd., Dereham, Norfolk.

MODELS of all kinds made from Hobbies designs. Leaflet from Branches and Dereham, Norfolk.

BE Taller. Quickly! Safely! Privately! No appliances no tablets no dieting. Details 6d. stamp.—Malcolm Ross, Height Specialist, BCM/HYTE, London, W.C.1.

MODELS: you can make lasting stone-hard models with Sankey's Pyruma Plastic Cement. Supplied in tins by Ironmongers, Hardwaremen and Builders' Merchants. Ask for instruction leaflet.

TRANSFERS for decorating toys, trays, furniture, fancy goods. Selection 10/-, 20/-. Flowers, pixies, dogs, nursery rhymes.—H. Axon Harrison, Jersey.

MONOMARKS. Permanent London address. Letters redirected. 5/- p.a.—Write Monomark BCM/MONO82, W.C.1.

YOU can look up in "Where's That Car From?" 10,000 car index numbers alphabetically arranged. 56 pages 6d. From all Newsagents. Raleigh Press, Exmouth, Devon. (Post 1d.).

PERSONS required make fancy goods at home. Write for details. — Melton Manufacturing Co. (Area 544), Southgate Street, Leicester.

PERSPEX Polish, genuine "Sinec" as used by R.A.F. Set of three grades, coarse, medium and smooth, 2/6 set, post 8d. Send for free surplus bargain list.—Marble Arch Motor Supplies Ltd., 286 Camberwell Road, S.E.5.

40 Power Tools you can make, 12/6 post 8d. Popular Mechanics Press, Chicago. The famous "What to Make", 1947—7/6. Shop Notes, 1947—7/6. Following "How to Make" Books, 3/- each; 5 Power Driven Saws; Spray Painting; Caravan and Utility Trailers; Plastics Projects; Wood and Metal Lathes; 21 Action Toys. "Science and Mechanics" the leading American work-shop magazine—one year 15/- post paid. S.A.E. for lists, books, plans, magazines.—BCM/PUBLICATIONS (H), London, W.C.1.

BOYS! Look at this, the most smashing free gift of all. The attractive and lovely Roosevelt Set from San Marino. Absolutely free to all genuine applicants for repeat approvals enclosing 3d. stamp, 1/- without approvals.—H. A. Smith, 13 New Road. Scole, Diss, Norfolk.

INDEX for back Volumes of Hobbies Weekly 1/- each post free. Each 6 months from April to Sept. and Oct. to March. State date required. Also Binding Cases in red linen, stamped in gold, 2/6 each.—Hobbies Ltd., Dereham Norfolk.

COPPER Wire, enamelled, tinned cotton, silk-covered. Screws, nuts, washers, soldering tags, eyelets, rivets. Ebonite and laminated bakelite panels. Coil formers, covered wires, crystals, permanent detectors, ear-phones, etc. List S.A.E.—Post Radio Supplies, 33 Bourne Gardens, London, E.4.

W. McGARRIGLE for aeroplane and ship kits. All accessories. Stamps lists 3d.; wholesale lists 4d. — 64 Hillcrest Road, Romford.

SPECIAL Offer. Attractive Stamp Album 50 stamps, packet of mounts. Post free 3/-.—Gamut (Dept. C), Supplies Co., 24 Gunnersbury Avenue, London, W.5.

WHEELS for Toys in metal, wood and plastic. Numerous sizes and types. Write for list, stating requirements to The Joyden Toy Co., 193 Chase Side, London, N.14.

HARDWOOD Wheels, recessed, per dozen, 1in.—1/6. 1½ins.—2/3. 2ins.—3/-. 3ins.—5/-. 4ins.—9/-. Post paid. Special quotations gross lots; other sizes available on request. — Joyden Toy Co., 193 Chase Side, London, N.14.

STAMPS FREE!! Twenty unused (2½d.).—G. H. Barnett, Limington, Somerset.

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LONELY? Then write Secretary U.C.C., 5B.B. Hay St., Braughing, Herts. Genuine. Est. 1905.

MINIATURE Naval Ship Packet of Designs for complete Fleet and Base. Price 1/- (postage 1d.) — Hobbies Ltd., Dereham, Norfolk.

DOUBLE Deck bus model 7½ins. long. Made from pattern sheets, 2638—price 6d. Parcel of wood 3/3 postage 7d.) — Hobbies Ltd., Branches and Dereham, Norfolk.

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Hobbies WEEKLY

CONTENTS

February 11th, 1948 Price Threepence Vol. 105 No. 2728

A TOY MOTOR HORSE AND TRAILER

HERE is a real up-to-date toy which we feel sure will suit the modern boy. It is a splendid little model of a mechanical "horse" with detachable trailer van. These vehicles are used by the railways and transport firms, for the delivery of goods in towns where the larger and more awkwardly-handled motors cannot conveniently be manoeuvred.

They have the advantage, too, that one van portion can be loaded and taken out, whilst other vans are being loaded in the yard ready for the tractor's return.

Our sketch gives an excellent idea of the toy, which is made up in two units—the motor and the trailer. The motor has a cab and enclosed front, and is fitted with three wheels, one of which is immediately beneath the bonnet, and two pivoted to the platform just behind.

The trailer is formed as a spacious van, with drop back and two recessed rear wheels. It has also two small support wheels on a bracket for use when the motor portion is detached.

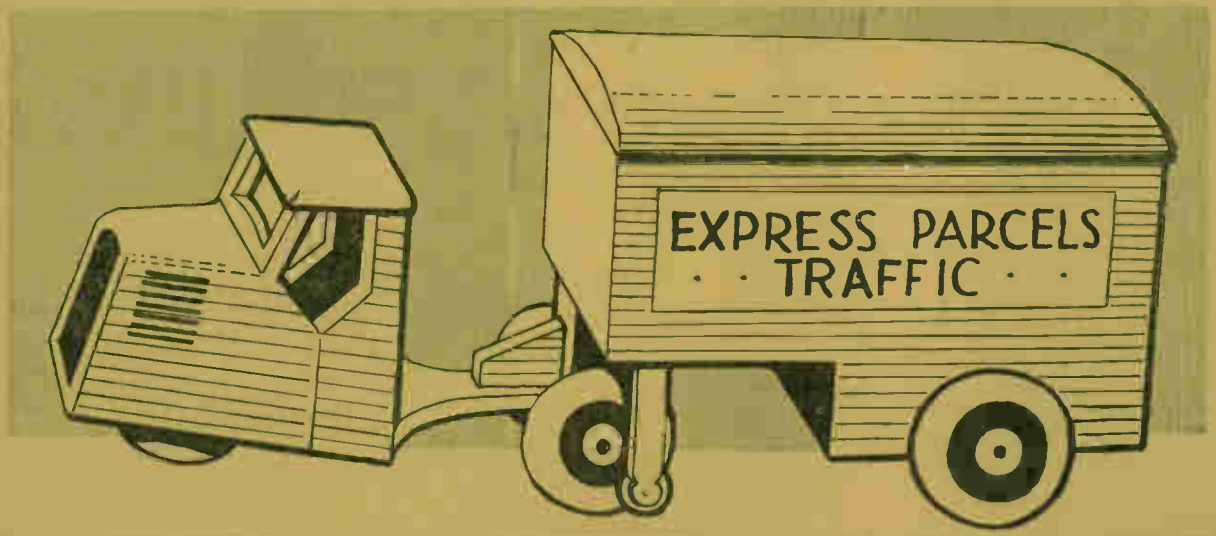
The Floor and Sides

Commence work by setting out the floor of the motor as given in outline in Fig. 1. It is cut with the fretsaw from ¼in. wood. Then, on this floor, glue the two sides, H, the outlines of which are given in the squared diagram, Fig. 2. The squares measure 2ins., so it is a simple matter to set these out on a piece of ¼in. wood and draw in the shape through them.

The front of the cab, C, is also done this way, and its position, as well as the other parts, are shown in the sectional diagram, Fig. 3. The back, B, is a plain piece measuring 2¾ins. square and ¼in. thick. When the parts are glued, the whole is strengthened by the block, G, which forms the seat of the cab.

From ¼in. stuff again, the two parts, E and F, are cut, and certain edges chamfered with the rasp and file. These pieces fit between the sides and are glued and pinned to them.

Finally, the roof of the cab, D, is



cut to shape 3ins. by 1½ins. and glued on, its true outline being checked by marking round along the sides and back.

Trailer

To form the pivot for the trailer a shaped piece (T in Fig. 4) is glued to the floor in the position shown by the dotted lines in Fig. 1. Against this piece is glued piece, U, a square of wood formed by gluing two pieces of ¼in. stuff 1in. long together. A clean hole must be drilled 3/16in. diameter in the centre of these two pieces to take the pivot rod of the trailer as shown in the sectional diagram in Fig. 4.

To complete the motor, the two back wheels, turned wheels 1⅞ins. diameter, are screwed on to the edges

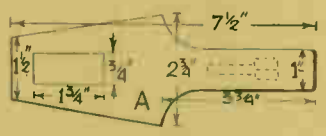


Fig. 1—Front floor portion

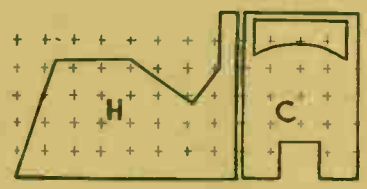


Fig. 2—Marking out cab parts

CUTTING LIST

A—One piece 7½ins. by 2¼ins. by ¼in.
B—One piece 2¼ins. by 2 ins. by ¼in.
C—One piece 6ins. by 2ins. by ¼in.
D—One piece 3ins. by 1¼ins. by ¼in.
E—One piece 1¼ins. by 2½ins. by ¼in.
F—One piece 2 ins. by 1 ins. by ¼in.
G—One piece 1in. by 2¼ins. by ¼in.
H—Two pieces 4ins. by 2 ins. by ¼in.
I—Two pieces 7¾ins. by 4¼ins. by ¼in.
J—One piece 3¼ins. by 3¼ins. by ¼in.
K—One piece 1½ins. by ¼in. by ¼in.
L—One piece 4ins. by 3¼ins. by ¼in.
M—One piece 3¼ins. by 2¼ins. by ¼in.
N—Card cut to size.
O—Waste from sides I.
P—One piece 7¼ins. by 4ins. by ¼in.
Q—One piece 4⅛ins. by 3¼ins. by ¼in.
R—Two pieces 1in. by ¼in. by ¼in.
S—Two pieces 1¼ins. by ¼in. by ¼in.
T—Two pieces 1½ins. by ¼in. by ¼in.
U—Two pieces 1in. by ¼in. by ¼in.

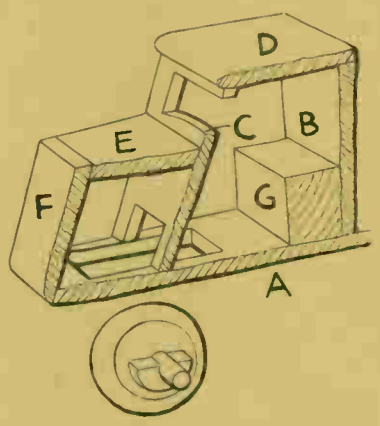


Fig. 3—Cutaway view of cab and bonnet

recesses formed for the main wheels, two circular pieces, O—cut and adapted from the waste from the ¼in. sides—are glued to L, as shown in Fig. 7. Covered with stout card, N, bent round and glued on.

Roof and Back

When this is done, the roof, P, is cut, shaped and glued. The back of the van, Q, is made up as detailed in Fig. 5. This back is first of all cut 4⅛ins. by 3¾ins., and then two marginal strips ¼in. wide set and cut off. The central piece forms the door and is then fixed to one of the uprights by narrow pieces of tape to form hinges. A little knob and catch could be formed from odd pieces of wood or metal to be fixed to the door. A narrow strip of wood is glued along

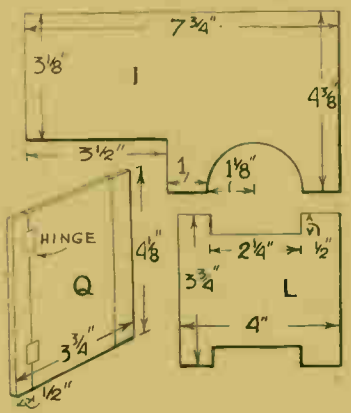


Fig. 5—Sides of the van

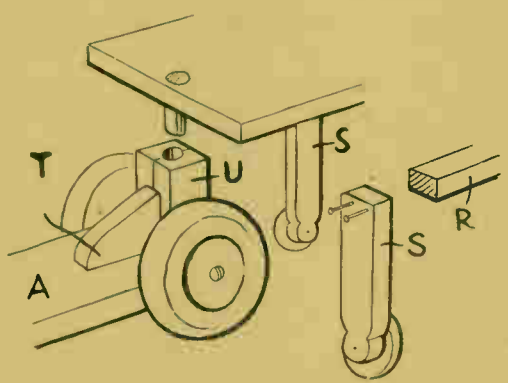


Fig. 4—Connection mechanism and wheels

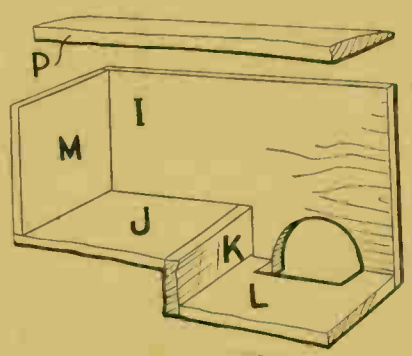


Fig. 6—Construction of van

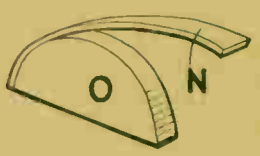


Fig. 7—Mudgard parts

of the floor centrally with the square pivot block. The front wheel is fixed beneath the opening made for it in the floor.

The Floor

The fixing for the front wheel consists of two semi-circular pieces of ¼in. wood with slots cut in to take a short piece of round rod which passes through the wheel. In Fig. 3 the wheel and its pivot is shown ready for gluing into place.

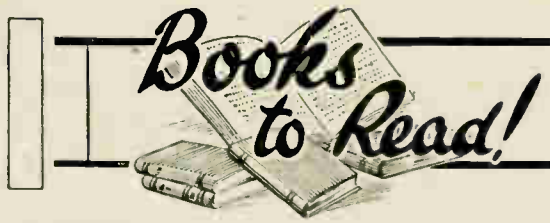
The first pieces to mark out and cut for the van are the sides. The outline for these is given at, I, in Fig. 5. They are ¼in. thick and the two may, therefore, be cut together for sake of speed and accuracy. The four pieces connecting the sides, consist of parts, J, K, L and M. They are quite plain in outline, and their respective sizes can be got direct from the cutting list given. Each is glued between the sides, and the openings or recesses on part, L, come against the semi-circular openings in the sides.

The marking out of piece, L, is given in Fig. 6. To cover in the inside to the underside of the roof to keep it from pushing in too far.

Fig. 8 shows how the two small wheels are made. Two pieces (S) are glued and nailed to a piece (R) and the whole then glued underneath the front of the van. The two small wheels are cut out with the fretsaw and the edges shaped with file and glasspaper.

This interesting little toy can be made mainly from odd pieces and painted realistically. The wheels for the van are the same size and make as those for the rear of the motor.

They can be cut as circles 1⅝in. wide in ¼in. wood and finished with rounded edge. You may be able to get them this size or 2in. diameter from Hobbies Ltd., or from the advertisers in these pages.



These reviews are of some recent books likely to be of interest to readers. They are obtainable from newsagents or the address given if postage is added to the price shown. Please mention Hobbies when ordering.

Electrical Engineering

by Frederick W. Purse, M.I.E.E., M.I.Mech.E.

WHEN we persist in saying electricity is still in its infancy, we are apt to overlook the fact that a Greek philosopher in 585 B.C. noted that amber, when rubbed, displayed certain attractive properties, although he did not realize he was producing a form of electricity. Or that it was in 1775 that Alessandro Volta, the Italian, succeeded in producing fluid electricity from what he called his Voltaic pile—hence our term volt—the pressure of electricity. Obviously then there is much still to be learned, but today its application can be found on all sides and in every sphere of life. The development and application of electricity offers marvellous opportunities to keen young men and women, and this book deals extensively with the planning of a career. Its author writes from a very wide experience and the chapters cover an equally wide survey of opportunities, methods, and advancement which can be carried out by the fellow—or girl—who plans and is prepared to follow through to what can be a worth-while goal. Study is given to opportunities in every class, the various branches which can be adopted, and the successive progress which can be made.

(*Published by Southern Editorial Syndicate, Ltd., 55 Turnmill Street, London, E.C.1—Price 5/-*).

British Time

by D. de Carle

TIME, we are told, is the measure or period of duration, and when you give some thought to the matter you realize what a voluminous subject can be the variety in which time can be registered, recorded, emitted or distributed. The earth itself is an accurate timekeeper, and in the early Egyptian days the sun was made a recorder of the passage of time. This book describes the means of modern recording of time, and its distribution over the country and to individuals. There are 200 pages packed with interesting and often, amazing information, whilst photographs, diagrams and maps further make the knowledge understandable. Chapters are presented on the earliest methods of ascertaining time—1,000 B.C.!—the evolution of the clock, Greenwich Observatory, "Tim", Big Ben, electric clocks, etc., apart from a chronological table from Henry III (1335) showing the major inventions and items of interest connected with horology.

(*Published by Crosby Lockwood & Son, Ltd., 20 Tudor Street, London, E.C.4—Price 15/-*).

How to Draw Churches and Cathedrals

by J. Frederick Adams

THIS is another of those excellent little Studio "How to do it" series, and is as informative and helpful as any of the titles which cover any subject to draw. The illustrations as well as the instructions are plain and practical, suitable for the beginner, but evidently put in by the expert. The delightful pencil pictures give point to details on perspective, windows, towers, composition, light and shade, whilst a special chapter on Beginners' Mistakes is most helpful.

(*Published by The Studio, Ltd., 66 Chandos Place, London, W.C.2—Price 3/-*).

Let's Take a Photograph

by G. J. Matson

THE present shortage of material is apt to prevent many following this interesting hobby, but that is no agreement to stop them reading the subject and knowing its possibilities, even if they are not at present active operators. On the other hand, many of our readers do enjoy the hobby, as shown by the interest in our periodical

Patterns for making a novel "Scottie"

CANINE CARICATURE

THESE "Canine Caricatures", made from full size patterns on page 195, are easily made from odd scraps of wood, and are intended, primarily, for mantelpiece, or desk or side-table ornaments. Readers, however, will find additional uses for them: for use with book-ends, for example.

Though, as the title "caricature" suggests, certain characteristic features of the animals have been exaggerated, the dogs are not "impossible" creatures. For our first subject, we have taken the ever-popular Scottie. The model emphasises the square-looking head (with whiskers), the straight back and the low "chassis".

The Parts

Trace off the parts on to the wood, and cut out. Note the different thicknesses of the parts. The inside body can be cut from solid wood, but, on account of the ears (which might otherwise snap off), the outside body pieces should be in plywood if possible. At the time of writing, large sheets of plywood are very scarce and correspondingly expensive, but odd scraps may be obtained locally from salvage or junk stores.

The legs may, if plywood is scarce, be cut from solid wood, but the grain must run the long way of the leg. The same applies to the inside body piece.

The bow does not go all round the neck but is a flat piece glued to one side of the model. If neither thin ply nor sheet plastic is available, cut from 3/16in. plywood and then, with a penknife, separate one of the layers and use the reduced piece.

Shape and Paint

Glue and nail the outside body pieces to the inside body, one each side. With a rasp, true up those places where the three pieces are supposed to be in alignment, e.g., around the head (except the nose and ears), along the back, etc. Then glue and nail (with small panel pins), the legs.

The position for these are indicated by a dotted line on one of the pieces. Take care to get the feet placed level. Final adjustment in this matter may be obtained by laying a sheet of glasspaper face upwards on a flat level surface, and rubbing the dog's feet along.

At this stage the model may be painted. Take your choice—black or white. When the enamel is dry, paint in the contrasting patches (but do not overdo it), and add the eye. The bow can be painted, say, bright red or tartan shades, and is glued on last of all. Had it been added before, it would have been in the way of the painting.

articles on the subject, and a book such as this can be strongly recommended as adding to their knowledge and consequently their ability to improve and vary the results they obtain. The book is strongly bound to allow for constant handling, and the type and illustrations are large and legible. All the normal stages of photography are followed in simple language, and the novice with a camera will find everything to aid him in these pages. The author has frequently written for Hobbies Weekly and is himself a photographer of repute, whose book we can now recommend to anyone with a camera.
(*Published by Thomas Nelson & Sons, Ltd., Parkside Works, Edinburgh 9—Price 7/6*).

Staining and Polishing

HOW often we have reiterated in these pages that as much attention must be paid to finishing woodwork as to its actual construction. All too often do we have to deplore the haste and incompetence with which an otherwise excellent piece of work is finished. It is, too often, the urge of enthusiasm and anticipation which causes these final operations to be rushed—and ruined! Staining and Polishing covers the wide field of work which can make or mar any piece of woodwork. There is nothing really difficult in it—although assurance of success first time cannot be guaranteed. It will be a profitable investment for any reader to obtain and get down to this book, and his results will be more certain, and undoubtedly more gratifyingly satisfactory. Being one of the Woodworker Handbooks you can rely on its information, whilst the range of its chapters cover anything the amateur is likely to need. Not only does it deal with ordinary everyday work, but gives you many notes on those odd and awkward pieces, such as polishing carved wood, matching, treatment of marks and stains, correction of common faults, etc. Its main sections deal with staining; french, wax and oil polishing; the cellulose finish; varnishing and lacquering, and the keen reader should study them with the certain knowledge of improved results.
(*Published by Evan Brothers, Limited, Montague House, Russell Square, London, W.C.1—Price 7/6*).

How to Build a Split Cane Fishing Rod

by G. Lawton Moss

THERE is the enthusiasm of the real craftsman in this book, so that even the non-fisherman could be almost persuaded to start right away in making his first rod. The stages of the work are written in such an interesting and plausible way—the excitement of seeing each portion completed—the "feel" of the rod, as it progresses to a triumphant completion are all sufficient to enthuse any fisherman. As the author says, it's such great fun, and when you have made one, there is no reason why you cannot make more—and as a profitable sideline apparently. A split cane rod of his own making must be a lasting joy to any fisherman, and this book is all you need for instructions how to undertake it.
(*Published by The Technical Press, Ltd., Gloucester Road, Kingston Hill, Surrey—Price 6/-*).

Fun with Physics

by Frederick Jeffs

IN a chatty direct style the author describes a variety of simple and interesting experiments which demonstrates many scientific facts in magnetism, current, glass, heat, light and sound. Not only has he performed them himself satisfactorily and with simple ease, but they have the added advantage that everyday "bits and pieces" provide the main source of material. The original equipment necessary is contained in a short list of inexpensive materials, and many of the experiments which entail the use of nothing but "scrap" material. Straightforward diagrams illustrate lucid instructions and subjects are covered in definite sections. The experiments include the neon lamp, making rain, a harmonograph, gramophone experiments, electric cricket, magnets and compasses. Altogether an exciting and praiseworthy book.
(*Published by The Southern Syndicate, Ltd., 555 Lea Bridge Road, London, E.10—Price 4/6*).

From THE EDITOR'S NOTEBOOK

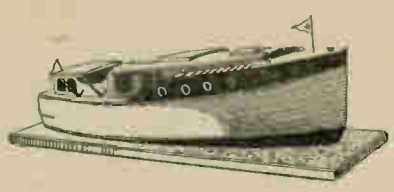
AN ardent reader who has followed our pages for many, many years (Mr. W. Sutton, 35 Hunton Hill, Erdington, Birmingham 23), is anxious to make a pen friend. He would prefer one, he says, of the "old school"—interested in real fretwork, and if possible from his native town of Liverpool. I hope some of our readers will contact Mr. Sutton and can assure them of helpful and interesting correspondence.

* * *

HIS last letter to me, indeed, contained much of interest. He mentioned the value of back numbers for reference from time to time and gives an example of their usefulness. "Looking up some Hobbies of 1910," he writes "I found instructions for boot and shoe repairing. Having a few of the necessary tools, I have soled and heeled a pair of shoes and I'm not ashamed to go out in them. In fact I think they look equally as good as repairs done in these days. There is a difference in 7/3 and 4/- for repairs. Perhaps you may smile, but it's little things like these that make a paper like 'Hobbies' a friend in need, for by following carefully the instructions given week by week, I have never found one to fail and I have done quite a number at various times."

* * *

IN the same letter he mentioned what is a common failing in taking fretsaws from their bundle. "I was recently talking (he writes) to a man who said that in some bundles of saws one or two had a twist. I asked him how he got the saws out of the bundle; he told just by unwinding the wire round them a little way and pulling them out as wanted. 'Well,' I said, 'I should have given you more credit than that, for you are just asking for a twist in your saws, I told him my method. I have a box divided into 8 divisions, each division is marked with the size of saw. I always undo the wire and lay the saws on a clean piece of paper, and then transfer same to my box. I have used this method for well over 40 years and used Hobbies Saws ever since they came out and I have never found a twist in them, and I fully believe that fretsaws treated kindly will amply repay the little extra trouble—especially in these days."



* * *

THE splendid model shown here can be made from this week's Design Sheet. It is another to add to the range of ships which I have published from time to time covering the various types seen on sea and river. There have been several naval ships, cargo ships of various types, trawlers, etc. Now you can add one of those popular river cruisers which are so enjoyable for a holiday on the Norfolk Broads. The wood for this model (No. 2728) is obtainable complete from Hobbies Branches for 5/2 or will be sent, post paid, from Hobbies Ltd., Dereham, Norfolk, for 5/11.

The Editor

THE ARROWS INDICATE DIRECTION OF GRAIN OF WOOD.

Hobbies DESIGN

No. 2728
11-2-48

SUPPLEMENT TO HOBBIES No. [illegible]

MODEL MOTOR CRUISER

NORFOLK BROADS TYPE

PANELS OF WOOD REQUIRED FOR THIS DESIGN

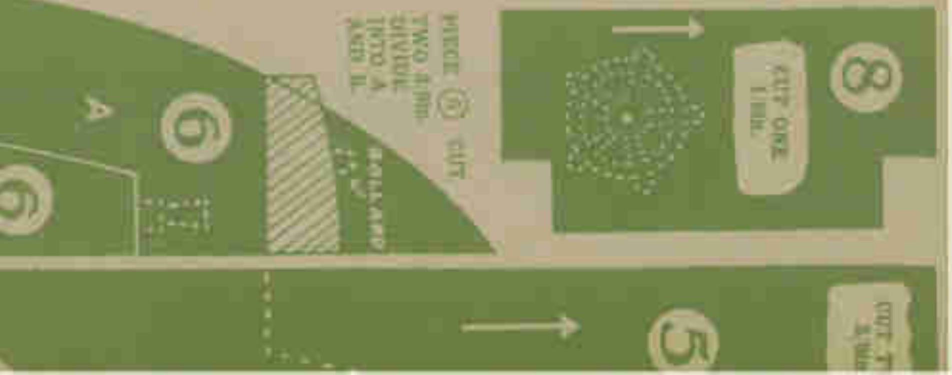
THREE LD6

ONE OD12 ONE H2 ONE H4

The price is shown in Hobbies Weekly, February 11th, 1948, but is subject to revision. See the current edition of Hobbies Handbook, or write for price to Hobbies Limited, Dereham, Norfolk.

SIZE
WITHOUT BASE
LENGTH 14ins.
BEAM [illegible]

NOTE.—This design sheet is only presented free with the current issue of Hobbies and not with back numbers. Further copies may be obtained.



Realistic Waterline Model of a

BROADS MOTOR CRUISER

AMONG those large numbers who had enjoyable holidays in a motor cruiser on the Norfolk Broads, many would undoubtedly like to make a model of the boat which provided them with so much pleasure. The patterns on the reverse side provide this opportunity, with the parcel of wood supplied by Hobbies Ltd.

The parts shown are all numbered for consecutive construction, with details of thickness and shaded portions showing shaping which must be done. The finished model is 14ins. long, and if suitably painted and fitted to a base, makes a realistic piece of work. The patterns shown should be marked on to the wood through carbon paper or tracing paper, and cut with a fretsaw to the outline shown.

The Hull

The construction is straightforward, and when the model has been completed it is added to a suitable base. Start with parts 1 and 2. Glue one of the thicker pieces on each side of the thin one to make up the centre keel (Fig. 1). The outline of all three should be identical. Cut two pieces of part 4, and glue projecting piece, from the centre, level with the bottom edge as shown in Fig. 2.

The forward portion of the hull is then built of 5 and 6, in each case, two pieces being required. Glue 5 in line with the front edge, and on the top of 4. Part 6, however, must be shaped. Cut to the outline of the pattern shown, and then divide into two pieces as marked A and B. The outer piece (A) will then have to be nicely rounded with rasp, file and glasspaper to form the deck roof to the cabin and fore peak. Do not overdo this shaping, but carry the cabin and is glued to the deck on the edge of the sunken well in No. 4. No. 8 forms the rear piece to this fitting between the sides and on to the deck itself. The outside of this part 8 has the steering wheel glued to it later and will have a small door painted on to lead into the cabin.

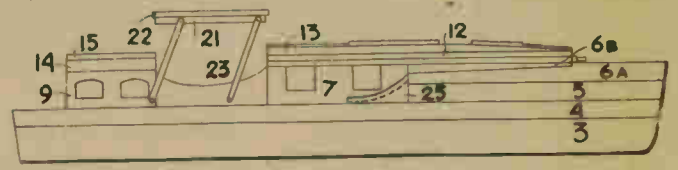
Stern Cabin

Part 9 is the upper sides to the stern portion and fits on the outside of 10 and 11 which form the other two walls. Part 10 has its narrow portion sunk into the well, and part 11 has its long edge glued to the deck with the two arms standing up in the air for the roof to rest upon. Most of these parts are shown in Fig. 4.

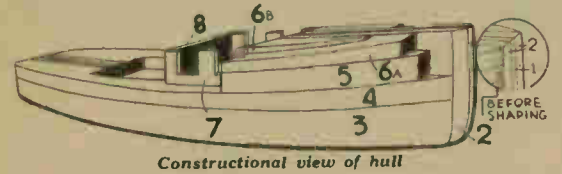
The roof is formed of Nos. 12 and 13, the latter being glued above and overhanging slightly on each side. The top of this piece should be rounded to form a nice sweeping curve from end to end. The rear roof is formed in a similar way of 14 and 15.

The piece 14 has its edge with a long curve stretching ⅜in. inwards as shown on the section of the part. Then immediately central on this is glued 15 in line with the back and front edge. The top of this is also slightly rounded. All, of course, are glued on the side walls to the rear well.

Well Sides



Side view showing numbered parts



Constructional view of hull

end tabs in. These will serve for gluing when fixed to the walls of the main and aft cabin, and in line with the outer sides.

Sliding Roofs

The parts 17 and 18 form the imitation sliding roof, and both are cut from card. 17 is pasted to the main cabin top centrally and in line with the widest end. Above it is the piece which should slide, although it is easier to make a fixture in the model. The card is cut as a rectangle and then by scribing a light line with a penknife where shown by the dotted lines, the edges are turned down so they overlap the previous piece (No. 17). Glue these turned edges so the card is slightly convex.

A similar imitation sliding piece is the hatch provided by 19 and 20. They are treated in the same way as the main sliding roof portion. The canopy is formed of two pieces 21 and 22 glued together and supported by four stays of card. Part 21 comes beneath part 22, the outer surface of which is slightly rounded as in the section.

It is advisable, perhaps, to finish and paint this part before adding the stays in place. The cards forming the struts are glued in the position which can be seen in the side view.

Steering Cable

The little shape shown at 24 can be cut from card, or you may prefer to put it on wire. Actually

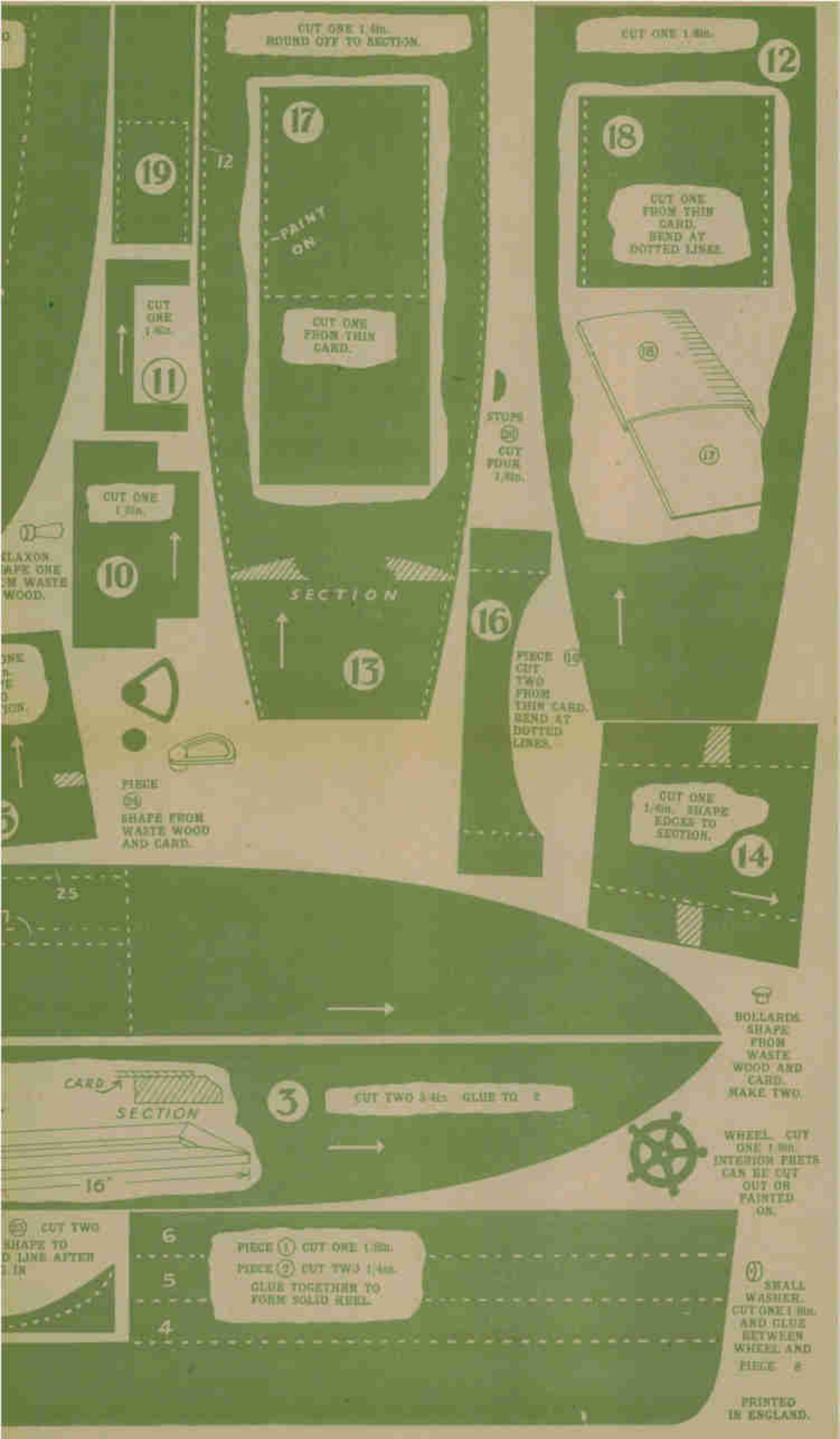
The only other wooden part is the piece 25 forming the shaped end to the foredeck, and the detail at Fig. 5 shows how this is fitted. The part is cut—one for each side—the size shown, and glued in the angle of the foredeck and main deck with about ⅛in. of its thickness projecting beyond the hull.

The idea of the projection is to allow the piece to be pared down with a knife as you see at A in Fig. 5 to form the curved shape of the hull itself. This should not be done until the glue is set. This cutting down will also make the wood much thinner, and then it is possible again with the knife to shape it to a curve as shown at D, so it finishes as at C, with the bottom end coming to a feather edge.

Deck Additions

The model is now complete apart from adding the little bollards at the bow, the Klaxon horn on the cabin, and the house pennant fore and aft. The model itself should be thoroughly cleaned and all surfaces made smooth before it is painted. A flat first light coat should be given and allowed to harden off before the second final one is added. The main body is white, as can be the roof and canopy.

The deck can be shown in light woodwork, and the rest of the hull and sides to the cabin as well as the interior to the well, given a mahogany colour. The name of the ship, the doors, portholes, etc., should be carefully painted on.



piece, B, is replaced, it projects above (see Fig. 3). The piece, 6B, should come in line with the centre upright keel.

Part 7 forms the side wall to the thin card (No. 16). An ordinary plain postcard will do, cut to the shape with a sharp penknife, scribed lightly across where shown by the dotted lines, and then bend the two

through which the cable runs to the rudder. To make it more realistic this cable (thin string) can be carried round the movement, down along the deck and to the back of the wheel, which provides the necessary pivoting action.

a base, details of which are shown on the reverse side. A framework is first made, and then the upper outer edge chamfered slightly with a plane, the surface of card slightly smaller than the piece itself is glued in position, on which the model is fitted.

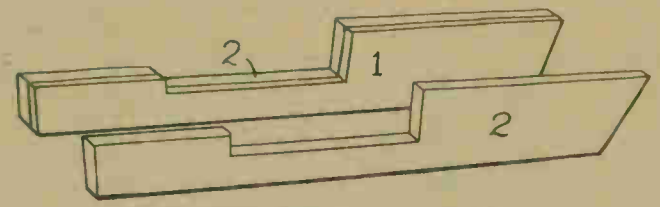


Fig. 1--The three-piece centre board

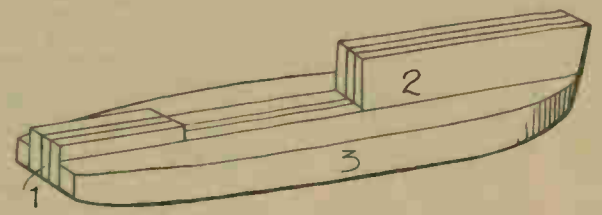


Fig. 2—The lower hull projecting sides

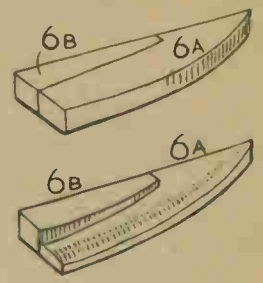


Fig. 3—The bow deck shaping

We are indebted to Herbert Woods of Broads-Haven, Potter Heigham, Norfolk, for helpful details in the construction of this model.

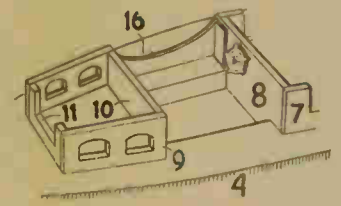


Fig. 4—Aft cabin sides and well

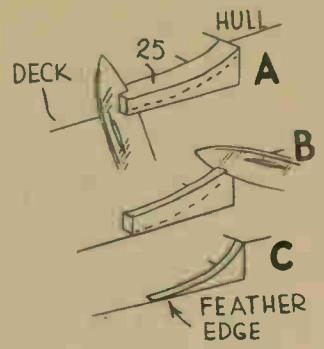


Fig. 5—Shaping the bulwark

The amateur photographer should be able to undertake

ENLARGING

DURING the last twelve months Hobbies Weekly has provided its readers with a series of photographic articles dealing with the most important branches and processes of the hobby. If any camera owner has studied these and tried doing the work himself, it is fairly safe to assume that he is getting much more interest and pleasure out of his hobby, and, what is of greater importance, is getting much better results and with less failures.

Wider Knowledge

It would be, therefore, no exaggeration for that individual to claim that he is no longer a 'button presser' but has become a real amateur and is fully entitled to become an active member of the local camera club and so gain more information concerning the more technical branches of photography from the discussions and lectures which fill the syllabuses of such societies.

There are, however, many more articles to appear which will continue to hold the interest and be of help to all. The first of these is to do with the actual making of pictures—or shall we call it producing enlarged prints from our small negatives.

How to Get One

Of course, this means that an enlarger is wanted and, unfortunately, these are expensive in these times. But there are some makes which are very good and do not run into big money so it is as well to make a few enquiries of the local photographic dealer and see what he can offer or suggest. If may be that one of your friends has one and will let you make use of it. Or, if you have joined a club, then you can take your turn at using the apparatus belonging to the club.

The author of these articles made his first enlargements on a very old enlarger belonging to a neighbour. Its illuminant was a paraffin lamp, but it did its work splendidly for the first two pictures made in the one evening well over forty years ago were framed and have hung on his walls ever since.

Thrift

That experience caused him to save every spare coin until he was able to get an enlarger of his own which proved to be without a projecting lens. This, however, was soon forthcoming, for there happened to be an old ½ plate camera in the family which had the necessary lens. That enlarger was made for gas, but it was not very long before it was adapted for electric lighting. It is still in use today, and there is no wish for a better machine.

This experience will show you that it is possible to obtain one without heavy expense by watching the advertisements of second-hand apparatus and doing a little self denial and saving.

There are two forms of enlargers, horizontal and vertical, and both require a rigid bench or table. The horizontal does, in a sense, require more space than the vertical, for with the former, the easel on which the image is thrown, is hung on the wall or stood at a distance away from the lens, whereas the easel of the vertical is part of the base of the enlarger which is really suspended on a metal arm and on an upright column. Both types have their own advantages and you should be able to gauge which will best serve your purpose and accommodation.

The Queen Mary and Queen Elizabeth at Southampton

Three Reasons

One might ask why should such an expense be incurred when good contact prints will show all there is in the negative. There are a good many answers to such a question, but let us consider only three.

First it is possible to make a print large enough to mount and frame. In other words, to produce a 'picture', something with which you can live, enjoy looking at it and recalling the pleasant time you were having on the day you made the exposure. You can also make something that will be worth entering for the local photographic exhibition and competition.

Secondly, it is just possible that there are some parts of the negative which spoil the print. In fact unless you can omit that ugly stump of tree, or that wretched shed or even that person who suddenly walked into the line of fire just as you made the exposure, your result will certainly not be a 'picture'. With an enlarger it is an easy matter not to include any part of the image if it happens to be near the edges of the negative.

The third point is that of control. It is customary to take longer in the exposing than is given for contact printing and quite a lot of control work can be accomplished in this extension of time. Such as shading the light portions, or giving longer time for the highlights of the negative—very useful, indeed, where there are clouds that should appear in the print if the best is to be got out of the negative.

An Example

Probably it would illustrate the three reasons given in favour of an enlarger if you glance at the illustration of the two liners, the Queen Mary and the Queen Elizabeth. The original film is a 2¼ins. by 2¼ins.—note a square negative. The size of the actual portion used to make the picture is 1¾ins. by 1⅞ins., and the size of the print made for the use of the block-maker was 8½ins. by 6½ins. It could easily have been 15ins. by 12ins., or even larger. Further, in making a contact print of this negative, it is almost impossible to get a satisfactory record of the clouds and without these, the result could scarcely be called a 'picture'.

(*Continued foot of page* 194

Float Paddles

I HAVE recently purchased two floats used by the R.A.F. during the war and am about to convert them into a raft. I now wish to make a pair of double bladed paddles, detachable from the shafts and light enough to carry to camp. (A.B.—Barrow).

FOR an average person a size of 6ins. by 10ins. for each paddle blade is sufficient. The outside end should be rounded and the inside end tapered slightly—e.g., the paddle made petal-shaped. After sawing to this shape the paddle should be thinned down from the centre to a sharp edge all round except where the handle will be attached. ½in. thick wood is suitable. A fairly hard, light material is desirable and canary wood (soaked in creosote and afterwards painted when dry) will be found suitable. Ash or other hardwood is suitable for the handle, which if thinner than 1in. diameter, should be provided with grips for the hands. It is best not to make the handle longer than necessary to permit of easy paddling, and avoid unnecessary weight to lessen fatigue.

The ends of the handle should be cut down to almost half-diameter at the ends, leaving a flat side for about 5ins. where the paddles are to be secured. The best way to attach the blades so that they may be removed would be to use small bolts (preferably brass) with either thumb screws or nuts. Where the paddles are to be single-ended a size of 7ins. by 12ins. is possible.

Taxidermy

I WISH to attempt to stuff and mount some small birds and animals for a harness room. (R.F.—Bulvan).

THE most modern practice for mounting, for example, a fox head, is to first thoroughly clean the skin after removing it entirely from the skeleton. Scrape away all traces of fleshy matter from the inside surfaces of the head. Wash with an arsenical soap and thoroughly dry. Then prepare a wooden "head," or build it up in skeleton form. Work up the detail form with plastic wood or the like, then cover it with the skin. Use the actual jaw bones and teeth, and build them into place in a realistic way and attach the whole to a shield or back plate.

Repainting Cycle

I WISH to repaint my bicycle. Could you please suggest how to preserve the high gloss and prevent chipping? (D.R.—Plymouth).

THE best finishing medium for bicycles is cellulose lacquer, or a good quality hard-drying enamel. It will, in either case be necessary to strip the metal parts free of paint, apply undercoats, then the finishing paint.

The old paint is best removed with a chemical paint remover, a home-made preparation consisting of lime, caustic potash and water, mixed into a creamy paste. This is applied with a rag tied to a stick and allowed to stay on for about 24-hours before scraping and cleaning it off. When the old paint and sludge is removed, rusty parts are scraped and smoothed with emery cloth. All traces of alkali are washed off with vinegar and water, then later wiped with a rag damped with petrol to remove any grease.

If the finishing medium selected is cellulose lacquer, this must be the kind which can be brushed on. A special cellulose undercoating is also required, this being applied with a soft brush. Apply two undercoats, allowing the first to dry. The finishing coat must be applied as smoothly and as quickly as possible ; lacquer sets in a very short time. Retouching, too, is rather difficult to do satisfactorily, so see no parts are missed.

Regarding an ordinary enamel finish, apply a couple of good undercoats of flat oil paint. Rub each coat down (when dry) with fine pumice powder and water. The enamel should be flowed on carefully with a soft brush. The shed must be free from dust. The temperature of the shed must not be below 60 deg. F. A simple finish worth trying is a single undercoat, a coat of finishing enamel (black) which is lightly rubbed with a fine glasspaper, dusted, then covered with a thin ebony french polish, applying a second coat if necessary.

Wood Worm

I HAVE quite a number of pieces of furniture with wood-lice in. Is there any preparation or substance which I could use to destroy this pest? (W.B.—Ramsey).

THE wood-lice of which you are finding traces in your furniture is probably the wood worm which is really a beetle. Its activities are more apparent during June, July and August because that is the period when they tunnel their way from the inside of the wood to the surface.

The beetle lays its eggs in crevices, the grubs are hatched and immediately commence to tunnel deep into the wood where they may lie even as long as two years. The grub finally bores a chamber near the surface of the wood, turns into a chrysalis, which in due course develops into a beetle The beetle eats through the surface and emerges. The very fine powder which you see round the holes is the digested wood tunnelled out and eaten in the process.

You will appreciate that until the grubs come to the surface, it is impossible to do anything about it because you do not know they are there. When the tunnels are shown by tiny holes on the surface of the wood, the insecticide must be used. The best is Cuprinol Furniture Beetle Destroyer, which is obtainable from most ironmongers in various quantities. Directions for its use are given. The liquid is forced into the holes by means of a soft brush, but it is a laborious business doing it hole by hole. Where large areas are involved, general brushing or spraying may be used in an endeavour to get the liquid down the holes concerned. There is unfortunately no definite cure that we know of.

Photography (*Continued from page* 193)

This effort to get the best out of a negative and definitely to use skill in the production of a result, embodying your own personal ideas of what a picture should be, is something which will prove invaluable to you in all your future work. Actually, by even trying your negatives in the enlarger to see what sort of picture is given by each, you are training yourself to recognise the pictorial in the views or subjects which present themselves when out with the camera. You will soon find out how to avoid objects which upset the composition of the subject and you will most certainly refrain from taking a number of items which the uninitiated is so likely to do. This, then, is the reply to the query, Why have an enlarger?

There is, however, another factor which must not be ignored. When you first see one of your own films thrown on to an enlarging easel and watch the image gradually appearing on the bromide paper in the developer, you will experience a greater thrill than any other which the hobby has given before. Whether that print is a simple postcard enlargement or something bigger, say, 12ins. by 8ins. or 15ins. by 12ins., the satisfaction that it will give you is a justification of the expense or the sacrifice that it has incurred.

In the next article it is hoped to give some information and hints on Picture Making by Enlarging.

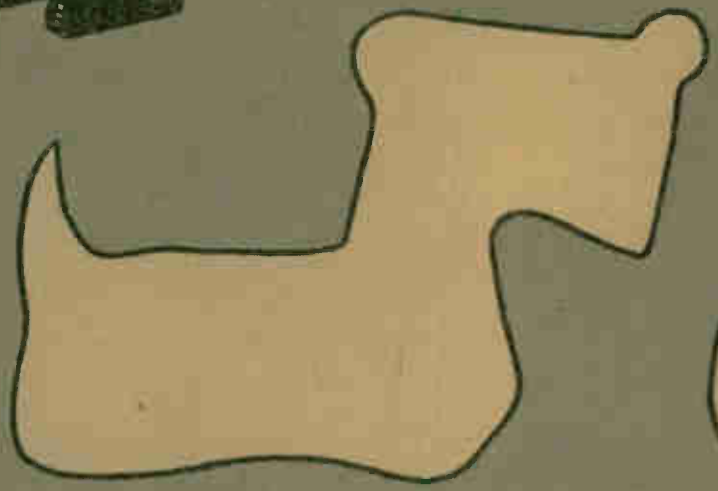
A Canine Caricature

The Scottie

For full details of construction & finish, see elsewhere in this issue

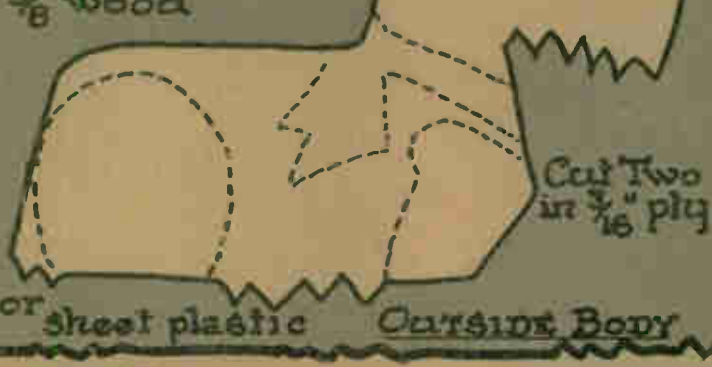
HIND LEGS
Cut Two in 3/16 ply

FORE LEGS
Cut Two in 3/16 ply



Dotted lines indicate leg, etc, positions

INSIDE BODY PIECE
Cut One in 3/8" wood



Cut Two in 3/16" ply

BOW
Cut One in thin ply or sheet plastic

OUTSIDE BODY

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Hobbies WEEKLY

CONTENTS

February 18th, 1948 Price Threepence Vol. 105 No. 2729

A ROWING EXERCISER

HERE is the very appliance to keep fit, especially handy when the weather conditions make outdoor exercise unpleasant. In any case, a few minutes work in the exerciser, first thing in the morning, is going to do a lot of good. Despite its appearance, no great quantity of wood is needed to make it. One 8ft. length of 9in. by ⅞in. deal will do for the job.

A plan view of the Exerciser is given in Fig. 1 and a side view in Fig. 2, from which the dimensions of the parts can be taken. For the sides, cut a 3ft. 6in. length of the board down the middle, to make two pieces. These will be approximately 4½ins. wide. The bottom edges of these sides are to be sawn to a smooth curve as shown.

Forming a Curve

The most convenient method of marking the curve, is to bend a flexible strip of thin wood and, getting a pal to hold it on the wood sides firmly, run a pencil along it. The curve can be easily sawn either with a bow or keyhole saw. File the cut edge, and then finish it to a smooth surface with glasspaper.

Cross Board

At each end a cross board is to be fitted, keeping the sides just 12ins. apart, all along. These boards are 6ins. wide and are grooved into the sides. Cut these grooves at the angle shown at A, and ¼in. deep. The boards should be 12½ins. long, to allow for entry into the grooves.

For the seat, cut a piece of board, also 6ins. wide, to 12ins. long. The seat is to rest upon fillets screwed to the sides, and as the seat should be 1in. below the top edges of the sides, the fillets should be screwed some 1⅞ins. below the edges to allow of this. The best position for seat and fillets is shown in Fig. 2 by dotted lines.

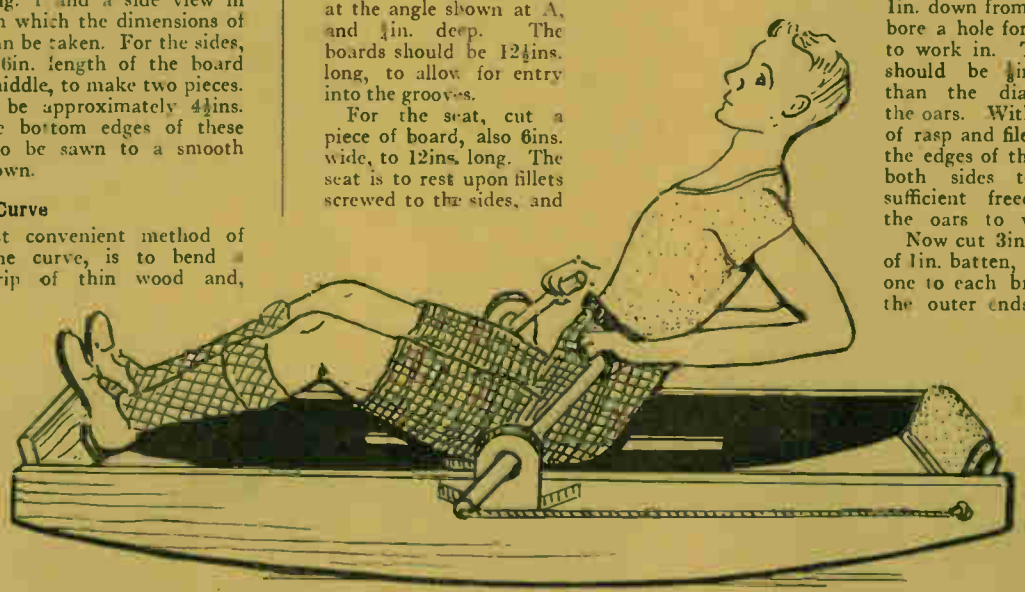
Now glue and nail the crossbars to the sides, but do not fix the seat just yet, as a personal test will show the best spot later on.

Brackets

Two wooden brackets should be cut and fitted. These are shown at B, and can be made from 6in. squares of the wood, with the outside corners sawn off, leaving a flat just 3ins. long, to which the rowlocks, C, are to be screwed. Fix these central to the sides firmly with glue and screws. In the angle beneath, glue triangular wood fillets, D, to stiffen the joints.

The rowlocks are shown separately in Fig. 3. Cut them to the given shape from pieces of the board, and at about 1in. down from the top, bore a hole for the oars to work in. This hole should be ⅛in. larger than the diameter of the oars. With the aid of rasp and file, enlarge the edges of these holes both sides to allow sufficient freedom for the oars to work in.

Now cut 3in. lengths of 1in. batten, and glue one to each bracket at the outer ends, under-



neath as shown at E, Fig. 3. Then screw the rowlocks in place, both to the ends of the brackets and also to the battens. Make a firm fixing, as some strain comes on these parts when the exerciser is in use.

The complete appliance can now be varnished or painted a pleasing colour as preferred. If a little paint is to spare, the exerciser could be given two coats of it, and would be improved still further by a finishing coat of copal varnish.

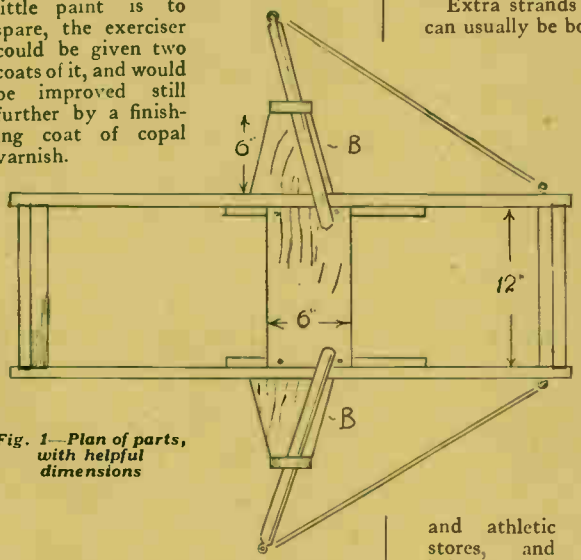


Fig. 1—Plan of parts, with helpful dimensions

For the oars, a length of broomstick, cut into pieces, as in Fig. 3, F, could be utilised. The diameter of the wood should be about 1in. If a piece of stronger wood, such as ash, is obtainable, all the better, as the oars come in for some strain. Smooth the wood with glasspaper and round the ends also.

In the outer ends drive stout screw eyes. From these eyes and a similar pair of screw eyes, driven in the sides at a convenient spot near the back, connect two strong elastic or spring pulls, such as are supplied with physical exercisers, chest expanders, and such like aids to muscular development.

Extra strands for these developers can usually be bought at sports shops and athletic stores, and it is not anticipated that any great difficulty will be experienced in obtaining them. Simply hook them to the oars and to the screw eyes on the sides. This practically completes the appliance.

If it has to be shared by other members of the family, the distance between the seat and footboard may not suit all. A good plan here is to make an extra footboard, and groove it between the sides at the requisite distance, not fixing it in, so that it can be withdrawn when not required.

In an exerciser of this kind there is always a possibility that the oars may break, or the spring pulls jump from the screweyes. Should this occur, a backward tumble will result, such as happens when "catching a crab" in real rowing. Nothing serious in such a tumble, but a nasty crack may be felt if the back or head should strike the rear crossboard.

To lessen the chance of such happening, or rather the results of it, the rear crossboard could be padded a little. Quite a simple job this, cover the inside and top edge of the board with several strips of old blanket, and over that tack a piece of American cloth or other covering material, as in detail sketch, G, in Fig. 2. Several layers of heavy sacking can be used if you have no old blanket.

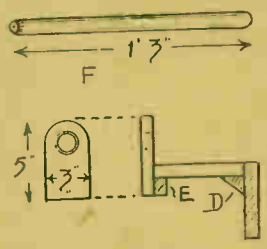


Fig. 3—The rowlock fitting

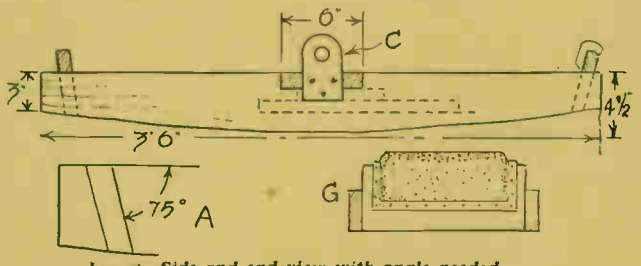


Fig. 2—Side and end view with angle needed

Passe-Partout Scraps

USES can often be found for odd scraps of passe-partout binding material, particularly by amateurs interested in chemistry or photography.

Being specially adhesive to glass, it comes in handy for marking bottles. It is made in various colours, scraps of white serving as labels. Anything of a poisonous nature could be distinguished with a band of red material around the bottle. If several bits of different colour are available, each chemical could be marked with a separate colour as a guide should the label itself come off or the lettering become indistinct.

The material is opaque, so amateur photographers will find it useful for making a rectangular mask on the glass of their printing frame when neat white borders are required on prints. A scrap may also come in handy for effecting a temporary repair to a torn darkroom blind or faulty safelight.

Staining Floors

FROM time to time it may fall to the lot of the home craftsman to stain a floor. In some rooms, for instance, the boards surrounding a carpet may have to be treated, for although a stained and polished surface stays in good condition for a reasonable length of time it is sometimes impossible to avoid walking over certain parts of it, with the result that in due course shabbiness is inevitable.

Whether they are new boards being stained for the first time, or worn ones simply being renovated, the first step in either case is to clean them thoroughly with water. About a handful of soda may be usefully added to the bucket of hot water.

After they are dry it is well worth while to look them over carefully to see whether there are any unsightly holes or nicks, and if so to fill them up with Plastic wood. Oak varnish stain should then be applied with a soft brush, but if the previous stain is badly worn in places these parts ought to receive a preliminary application.

If desired quite a satisfactory stain can be made up at home by dissolving half an ounce of permanganate of potash in a pint of boiling water, which gives a deep brown finish.

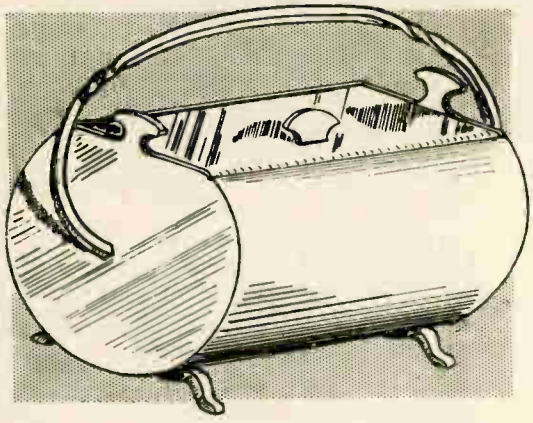
Siphon for Fish Tanks

YOU will find a length of rubber tubing most convenient when emptying and clearing out bits from a fish tank. Small quantities of water can be quietly drawn off for replacement with fresh water without disturbing the occupants.

The tube should be immersed in water and when full, closed at both ends between the fingers. Lift it out and place one end in the tank, with the other end over the side into a bucket. The end over the bucket must be at a lower level than the tank, otherwise it will not siphon.

The water will trickle gently out through the tube, and by poking the end in the tank here and there, any bits of refuse will be sucked up at the same time.

How to make in Perspex a modern CIGARETTE BOX



AT first glance this cigarette box appears to be a complicated item to make, yet tackled in the right way, it is really quite simple. The series of articles we had on the subject tell you all the details.

Fig. 1 shows the construction views of the box itself, which is made in ⅛in. thick Perspex. Commence by making up the tubular part of the box. This is done by taking a piece of Perspex measuring 6ins. by 3¾ins., softening it and bending it round a former consisting of a 2½in. diameter rod or tube.

End Pieces

Next cut out the end pieces, and trim them to a close fit in the main part of the box. In each end piece drill two holes, a central one for the handle and the small hole for the lid pivot. Now make up the lid and cement the lid handle in place.

Cement a strip of Perspex under the back edge of the lid so it projects by about 1/16in., and when dry, shape the edge as shown in Fig. 1. This edge fits against the inner surface of the box when the lid is closed to help keep the box reasonably air tight.

Bore the holes for the lid pivot pins and file up the two pins from a scrap of Perspex. They should not be too slack or the lid will be a sloppy fit. Cement the pins into the holes in the lid.

Assembling the box is the next operation. Commence by brushing a little Perspex cement on the edge of one of the end pieces and put it carefully into position in the main piece. When the cement has set, put the lid in place and cement the other end piece into position.

The Feet

The feet are now cut from 3/16in. thick Perspex, smoothed and polished and cemented in position. Last of all make up the handle from a strip of Perspex 9½ins. long and 3/16in. square. File the pivots at the ends so they are a nice fit in the central holes of the box, then heat the strip and make the two twist bends, one of which is shown in Fig. 2.

If you have difficulty in obtaining sheet Perspex locally, The Editor can send you names and addresses of possible suppliers.

When set, re-heat the material and complete the bending. The ends of the handle should press lightly against the end pieces of the box, and the ends of the pivots trimmed flush inside the box.

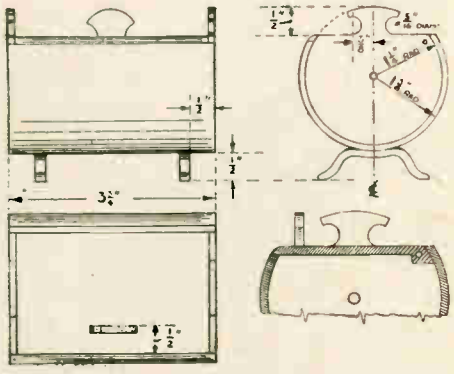


Fig. 1—Constructional views and sizes, with section showing how the lid is fitted

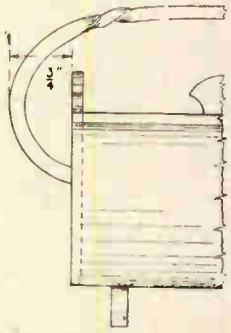


Fig. 2—How the handle is twisted and shaped

When you are using . . .

. . . a steel die to thread mild steel rod, have the end of the rod filed to a slight taper so the starting cuts are made correctly. Furthermore, do not turn the die around in complete revolutions; twist it on half way, reverse, then complete the revolution; this breaks the trimmings and they drop away easily.

. . . a steel tap for threading nut holes, etc., have the nut or work fixed so that the threading is done vertical. This allows the trimmings to drop out and not be packed tightly in the tap grooves, as is the case when the threading is done horizontally. Remove the waste metal a little at a time and frequently withdraw the tap to ensure that the grooves are free from trimmings. Avoid oiling the tap, as the oil tends to make the particles of metal cling to it. Oiling, in respect to iron or cast-iron, is sometimes a real necessity, but the oiling should be done sparingly.

. . . a hammer, do not get into the habit of gripping the handle near the hammer head. Much momentum is lost, so that a 15 oz. hammer head gives merely a 9 oz. blow instead of the full weight.

. . . a rule to tick off divisions on wood, hold it edgewise on the wood, not flatly, so the divisions—eighths, quarters, halves, etc.—are clearly seen and easily ticked off with the pencil to be accurate.

. . . a fretmachine, do not press the treadle down heavily with the heels so that, by the momentum, the heels are raised up. This produces quick and slow alterations in the speed when, in fact, the speed should be kept at a steady pace. The fault produces strain on the belting and bearing. Even foot pressure must come from the toes and heels.

. . . beaded glue, remember that, being in particle form, it does not require steeping in water the same as cake glue. It is only necessary to put a sufficient amount of water into the glue pot to cover the beads of hard glue.

. . . a hacksaw to cut off a strip of metal, ensure a correct starting cut by first making a small notch in the edge of the metal with a triangular file, or the corner of a file.

. . . corrugated iron sheeting to roof a shed, fix it with the proper roofing nails which are obtainable. Holes are punched, not drilled, with a special punch, and the holes should be made in the ridges of the material, not the valleys where, of course, rain water gathers and runs down to the guttering, if any.

You can do many useful jobs if you understand

SPRING REPAIRS

MUCH depends on the mainspring of clockwork mechanism and quite naturally, being the driving force, wound up with a key or handle, it is frequently strained, either at the centre end or the outside end. Where gramophone motors are concerned, a powerful spring about ⅜in. wide by 1/32in. thick is attached to a "spud" on the winding spindle and the inside of the metal drum, wherein the coil is tightly packed, even though unwound.

The fixture is not a permanent one, i.e., the slots made in the spring simply clip upon the metal spuds on the spindle and casing. Thus, it is possible to remove the spring from its fixtures.

If, however, you have never attempted to repair a gramophone spring before, do not imagine it is an easy job. It is a rather dirty job, requiring strong fingers. The black or grey lubricating oil on the spring makes it a very slippery item to handle. There is, too, a great deal of tension in the coil of spring, and its removal requires care.

A Broken Spring

In the case of a broken spring, it will be unnecessary to take the precaution of letting the motor run down before interfering with it. If the break is at the slot which fits upon the winding spindle spud, the coil is best removed by gripping its centre end with pliers, giving the coil a few turns in the winding direction to slacken it, then pulling it up out of the drum.

While doing this, wear old gloves or wrap the hands in dusters, and be prepared for the sudden uncoiling of the spring which will jerk like a live thing in your hands. Keep the drum and its spring well away from the face.

In fact, to enable both hands to be used, the drum should be clamped in a wooden bench vice. If the drum is held in one hand, and the coil removed with the pliers in the other hand, the sudden unwinding will cause the drum to twist rapidly in the hand which, if bare, will be torn badly by the teeth on the drum.

A Difficult Break

A spindle end break is a difficult one to get at properly. It means uncoiling the spring. The best way to do so is to re-coil the spring in an opposite direction, starting with the good intact free end. If this end is drawn out straight, it will begin to coil itself up in the hand, if allowed to do so. Continue withdrawing it out and letting it coil itself up until you finally reach the broken central end.

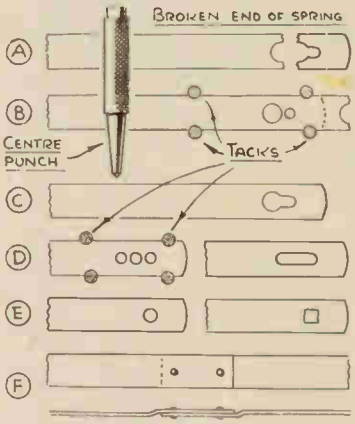
This end will need to be straightened out with the fingers as much as possible. The extreme end will have little springy tension due to the fact that temper of the steel has been softened.

It may usually be straightened out with pliers, but if not, the kink can be nailed down to a board, using large tacks or wire nails. This will keep it flat while the new slot is made. Assuming, however, that the temper of the steel is too hard for drills, it will be necessary to heat the spring (to a cherry-red) and allow it to cool gradually. This can be done with a blow-lamp while the spring is nailed to the board. The alternative is to remove the spring and hold its end over a gas-ring flame with old nippers.

Making a Slot

The coil of the spring, being in reverse, has a tendency to push itself out in a spiral. To prevent this, the coil should be tied up with string. This will prevent it unwinding itself and causing endless bother.

Assuming you have managed to soften the steel and straightened its end out, and placed the broken off



Various ways in which clockwork springs can be repaired

piece in position to see the kind of slot required, as shown at, A, set the broken off portion on a new part of the spring and scribe the slot wanted with a drill point.

The particular slot shown at, A, by the way, is usually the one for the rivet head spud fixture on the inside of the drum casing. The central spindle slot is usually an elongated hole, as shown at, D. In your case, simply follow the slot cut in the spring.

If it is like the slot at, A, this is made by drilling a larger and smaller hole, then cutting into both holes with a small cold chisel or an old wood chisel, finally clearing with a small file.

To ensure accuracy, the centre of the holes are "popped" with a centre punch. Holes are drilled at the poppings with a fretwork drill poinr. A ¼in. and ⅛in. drill is then used to bore the holes, if such happen to be the diameters required.

Elongated Slots

The elongated slot, D, is made by drilling several holes together, then cutting away the waste carefully and truing with a file, such as a rat-tail type. Steel, when in the softened

(*Continued on foot of page* 202)

Made with one hand!

***HERE** is a lesson for those who moan 'at being unable to make their model galleon, and those who lose patience half way through! This splendid model was made by a fellow with only one hand—R. J. Finch of Nelson Rd., Lower Edmonton, London, N.9. And that's not all. He has made five! Read what this cheery optimist says. "I lost my left hand in the war", he writes, "and to prove to myself that one hand is as good as two, I took up model making. I would like to thank you for helping me over a very sticky time. I have not used any of the many implements supplied to me—it is definitely a single-handed effort". Our heartiest congratulations, Mr. Finch, on your grand spirit and enthusiasm.*

Helpful details for the amateur on types and use of

RADIO VALVES

IT is hoped this article will help readers both to understand the valves they use, and to employ them in the best way. Although there are scores of different types, three of the most popular (the triode, screen-grid, and pentode) are used almost exclusively in straightforward one-, two- and three-valve receivers intended for home construction. Thus excessive complication is avoided.

How a Valve Works

The bulb is evacuated and a filament is heated until it emits electrons. These form a small electric current flowing through the empty space inside the valve. The first valves made (the diode) had a metal plate a little distance from the filament. When this was charged positively the electrons flowed to it.

However, no electrons could flow from the plate (usually called the anode) to the filament, because the plate was not emitting electrons. In consequence, the internal current could only travel one way. Such valves are used for rectifying (changing alternating current to direct current).

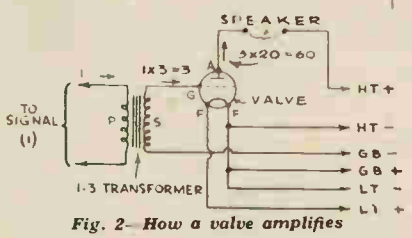


Fig. 2—How a valve amplifies

If a metal grid is placed between the filament and anode, the electrons must flow through its mesh. If this grid is slightly negative, it tries to stop the flow. When it is not negative the flow is uninterrupted.

Thus small changes in grid voltage produce large changes in the current flowing to the plate (anode current), just as raising and lowering a sluice controls the flow of water under it. This increase is what is meant by amplification.

Screen-Grid Valves

When two metal objects are near, a capacity exists between them. As the capacity between grid and anode was bad from a radio point of view, a further grid was put between them. This is called the "screen grid" because it screens the first grid from the anode. Valves with this are called Screen-Grid Valves.

This extra grid had to be positive to attract electrons, and it was found some bounced back off the plate, which was not wanted. In consequence, a further grid was put between the screen grid and anode. This was called the "suppressor grid", and its inclusion made the Pentode Valve.

The first grid is called the "control grid" because it controls the electron stream initially. A "bird's eye view" of the electrodes in a pentode is shown at "E", Fig. 1. In screen-grid valves the suppressor grid is absent. In triodes both suppressor grid and screen grid are omitted.

The Triode

The symbol and pin connections for a battery triode are shown at "A" in Fig. 1. These valves are good for detection and low frequency amplification. They are little use for high frequency amplification because of the capacity between control grid and anode.

As the size of the electrodes and the distance between them governs the power the valves will handle, certain valves work best for certain purposes.

For detection, the Mazda HL2, Ever-Ready K30C, Mullard PM1HL, Cossor 210HF, or Osram HL2 are all very good. For low frequency amplification, the Mazda L2, Ever-Ready K30E, Osram L21, and Cossor 215P are suitable. Power output requires a Mazda P220A, Mullard PM202, Osram P2 or Cossor 220P to provide good speaker volume.

Screen-Grids

Connections for the Mullard PM12M and Osram VS24 are shown at "B". These valves have a top cap for the anode connection. Pentodes such as the Osram VP21 and Cossor 210VPT have the same connections and can be used instead. Where possible, 120 volts should be applied to the anode, with about 60 to 80 volts to the screen grid.

These valves can also be obtained with seven-pin bases, when connections, *looking at the bottom of the valve*, are as shown in "D". Four-pin pentodes have the metallising on the outside of the valve and the suppressor grid joined internally to one filament pin. Except for very special circuits this is satisfactory.

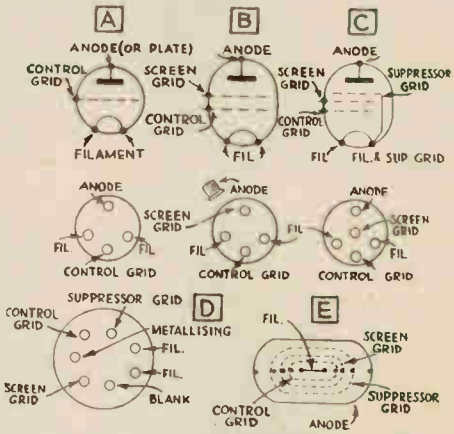


Fig. 1—Valve symbols and pin connections

Low Frequency Pentodes do not have a top cap, but an extra pin, as shown at "C". Valves of this type are: Mazda PEN220, Ever-Ready K70B, Osram PT2, Cossor 220HPT and 220PT, and Mullard PM22A.

With these, a voltage of 100 to 120 should be applied to the screen grid if it is available. Some old valves have a side terminal instead of the extra centre pin.

All the valves mentioned have 2-volt filaments for operation from an accumulator.

How Amplification Takes Place

Fig. 2 shows a typical amplifier with batteries connected. Electrons flow from the filament, through the grid to the anode. A transformer is used, because if it has more turns on the secondary than are on the primary, the voltage of the signal will be stepped up. If the signal is called "1" a 1:3 transformer increases it to about "3".

This is applied to the grid, and if the valve amplifies (as described) twenty times (an average figure), the signal will be sixty times as strong when it reaches the speaker. (In practice, losses actually prevent quite such good results).

For best results, the anode voltage should be as high as possible.

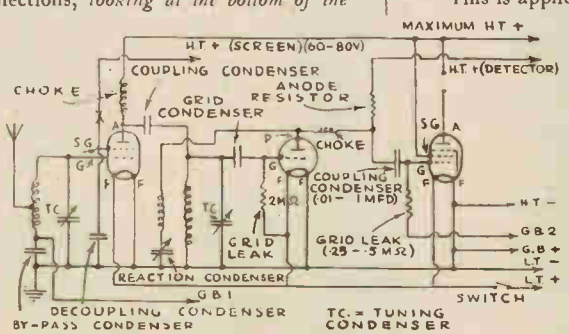


Fig. 3—How voltages, etc., are applied

(Continued foot of page 203)

For an amusing novelty you should make this

DACHSHUND DOG

THIS amusing "German sausage" dog novelty will always raise a smile wherever shown, and as such, it makes an unusual room decoration for mantelpiece, sideboard or window ledge.

If a practical use is desired, several ideas present themselves. Instead of openings being cut in the kennel and the dog going right through (the kennel being bottomless in this case), the kennel can be made like a box with a hinged lid. The doors can merely be painted on, and the middle of the dog cut right away so that there is a clear space inside the box.

The box can then be used for odds and ends. A good use would be for saving the weekly contributions towards a dog licence. The kennel can, of course, be made much longer than that shown here, thus affording more space inside, if this is desired.

A calendar could be pasted on the roof of the kennel or hung at the side.

The first step is to draw out a full-size paper pattern for the parts—one body, two fore legs, two hind legs and two ears. The method of squaring is adopted. On a sheet of paper, rule out 1in. squares, ten one way and three the other (Fig. 1). If you letter and number the lines, as shown, it will be easy to locate any part of the drawing.

Body Work

The body is cut from ⅜in. thick wood, not plywood ; the grain goes the long way, of course, from head to tail. A coarse fretsaw blade should be used. It is possible, of course, to cut two patterns in 3/16in. wood and glue them together. Each of the legs is cut in ¼in. wood, with the grain going the long way, and the ears are cut from ⅛in. wood. These last can be of plywood if desired.

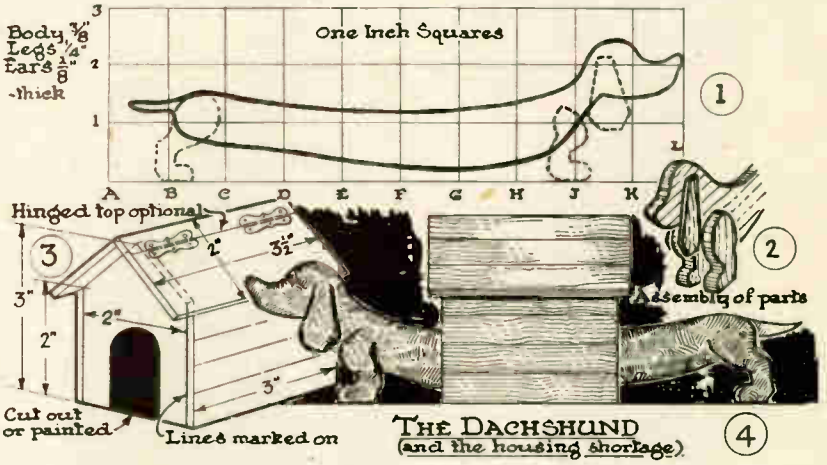
Glued and Shaped

Fig. 2 shows how the parts are glued together. When the glue has set, the square edges of the wood are bevelled off with a sharp penknife, so that "roundness" is achieved. Do not use any glasspaper or a rasp ; let the knife cuts show. Fig. 4 gives some idea of the effect to be aimed at. The dog, when finished, can be stained black and then varnished.

The kennel is easily made by reference to Fig. 3. The hinged lid is, as already mentioned, optional. Small "butterfly" hinges would be used. If the kennel is made as a box to be used, it will be necessary to saw away, neatly, the middle of the dog, and screw the two parts to the ends of the kennel. This will be done before the kennel is assembled, of course.

Lines are scored on the kennel sides and top to represent planks. A very neat kennel is shown in the sketch. It is possible, for effect, to construct a kennel in a tumble-down manner, with a chimney-pot (made from a pea-shooter tube) giving a "crazy" touch.

If the dog is cut in the middle, it is as well to mount the whole job on a three-ply base, otherwise, when the model is picked up (probably by the head), there will be an undue strain on the screws.



Spring Repairs (*Continued from page* 200)

state, can be cut, drilled and filed easily, but when hardened, the steel is as tough as the drills and files which will have no effect.

If a square hole is wanted, this is made by first drilling a hole of the required size, as at, E, then forcing the tang of a file into it. The spring should be supported on a block of wood at the upturned end, so the point of the tang will drive into the wood easily. The "burr" created on the opposite side of the spring is filed away.

Splicing

If the break is not at the spring slots, it will be necessary to "splice" the broken ends together, as at, F. This is done by means of small rivets. Shortened, flatheaded brass nails may be used as rivets. The spring holes should be countersunk slightly with a larger drill. Note how the spring is kinked to give better alignment.

To put the repaired spring back in its drum, be sure to bend the hub end to its original form prior to reversing the coil and inserting it over the spindle.

Alarm clock springs, etc., are treated much in the same way, especially watch springs. And having softened the metal, it should be hardened slightly again by heating to a purple or straw colour and plunging in hot water. Cold water is apt to quench the metal too quickly, making it too brittle, so that it snaps easily. In fact, the spring is more likely to give longer service if kept in the softened state at the slotted ends.

Having seen that the central slot engages with the spud on the winding spindle, assemble the works together, then proceed to carefully wind up the spring. In nearly every instance, the opposite slot will engage itself with the spud in the casing of the drum. This is a most difficult thing to do once the coil of spring is in the drum.

The winding up usually does the job in a twinkling. Incidentally, be sure to lubricate the spring with fresh thick oil again, with motor grease applied to all gear teeth in the motor. Clock springs require a thin oil only.

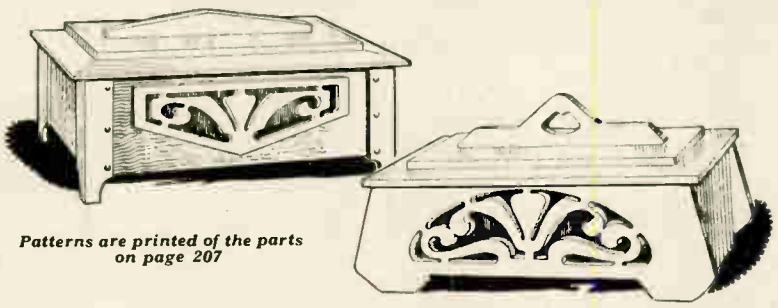
Quenching Colours

Having hardened steel by heating to a cherry-red and quenching it quickly in cold water, the hard brittle metal requires to be "let down" to a suitable temper. This is done by careful re-heating until the steel assumes a proper quenching colour. Here are some of the usual colours for different articles :—

Full golden yellow—Taps, dies and drills.
Light golden yellow—Reamers.
Golden yellow—All lathe tools.
Gold, with touch of purple—Wood chisels, plane irons.
Purple—Punches, cold chisels.
Light blue—Knives.
Dark blue—Screwdrivers.

For bedroom or side table these are two useful

SMALL GIFT BOXES



Patterns are printed of the parts on page 207

A WELL-MADE box, simple in design and decoration, is always acceptable by our fretworkers. The two decorative boxes shown on this page can be made up quickly, and are suitable as a selling line to augment one's pocket money. They can, too, be made from small pieces of wood.

On page 207 are full-size diagrams of some parts of the boxes which will obviate the necessity of making the enlargements from smaller diagrams. The patterns can be either stuck down direct to the wood, or traced and transferred by means of carbon paper and a fine pointed pencil.

The construction of the box bearing the overlays on the sides, is shown in Fig. 1. There are two long sides, A, measuring 7ins. long by 2¼ins. wide, wood ¼in. thick being used throughout excepting for the feet, C. The ends are 4ins. wide by the same width, of course. The four parts are butted together and glued and pinned, or they may, to make a stronger job, be lock-jointed together as shown in the sectional diagram.

The lock joint has to be carefully marked out and can be cut with the fret-saw, keeping always to the outside of the drawn line so as to ensure a tight fit.

The floor of the box measures 6¼ins. by 3¼ins., and will fit between the sides and ends as shown. Glue these and pin, the pins being put in near the ends so the heads come behind the feet overlays, C.

A full size pattern of the feet is given on the sheet, and having cut one from ⅛in. wood, the remaining three feet can be outlined by drawing round this. The feet should be glued on and, if desired, little wood pegs can be bored for and driven in at the intervals indicated on the pattern. The heads of the pins are allowed to stand out from the surface of the wood about 1/16in.

There is to be a hollow frame put on the top of the box and this can be made to the measurements given in Fig. 2. Chamfer the outer edge of the frame before the opening piece, measuring 6ins. by 3ins., is cut away.

This latter piece must be kept ready for fixing to the underside of the lid. The lid measures 6⅜ins. by 3⅜ins., and it is just a plain piece with the top outer edges rounded off and glasspapered.

A simple-shape handle is given on the pattern sheet at D. Cut this out and then mark the position of the tenon on the lid and cut this out also, making a neat and tight fit.

The two overlays, F, can be cut together from thin wood. When cut out, clean off the rough edges before applying the glue. One or two tiny fret pins can be added in the overlays if required to keep them flat until the glue has hardened.

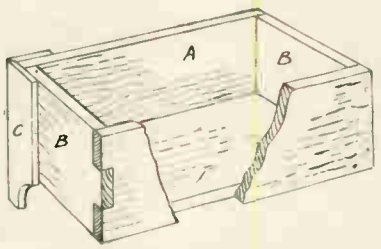


Fig. 1—Showing construction of box

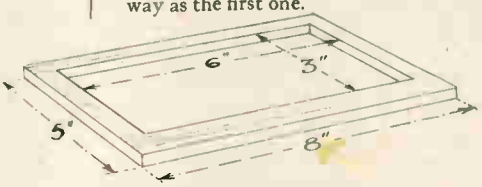


Fig. 2—The framework of the top

With Fretted Sides

The second box is very simple in construction, and consists of the two fretted sides. The pattern for one of these is given on the page. The two ends of the box measure 3ins. high and 3¼ins. wide. The grain must run vertically so the screws through the sides will not run into end grain wood.

The top frame of the box and the lid are made similarly to the previous box, but a different type of handle may be glued on after the pattern shown on the sheet at E. The floor, too, is cut and fixed between the sides and ends of the box in the same way as the first one.

A lining to the two sides, to back up the open frets must be provided by thin wood or stout card covered, perhaps, with coloured silk.

Radio Valves (*Continued from page* 201)

For battery valves 150 volts is maximum. 120 volts is usual, and even 60 volts will give reasonable results.

The grid bias should also be adjusted to the voltage which gives best results (usually from 4·5 to 9 volts). As was seen, this voltage governs the current flowing. Consequently as high a voltage as possible should be used, as this will greatly increase the life of the high tension battery. Too much grid bias will so reduce the current, results will be poor.

Fig. 3 shows a complete three valve set. The decoupling condenser (about ·1 mfd.) prevents unwanted signals remaining on the screen grid. Sometimes a resistor is added at the point "X" to prevent these signals flowing into the H.T. battery. Except in critical sets, this condenser can be omitted.

The choke allows the H.T. to reach the anode, but prevents the flow of the signal, which passes through the coupling condenser (about ·0002 to ·0005 mfd.) to the second tuning coil. The signal is then built up across the grid leak and amplified by the detector.

The second choke prevents the radio part of the signal passing, which goes through the reaction coil and condenser, increasing volume because the reaction coil is coupled to the tuning coil. The audible part of the signal cannot pass through the anode resistor (about 30,000 to 50,000 ohms), which nevertheless allows H.T. to reach the detector anode.

The signal consequently goes through the second coupling condenser, to build up across the second grid leak and be amplified by the last valve, which is connected to the speaker. A transformer could be used for coupling, as in Fig. 2.

The output valve screen grid is connected directly to maximum H.T. 40 to 75 volts is ample for the detector, however, or it may tend to oscillate too violently.

Sometimes the lead marked "G.B.1" goes to a potentiometer so that anything between zero and 9 volts may be applied. This acts as a volume control.

Some serviceable advice on many interesting subjects which we have given to our readers. There is probably something worth remembering for present or future.

CAN you help me, please? I purchased a "Pifco" radio test meter and, while testing the voltage of a H.T. current, I inadvertently broke the fuse. I have searched everywhere for a similar fuse, but no shop could supply me with one the proper size. The fuse is marked 150 m/a.

ALL you need is a piece of 3 amp. or 5 amp. fuse wire, and you should have this on a card in your mains meter box. A piece 2ins. long will serve. Take a file and remove the blob of solder at each end of the fuse. Prick holes through the metal caps with a pin and insert the fuse wire so it projects evenly, then wind the wire ends around the caps. When inserting the fuse, make sure that the holders grip the fuse wire winding. Alternatively, simply prick holes through the caps, insert a short piece of the fuse wire, then apply a red-hot poker to the blobs of solder. This makes the fuse as good as new again.

I SHOULD like your advice regarding the speed of my gramophone motor. It is an ordinary Garrad double-spring motor. I fitted it into a new cabinet and, ever since, the speed has changed. With the speed regulator pointer at 78, the revolutions per minute are only 60.

OBVIOUSLY, the hub to which the speed regulator pointer is attached needs to be re-adjusted slightly. Slacken the small set screw and bring the spindle (which operates the felt brake pad on the governor disc) around a trifle, then tighten the set screw. Set the pointer at 78 and count the r.p.m. A chalk mark on the turn-table, and checking by a wrist-watch, will enable the revolutions per minute to be adjusted correctly.

WHAT are "trailer" playing needles, please?

THESE are special needles for use on direct disc recordings. Unlike ordinary steel needles, the trailer needles have a bend so that, when inserted in the sound-box or pick-up, the point "rides" easily in the grooves with a minimum of scraping. If ordinary plain steel playing needles are used, the points of these would soon ruin cellulose-coated records, i.e., the discs used for direct recording purposes.

CAN you advise me whether I can operate my 2-volve battery set from a D.C. mains supply? I am told it is possible to do so, but wish to be certain.

YES, it is possible to use D.C. supplies. You will require, however, a battery eliminator made from a mains dropper of suitable amperage and resistance, plus a smoothing condenser and an extra resistor to give 120 volts H.T. and a 2 volt L.T. supply. If the set has two extra H.T. points, such as 60 volt to 80 volt, such can be provided by means of a couple of resistors to break down the 120 volts. A 3 amp. fuse, or a blub fuse, should be included in the eliminator, as a safety measure. The battery eliminator should be plugged into a wall socket having a switch, preferably fitted with an earth socket.

HAVING replaced the upper panels of a room door with glass, I had occasion to make use of the wooden panels recently. To remove the thick coats of paint, I used a chemical stripper and experienced much difficulty in the matter. Was there a much easier way to remove the old paint?

WELL, there is always one easy way—the use of a blow-lamp. Unfortunately, few of us possess blow-lamps. Practically everybody, however, has access to a gas-ring. If the boards had been held over a gas-ring for a few minutes, the old paint could be easily and quickly removed with a scraper, piece by piece. The paint requires to be heated only—not scorched. Another plan is to make use of gas-ring tubes and a gas-jet fitting.

I WAS told I could obtain automatic bias in my 3-valver by means of a 25 mfd. condenser and 1,000 ohm resistor if inserted between the G.B. terminal of the L.F. transformer and the L.T. positive line. I have made the necessary alterations, but I fear something is wrong somewhere.

AUTOMATIC bias can be obtained with the components mentioned. It is usual, however, to have the condenser and resistor connected to the L.T. *negative* line and this should be done.

IN the summer our piano plays excellently, but when winter comes along, the instrument goes out of condition; many of the keys stick. The piano is a German make, with iron frame and a check action, being quite new in appearance. I thought that wooden-frame pianos only were temperamental.

FRANKLY, all stringed instruments are "temperamental" to some degree, especially in winter time. Dampness, obviously, is the cause of the keys sticking. Dampness, too, will also affect the tone of the instrument. The only known remedy is to light a fire occasionally in the room where the piano is kept and open up the piano to let the heat into it to remove the dampness. Expose the works—the heat will do the rest.

IS it wrong to keep a piano lid closed while the instrument is not in use? I am told that the white keys may turn yellow.

THE keys are more likely to be whiter and cleaner with the lid closed. It is age which causes the white keys to turn a light yellow colour.

Stamp Collecting (*Continued from page* 205)

was to mark the 80th anniversary of the first stamp.

Now look at the long stamp from Russia. It has only just been issued, and is one of the set of three values 15, 30 and 60 kopeks. The 30k value shows only one stamp on it, that which was issued in 1921. The design expresses the "Triumph of Revolution". The 15k has some nine stamps discernible and the one here shown has no less than 16 stamps, each of which can be identified.

For instance, the top stamp in the centre shows a picture of Stalin watching marchers inspired by Lenin—this came out in 1934. Below this is the 1946 issue to commemorate the Supreme Soviet Elections, while in the bottom centre is the stamp already mentioned "Triumph of Revolution."

Outstanding Events

Just to the right of that you see five portraits. This is one of the Russian Heroes set of 1943 and on the extreme left is one of the Victory issues of 1946. At the bottom left is the Lenin Mausoleum at Moscow, a stamp which came out in 1925, the first anniversary of Lenin's death. Number three from the left on the top row commemorates the North Pole Flight being issued in 1938; the same date as the right hand stamp which was issued for the Paris International Exhibition.

How nice it would be to have the originals of all the old stamps which are illustrated on these stamps! Again, how nice to have been in a collecting mood in those early days and to have all the old issues. But had we been collecting over 100 years ago we should not have much energy to collect now, should we? Stamp collecting is a great hobby. Even Hitler recognised this as seen in the design used for the Hitler Culture Fund stamp of 1942!

STAMPS ON STAMPS

RATHER a curious title, but then the specimens which illustrate this article are rather curious, too. Unfortunately from a philatelic point of view, as well as from every other point of view, the year 1940 was one of upheaval, so it was impossible to celebrate the centenary of the introduction of the adhesive stamp in a proper manner.

Certainly, Great Britain issued a set of six stamps, but that was practically all that could happen to commemorate an event which had such far reaching effects as the adhesive stamp. Other countries, those which were not at war, commemorated this, however.

First Issues

Portugal brought out a set of eight stamps with a portrait of Sir Rowland Hill on them. Mexico brought out three stamps, each with the same design as that illustrated, namely a picture of one of the first stamps that appeared on May 6th, 1840. Do not forget that the penny black which is on the Mexican stamp was accompanied by the twopenny blue of exactly the same design except for the value.

Now you see the curious example of a stamp appearing on a stamp. Actually this was not the first time such a theme had been chosen for a stamp design, but it was the occasion that made it so noteworthy.

Finland in 1931 brought out a stamp which also had a picture of the first Finnish stamp on it. But it was the 75th not the 100th anniversary of the first Finnish stamp. So we see Finland started in 1856, which was not so very early, as by that time there were about 40 countries issuing stamps.

Early Examples

Portugal was one of them and a picture of her first stamp appeared on a special 40c issue in 1935. This was on the occasion of the first Portuguese Philatelic Exhibition and the stamp was the embossed issue of 1853.

The first country to follow the lead of Great Britain in producing postage stamps was Brazil. This was in 1843 and in 1943 Brazil produced three stamps of the same numerical value as the first three that she issued—namely 30, 60 and 90 centavos—although since the first stamps appeared she had changed her currency from reis to centavos.

The first stamps she issued earned for themselves the name of "Bull's eyes" owing to their shape. They had no lettering whatsoever, just a figure in a circle to show the value. Have you noticed, by the way, that Great Britain has never placed the name of the country on her stamps?

After Brazil the United States of America had an issue of stamps. This was in 1847, so the centenary of her first issue was last year. To mark that, there was a very big Centenary International Philatelic Exhibition from May 17th—25th. The two stamps printed on the miniature sheet which is illustrated were the first stamps the U.S.A. issued. These are in the nature of souvenirs of the Exhibition. All the other illustrations this week are of stamps which cover the cost of sending a postal packet through the post.

A country, which, although it did not issue stamps for many years after 1840, recognised the importance of the centenary and in 1940 brought out a stamp picture of its first issue, was Bulgaria. Actually, Bulgaria did not herself produce stamps until 1879.

Fig. 1—The "Penny Black" on a stamp from Mexico

Fig. 2—The first Egyptian stamp illustrated

Fig. 3—A collection of 16 Russian stamps shown as one

Fig. 5—A stamp collector for Hitler's Culture Fund

Fig. 4—Centenary of the first issue of the stamps of U.S.A.

Ethiopia or Abyssinia has just brought out a set of stamps, the lowest value of which has a reproduction of the Lion of Judah, the first of her stamps. The present set is the 50th anniversary of her national postal service.

Of course, it must be remembered that in the early days it was not possible to use a postage stamp to send a packet to any country in the World. It was not until 1874 that the International Postal Union was formed, by which one could interchange correspondence with any other country which had joined the Union. Before this it was a matter of arrangement between two countries before letters could travel on the one payment.

From Egypt

The last illustration of a single stamp is from Egypt. This was issued on 26th February, 1946 and

(*Continued foot of page* 204)

MISCELLANEOUS ADVERTISEMENTS

50 EARLY stamps 6d., ask for approvals, from ½d.—Cogman, Potter Heigham, Gt. Yarmouth.

STAMPS, send for my approval sheets, for small and medium collectors, enclose 2½d. stamp for postage. Free gift of eight stamps.—D. Mellenfield, S.D.A. (H.W.), 14 Kings Road, Barnet, Herts.

LONELY? Join Friendship Circle. Details 6d.—Secretary, 34 Honeywell Road, London, S.W.11.

'K' Toys, Brookfield Rd., Bristol 6. This week's offer, Model Deck Chair, all parts nicely finished, you fit together. 1/3 post free. S.A.E. for list of other models.

WOOD TOYMAKING. A practical handbook with 180 designs and illustrations, 2/3 posted.—Industries, 2 Waldegrave Park, Twickenham.

SEND stamp for extensive list of Handicraft Tools and Materials now available.—Dept. Y.3, Torob Agency, 53A Broad Marsh, Nottingham.

POCKET Magnet, small permanent magnet equal in power to old style one of six times its size. 2/6 post free.—The Hobby Shop, Bold Street, Southport.

STAMPS FREE!!! Twenty unused (2½d.).—G. H. Barnett, Limington, Somerset.

CENTRE Page Bargain, Approvals British Colonials. Every stamp a bargain. Postcard only required.—Venables, 81 Montgomery Street, Hove, Sussex.

40 DIFFERENT stamps free to all applicants for my ½d.—1/- approvals. Includes Mint Victory, used Coronation, Silver Jubilee, Ship, Pictorial, etc., etc.—J. F. Smith (Dept. H.), 60 Edison Rd., Welling, Kent.

3 PEACE stamps and V.I.P. stamps free to approval applicants. 2½d. postage.—Fleming, 37 Hartington Rd., Edmonton, N.9.

POST Free—Fascinating steel tracing machine for copying and enlarging magazine drawings, maps, etc. Price 3/-.—Clayton, 16 Westminster Road, Bradford, Yorks.

EBONITE and Bakelite sheets for sale, ⅛in. to ⅜in. thick; suitable for instrument panels, desk tops, etc. List on request to—C. Leatherbarrow, Ltd., Grand Bldgs., Trafalgar Sq., W.C.2. Tele. Whitehall 3948 or Liverpool Central 7251.

PEN pals Bulletin. World-wide contacts, 1/- monthly.—176a Old Shoreham Rd., Hove.

BARGAINS! ½ oz. unsorted mixture (about 175 stamps) 2/6.—James, 67 Coledale Drive, Stanmore, Middlesex.

50 DIFFERENT free to approval applicants. Discount and free gifts given. Enclose postage.—Ward, Grindleford, Sheffield.

MORSE telegraph keys. Genuine U.S. Army Signal Corps, 5/6 each, plus 6d. postage. Special torches, with flexible lamp extension, less dry battery (No. T12), 3/6 each, plus 4d. postage.—Allan Levin, Limited, 1 Mayfields, Redditch.

GALLEON sails and heraldry, 5 sheets 7½ins. by 10ins., 2/6 pkt. List of plans and accessories 3d.—St. Andrews, High Pitfold, Hindhead.

PERSONS required immediately to make leather shopping bags in spare time. Write—Dept. 11, Empire Co., 117 Nottingham Road, Loughborough.

BE Taller. Quickly! Safely! Privately! No appliances no tablets—no dieting. Details 6d. stamp.—Malcolm Ross, Height Specialist, BCM/HYTE, London, W.C.1.

LONELY? Then write Secretary U.C.C., 5B.B. Hay St., Braughing, Herts. Genuine. Est. 1905.

MODELS: you can make lasting stone-hard models with Sankey's Pyruma Plastic Cement. Supplied in tins by Ironmongers, Hardwaremen and Builders' Merchants. Ask for instruction leaflet.

TRANSFERS for decorating toys, trays, furniture, fancy goods. Selection 10/-, 20/-. Flowers, pixies, dogs, nursery rhymes.—H. Axon Harrison, Jersey.

FREE! 25 Stamps. Request discount approvals.—Bradbury, 5 Goulden Road, Manchester 20.

YOU can look up in "Where's That Car From?" 10,000 car index numbers alphabetically arranged. 56 pages 6d. From all newsagents.—Raleigh Press, Exmouth, Devon. (Post 1d.).

PERSONS required make fancy goods at home. Write for details.—Melton Manufacturing Co. (Area 544), Southgate Street, Leicester.

W. McGARRIGLE for aeroplane and ship kits, all accessories. Stamps. Lists 3d. Wholesale lists 4d.—64 Hillcrest Road, Romford.

WHEELS for Toys in metal, wood and plastic. Numerous sizes and types. Write for list stating requirements to The Joyden Toy Co., 193 Chase Side, London, N.14.

TOYMAKERS' Super Casting Moulds for lead toys and Plastercraft. As used by all high class toymakers in England and abroad. Over 600 latest designs: fully illustrated catalogue 2/- P.O.—Agasee, 7 Stradbroke Road, Highbury, N.5.

MONOMARKS. Permanent London address. Letters redirected. 5/- p.a.—Write Monomark BCM/MONO82, W.C.1.

PRESSED Metal Wheels (balloon tyre design). Per dozen, ¾in.—10d. 1in.—1/-. 1¼ins.—1/3. 2ins.—1/6. Per gross, ¾in.—6/-. 1in.—7/-. 1¼ins.—8/-. 2ins.—10/-. Illustrated catalogue 3d.—Jason, 135 Nags Head Road, Ponders End, Middlesex.

PERSPEX Polish, genuine "Sinec" as used by R.A.F. Set of three grades: coarse, medium and smooth. 2/6 set, post 8d. Send for free surplus bargain list.—Marble Arch Motor Supplies, Ltd., 286 Camberwell Road, S.E.5.

"THE Art of Wood Finishing". A book explaining in simple language the art of french, brush and wax polishing, liming, fuming, etc. Price 1/6, postage and packing 1½d. extra.—M.M.D.A., Ground Floor, 38 Belmont Road, Bristol.

NOVELTY Packet of unusual stamps free to approval applicants sending 3d. postage.—M. Edwards (N.3), Westcroft, Northchurch Common, Berkhamsted, Herts.

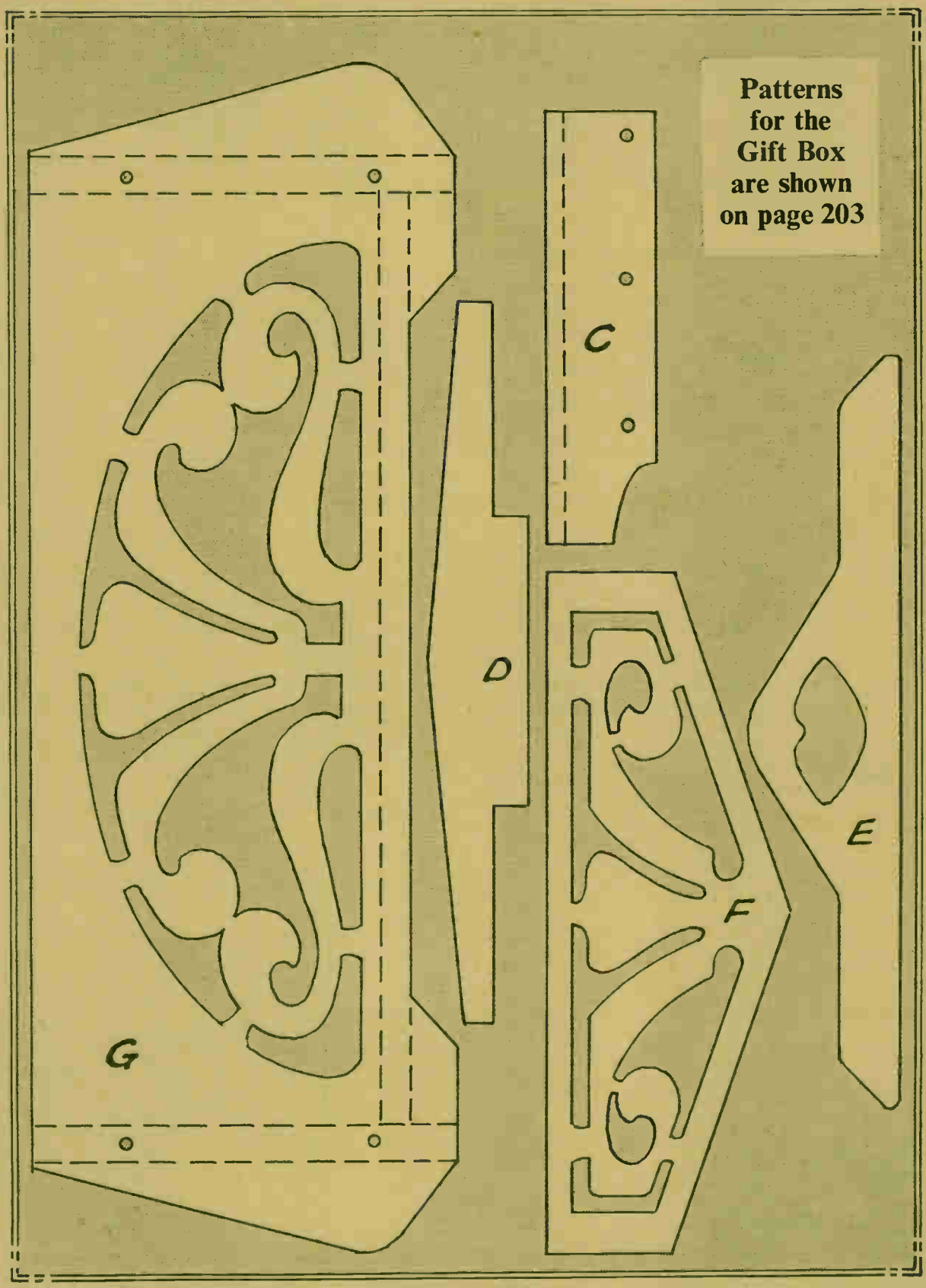
40 Power Tools You Can Make, 12/6 post 8d. Popular Mechanics Press, Chicago. The famous "What to Make", 1947, 7/6. Shop Notes 1947, 7/6. Following "How to Make" Books, 3/- each; 5 Power Driven Saws: Spray Painting: Caravan and Utility Trailers: Plastics Projects: Wood and Metal Lathes: 21 Action Toys. "Science and Mechanics" the leading American workshop magazine, one year 15/- post paid. S.A.E. for lists, books, plans, magazines.—BCM/PUBLICATIONS(H), London, W.C.1.

BOYS! Look at this, the most smashing free gift of all, the attractive and lovely Roosevelt Set from San Marino. Absolutely free to all genuine applicants for repeat approvals, enclosing 3d. stamp. 1/- without approvals.—H. A. Smith, 13 New Road, Scole, Diss, Norfolk.

SPECIAL Offer. Attractive Stamp Album, 50 stamps, packet of mounts. Post free 3/-.—Gamut (Dept. C), Supplies Co., 24 Gunnersbury Avenue, London, W.5.

FREE! Extra special British Colonial variety packet includes scarce Jubilee, Coronation, Victory, Zoological and latest new issue stamps. Request approvals (2½d.).—Thompson, 70 Cavendish Avenue, London, W.13.

DUTTON 1 week Shorthand. Learnt in 12 2-hour lessons. Accepted by all examining bodies. Test lesson 3d.—Dutton's (H.B.), 92—3 Gt. Russell St., London, W.C.1.



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Hobbies WEEKLY

CONTENTS

SUPPLEMENT DESIGN SHEET FOR ROCKING RABBITS TOY.

February 25th, 1948 Price Threepence Vol. 105 No. 2730

A MODERN TOY MOTOR LORRY

HERE'S another attractive little toy or model. It is one of the simplest toys to cut and assemble, being made up from one thickness wood, viz., ¼in., and thus very economical in placing the individual pattern pieces on the boards. The length of the truck from front to rear is 8½ins., while its width and height are 4½ins. and 4⅞ins. respectively.

The addition to the truck of the trussed support fixed behind the cab, is to take long lengths of timber which may be well represented in our toy by tying on a few pieces of fretwood or other wood which has been cut to suit as suggested in the working diagram Fig. 1.

Simple Construction

The simple construction of the model may be understood from Fig. 1, the letters and the dotted lines helping a lot in the assembling after all the pieces have been cut and cleaned. Taking the floor (A), as the first piece to mark out and cut, we have just an oblong piece measuring 7½ins. long by 2½ins. wide, the forward end of which is slightly chamfered to take the slope of the radiator front (D).

Next make the two sides of the cab (B), and for the outline of these, the full figured diagram in Fig. 2 may be taken. Cut next, the back of the cab (C), a piece 2½ins. by 2ins., and make in this the window according to the detail shown at the top of Fig. 3.

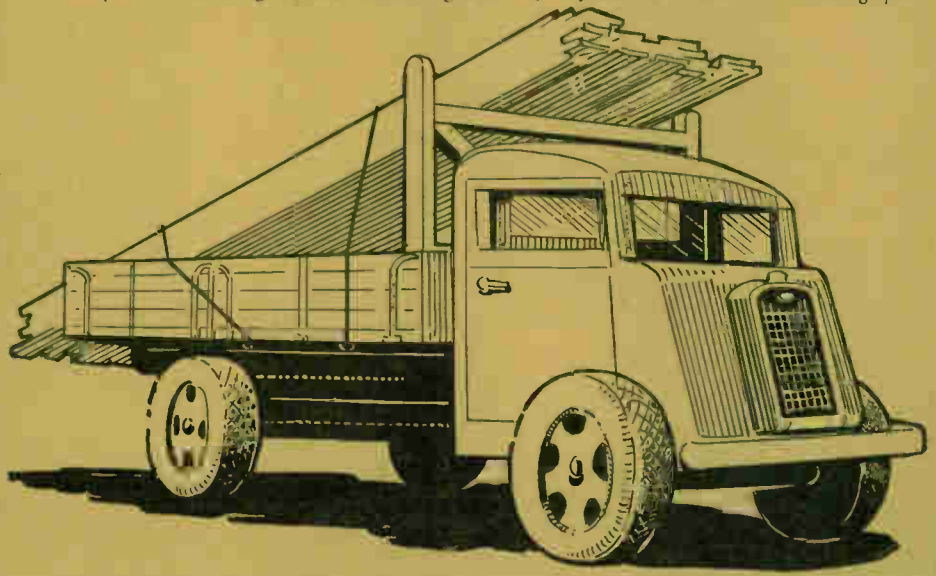
Cabin Sides

The two sides (B) and the back (C) will be glued to the floor (A) as in the detail Fig. 3, keeping in mind the measurement of 4⅜ins. from the back end of floor (A). The three pieces are flush at the top where the roof (G) meets them.

Pieces (D) and (E) are the next to prepare, and these are plain pieces necessitating a little chamfering and rounding off as will be seen in Figs. 1, 2 and 4. The measurement of (D) is, length 2½ins., width 1⅝ins., and the top edge and the lower edge will be chamfered. Piece (E) is a plain piece 2½ins. long by ⅜in. wide. It glues on top of piece (D) and between the two sides (B), see Fig. 4 again.

Radiator

A detail of the radiator front (F) is shown in Fig. 2. This piece is simply glued on to (D) after the latter has been glasspapered clean. At this juncture a seat and steering pillar



may be added inside the cab if desired. The seat is a piece of thinner wood or even stout card 2½ins. long by about an inch wide.

When this is done the roof (G), can be cut and glued on. It's a piece measuring 3ins. by 1¾ins., and most of the shaping, if not all, may be carried out after the actual gluing up has been done.

The Truck

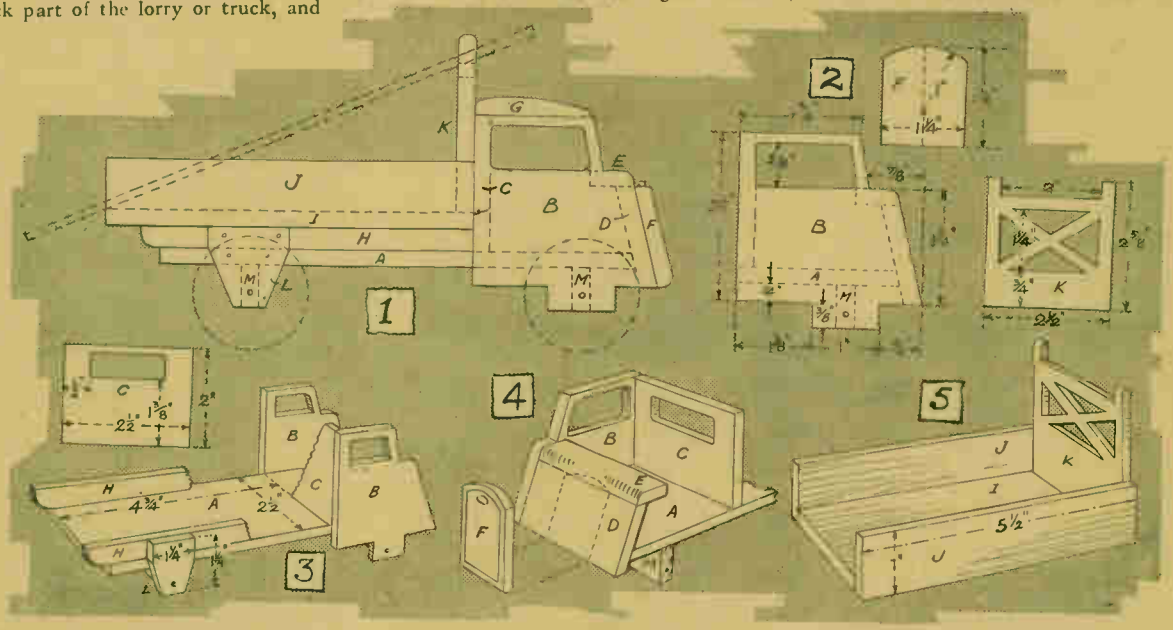
We now turn our attention to the back part of the lorry or truck, and its long edges the sides (J) are attached. Then in between the sides the upright (K) is glued, a detail of this piece being included in Fig. 5.

The parts of the truck should be firmly glued and nailed together, for, being a toy the whole thing will be subject to a good amount of rough handling. The two wheel supports (L) can now be drawn out full-size on the wood, and cut round. The holes for the axle screws are bored ¼in. up from the lower [illegible] edges. The

this has been added before the cab roof is put on. The wheels (from Hobbies, Ltd.), are 1⅝ins. diameter and are ready for painting.

Painting the Toy

The whole toy may be painted in bright colours after the wood has received a thorough cleaning with coarse and fine glasspaper. Round-head screws should be used for fixing the wheels and thin metal or celluloid washers added under the



cut and fix on the two rails (H), seen in Figs. 1 and 3. These rails are 5ins. long by ¼in. wide, and the end overlapping the floor at the tail should be rounded with the fretsaw as shown.

The whole truck portion can now be made up independently as shown in Fig. 5, and afterwards attached to the rails (H). The floor (I), of the truck is a plain oblong 5ins. by 3ins., and to

measurements and position of pieces (L) are given in Fig. 3.

The cross axles of both back and front pairs of wheels are formed of pieces (M), measuring 2¼ins. long and ⅛in. wide, and the positions of them are given in Figs. 1 and 4. Two screws to the back cross axle (M) should be driven down through floor (A). Similar screws cannot be put to the front axle, however, unless

heads of the screws and at the inside of the wheels.

The sides of the truck should be painted with lines to represent the boarded side, and the metal hinges, etc., lined out in black. The radiator front is picked out in aluminium paint with red border. If desired, thin transparent celluloid could be placed as a screen and as windows in the doors of the cab.

From D.C. to A.C.

COULD you give me instructions as to a method of changing a D.C. current electric motor to A.C.? (R.S.—Darlington).

IF the field magnet of the motor is of the permanent type, the motor may not be converted to A.C. operation without constructing an electro-magnet to replace it.

An ordinary small motor is suitable for A.C. without modification, and may be fed from a small mains transformer providing the necessary output of 6 volts, or whatever is the normal voltage required by the motor.

With larger motors it is sometimes found that the inductance of the winding prevents the passage of sufficient current, in which case the motor must be re-wound with thicker wire.

It is better to run the motor with a transformer to reduce the voltage to a safe figure than to attempt to operate it directly from the mains, unless it is a fairly large model with well insulated body and windings.

Fixing Perspex

COULD you help me in advising how to stick Perspex together? (A.G.M.—Middlesbrough).

JOINTING of Perspex by chemical process is quite an accepted principle, but for the craft-worker it is far wiser to use the cement created by the makers of Perspex.

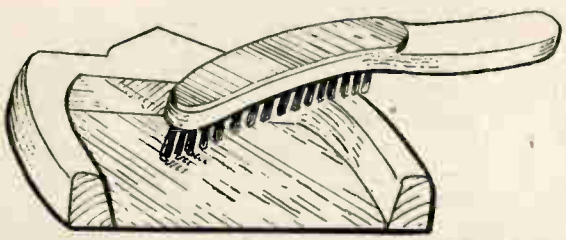
"Diakon" cement is supplied direct from I.C.I. Plastics Division, Dog Kennel Lane, Oldbury, Birmingham. The cost is reasonable and the quantity sufficient for many joints. It is transparent and quickly 'sets.'

Coil Wiring

I AM building a shocking coil, but am unable to obtain 42 S.W.G. wire. The nearest I can get is 32 S.W.G. Will this be alright? (E.R.—Tottenham).

ALMOST any gauge may be used, fine wire merely being used so that sufficient turns may be accommodated. If you have sufficient of the 32 S.W.G. wire it could be tried. It is also possible to obtain suitable wire from a broken spark coil, if such can be procured from a garage having scrap motor parts.

How you can complete both brush and CRUMB TRAY



THIS useful article would make a welcome gift and it would, of course, be equally handy in one's own home. It can be made from scrap material, mostly, just a few small pieces of wood, an empty tin, and the remains of a worn brush. Not a very expensive set-out anyhow.

Start with the tray first. The pattern for this is given in Fig. 1 and can conveniently be set out on the wood direct. As for the wood, any suitably-sized piece will serve, some ½in. thick. Let the grain of the wood run in the direction shown by the arrow.

First draw line A, lightly in pencil, then at a point ¾in. from one end, and with the compasses extended to the opposite end, strike the arcs shown, ¾in. apart. Strike the arcs at the other end similarly, put in the two lower lines, and saw out.

A second shape will be needed to glue to this, but this time it will be cut in three pieces, B, the handle, and C, D, the side shapes. All these are cut from fretwood, any thickness available. A point to note here is that the grain of the wood must run at right angles to the first shape.

Side Pieces

There is no need really to set these shapes out by rule and compasses, the first shape can be laid on the fretwood and a pencil run round it. Do not forget to arrange for a space of 3ins. to be left between shapes, C and D, to admit the handle piece, B, between. Glue all three on the first shape and press together in a vice for a few hours, or lay a weighted box on top, until the glue is set.

The handle is further secured by the addition of a couple of small round-headed brass screws. Get to work with a rasp and round off the top edges, and make the inside edges slope a little, as in sectional view, E. Then finish with a file and a vigorous rubbing with glass-paper, and bevel the front edges down to the tin.

The bottom of the tray is made of tin. A piece large enough for this purpose can be obtained from a tin about 2¾ins. diameter and 4½ins. high. A standard and common size. Cut top and bottom off, cut out the vertical seam, and flatten. Flattening can best be done by gentle hammering on a piece of metal or hardwood. Bend over ⅛in. of the long sides, one side only, and hammer down underneath, to make a neat double thickness edge to the front of the tray.

Fitting Metal Base

Now lay the rim part on the tin, and scratch round to mark its shape on the metal. Cut out, punch a few holes round for nailing to the rim, and file the resulting burrs made by the punch, flat.

It will probably be found that the tin will not be quite wide enough to reach the back edge of the rim, but as long as it does not come too short of it, this will not matter. A strip ⅜in. long will be enough for secure nailing. Use ½in. brass shoemakers' brads for nailing the tin on.

For the brush, a small piece of ⅜in. or ½in. hard wood will be needed for the stock. Cut it to the size shown in Fig. 2, and with compasses, set to the given radius, strike the curves. The handle part can be put in with a ruler. Run a pencil line down the middle of the curved part, and on this and some ½in. apart, bore a row of 3/16in. holes through for the bristles.

A cover piece from fretwood should be cut to the curved shape only of the stock, that is as far as the dotted line. This should be carefully shaped to fit on the stock, as at F, and subsequently cover the unsightly appearance of the wires used to draw the bristles through.

It will, afterwards, be fixed to the stock with six small round-headed brass screws, but can be temporarily fitted on with two. Round off the edges of the cover piece, and glass- paper the stock thoroughly all over until quite smooth.

The stock and tray should now be finished in a pleasing colour. For an article of this description quite a brilliant finish can be put on. It will be best to apply a preliminary coat of lead paint or undercoating first, then the final coat of enamel can be applied.

Alternatively, two coats of flat paint can be given, with a finishing coat of copal varnish. The latter treatment is generally considered the best, especially on the metal part.

Making the Brush

Some bristles or other suitable material will be required for the brush. Almost any kind will serve if some 2ins. long or a trifle more. An old worn broom often has enough bristles or hair left for such a purpose, or a brush in good condition but unwanted can be utilised. Split the wood and pull the bristles out, then lay them together for the work.

Do not get them tangled up on any account. Buy a small coil of thin brass wire, which can generally be got at a hardware shop for a few pence, and then fix the stock with its cover removed in the vice. It is then ready to receive the bristles.

Double a few inches of the wire together, and poke it through the first hole in the stock. Open out the loop and, taking some of the bristles between the fingers, push them in the loop. Now grip both ends of the wire and pull until the bristles are drawn in the hole, as in sketch, Fig. 3.

Repeat this operation until the holes are all filled, then cut off the wire ends, and gently hammer the wires on the back of the stock quite flat. Rescrew the cover on, then cut the ends of the bristles all level.

Readers who have never made a brush before, will be well advised to try drawing the bristles through a few holes bored in a spare scrap of wood first, to acquire the knack. With a little practice the job is a simple one and may encourage the reader to try his hand at making other household brushes.

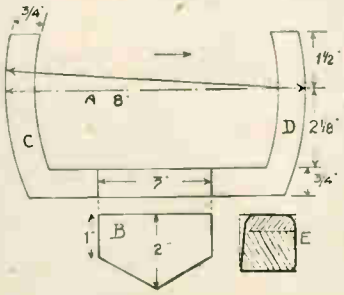


Fig. 1—Rim parts of the tray

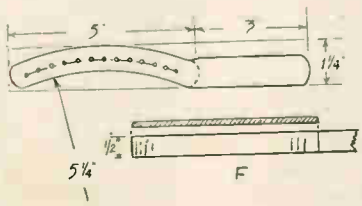


Fig. 2—Plan and side view of brush

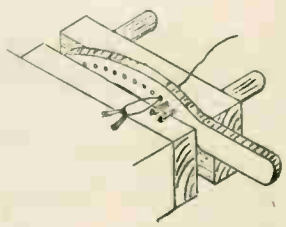


Fig. 3—Inserting the bristles

Small bits of wood can be used to make a simple

WALKING PIG TOY

THE little novelty this week should appeal to all the youngsters. The novelty of the thing, of course, lies in the realistic movement of the legs of the pig when pulled along.

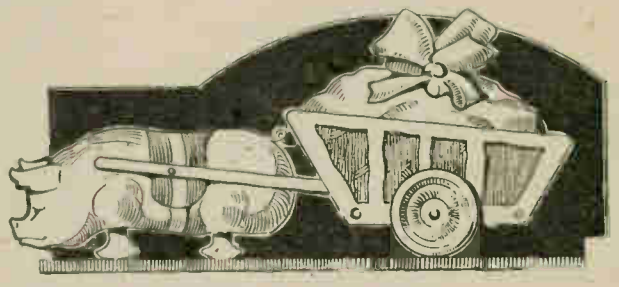
These are so made that a number, both fore and hind legs, are made separate from the body section of the pig, and revolve as it were, which really does give a most realistic idea of the pig when running along.

The little cart at his rear has a pair of wheels, and the shafts which project forward hold the pig in an upright position by means of a pivot pin running right through.

It would be best to make the cart first, and the two details of it given here should make clear its construction. The floor and the shafts are in one piece as outlined and figured up in Fig. 1. Make the outline on to ¼in. wood and cut round in the usual way with the fretsaw, and clean up the cut edges. The sides of the cart, being, perhaps, of an awkward shape, we have included one as a squared up diagram as is shown in Fig. 2, the squares being ¾in.

Squared Shape

The shape can easily be set out by following each square carefully, not forgetting the position of the floor of the cart, which is shown by the dotted lines. These lines should be included on the outline and also the central pivot hole where the wheels will later be attached. When the one side has been drawn in and cut and cleaned off, it may be used for drawing round, template wise, for getting the second side. The extremities of the dotted lines may be pricked in on the sides and the lines thus drawn in will afterwards give the position for gluing the sides to the floor.



The front and back of the cart, C, in Fig. 3, are plain pieces of ¼in. thick wood 3ins. by 1½ins., glued and pinned with fine wire nails to the sides. A square of wood the width of the floor should be glued across as, D, in Fig. 3, to take the screws of the wheels. A pair of wheels 2ins. in diameter should be screwed on to revolve with round-head screws.

The Pig

A little care and attention are needed in making the pig. There are fourteen distinct pieces which make the animal, and wood 3/16in. and ¼in. will be required. The construction of the body and the legs can be seen at a glance at the sectional diagram, Fig. 4. The body is composed of two inner 3/16in. pieces, F, in the diagram, with two outer and complete bodyline outline pieces as, E, in the same diagram.

All four pieces are glued together which, as will be clearly understood, make a complete body, having a hollow recess as it were for the legs to fit in and revolve.

Looking at the squared diagram, Fig. 2, we see at the top of this the outline of the pig's body, following the line, E, right round for the outer ⅛in. sides, and following for the most part the same outline from the throat to the rear of the hind legs for the inner sections. From the two points mentioned, the outline falls away to two circular arcs at F.

Both the distinct outlines can, therefore, be traced at one time on to paper by means of the ¾in. squares, and then separate outlines transferred to their respective 3/16in. and ¼in. pieces of wood ready for cutting. In Fig. 4 the two inner 3/16in. pieces are shown complete and glued up, with one ⅛in. full-side piece also glued on.

Outer Side

Standing away from this, and ready to be lowered and glued over the lower pieces is the remaining top full-side piece. If possible the two

(*Continued foot of page* 215)

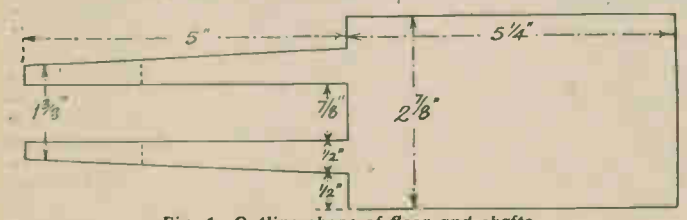


Fig. 1—Outline shape of floor and shafts

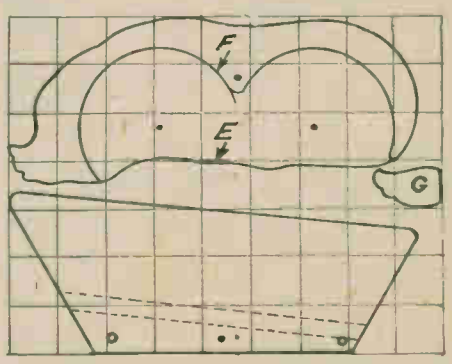


Fig. 2—Squared up pig shape and cart sides

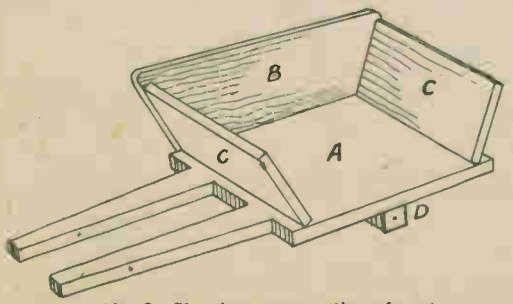


Fig. 3—Showing construction of cart

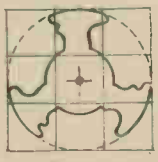


Fig. 5—How the leg pieces are marked out and cut.

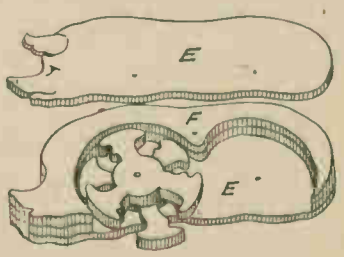


Fig. 4—The "walking" mechanism in position

Beginner and expert will find information in these

FRETSAW NOTES

THE enthusiasm of our readers is evidenced by the large daily mail which arrives with their letters, seeking advice and speaking of the enjoyment they get from the use of the fretwork tools which they all possess. Their owners are of varying ages, and we are delighted to receive so many letters from readers up to the age of 70 who have known and followed our pages regularly over a period of more than 50 years.

They lament, of course, that we cannot now offer 24 and 32 pages each week, but still agree that there is value for money in the few pages we are able to present, even apart from the presentation design sheet offered each week.

Some of the advice which we have given recently will probably be of interest to other workers also, and that which follows will be helpful in making both the beginner and the more experienced, quicker in the execution of more satisfactory work.

Position in Cutting

One point noticed in so many workers is that they are apt to sit down and get on with using their fretsaw without thought of the position. A beginner may be excused this hurried enthusiasm, but the more experienced, should realise that one of the first essentials is to be comfortable.

In the use of the fretsaw, get the knees well under the table and sit slightly at an angle to the work so that you can see what you are doing without effort. If possible, have a light overhead, but again slightly to the left or right. If it is immediately above you or behind you, then an unwanted shadow is cast on the cutting line, particularly if the hand and fingers are held very close to the sawblade.

Do start the work with the saw upright and the top arm of the handframe horizontal. Do not get the sawblade sloping forward or you will hack into the wood and prevent that smooth running action which is essential. When you first begin, the use of the handframe, or of the machine, may seem awkward, but it is surprising how quickly one can get used to the motion required and so travel along at good speed.

It is, of course, quite wrong to force the sawblade through the wood with much pressure behind it. Let the sawblade move up and down smoothly, gradually biting its own way forward in the direction required. When you see a professional carpenter using a handsaw, notice how easily he takes the stroke and allows the saw to cut its way smoothly through even thick timber.

It is the same with the fretsaw. Do not press it forward almost to breaking point, but let its motion cut smoothly through the grain of the wood. Remember it is more difficult, too, to cut with the grain of a close wood than it is across it, so do not be surprised if your rate of progress is slowed down.

Speed of Cutting

Actual cutting speed, of course, depends on the ability of the worker. As you become used to controlling the saw, you can go quicker. At no time, however, must you lose control of the fretsaw. Progress should be at such a rate that you can stop immediately if you require, or finish exactly at the point needed. This demands a firm holding of the wood with the left hand, to prevent it leaping upwards, possibly binding the saw and breaking the tiny blade.

Have all Materials

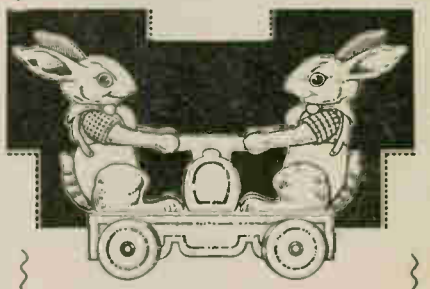
Another point which particularly applies at present is that a job should not be undertaken until all the necessary materials are in hand. We frequently hear from readers who have got half-way through a model or a piece of work, only to find that they require a fitting or a piece of wood which is just then unobtainable.

When you decide to make an article, do not expect to begin it tonight. Look ahead and plan so that you have requirements at hand when you really want to commence. Remember too, that the shop where you normally buy the goods, may be temporarily out of stock of what you want, and that supplies have to be ordered and obtained.

In posting orders, the same thing applies because shortage of clerical staff as well as the routine work of getting the order together, may mean a delay of some days before you receive the goods you are so anxiously wanting.

MECHANICAL RABBIT TOY

THIS novel wheeled toy can be made from the supplement sheet with this issue. The "rabbits" rock backwards and forwards in an amusing manner. A parcel of the wood (No. 2730) is obtainable from Hobbies Branches for 6/6 or for 9d. extra by post from Hobbies Ltd., Dereham, Norfolk.



Vital Parts

A model to be completed may, for instance, require some hinges or a little piece of dowel, or even some wheels. Do not commence your work until they are all available. If you do, you might cut the part where the hinges will go, only to find that when you actually get them, they are too large or too small, and the consequent fitting up will only spoil the look of the finished article.

You may not be able to get just the size wheels you require, but if you have a substitute wheel, then it can mean slight adjustment in fitting to the work. If you have completed the article and then have to alter it to suit the wheels or any other part, unnecessary labour is needed. A much better plan is to have all the materials at hand so you can be sure of a straightforward cutting and constructional job to complete the whole thing satisfactorily.

In these days of wood scarcity, too, do not be wasteful with that material. If you have several parts to cut of the same thickness, take the patterns and

put them together on a single board, fitting them into each other something like a jigsaw, to reduce waste of wood to a minimum.

If you are going to paste the patterns down, cut them fairly close to their outline—about ⅛in. away—and then lay them on the wood, turning and twisting until you have got the most effective and economical result.

Drawn Outlines

If the patterns are not at all elaborate, but only plain geometrical outlines, then it is not worth pasting them down. Draw them on to the wood carefully with a piece of carbon paper between the design and the board. Or trace them off with a piece of transparent paper and redraw on to the wood itself. Simple outlines can, of course, be marked direct with a ruler and setsquare.

It is a failing of some workers to redraw these plain outlines with a ruler only, but you will be well advised to include the setsquare in the work.

You may get, for instance, four sides of a square the correct dimensions, but it may not even then be a square because the two sides may slope slightly out of true. In setting out the work, therefore, get your ruler on the base line and run the uprights from it by sliding a setsquare along to ensure the right angle is obtained.

These remarks also apply where mortise and tenons or other joints are concerned. Too much time cannot be spent in marking out correctly. Use a pair of dividers to check off sizes, dimensions, etc., ensuring they are the same as stipulated or drawn on the actual design sheet.

Saving a Sawcut

This economy in wood can also be seen in the use of the edge of the board. If you have a straight line on the part to be cut, why not use the already straight edge of the wood to provide that side? In drawing off, say, a square or rectangle on to the board, therefore, use the straight edge of the wood as one side and so save that much cutting.

The same applies even to two parts. If drawn out on the wood close together, then one sawcut will separate the two parts and so save duplication in cutting. Little points like this can save much time and labour, so before undertaking any of the work it is as well to give some thought to the best way to do it.

Keep a Catalogue

If this point had been borne in mind, one of our readers would not have had recently to write complaining of the trouble he had in going through all his back numbers to find the design sheet he wanted.

For what more simple than to keep a list of the designs as published, giving the date of their issue as well as the number and volume? If such an index were kept in a small book in alphabetical order, then it would merely be a matter of a very quick reference to find what was needed. A simple book for the purpose could be made from some sheets of blank paper folded and with a pin driven through the hinge portion so that 26 pages were available.

How to Index

With each page lettered, the particulars of the design could be put in its proper place, a thumb index showing the letters could be cut down the open side of the book, which would further facilitate ease in opening. The designs themselves, of course, could be given in two or three places to make certain.

A design such as a Cigarette Box, for instance, should be shown under C for cigarettes, and also on the page of B, standing for box. In the latter case, of course, it would be written in as "Box for Cigarettes".

If nicely ruled off and with an appropriate name on the front cover, you would have a book of easy reference which would help you when wanting to discover what things to make, and when it was published, to say nothing of the enjoyable pastime of making the book itself and keeping it up to date as each design or article appeared.

Things to Remember—

SOMETIMES, in a home-made wireless receiver, you may wish to have a plug connection to, say, the detector stage of the circuit for pick-up or microphone purposes. Instead of a terminal connection, in the real sense of the word, four terminals could be used, two serving as sockets and two as plugs. These are the terminals which have a screw-on, open-ended erinoid cap, with a hollow socket in the brass stems.

It is easy to fix these sockets in the back strip, with wires attached to the ends of same. The pick-up or microphone plugs fit into them neatly. Holes are bored in the back strip to take the threaded stem of the plugs used as sockets. Part of the thread should project at the exterior side for the erinoid caps which, screwed on, give neat plug holes. Use red and black plugs, by the way.

* * *

THERE is, to many people's eyes, nothing more distasteful than men's light brown (almost yellow) footwear—and most men object strongly to it and sometimes endeavour to "stain" the leather a warmer, darker tone. Generally, this is most difficult to do properly. Time, and the use of a tonette dark stain polish, will colour the shoes effectively.

Never try to darken the leather quickly by, for example, using a brush containing traces of black shoe polish. This will produce a nice brown colour, but some parts will be darker than others and the darkness may "crack" at the bend in the uppers near the toe caps. Should you make a mess of things in this way, the footwear can be cleaned by applying a thin, wax floor polish, i.e., wet-wax.

* * *

WHILE on the subject of footwear, it is not always necessary to steep new leather in water before using it in making repairs. Far better to use the leather dry, then when trimmed and smoothed, it can be wetted, this making it swell.

When dry, the surface is re-rasped, filed and glasspapered to be quite smooth, following which the stain and polish is applied. When the repaired sole, or heel, comes in contact with dampness, there will be less tendency for the leather to swell.

* * *

A FRETWORKER, unlike most woodworkers, should never be content to use boiled glue and cold liquid glues supplied in tins or jars. A fretworker cannot afford to be messy. His work is light and delicate—extremely delicate, sometimes, and if gluing is necessary, it can be applied more easily, with less mess, if the glue is in a tube.

Because of the war and the restricted use of metals, lead being one, manufacturers of cold, semi-liquid glues have had to supply adhesives in tins or jars. These, from a fretworker's point of view, are not so convenient as the glue in tubes, with a nozzle which, apart from helping to place blobs of glue in the exact position required, could be easily "stoppered" with a pin.

The drawback with glue jars or tins is that the lids always become troublesome—hard to screw on and harder to remove, and to apply the glue, a small stick, or brush, is necessary. So, whenever possible, insist on *tubes* of glue.

Readers having any difficulty in this respect should note that Hobbies Ltd. can supply tubes of glue at 4d., 6d., and 1/-, with 3d. extra for postage. The glue, needless to add, possess good adhesive qualities. It means quicker, better, cleaner gluing and improved workmanship.

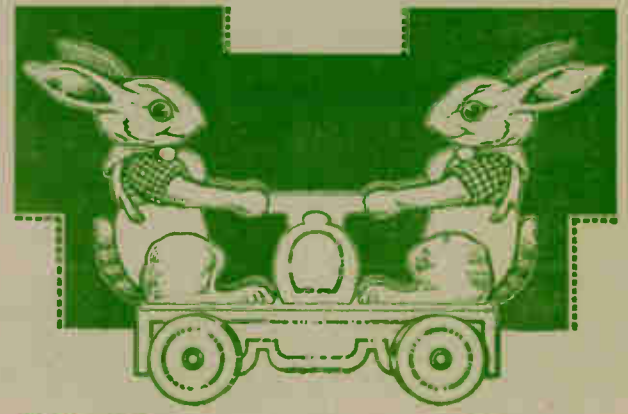
Hobbies DESIGN

No. 2730

SUPPLEMENT TO HOBBIES No. 2730.

— THE TWO RABBITS —

A PULL-ALONG WORKING TOY



NOTE.—This design sheet is only presented free with the current issue of Hobbies and not with back numbers. Further copies may be obtained.

SIZE
LENGTH 12ins.
HEIGHT 10ins.

LONG AXLE 5½"

SHORT AXLE 2⅞"

DISC M

HIND LEG F OF RABBIT. CUT FOUR.

F

BODY SECTION J OF RABBIT. CUT TWO. THE INTERIOR LINES ARE GUIDES FO PAINTING UP.

FRONT LEG, G CUT FOUR.

DISC M

CONNECTING DISC H. CUT ONE.

CONNECTING ARM L. CUT ONE.

NOTE:—WOOD ¼in. THICK USED THROUGHOUT

SPACING DISC L. CUT TWO.

THE ARROWS INDICATE DIRECTION OF GRAIN OF WOOD.

ROCKER ARM H. CUT ONE.

LINE OF A

MECHANICAL RABBITS

THIS is an ideal toy to make from the patterns provided, for the painted animals rock up and down by the action of pulling along the ground. All parts are cut in ¼in. wood with the fretsaw, cleaned up and finally painted. The patterns shown should be marked out on to the wood, and cleaned with glasspaper before being tested and glued in position.

The great point is accuracy in fitting the various pivot points so that the front paws of the rabbits move up and down smoothly, the body sways backwards and forwards as the wheel is pulled along. Having cut and cleaned the parts, they should be temporarily fitted together to ensure that all works satisfactorily. Then the moving parts will have to be taken away for painting.

Painting Hints

The base and fixed uprights can be painted as a complete unit, but the moving pieces must be painted individually before they are finally fixed on. For this reason, all pivots

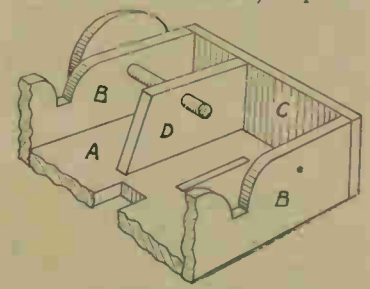


Fig. 1—Underview of axle parts

are previously only loosely fitted in and not replaced until finally. Apart from the cutting, the principal work is in the finished painting, and care should be taken to get a striking, colourful effect.

The other main point is the pivoting itself. Holes are shown on ing to these details. The base is a simple platform with four sides and tenons E and F. These are to take the uprights forming the hind legs of the animal, whilst the central slot provides the opening for the rocker movement. Notice that three axle holes only are provided for wheels on the sides; the fourth will be screwed later. Stiffen the framework of the base by gluing blocking strips in the corners.

This floor, by the way, goes between the sides and end. Two wheels ¼in. thick are fitted at one end, on an axle 5¼ ins. long. This runs loosely through the hole in the sides. At the other end, one wheel provides the power to actuate the eccentric action which moves the figures. The fourth wheel which must be opposite to the working one, can be held on by a round-head screw into the side. An underview is given at Fig. 1 where you see the support, D, glued upright

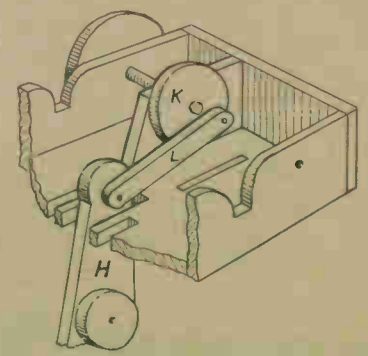
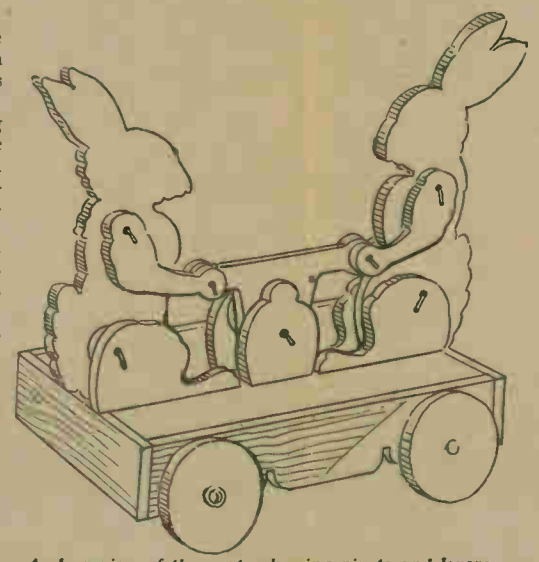


Fig. 2—Further steps in construction



A clear view of the ports showing pivots and levers

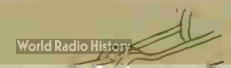
can be loosely attached with a round-head screw.

Rocker Arms

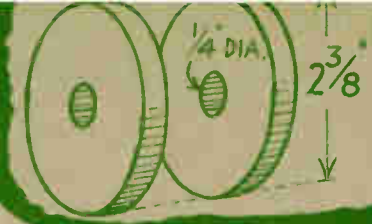
Now take the rocker arm, H, and glue on it the spacing discs, I, at the position shown. The central pivot hole is driven centrally through all three. Push the arm down through the main central slot in the floor, and link it with the pivot pin to the end of the connecting arm, L.

The rocker arm, as mentioned, is pivoted through the uprights, E, and the projecting ends of them pinned loosely to the front paws of the animals. These paws, in turn, work loosely on the body at the shoulder, and the whole thing rocks by a pivot pin through the fixed legs on the floor.

To provide a thickness between the body and the legs, a spacing disc, M,



SIDE B OF BASE. CUT ONE. NOTE HOLE FOR SCREW AXLE.



EACH WHEEL CAN CONSIST OF TWO DISCS OF 1.4in. WOOD GLUED TOGETHER.

SCREW
AXLE

LINE OF A

SIDE B OF BASE. CUT ONE.

PANELS OF WOOD REQUIRED FOR THIS DESIGN

THREE H4

The price is shown in Hobbies Weekly, February 25th, 1948, but is subject to revision. See the current edition of Hobbies Handbook, or write for price to Hobbies Limited, Dereham, Norfolk.

E F

F

SLOT

F E

SUPPORT D UNDERNEATH

F

TOP A OF BASE. CUT ONE.

DISC

UPRIGHT E. CUT TWO

E

SIDE B

END C OF BASE. CUT TWO.

SIDE B

SPACING DISCS M CUT FOUR AND RUB DOWN TO 3 16in. THICK.

THE TWO AXLES CONSIST OF 1.4in. DIA. ROD. CUT TO LENGTHS SHOWN ABOVE.

AXLE SUPPORT D INSIDE BASE. CUT ONE.

PRINTED IN ENGLAND.

these should be drilled accurately. The pivot itself can be a headless nail, hammered over in the form of a rivet when it is cut the right length. These in turn can be covered by a small piece of paper, and the paint added to match up with the rest of the work. Keep these pivot pins as unobtrusive as possible.

Wheels are provided, or can be cut as 2⅜in. circles with ¼in. diameter hole centrally for the axle rod. If, however, you can get properly turned wheels of the same diameter, or even 2½ins.—they must not be smaller than the size shown—then these save the trouble of cutting circles.

A Heavy Base

The great point in these pull-along toys is to have the base portion weighty on the wheels, otherwise the wheels do not turn when pulled along, and so prevent the action required. A good plan is to nail little strips of lead on the underside of the floor to give the necessary weight.

The parts shown on the sheet are lettered in the same order as they are required for construction, and the sequence must be carried out accordside, fitting into the corner.

Axle Fitting

The short axle rod passes through the wheels and into a moving disc at the inside of this upright support, D. The moving arm links this with the upright rocking action, and so transfers the movement to the rabbits above. The whole of this action under the floor is shown in Fig. 2.

Above the floor, the rocker arm, H, is pivoted between the two main uprights, E, with each end fitted to the front paw of the rabbit. The detail at Fig. 3 shows the action with one of the uprights, E, removed. Test the moving parts together, and then follow this assembly.

The connecting disc, K, is loosely fitted to the connecting arm, L. One wheel is now glued to the short axle bar which has been cut 2⅞ins. long, and projects sufficient to take the disc inside. The whole axle is passed through the outer and the inner bearings, pushed slightly through the axle support, E, so that the connecting disc, K, can be glued on. At the point shown on this circular disc, the connecting arm, L,

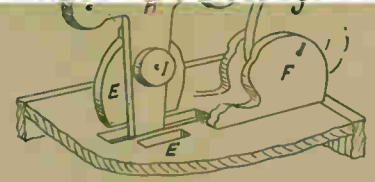


Fig. 3—The top working parts

is put on the pin each side of the body. It is rubbed down from ¼in. wood to provide just enough to allow the movement of the parts concerned. When the toy is complete in its cleaned stage, it is ready for painting, and reference to the picture of the finished article is a useful guide.

Suitable Colouring

The head, ears, tail and paws can be brown, with red trousers, a blue shirt, and possibly yellow braces and scarf. Remember that kiddies like bright colours. The base portion can be red with the panel effect shown lined in black. The body markings and ear linings can also be black lined, with a bright brown eye and a tipped nose. A screw-eye can be put into the end of the floor to provide a string for pulling.

A Craftsman's Notebook

Some notes of general interest on a variety of hobby subjects

Making Taps Look Modern

IF your house taps are of the brass variety, why not modernise them the same as I did? Finished in this way they look so smart and modern that they are sure to be appreciated, and there is little doubt that if you suggest such treatment the idea will meet with general approval.

The procedure is simply a matter of painting them with enamel or paint, after having well cleaned, rinsed, and wiped them perfectly dry. Plugs and chains may be done, too.

Those in the bathroom I did with white bath enamel, which seemed most suited to the surroundings. Two or three fairly thin coats are always preferable to a single thick one, remembering also to let each application dry perfectly hard—say for a couple of days—before putting on the next. Taps in other parts of the house were given two coats of aluminium paint, which resulted in quite a fair substitute for the popular chromium fittings.

Brass taps finished like this will retain their smart appearance for a good length of time despite plenty of usage, though of course the paint begins to wear off and look shabby in due course.

So long as the foundation paint is absolutely clean and dry, there is no need to clean it off if they have to be touched up again later on.

* * *

A Craftsman in Wool

OTHER people's hobbies are always interesting to hear about, especially when the craft is something rather out of the ordinary like that of a Yorkshireman who in his leisure time literally "paints" in wool. Using a needle and coloured knitting wool he pricks the pictures into harding.

With as many as sixty stitches neatly packed into a square inch of material—sometimes amounting to nearly a hundred thousand stitches in a single piece of work—one of these colourful pictures takes a month or more to complete, according to its size. Such varied subjects as landscapes, birds, and animals are represented.

A further example of his skill was a 2ft. 6in. by 1ft. 6in. reproduction of the Leeds Coat of Arms which this craftsman in wool presented to the editor of a local paper some few months ago. The finished products make splendid chair back covers, to mention one of the pleasing uses to which they may be put.

* * *

Starting a Club

MEMBERSHIP of a club, where people with interests in common can get together, usually increases the pleasures of a hobby. There may be a society catering for your particular needs already in existence in your locality, but if not there is no need to go without the benefit of such companionship. With a little enterprise you can start one yourself.

The first step would be to draw attention to your project, and this, if your immediate circle of friends does not provide sufficient response, may mean a small advertisement in the local paper or journals devoted to the subject. Shopkeepers from whom you get supplies of materials and equipment may help by displaying a notice in their window. Those at school are in a good position for making a start, as the co-operation of teachers and an announcement on the notice board giving the date and time of the preliminary meeting should soon bring support.

Until the club is established meetings will probably have to be held at home, members taking it in turn to provide facilities in this direction. But when funds permit the ideal arrangement is a shed or room that can be fitted up for permanent use, equipped to suit the club's special activities.

Many matters will call for discussion at the first meeting, entrance fees and subscriptions being decided on, and officials appointed. There would be at least a secretary and treasurer, and probably also a president and other officials, including a chairman, also a small committee to meet at intervals and plan things out.

Plenty of members being desirable for success, it is suggested that the club should not be too limited in its scope, but open to anyone interested in subjects of a rather similar nature. Model-makers would enjoy the company of amateurs keen on fretwork or carpentry, or again, a club for rabbit-keepers could include goldfish and other pets, and beekeepers.

* * *

Autograph Hunters

AUTOGRAPH hunting provides an attractive hobby for many people, and it is interesting to know that celebrities whose signatures are sought are often keen collectors themselves.

Quite a number of famous film stars, for instance, like to get autographs as well as give them, and it seems that in the matter of 'albums' some of them have really original ideas. My film-fan friend tells me that Bing Crosby invites his celebrities to burn their name into a wood ceiling, and Pat O'Brien keeps a special jack-knife with which they carve their names.

Those who work in films certainly have plenty of big names near at hand, though they do not all concentrate on film star signatures. It is understood that Wallace Beery specialises in the autographs of famous aviators.

The Craftsman

Walking Pig (*Continued from page* 212)

inside 3/16in. pieces should be cut together at one time by simply fret-pinning the two pieces of wood, bearing the outline pattern, together and cutting round, this will ensure a perfect finish and fit when it comes to the gluing up.

The ¼in. side pieces can also be done in this manner, any little variations then in the finished outline when all four pieces are glued together, can be made right with rasp or file.

For each pair of legs two distinct outlines like Fig. 5 will be required. Take, therefore, this squared diagram, again using ¾in. squares, and within the dotted circle shown, draw in first one foot and then trace this and reproduce the outline at one third intervals in the circle. Transfer the completed three-way outline to 3/16in. wood and cut round with the fretsaw. Use this cut-out, after cleaning up its edges, as a template for making the remaining three outlines on the wood.

When the four separate pieces are thus finished, they must be glued together in pairs, the legs being so arranged that they form almost a continuous circle as seen in the lower diagram in Fig. 4. So that each set of legs will revolve freely in its allotted space, both sides must receive a glasspapering until they slide freely between the outside layers of the body.

A fine wire nail driven through and then cut off on the opposite side and filed down neatly, completes the make-up except for the two ears of the pig which are shown at, G, in Fig. 2. To make the ears stand out realistically they should be rubbed down to a chamfer on their wide ends and then glued in place. They are cut from 3/16in. wood.

The whole toy should be painted in bright colours of oil paint. Give first an all-over coating of white or pink paint, then finish with the actual chosen colours. The pig might be a yellowish-pink with, say, red trappings, and the cart carried out in two shades of green to give the panelled effect shown in the illustration of the finished toy.

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