CUT-OUT ANIMALS DESIGN SHEET FREE INSIDE

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A CHEAP BICYCLE SHED

NEW bicycles mean *new* riders—and *new* sheds. There is no room in a house for a bicycle, nor is that the proper place for it. A shed is the thing, and a very simple, inexpensive type is shown at Fig. 1.

It is made from crate laths—glass crate laths, if you can manage to pick one up from a glass-merchant. It is only a matter of dismantling the crate, removing the nails from the laths, then proceeding with the construction of the shed suggested.

The size of the shed is reasonable It will garage any bicycle comfortably, and a feature about it is the fact that there is considerable saving in wood and covering material. It is a lean-to shed, built in a corner of the back yard or garden.

Moreover, a platform is provided for the bike to stand on. The platform keeps the tyres free from extreme cold and dampness, both of which are detrimental to rubber. The big difficulty of obtaining new air tubes and tyres on account of the rubber shortage needs no stressing.

Building the Shed

The shed is built as a skeleton frame, the roof being reinforced with lengths of scrap box wood to support the covering of felt, or if you possess it, old lino. The latter is quite serviceable, especially if tarred over afterwards.

To build the shed, get the two side roof rafter pieces prepared to length, this being 6ft. to 6ft. 6ins. One of the rafter pieces is nailed against the wall to slope from 5ft. down to 4ft. (see constructional view at Fig. 2). Fit the leg pieces beneath by cutting the top ends to a suitable bevel.

It will be noticed that all four leg pieces must be suitably checked for the cross-rail pieces. Check them as shown to take the width and thickness of the crate laths used. The topmost cross-rails, it will be noticed, are 4ins.

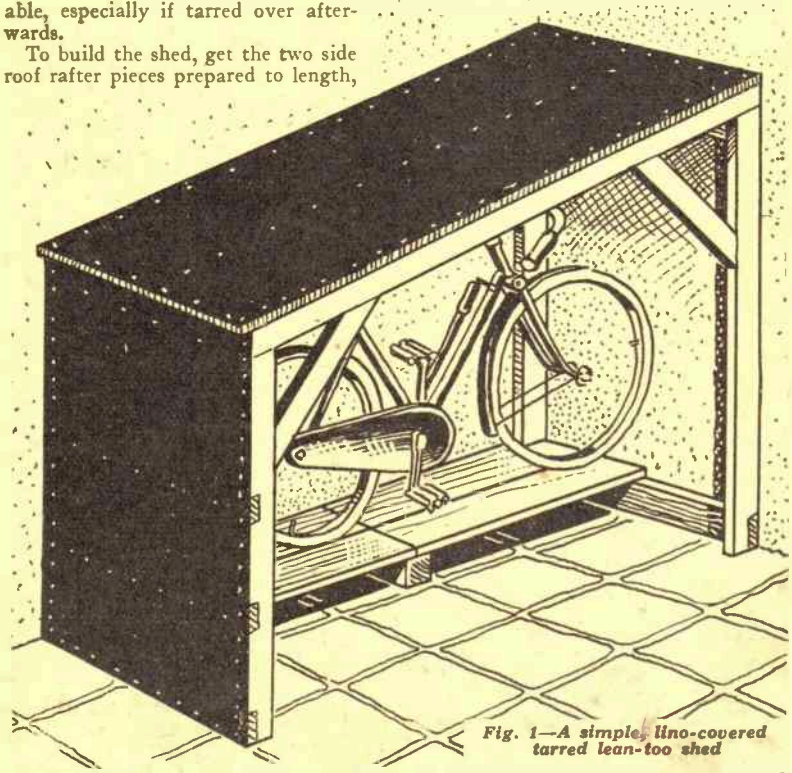


Fig. 1—A simple lino-covered tarred lean-too shed

wide, so a piece of floor boarding or the sides of a box will be needed.

Check the centre top edge of the top cross-rails for the central rafter piece, same being fitted flat. To assemble the work, first knock the end framing together. In respect of the highest frame, it is only a matter of securing the lower and topmost cross-rail piece to the legs, the wider cross-rail being nailed *between* them.

Fixing to the Wall

When assembled, fix the frame against the wall, driving large wire nails through the cross-rails so the points bite into the mortar between the bricks.

The framing (shorter) is assembled in the same way as the former, following which the two extra cross-rail pieces are added. These two cross-rails are included to prevent any likelihood of the bicycle wheels breaking through the felt if accidentally knocked against it.

Fit the smaller frame against the wall rafter lath in its position. Put the outer rafter piece against both frames at the top and secure with nails. To keep the end frames firm at the bottom, a few 4in. nails could be driven through the edge of the bottom cross-rails into the ground, i.e., between the yard tiles.

Cycle Platform

To keep the work held true and steady, the bicycle platform could now be constructed. It consists of four 3ft. lengths of 6in. wide wood or two 6ft. long by 6in. wide boards. The shorter lengths can be joined over the centre of the supporting block, this being 12ins. long by 2ins. or so wide (according to the width of the cross-rail laths).

Nail the block to the ground in a central position. The innermost platform pieces are fitted to go against the wall and rest on the cross-rails, as shown, following which the rest of the platform is added.

The Roofing

You may, perhaps, have been wondering why there is a flat rafter in the centre. It is laid flat so that short pieces of box wood can be joined on top of it, as shown. It is advisable to fix the pieces on with screws.

Try to have the roof pieces of wood about the same thickness. While this does not matter greatly, it is better to avoid "creases" forming in the felt over the joints by using wood that is almost entirely the same thickness.

Cement Packing

Prior to attaching the roofing felt, obtain some made-up cement from a builders' yard and trowel some of it into, and along, the wall rafter pieces. Small crevices and spaces (caused by the wall bricks) are bound to be showing and such must be filled up, otherwise rain is sure to trickle down the walls into the interior of the shed.

If you cannot obtain cement, melted tar, or pitch, could be used, including plaster of paris or putty. When you have applied one or the other, obtain the felt and lay it on the roof by its *width*—not ... one long piece, ... s there is sure to ... e some waste.

Roofing felt is ... sually a yard wide ... ou will require a piece 8ft. long. ... ut off four pieces 2ft. wide, doing so neatly by ticking off the 2ft. widths along one edge and by folding the material over at each width, or mark, getting it folded even with the edges prior to creasing flat, following which a sharp table knife is inserted between each fold and the widths cut off.

Laying the Felt

Prior to laying the felt, all the woodwork should be given an application of creosote all over, that is to say, inside and outside, to preserve it. Creosote also stains the wood rather like a naphtha stain and no painting will be necessary, unless desired.

Use Proper Nails

When dry, to lay the felt, start off from the high end of the roof. Lay one 3ft. length, close to the wall and nail at the top end and down the sides half way. About 3ins. of the other piece is tucked *beneath* the un-nailed end. Add more nails, using proper felt nails, by the way, these having large, flat heads.

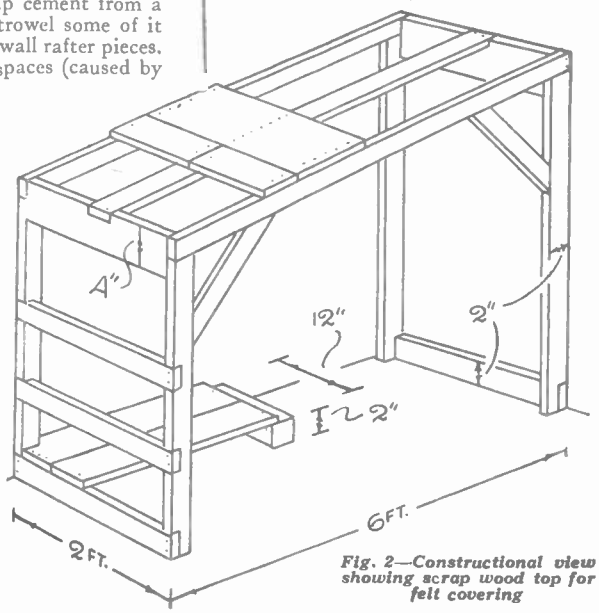


Fig. 2—Constructional view showing scrap wood top for felt covering

Proceed in the manner explained until all the roof and the end side is covered. The lengths of felt must be laid like roof slates so there is no chance of rain running under the joins.

If you prefer putting the felt on in one complete length, you could obtain a 7ft. length and cut off a 12in. wide strip. The strip will be used in covering the end of the shed; you have only to cut it into 2ft. lengths. Thus, you save 1ft. of felting.

If you possess some old rolls of lino material, this stuff can be used, but it should be tarred to make sure of sealing up the joins.

Be original and up-to-date by making this model

AEROPLANE WIND VANE

THE novel and up-to-date weather vane shown here would make a very interesting piece of work for the professional or the amateur craftsman. It is fashioned on the lines of a high wing monoplane with two engines.

The type of plane shown is the Blackburn Botha, although almost any model could be incorporated. The length of the plane is 18ins. and its wing span 20ins., so made and balanced that it is easily acted upon and will point head-on to the prevailing wind.

The Fuselage

The first part to make will naturally be the fuselage, and this is built up of five distinct pieces of ⅜in. stuff cut to outline and glued together. Details showing how this is done are in Fig. 1, and the method of preparing the enlargement from a squared-up profile view is given in Fig. 2.

As several parts of the plane will have to be set out by this simple enlarging method we give them altogether and within squares measuring 1in. Set out therefore, twenty squares in length and eight in width on a sheet of paper and fill in all the outlines shown with the solid black lines. These outlines include the fuselage, one wing, one tail plane, the fin and rudder and one of the engine nacelles.

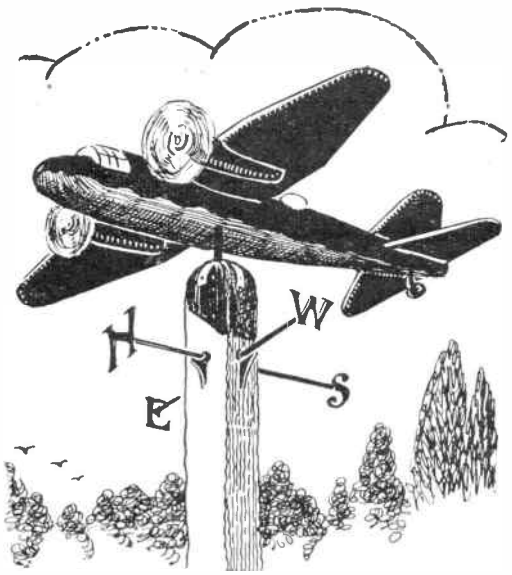
Marking the Shape

For the fuselage we shall require the wood of five Hobbies LD6 panels, they are ⅜in. thick. Pin the diagram of the fuselage to one and lay carbon paper beneath. Go over the lines with a hard well-pointed pencil and then cut round the outline with a fretsaw.

Lay it on each of the other four pieces in turn and draw round in pencil using the cut-out as the template. When all the parts are cut and cleaned off, glue them together, using, if procurable, the special marine or waterproof glue so the joints will not come apart due to wet and damp.

We now proceed to do the shaping to the sides, top and nose of the fuselage. Our middle diagram in Fig. 1 should be found sufficient to show exactly the result of this shaping which is done with a small wood rasp, a coarse file and finally coarse and fine glasspaper.

Now for the wings. We have our outline already made for these, and it only remains to transfer this to one of the ND8—½in. thick panels. When this is cut round use it again in template form for marking out the second wing. In Fig. 1 the starboard wing is shown with its edges rounded and finished ready for screwing in place on top of the fuselage.



Wing Shaping

It will be observed that a pencil line, shown dotted, is drawn on the wood in the recess where the wings meet, as a guide for getting them perfectly central. The wings, they should taper from ½in. at the root, to ¼in. at the tip where they should be nicely rounded and glasspapered smooth.

The tail plane and rudder are cut from ¼in. wood. Transfer the outline from the large sheet of details as before, and cut then with the fretsaw. Round off all edges with glasspaper and then bore two holes in the tail plane piece ready for fixing it to the fuselage.

Before fixing it, however, the rudder and fin must be screwed to the tail plane piece by screws from below, its position being central between the two aforementioned screw holes. The two sections fixed together are seen in Fig. 1, ready for gluing and screwing to the fuselage.

For each engine use three pieces of ½in. wood 5ins. by 1½ins. The method of getting its true shape may be gathered from the detail in Fig. 3.

Engine Parts

The outline, again, will be transferred from the enlargement sheet to one of the pieces of ½in. wood and after it is cut to shape it will form the template for drawing round to get all five other parts.

Glue the sections and then strike a circle on the front end of each as shown. Pare away the wood from back to front with a sharp pocket knife. A rasp and file will help with the final shaping. The finished appearance of the engines should be as the upper diagram in Fig. 3.

The dotted lines on the wing outline in Fig. 2 indicates where the engine is to be fixed. Two long screws run in from the top of each wing will fasten each engine securely.

Two propellers cut from tin or brass must be made according to the outline and measurement given in Fig. 3. Drill or punch a hole in the centre of each and thread them on a pin and spin them to see if they balance properly. If they do not

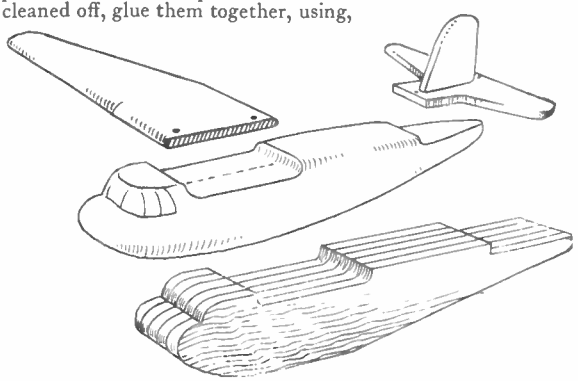


Fig. 1—Showing principal parts and construction

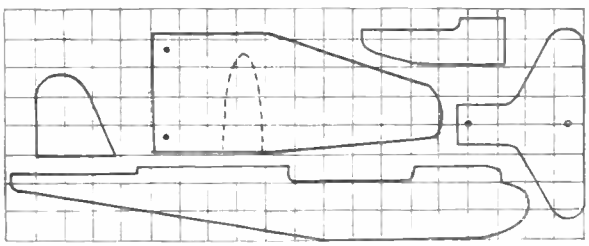


Fig. 2—Shape of the parts to be marked out

balance evenly file a little of the metal away on the heavy blade or blades until the whole spins evenly.

In fixing the propellers to the engines—and this will not be done until almost the last thing—thread a large glass bead on to the screw or nails, then put on the propellers and another bead on each and finally drive in the screws or nails making sure to leave plenty of clearance so that the propellers spin freely.

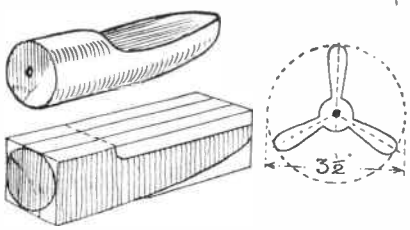


Fig. 3—Details of engine and propeller

The question of proper balance of the aeroplane must now be considered if it is to act up correctly to the four winds. That is, the total weight of the plane must be halved and the upright supporting column be situated so the plane stands perfectly horizontal.

The exact balance centre can very easily be found by driving in a small screw eye midway into the fuselage say just behind the centre line of the wings. From this screw eye tie on a piece of thin cord or wire and allow the plane to hang freely from it. Alter the screw eye backwards or forwards as the case may be until the plane hangs perfectly horizontal,

Pivoting the Model

Mark the position where this final trial was made and bore a hole right through the fuselage from top to underside. Fig. 4 shows how to form a good pivoting system. Obtain two brass collars such as are used for fixing electric bulb holders to a standard wood lamp—see detail left corner of Fig. 4—and run one of these into the underside of the wood, central with the hole already made. The upright rod which goes through the middle of the fuselage must pass freely through these brass collars.

Next form a circular sinking ⅜in. in diameter round the hole in the top of the fuselage and put in the second collar exactly central with the hole again. A test can now be made with the rod which may be pushed up from below to see it passes clearly through both of the collars.

Fit Brass Collars

When the fuselage swings freely round the rod, screw on a small steel or brass plate (see Fig. 4) immediately central with the hole just as seen in the sectional diagram in Fig. 4. File the top of the pivot to a blunt cone shape to eliminate as much friction as possible.

Before screwing on the steel plate the top sinking in the fuselage may be filled with grease so the bearings may keep well lubricated. The rod supporting the aeroplane should run well into the top of post.

Support Arms

The arms supporting the letters N, S, E and W need not be elaborate. They may be simply pieces of iron rod put through the post as shown in the sketch. The letters could be of wood or better still of sheet metal riveted on the ends of the outstanding rods.

The finished plane will be put over its spindle after the two propellers have been added. If it is decided to make the plane more or less a finished model the targets on the sides of the

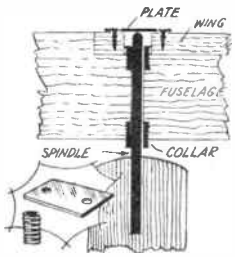


Fig. 4—A section showing pivot action

fuselage and in the undersides of the wings might be added.

The wood for the whole aeroplane weathervane may be got from Hobbies Ltd., and the following standard panels are required. Five LD6 panels, three ND8 panels, and two G4 panels.

EASILY MADE MINIATURE MODEL CARS

AS a small boy (writes J. R. D. of Smethwick) I derived great pleasure from the miniature replicas of racing cars which I made from very small scraps of wood, a few drawing pins and a touch of paint. A description of one of these cars may interest some of your readers.

A piece of wood is cut (I used a penknife as the only tool) about 1½ins. by 3/8in. by 5/16in. and side and plan views drawn on the appropriate sides. The car is then cut to shape with a penknife, and when nicely finished, four drawing pins are pushed into the sides to form wheels.

A touch of paint is then added. The model I made recently was painted green, with radiator, radiator cap, filler cap and cockpit in yellow, number discs in white, the wheels being black. An idea of the various stages is given at Fig. 1.

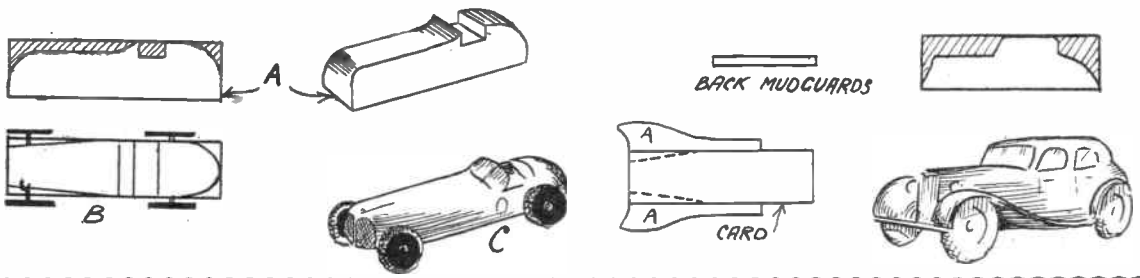
Saloon Type

The modeller need not stop at racing cars. for a saloon car need not present any difficulty. The body could be cut out in the same way as the racing car, with a thin card shape to form steps and wings, the mudguards being cut from paper (see Fig. 2). That diagram shows how to bend A and A to form front mudguards.

The chassis is cut out, wings bent up, and the whole glued to the bottom of the body. Drawing pin wheels are fitted and the paper mudguards fixed in position.

Further "refinements" immediately suggest themselves—a headless pin, bent and painted and pushed into the underside to form an exhaust, small paper number plates, perhaps the heads of nails or tin tacks as headlights, a very short length of pin cut from the pointed end, painted black with a red end as rear light, etc.

The interested modeller could undoubtedly develop his craft until it reached the high standard that aeroplane and ship modelling has attained.



You need only have odds and ends to make this SMALL BUZZER SET

THE small buzzer illustrated can be made from odds and ends, a feature amongst which is an attache-case lock key, the overall length being about 1⅝ins. The key, although small, makes an excellent core for the windings of coil wire and saves a lot trouble in cutting and filing if you had to make it from a piece of metal rod.

When the wire is wound around the key, we get an electro-magnet coil. Some buzzers have two of these coils, the same as in electric bells. However, one coil, when made as described, serves to attract and so agitates the special spring armature that has been devised, doing it effectively and efficiently so there is a strong, high-pitched buzz.

The strength of the buzz, of course, depends on the voltage of the battery used, and consequently, the strength of the magnetism collected by the key from the magnetic field (windings of wire), while the pitch of the buzz is regulated by means of the contact screw.

Nothing Difficult About It

There is really nothing difficult in making and adjusting an electric buzzer. It becomes a simple, understandable device once you get to know the working principle and the few simple, circuit connections that are necessary. For instance, the "heart" of the buzzer is the electro-magnet coil which, unlike a permanent magnet, is only active when an electrical current is passed through the wire windings.

In other words, the coil converts elçctricity into a magnetic power. Break the current and you break the magnetism. So, the parts of a

Fig. 1—Detail of key, end pieces, contact screw piece and terminal end

buzzer are put together in such a manner that the current is switched on and off automatically—and so quickly, too, that the clicking on and off becomes a constant buzzing note of sound.

Accuracy Needed

There is, therefore, really nothing elaborate or very mysterious about a buzzer or electric bell. In making one or the other, naturally, great care will have to be taken to see that parts are accurately made and fitted. The right kind of coil wire must be used, plus the right kinds of metals, while the electric current must not be too low or too high, 4½ volts being the average voltage, or less, in the case of the small buzzer described.

Making the Coil

The first thing to be made is the coil. The key needed is shown at Fig. 1. The "tooth" at the end requires to be removed, this being done with a hacksaw, after which the stem is nicely rounded with a file.

Two plywood ends are wanted for the key, the shape and size shown at Fig. 1. Cut the central holes to take the shank of the key fairly tightly. It would be advisable to cut and try the key in the holes prior to cutting out the end pieces. The latter, like the screw contact piece and terminal piece, are cut from (preferably) ⅛in. thick birch plywood (we know this is scarce, but you are almost certain to have small cuttings about the house).

When cut out and glasspapered smooth, force the end pieces on the key shank as shown at Fig. 5. The distance between each piece is ¾in., while the fore end of the key must project outwards slightly.

Insulation

To insulate the coil wire from the key shank, bind the latter with a single strip of thin paper. You now need 4 or 5 yards of fine coil wire, either enamelled or cotton-covered stuff. Almost any sort will serve, but the proper thing is No. 26 D.D.C. wire.

If you use wire removed from an old wireless coil part, make sure that it is properly enamelled and not kinked in places. The magnetic power will suffer if the wire is put on exposed in places, i.e., with the enamel scraped off and the copper showing, for some of these "bare" parts are sure

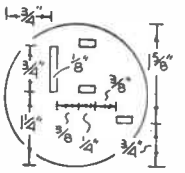


Fig. 2—The base marked out

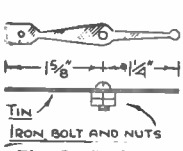


Fig. 3—Spring armature

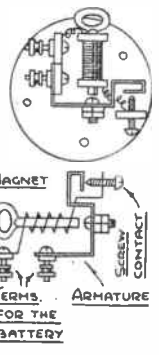
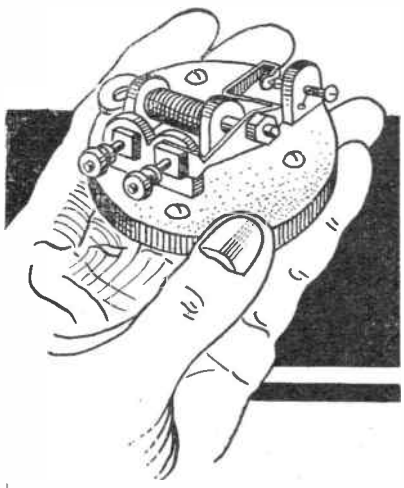


Fig. 4—Top view of buzzer, wiring circuit

to meet each other and cause a short circuit.

To begin the winding, thread one end of the wire through the tiny hole bored at the side of the key end piece



(as shown), then carefully and neatly wind on the wire. About three layers of wire (windings) will suffice.

The other end of the wire is then put through the hole in the opposite end-piece and the electro-magnet coil is complete.

The Base Piece

Proceed by cutting out the base piece detailed at Fig. 2, using 3/16in. plywood or hard fretwood. Glue the tenons of the coil ends to this, including the terminal piece and contact screw piece (see top view at Fig. 4).

You might, however, find it difficult to insert the terminal bolts into the terminal piece, so perhaps you will remember to insert them first before gluing the piece in place. By the way, ordinary roundhead brass screws will serve as terminals, the size being ½in. by 4.

Making the Armature

Now make the armature. This is cut to the size and shape shown at Fig. 3 from tin. Very thin, springy brass could be used, but tin is just as good and easier to obtain.

Having drilled the holes and filed the armature nicely, fit on the iron bolt and nuts. These must be of *iron* and not brass, or similar metals which are not attracted by a magnet. Iron, or mild steel, is the best metal to use.

Continue by fixing the contact screw in position. The screw is a small machine bolt, the end of which must be filed to a conical point; it should be

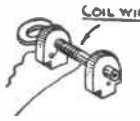


Fig. 5—Wire winding

Fig. 6—Contact connections

a brass bolt, by the way. Notice, from Fig. 6, how the end of the coil wire is attached to the contact screw, being first inserted in the hole and then brought up and around the bolt.

The bolt should be a neat, tight fit in the wood. If desired, a ⅜in. thick piece of wood could be drilled and glued to the base, this providing more "grip" for the bolt threads. Another idea is to make a brass holder for the screw, both ideas being shown at Fig. 6.

Fitting the Armature

Having attached the other end of the coil wire to the rear terminal bolt (see top view and wiring circuit at Fig. 4), bend—with the pliers—the armature into the desired shape shown.

When you have fixed the armature on the remaining terminal bolt with a small nut, the head of the iron bolt should be about 1/16in. or slightly more distant from the end of the key.

Now comes the exciting part—the test. Connect a small length of flex to the terminals and plug the opposite ends into a grid bias battery, plugging in at 3 volts or 4½ volts. Having done that, get a screwdriver and slowly drive the contact bolt against the springy end of the armature.

As soon as the conical point touches the armature, the circuit is completed and the current flows into the coil. Immediately this occurs, the magnetism in the key draws the armature away from the contact screw, thus breaking the circuit.

The armature is thus automatically released and it springs back to the contact screw again, only to be pulled away by the magnetism in the key, and and so the whole action goes on until the current is switched off by withdrawing one of the plugs.

Final Adjustments

It should be explained that, being lightly constructed, the pitch of the buzzer will be rather low. It needs to be screwed down to something firm, possibly a heavier base. If you possess a morse tapper key, this and the buzzer can be arranged on a heavy piece of wood.

While testing, hold the buzzer down firmly on a box or a kitchen table. Always screw the contact screw against the armature spring end very slowly. When contact is made, the armature will likely buzz softly and slowly.

A further slight turn on the screw will bring the iron bolt head nearer to the magnetic core of the coil and which, as a result, will have greater pulling power. An extremely high, pleasing buzz is—or should be—heard when the armature bolt is about a hair's breadth from the key end.

Too Much Tension

If the buzz should be still low and jerky and stopping, this signifies that there is too much tension on the armature and that the magnetic "pull" is not strong enough to battle against it. Therefore, bend the armature inwards (to the coil) slightly and adjust the contact screw until the best pitch of buzzing is heard.

Do not forget that lengthy testing and adjusting is exhausting the battery and that weakness of the magnet (on account of the lower voltage) may be causing the stoppages. If you are using a grid bias battery, insert the plug in a higher voltage position.

It is entirely wrong to imagine that, the greater the strength of the electric current, the greater and higher the pitch of the buzz. If the plug is put in at 9 volts, the current will only "sizzle" away at the contact screw point.

If, however, you want a stronger electro-magnet, add a few more windings of wire. This will "step up" the magnetism a bit more, but will hardly be necessary, unless you are using extremely fine coil wire. Try it yourself to find out.

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This is the season and the opportunity to learn

THE ART OF BOATING

THE use of a small boat on water is still one of the pleasures we can enjoy without infringing any Order or local liability. That is, of course, on normal rivers and places where boating is normally undertaken.

Now that power-driven boats are taboo, the use of a small boat is all the more delightful, and many should take the opportunity during the summer of enjoying the amenities afforded by boating of some kind, whether punting, rowing, sculling or sailing.

In all cases, however, there are certain fundamental rules which you should know in order to get the best out of the use of the boat so far as comfort or speed is concerned. In any case, of course, the exercise is good and the sense of power invigorating.

Rowing

The most common form of sport is probably rowing, although normally most people undertake sculling. The difference is that in the former you only have one oar each, whereas for sculling a pair of oars is used. The light pleasure skiff comes under the latter category, and quite a high turn of speed can be obtained without a great deal of experience.

The great thing is to get a comfortable position on the seat, preferaby near the stern, and with the feet and legs well braced against the cross pieces in the bottom. These cross pieces or stretches are normally adjustable to suit the rower, and a little experiment with them will prove satisfactory.

Holding the Oars

Take a grip on the innermost ends of the oars and run them backwards and forwards with a swing movement from the wrist and shoulder. It will be found that the ends of the oars overlap each other, and for this reason in actual use one hand must come over the other in the centre of the stroke. Decide which hand will come uppermost, and keep to that through the whole use.

At first you may be apt to pull the blade out of the water and so "catch a crab." With a little trial, however, the blade can be maintained just under the surface through the whole length of the stroke. You must learn to dip it into the water and take it out again without a splash. It should cut in at a smooth angle and be withdrawn in the same way simply by the wrist movement.

If you want to go one better and "feather" the oars, you must turn the wrist so that the blade skims along the water in its return movement. For this purpose, when you grip the oar for pulling, the backs of the hands are uppermost.

When the blade is taken out of the water, the wrist is dropped so the knuckles come on top. This turns the oar with the blade flat to the surface, where it is held during the return movement of the hands for the second stroke.

The beginner will find the blade apt to drop into the water first with the inner end of the oar endeavouring to knock him off the seat. This, however, will soon be overcome by experience and a good feather stroke obtained. Possibly the best way to learn this is in actual rowing where you have only one oar to contend with.

Canoeing

Before the war, canoeing was exceedingly popular and many of these light craft were in use on rivers, lakes and even the rougher water of the sea. One or two paddles are used and only actual practice can gain the necessary balance and handling.

For a single canoe, the paddler sits in the centre, dips his blade cleanly and close to the side of the edge on his right. The paddle pulls the boat forward with the arms passing gradually to the rear. The blade is then lifted again cleanly, and brought forward for the next stroke.

The pressure should be gradually put on to the blade, increasing as it gets lower, with the fullest strength towards the end of the stroke. The paddle should be kept vertical and close to the boat.

With a double-bladed paddle you put the ends in alternately on the right and left side with regular speed and force. A crew of two, must, of course, work in unison, if not, one irregular stroke will counteract the work of the other. Remember, too, that one hand must push just as the other hand pulls the blade.

Changing Places

Never attempt, if there are two of you, to change places unless the boat is at a mooring stage or some suitable landing spot. Keep the weight of the body as low as possible in the canoe, because if you stand up, the centre of gravity is altered and rocking is sure to take place.

The steering is done by the pressure of the paddle more one side than the other to get the nose to turn round into the direction required.

Sailing

Sailing is, of course, a highly technical art, although quite simple when you know how. It is one best learned from somebody who knows a good deal about it. In this, the force of the wind takes you along, and when it is in the reverse direction a knowledge of tacking is essential.

This is the art of taking the boat on a diagonal line across the wind, hugging as much as possible and controlling the angle of steering to get as much advantage out of the breeze as possible. At each tack, of course, the sail swings to the opposite side of the boat and the speedy turn on the rudder is apt to cause a lot of way to be lost if the action is not correct.

A Simple Cross Word

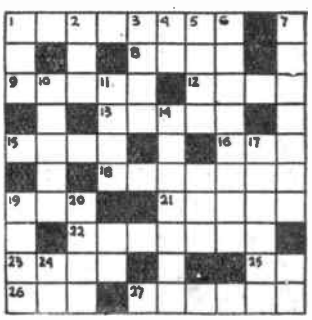
CLUES ACROSS

1. You cannot live without them. 8. A way out. 9. A substitute for butter. 12. Not a long way off. 13. Sea one is used in catching fish. 15. To render senseless with a blow. 16. A meadow. 18. The period from sunset to dark. 19. A curved line. 21. To cut into very small pieces. 22. It gets you in the back. 23. Not a nice person. 25. Royal Engineers (abb.). 26. To doze a short while. 27. A modern type sofa.

CLUES DOWN.

1. War workers are showing this. 2. Name for a sailor. 3. Job making ends do this these days. 4. Roman letters for "nine." 5. The same in English. 6. When gold is. 7. The balloons form it. 10. To effect a change. 11. Disappeared. 14. Falling bombs make one do this. 17. A demand for the repetition of a song. 19. At conclusion of the Prayer. 20. With scissors or shears. 24. Vice-Admiral (abbr.).

Solution Next Week



Add to the realism of your layout by making a

MODEL RAILWAY LAMP

A model railway layout may be considerably improved by having realistic electric light standards. It does not matter whether you are running a gauge 0, or larger, or one of the neat little 00 table-top layouts, or whether they are electrically or clock-work driven, electric light will make them much more interesting and attractive.

A general well-known type of electric light standard has been chosen here which may be used for platform or goods yard or for sidings or even for station entrances.

The standard is shown complete in Fig. 1 and may be constructed with a solid wood post or made from scrap metal cut from, say, a cocoa tin.

If the post is to be of wood, and ½in square in section, two pieces of ½in. by ¼in. should be cut and a vee groove run down the middle of each with an ordinary pocket knife. The two parts are afterwards glued together with the vee sections together to form a hollow, through which the electric wires may pass up to the lamp above.

A Metal Standard

If, however, the post is to be of metal, then it can be set out on the sheet with the four sides and a lapping piece for soldering, as in Fig. 2. Realistic trellis may be cut in with a metal-cutting fretsaw on the four sides or, of course, this trellis may be painted on.

To finish the top of the post two squares of wood may be cut and glued up as shown and fitted into the hollow top with a ball turning glued on as a terminal.

The bracket supporting the lamp and shade is made as shown in Fig. 3 and also from metal. Scale off for this the proper proportion for the projection of the lamp and when the outline is made allow two flanges of sufficient width for bending at right angles and soldering to the post.

Drill three holes in the extreme end of the bracket, one for a screw for screwing into the plug of the shade, and the other two for the passage of the wires leading to the lamp. We shall mention the latter again further on. Then, when the bracket is securely soldered to the post, a hole must be drilled on the flat part of the bracket where it meets the post. This is seen in Fig. 3 and the hole is again required for the passage of the wires from the middle of the post to the end of the bracket.

The base of the pole must be so proportioned that it stands firmly when all the fittings are attached. If the pole is of metal its bottom end should have two projecting lugs left on when cutting out so that these may be bent up at rightangles and drilled for screws.

Post and Base

The post can be securely held thus to the base, an additional top layer (as A in Fig. 4) being added, if desired, as further stiffening. If this top piece is added, however, it will need to be cut and put over the post before the square top and the outstanding bracket is fixed.

A shallow recess must be cut in the underside of the base piece A, as shown, to allow it to lie flat on the larger base when the post and its lugs are screwed.

Procure a small metal reflector such as is used in some of the cheaper forms of pocket lamp. This has a screwed or threaded interior into which a standard flash-lamp bulb will screw. Plug the end of the reflector with a piece of wood or ebonite, making it a tight fit and securing it with a touch of glue.

Through the centre of the plug drill a hole for a screw which will fasten the whole to the projecting lamp bracket, see Fig. 5. This screw will form the contact for the end of the lamp bulb, so it must be long enough to project below the lower end of the plug.

When the bulb is screwed into the reflector socket it makes contact, the circuit being this complete after a wire has been brought over the arm and soldered to the socket as seen in the diagram. When the reflector is firmly fixed to the bracket, push two lengths of 22-gauge insulated copper wire up through the standard and out through the hole in the top.

The Wiring

The square top and ball of the standard should be taken off to facilitate the threading of the wires through the hole in the side of the standard.

The diagram, Fig. 5, illustrates the method of connecting the wires with the bulb and reflector to obtain the proper contact. Screw in a flash-lamp bulb and connect the lower ends of the wires with a battery.

The lamp should immediately light up and it only remains now to form a switch for "on" and "off" lighting. A coat or two of good paint or enamel and the lamps are ready for screwing down to whatever position required. A number of these lamps may be wired together in series.

Batteries and Switch

Pocket-lamp batteries or an accumulator housed in one of the station buildings can supply the necessary current. Some form of switch control will, of course, be necessary and it rests with individual ideas and wishes, whether each lamp should be controlled separately, or the whole number of lights worked from a single switch.

The wiring diagram (Fig. 6) shows separate switches for each lamp, while Fig. 7 gives the circuit controlled from one main switch all the lamps being on at one time.

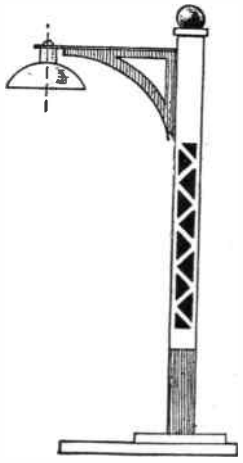


Fig. 1—The completed lamp

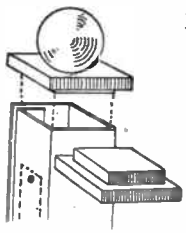


Fig. 2—The top

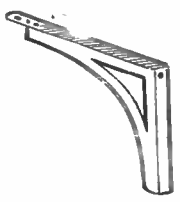


Fig. 3—Lamp bracket

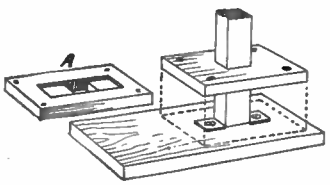


Fig. 4—Detail of base

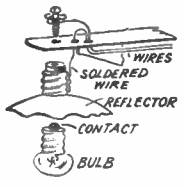


Fig. 5—Lamp parts

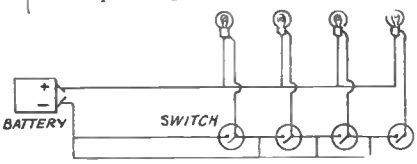


Fig. 6—Wiring for separate lights

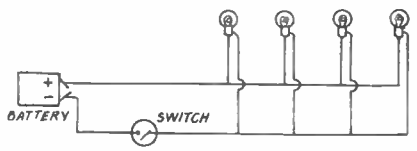


Fig. 7—One switch for the lot

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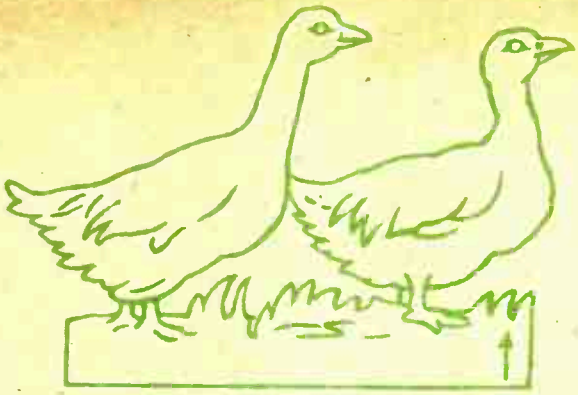
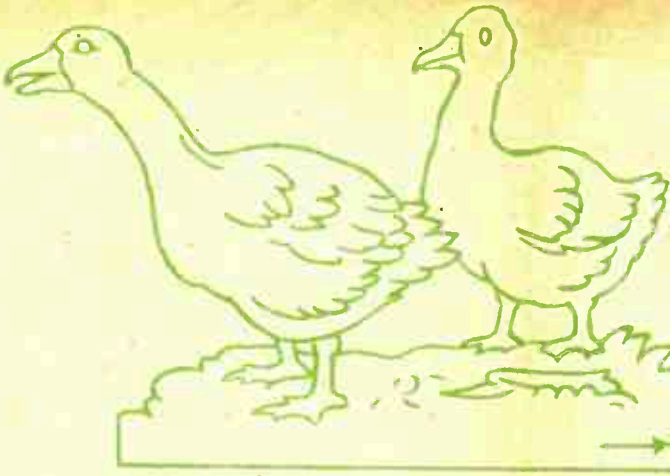
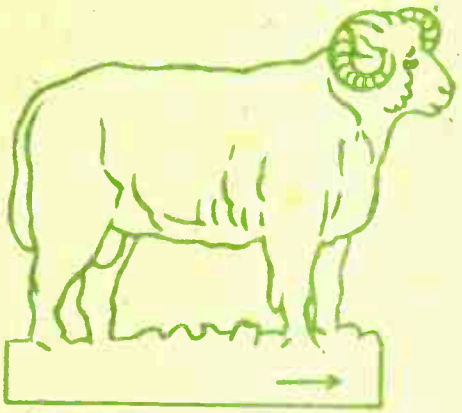
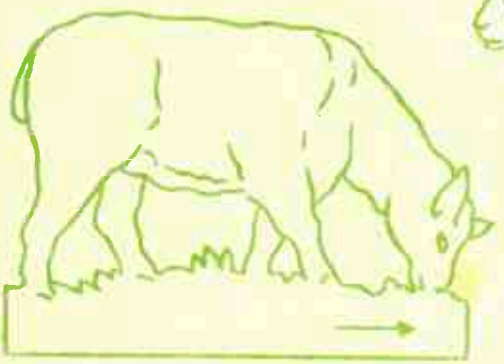
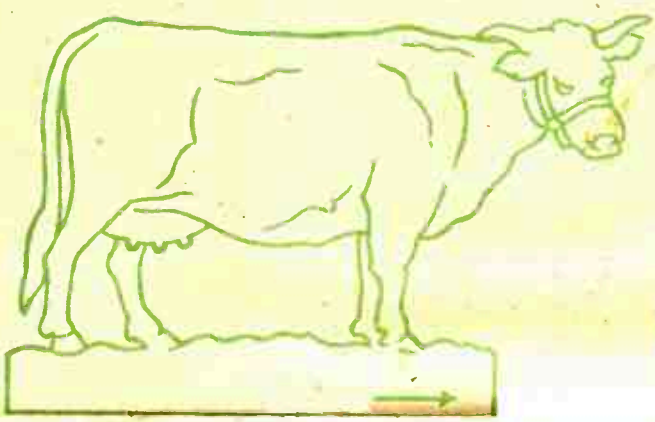
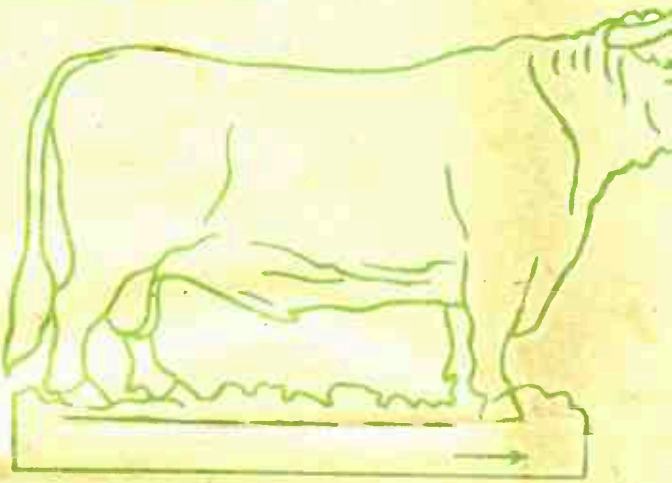


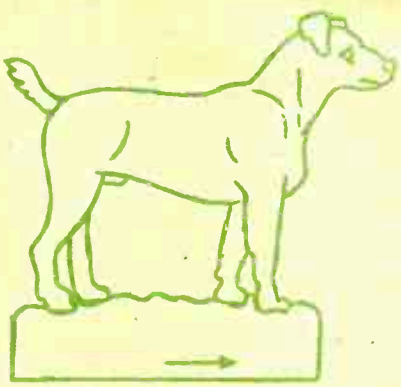












Hobbies DESIGN

No. 2486/8
23.6.43

The arrows indicate the direction of grain of wood.

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

SUPPLEMENT TO HOBBIES No. 2486.

MODEL FARMYARD

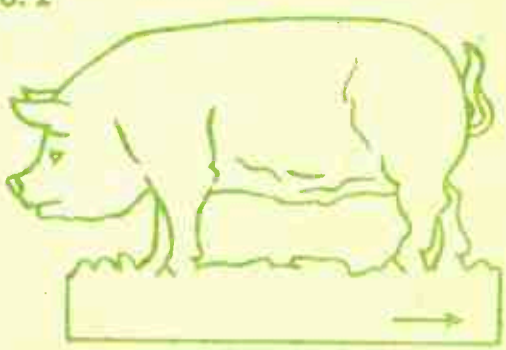
THE MODEL FARMHOUSE FORMS THE SUBJECT OF DESIGN SHEET No. 2486.

PANELS OF WOOD REQUIRED FOR THIS DESIGN

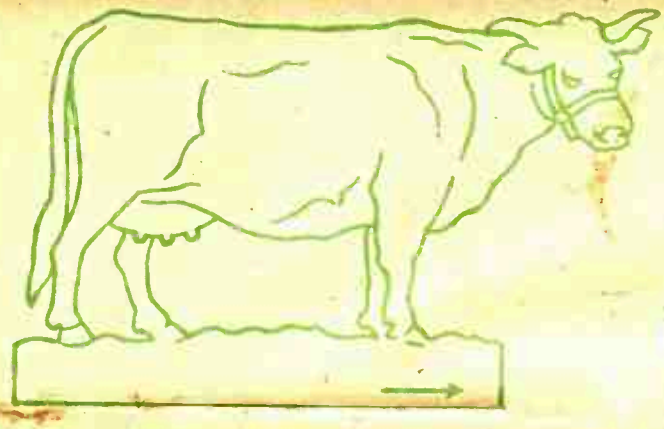
THREE H3

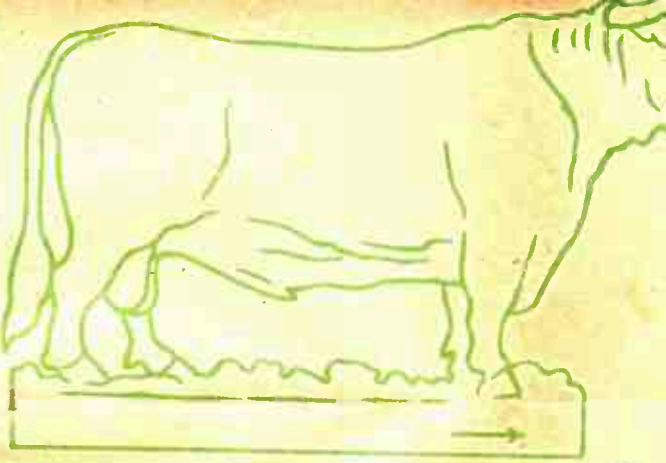
The wood supplied for this design is composed of standard panels detailed as above. The price is shown in Hobbies Weekly, dated JUNE 23rd, 1945, but is subject to change after that date, when the current edition of Hobbies Handbook should be consulted, or application made direct to Hobbies Limited, Dereham, Norfolk.

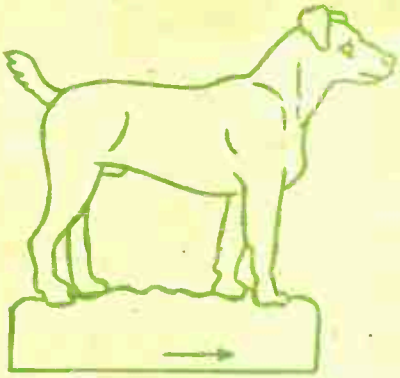
SHEET No. 2

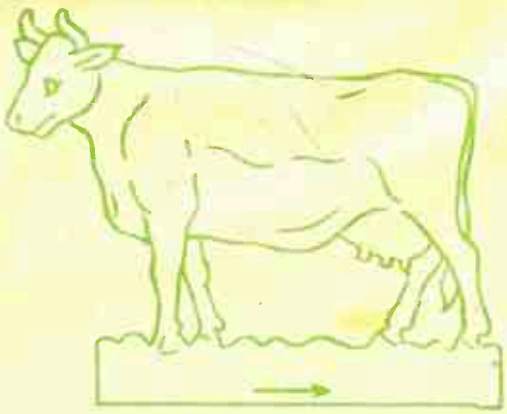


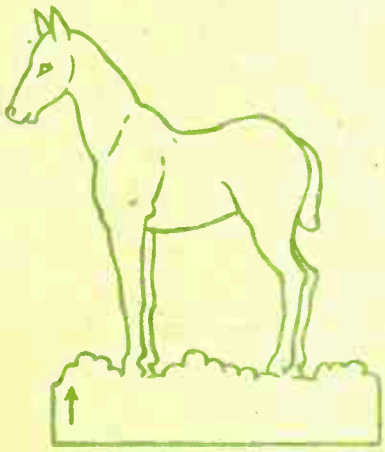
SHOWING METHOD OF FORMING BASE AND STIFFENING BLOCK AT BACK OF FIGURE.

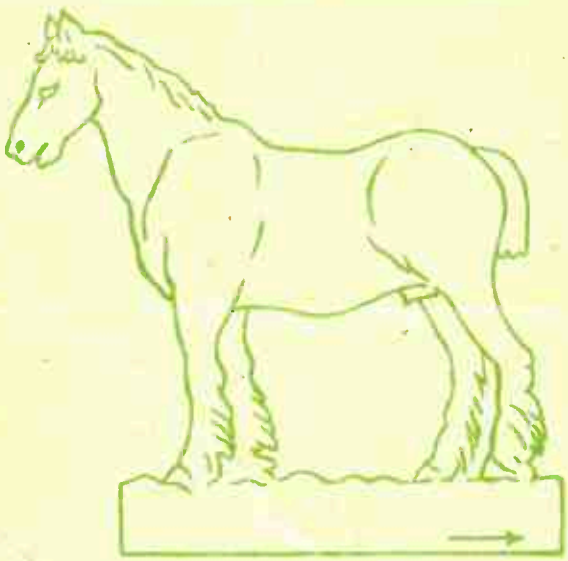


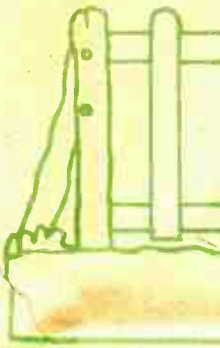




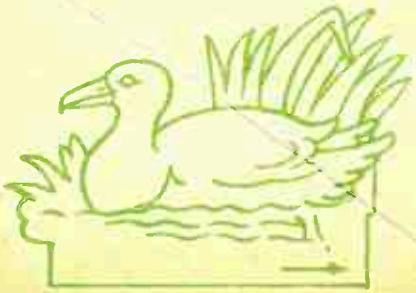




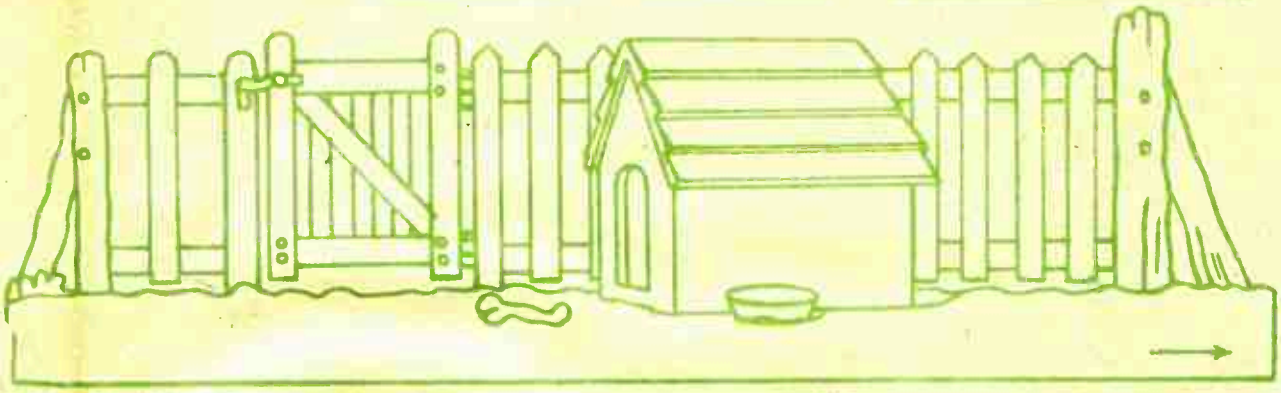




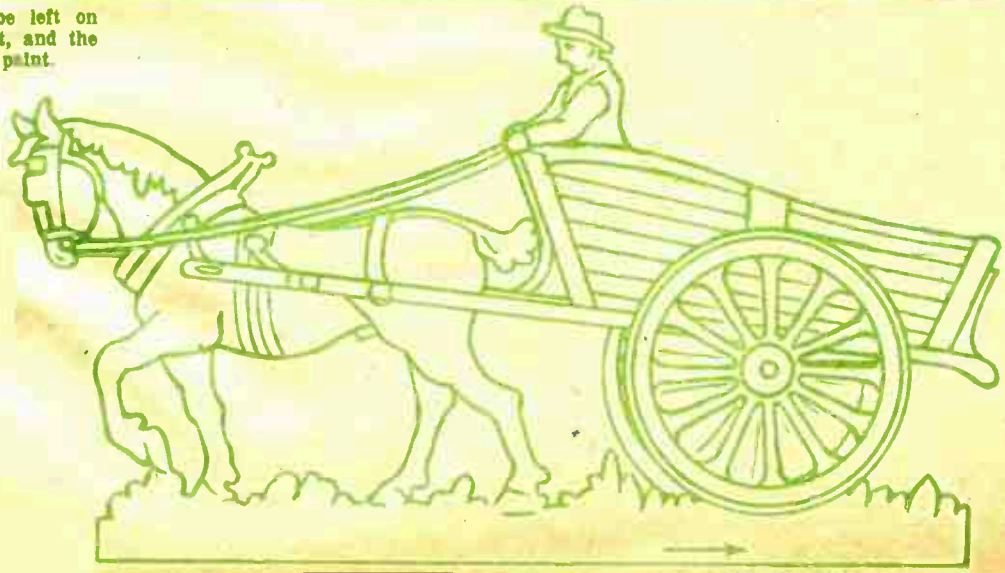
The paper pattern
to wood after cutting
figures coloured up w



SHOWING METHOD OF FORMING BASE AND STIFFENING BLOCK AT BACK OF FIGURE.



The paper pattern may be left on the wood after cutting out, and the figures coloured up with paint.



PRINTED IN ENGLAND.

FARMYARD ANIMALS No. 2488

THIS design sheet is a companion with No. 2486 and the cut-out animals are intended to be used with the farmhouse shown there. They are quite simple to make, and comprise 16 of the common farmyard animals or sets of animals, as well as farm cart, piece of railing, the farmer, his wife and milkmaid.

Even if made apart from the house, the figures form interesting cut-out models all of which can, of course, be made with the fretsaw. If you are likely to want more than one set, it is a good plan to trace off the outlines on to the wood to save the sheet for further purposes.

On the other hand, you can paste down the pattern sheet and cut round the outlines in the ordinary way. The animal can be finished by leaving the paper on and drawing similar lines of the body, head, etc., on the reverse side with indian ink or paint.

The animal is made to stand by adding it to a base, a detail of which is shown on the sheet. The wood for these parts is cut from the waste material.

The base itself is 1in. wide and about ½in. longer than the bottom edge of the upright portion. Behind it are glued two small strips of waste wood to form a buttress against which the animal is fixed. If you want, of course, you can do without the lower base altogether, or even glue a small strip both in front and behind the actual figure itself.