

HOBBIES

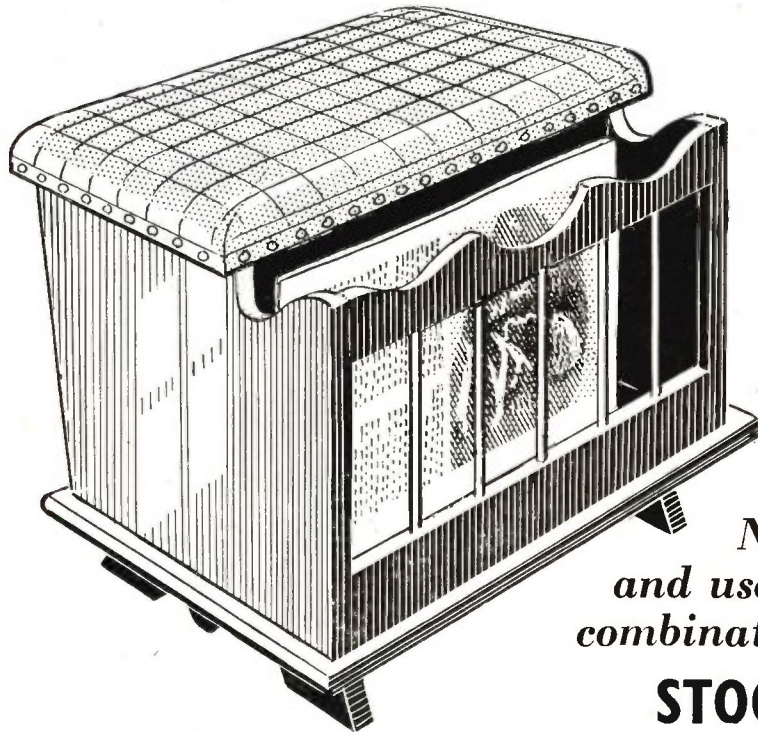
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* **FREE DESIGN INSIDE**



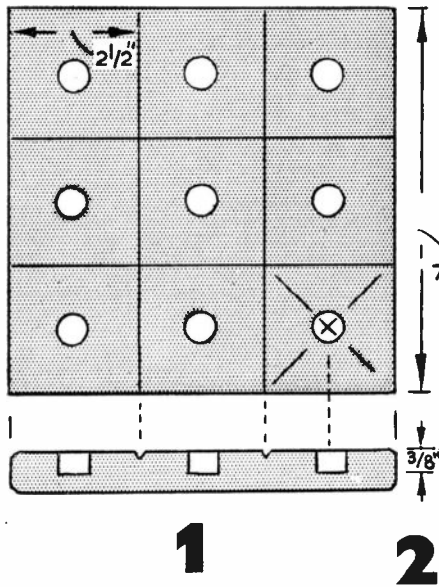
*Neat
and useful
combination*

**STOOL,
WORKBOX & MAGAZINE RACK**

FOR CRAFTSMEN OF ALL AGES

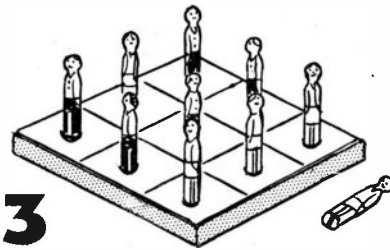
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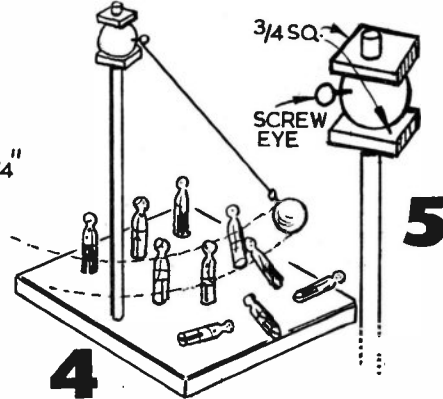
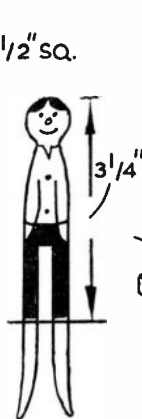


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Two-in-One

CLOTHESPEG SKITTLES

THIS is an exciting two-purpose game which you can easily make up for the children.

You will need one piece of $\frac{3}{8}$ in. thick plywood, $7\frac{1}{2}$ in. by $7\frac{1}{2}$ in. for the board. Cut the sides straight and square and glasspaper the sides and the edges smooth.

Fig. 1 shows the peg board sub-divided into nine squares on one side, the dividing lines being cut with a tenon saw guided against a straight-edged piece of wood. Make a

By T. S. Richmond

slight chamfer along the edges with a smoothing plane. Do the same to the edges on the other side of the board.

In the centre of each square drill a $\frac{3}{8}$ in. diameter hole with an auger bit. Make all the holes $\frac{3}{8}$ in. deep.

Obtain ten wooden clothespins for the skittles shown at Fig. 2. (Better to buy new ones than to rob mother's peg bag!) Cut off the pointed ends so the skittle may be stood upright on a flat base. Paint five pegs with red skirts for the girl skittles and five with blue trousers for boy skittles. Paint on details for the faces, etc. Give a protective coat of clear varnish if water-colour paints are used.

The board may also be varnished, but don't allow varnish to run into the holes into which the pegs are fitted. Play 'Criss-Cross' (Fig. 3) like noughts and crosses. Two players each hold five pegs. The object is to get three pegs in a row, either across, down or diagonally before your opponent.

For the table game of skittles Fig. 4 turn the board over and bore a $\frac{1}{4}$ in. diameter hole near one side for inserting the upright post.

Fig. 5 gives details of the post — a $12\frac{1}{2}$ in. length of $\frac{1}{4}$ in. dowel — with the swivel ball assembly at the top. The 1 in. diameter wood ball is drilled to pivot loosely on the rod, held in position by the two pieces of $\frac{1}{4}$ in. plywood which are drilled to fit the rod tightly.

A length of thin cord is tied to the screw eye in the swivel ball, and the solid 1 in. diameter wood ball used for throwing at the skittles is suspended on the cord, secured to a second screw eye. The ball should just clear the base.

The peg skittles are set up on the board and the ball set in motion. When it stops circuiting the swivel post the number of skittles knocked over will count as the player's score.

The post is, of course, removed from the base for the Criss-Cross game, and for storage with the board and set of skittles in a cardboard box of suitable size.

Hobbies turned wooden balls, 1 in. 3d. each. (Two req.).

Illustrated on front cover

Combined Stool, Workbox and Magazine Rack

THIS neat and useful piece of furniture is an ideal subject for the handyman to tackle. The novelty of the three-way use makes it a desirable acquisition in the home and would also make an acceptable present. It is particularly useful for the 'flat dweller' where space is at a premium.

Many uses will suggest themselves for such a fitment. Nicely polished and finished it would be an attraction in the hall. Mother would find it an excellent repository for needlework and sewing utensils and its uses as an occasional seat are obvious. As a bedroom stool, how handy to have magazines neat and tidy besides being close to hand.

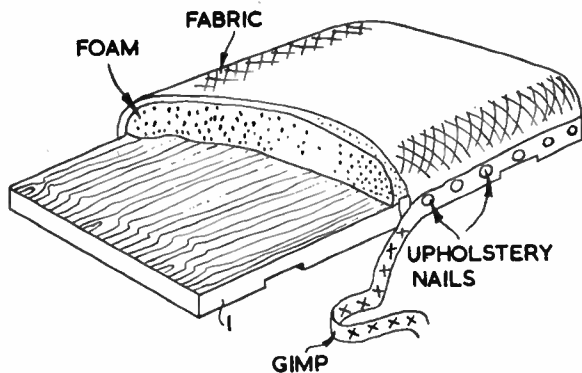
KIT FOR 47/6

Hobbies Kit No. 3638 for making this useful piece of furniture contains selected panels of wood, round rod, hinges and screws. Kit price 47/6 from Hobbies branches, or by post (7/6 extra) from Hobbies Ltd. Dereham, Norfolk

The construction is simplified to enable even a beginner to make a really satisfactory job which will give a lifetime of service in the home. The seat can be padded or left plain at your discretion.

The kit contains suitable hardwood panels 36 in. long which are ready planed to the required thickness and have only to be sawn to the correct size. Also included in the kit are dowel rod, hinges and screws for hinges. Items such as polyether foam, gimp and covering material can be obtained locally.

The details on the design sheet are self explanatory, giving measurements where required. If you are using your



How to upholster the seat

own materials the measurements could be modified to suit the material to hand, but otherwise the measurements should not be increased.

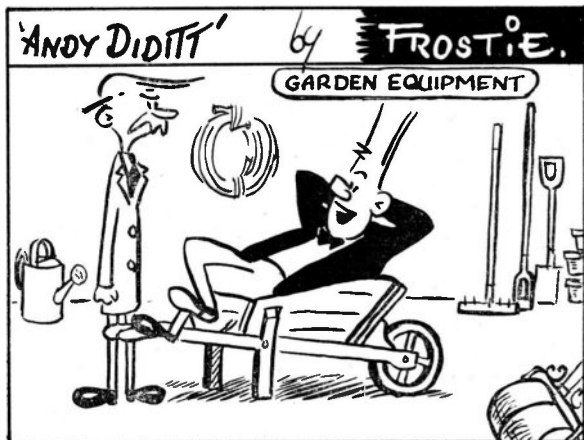
All parts are cut from $\frac{1}{2}$ in. wood and all the pieces should be drawn out first on to the wood, to make sure that all are accounted for. From one 36 in. by 10 in. panel you will get two pieces A and two E; from another two B; and from the third, one C and one I. The rest will be cut from the 36 in. by 6 in. panel. Cut out the various parts, using a fretsaw for the curved pieces and allow for planing the cut edges. Clean up the parts with glasspaper ready for assembly. All parts are glued together and may be supplemented with screws or pins.

Study the exploded diagram on the design sheet to familiarise yourself with the construction. Commence by joining pieces A and B together, making sure that they are square and true. Remember to recess one piece B for $1\frac{1}{2}$ in. heavy brass butt hinges. Next fix the bottom, which consists of one piece C, $9\frac{1}{2}$ in. by 15 in. and one piece D, 3 in. by 15 in. These pieces are butted and glued together to form one piece.

The feet consist of the pieces E and F, which are slotted together and glued under the bottom. Screws are added from the inside. The rails G and H are drilled to a depth of $\frac{1}{4}$ in. to take $\frac{1}{4}$ in. dowels which are cut 7 in. long. The dowels are spaced as suggested on the front view. Note that the rails G and H are slotted into the sides A. The lid is hinged to one piece B, the hinges being recessed to fit flush.

All parts are now cleaned up with glasspaper and the wood stained and polished or varnished.

The seat may be padded if required as seen in the illustration, using a piece of polyether foam, covered with a suitable piece of fabric. The fabric should of course be thick and hardwearing. Finish off by doubling back round the edges and covering with a piece of gimp pinned in place by upholstery nails.



"HAVE YOU A LARGER SIZE — THIS ONE'S A BIT TOO SMALL."

SIMPLE TECHNICAL DRAWINGS

It is interesting and useful to be able to produce drawings which will show the construction of objects, or the dimensions of carpentry joints, models or other items. Drawings of this kind can be done in a number of ways, and with ease. No particular skill is required for this type of drawing — merely care in setting off measurements and lines.

You need very few articles — only a drawing board, T-square, 45-degree and 30/60-degree squares, a few pencils, and a compass and ruler. A drawing board can be bought or made, or a piece of hardboard (smooth on one side) can be used. The T-square could be made from two pieces of wood. Secure the paper to the board with drawing pins.

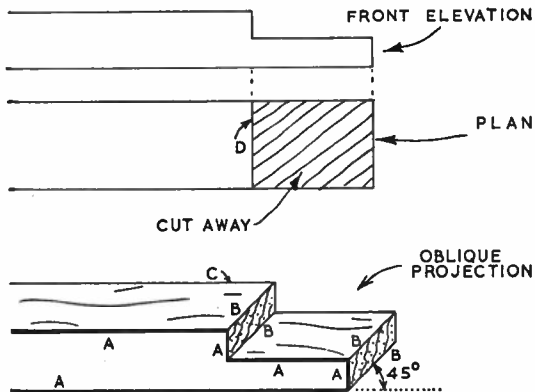


Fig. 1—Two ways of showing a solid

Showing solid objects

Solid objects are often shown by drawing plan and elevation diagrams like the Front Elevation and Plan in Fig. 1. It is not proposed to deal with this in much detail. The method is very straightforward. All dimensions are taken directly from the model or object. There may be an End View as well, but this is not needed when the object is simple.

The method of using plan and elevation drawings does not give a 'picture' of the object. This is often a disadvantage, and it can be avoided by using some form of solid projection.

An oblique projection of the same object is shown in Fig. 1.

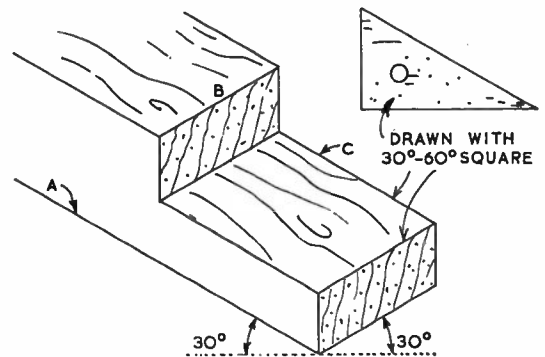


Fig. 2—Isometric projection of joint in fig. 1

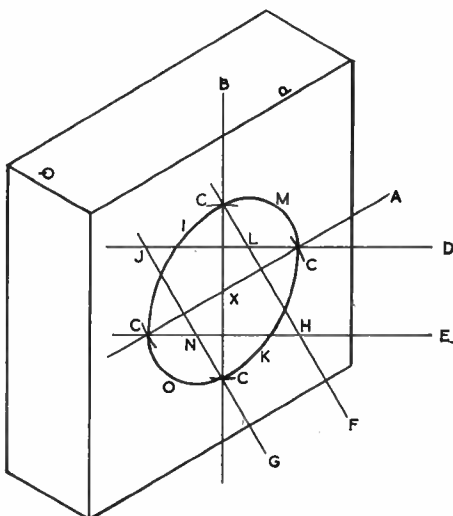


Fig. 3—To draw a circle on an isometric face

The shape outlined by the heavy lines A is made by actual measurements of the object, and is the same as the Front Elevation.

The lines B are then drawn, using a 45-degree square, and the object is finished by adding the back lines C. Some shading is often added.

With the oblique projection, the lines B are somewhat shorter than the actual width of the joint D, Plan. This is necessary to avoid a very distorted appearance. All dimensions can be marked on the oblique projection, if wanted.

Isometric projection

Another method of showing the solid is by isometric projection. All distances on this are taken directly from the object.

An isometric projection of the same joint is shown in Fig. 2. You will need a 30-degree square to produce this. Dimensions of the outline A are those of the object, but the horizontal lines are replaced by lines running back at 30-degrees.

The receding lines B are also of such a length as to agree with actual dimensions (equal to D in Fig. 1) and are at 30-degrees. Vertical lines are also actual dimensions. So this type of drawing can be very useful.

Circles

If a circle is wanted on a Plan, Front Elevation, or End View, it is simply drawn with compasses. With the oblique projection, Fig. 1, a circle on the front surface (outline A) can also be drawn in this way.

With an isometric diagram, the shape which appears to be a circle is actually not a circle at all. One way to construct this is shown in Fig. 3. It is easy if carried out in the order given.

First draw lines A and B, which cross at X, the centre of the circle. A is at 30-degree, as in Fig. 2. Set compasses to the radius of the actual circle, and with one point at X mark lines A and B at the four points C.

Using the T-square, draw the two horizontal lines D and E, where C intersects A. With the 30-degree square, draw lines F and G, where C and C cross line B. All these construction lines would be drawn very thinly.

Now extend the compasses from point H, along line F, to the intersection of C and B, and draw the arc I. With the same compass setting, put one point at J, where D and G cross, and draw K. To complete the circle, put the compasses at L, extend to the intersection of A, D and C, and draw M. With the same setting, draw O from N.

If the circle is to appear on the other face of the object, rotate the page until the line P is vertical. Then follow the same order as before. If the circle is on the top of the object, turn the page until line Q is vertical.

As an exercise, you can draw an isometric projection of a cube having 3 in. sides, with a circle $1\frac{1}{2}$ in. in diameter on each of its three visible surfaces.

Further exercise

The small toddler's wooden train in Fig. 4 is a good exercise in isometric projection. Take a piece of paper large enough so that it can be drawn full size, and use the 30/60-degree square throughout.

If a centre line is drawn for the boiler, the front circle can

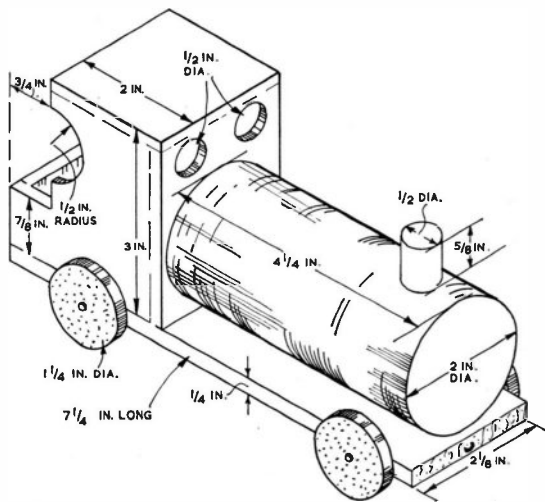


Fig. 4—Isometric projection of small train

be produced as explained for Fig. 3. The back half circle is made in the same way.

Vertical and 30-degree lines then allow the base and cab to be drawn, all measurements on the paper being those actually employed in the model.

The windows, wheels, funnel and half-circle in the cab are drawn in the way described. All guiding lines should be very thin, they can be erased later, and the outlines of the main parts are drawn heavily. Everything is drawn with the square, and compasses set as explained. Fig. 4 also shows how well a projection of this type can give all necessary information and dimensions, and a good idea of the finished appearance of the object drawn. (F.C.R.)



SHAPES AND SIZES

By L. P. V. Veale

Of late years there has been a great change in stamp shapes and many countries are trying to make money from collectors by producing something different, something which might make a person take another look and covet a specimen; in other words, they advertise.

In 1840 Great Britain produced the famous 'Penny Black' and also the more valuable but less well known 'Twopenny Blue'. Other countries followed suit and in general adopted a stamp of similar size and shape: one exception to this was the Cape of Good Hope. Stamp colours had not become standardized throughout the world by then, and consequently it was not possible to say that a red stamp showed that one

had paid the postage for internal letters, nor that a blue one paid for foreign.

In the Cape Province they had to employ people who were not too well educated, so they decided on an unusual shape for their stamps so that anyone could tell if the postage had been paid in the Cape. They told their workers that any letter bearing a red triangular stamp could be delivered at home, and if a letter had a blue triangular stamp then it could be sent abroad. By mistake, in 1861, some penny stamps were printed in blue and some of the fourpenny in vermilion; and those make the famous 'Cape Triangulars', and their values run into four figures.

The ordinary Cape triangulars, if they are good specimens, are quite nice to have, but they are not worth thousands of pounds!. Most of them are worth less than a hundred. There you have the reason for the first change in shape. Many people think that any triangular stamp from the Cape of Good Hope must be very valuable, but it is the error in colour that brings in the money. Without any doubt other countries have traded on the fact that many people think triangular stamps valuable, and consequently they have imitated them.

Just think of the number of countries which now have triangulars. Liberia will at once come to mind, first introducing them in 1894, then again in 1909 & 1918, Airmails in 1936, animal sets in 1937 & 1938 and Registration stamps in 1919 and 1921 — about three dozen in all. Ecuador, Dominica, Colombia, China, Spain, Salvador, Paraguay, and Nicaragua, all have them, some with the long side at the base, and others with the long side on top. Then we have diamond shaped stamps from Portuguese Angola and Mozambique showing various athletic designs. Monaco is the country which really seems to have taken the diamond shape to heart, starting in 1953 with a set to commemorate the 1952 Olympic Games in Helsinki.

For variety in shapes turn to the stamps of Tannu Tuva. For their air mails they have very large rectangular vertical designs, then they turn to what we consider the more usual, such as our commemoratives. These are followed by large triangulars with the largest side at the base, then they turn them upside down and have the point to the base, also a very

large diamond with the longer diagonal horizontal.

Some of the designs are rather formidable. The large air stamps show a man on horseback, the animal obviously very frightened by a large air-ship above. The triangulars show various animals such as foxes and otters in threatening attitudes over their food, men wrestling, shooting fish and so on — quite a mixed bag. We illustrate the diamond, which shows a farmer riding on a reindeer. Tannu Tuva (or North Mongolia) no longer issues her own stamps; it was incorporated in the Soviet Union in October 1944.

The largest . . .

Mentioning Russia reminds one that it holds the record for the largest stamp, the 1962 to commemorate the Soviet Cosmonauts. The size was approximately 5½ in. by 2½ in., needing a special envelope.

Italy in 1933 had issued a stamp approximately 4 in. by 1 in. in connection with the Balbo Transatlantic Mass Formation Flight. The French Colony Djibouti also issued a large stamp, nearly 2½ in. by 1½ in., which in area is not so very much less than the Italian, but considerably less than the Russian. During the last year or so France has had some quite large stamps for her famous paintings.

. . . and smallest

In 1872 Spain issued a 1 centimo which could be easily divided into four, each ¼ centimo. These were available for postage and being only a quarter of a normal stamp, were very small indeed. There is a more common stamp that many will possess, and that is the ½d. of 1873 of Victoria. Another of the same size was issued in 1901. Just below the word 'halfpenny' there is the word 'Postage', but in the earlier issue this does not appear. Nearly as small as these are the war-economy stamps of South Africa, said to have been issued in the reduced size in order to bring home to people the need for economy in paper.

Belgium has used hexagonal stamps for her telegraphs but it is not usual to put these into a postage stamp collection. One country, Thessaly, had octagonal stamps. They were used by the Turkish Army of Occupation in the Graeco-Turkish war of 1898. Two countries have used round stamps, one being Afghanistan, But if you see a used Afghanistan stamp, then it will generally appear as though it is torn, the reason being that instead of cancelling the stamp as we do, they just tore a piece out.

The second country with round stamps is Tonga; they were issued in July 1963 to commemorate the first Tonga gold coins. They are embossed in gold foil with a backing paper which you tear off rather like a piece of Elastoplast and then stick the front on to the envelope. Should a reader receive this, or others similar, then he should *never* try to take it off the envelope, but keep the cover intact in his album. These gold coin stamps are proving to be very popular, although it is obvious that they are done for the benefit of collectors.

Tonga has just brought out another variety. This time the stamps are 1 for postage in the shape of a heart with Queen Salote's portrait embossed in gold in the centre; 2 for air postage the shape is that of the island of Tongatapu, again having the portrait of Queen Salote. Both are backed with paper which has to be torn off.



1. Tannu Tuva (North Mongolia) Farmer riding reindeer.
2. Tonga (surface mail).
3. Mozambique. Gymnastics.
4. Victoria.
5. Tonga (air mail).



INTERNATIONAL SHELL DOLLS

MAKING little dolls and knick-knacks from shells you have gathered from the seashore is a most entertaining hobby. It costs practically nothing, and requires just a little patience and a light hand. The four dolls shown, for instance, can be the beginning of a wide collection of international dolls. When you see how easy it is, you will get ideas for many other national characters.

You need only a few things to begin with. It would be handy to build up a stockpile of all possible types of shells. Many break while being worked on, and it is not easy to find pairs, so get a good collection of all kinds.

Oil colours and turpentine, a good adhesive, some copper wire, and wool are the only other materials required, and will cost a matter of pence.

As you will see from the sketches, the shapes of the shells needed for each doll are pretty obvious. The variety is brought about with a little paint and imagination.

Now to make an actual doll, such as No. 1, from India. Take three ordinary fan-shaped shells. Build them up one above the other by sticking a small shell or cotton wool between them in such a way that it cannot be seen, but only adds height to the shells.

These three form the lower part of the sari. The upper part of the body, the face and the arms are made up of shells stuck to the others and each other with strong adhesive. You will have to go through your pile of shells, and choose the ones most suitable for the different parts of the body.

If you find any difficulty in sticking the shells together, you might find it helpful to use a thin file to flatten the edges slightly, as this makes for better adhesion.

This is the preliminary part of the operation. At this stage the doll is just a collection of shells, and looks very little like the finished character of a definite country. It is now that paint and your skill play their part. However, before you begin painting, it is wise to leave the doll for a few days, so that the adhesive can do its work properly. If you hurry at this stage, the shells might come unstuck and cause annoyance.

Mix the oil colours with the turpentine till it is fairly

thick in consistency. You will need about two or three coats of paint altogether. Use bright, contrasting colours. The hair, the eyes, nose and mouth should be painted in carefully.

Now for the differences in the other dolls. Numbers 2 and 3 have thin legs showing below their dresses, and so are more difficult to make than the ones which use larger shells at the base.

You will find that a twig stuck to the back of the shell may help. If, however, your patience is limited, and you still have difficulty, a little plastic bowl from a child's toy collection will do. Invert it, and let the doll you are making use its support so that the weight is off the tiny shells used for the legs. You can paint it later to look like a stool or the trunk of a tree.

For Doll No. 2, The Hula-Hula Dancer, use thin wire bent to the shape of round ear-rings, and stick them on. You might prefer to drill a very tiny hole in the side of the shell you are using for the face, and pass the wire through. This is entirely up to you. You are free to adapt these designs to the kind of shells you have, and the patience you possess.

For the garland, the one in the illustration was made of minute shells brightly painted. A hole was drilled through them with a pin, and then they were strung together on a chain. You might prefer to use tiny paper or plastic flowers. The grass skirt can be made from cut hay or straw. You will find it easier to stick the hay around a thin tape which is then tied at the back.

The clothes of Doll No. 3, The Dutch Girl, may look complicated, but the main body consists of three shells with the clothes painted on in the colours of your choice. The pigtails are made of wool, and stuck to the back of the shells making up the face.

For the Japanese Doll No. 4, the main body is made up of two shells, and the clothes again painted on. On her back is her baby in a basket, made up of two shells. Her bun is made of another shell stuck on the top of her head.

You will probably have so much fun making these dolls that you may be tempted to take on a United Nations of international dolls — all with shells. (E)



Red deer antlers. This head of 13 'points' shows that antlers rarely match. One may be cast off or broken off before the other at shedding time of year

TOPICS FOR COLLECTORS

NATURE'S 'CAST-OFF'

THERE is, literally, a 'wide field' of interest for the British collector of 'special' things in the open country, both cultivated and wild. The same may be said of many foreign countries, although I think we are especially favoured by the variety we can meet near at hand.

Before we consider how best to go about this hobby, two or three things need to be borne in mind. To begin with, special knowledge is not necessary for the discoveries you should be able to make, although once you have obtained something you may find it of benefit to dig up information about it, which will add to the interest and perhaps help you to care for the object.

Then the rule of 'who finds can keep' is not a true one. Some objects may be on preserved or private land where we have been given permission to wander. The owner or warden should first have given permission for the thing to be taken and if it causes no harm to do that, you should have no difficulty.

Thirdly you will notice that the title of this article is 'Nature's Cast-offs'. That means you should be sure that the object is no longer required by any creature — and that is not always easy to decide.

To illustrate the last point, let us assume you come across a bird's nest with a clutch of speckled eggs among the bits of fluff. It does not matter whether there are birds about, whether it is too late in the season for hatching according to the bird book, or you suspect they have been deserted or the eggs are infertile. Leave them alone until the right season is so far past (and that includes late hatchings common to some species) or the eggs have been in the nest so long that you are sure beyond doubt that they never will hatch out.

On the other hand you may find a well built nest from which the young birds have flown and you may feel that it would make a good exhibit. Again you must think first. Some birds are economical in their nest building habits and use old nests another season, or may be forced to become ten-

ants of one if very bad weather has prevented them from building new nests at the right time. If, however, you find from enquiry that the hedge in which the nest lies is to be 'Layered' or 'plashed' very soon, you will know that in the process of severe trimming of the hedge the nest will suffer and you are then quite justified in taking such a nest in the autumn.

Whilst on the subject of birds, it will be rare for you to find infertile perfect eggs because normally they are kicked or pecked by the parents who sense they are a waste of time. Usually they end up smashed on the ground. The thing to look for is the cleanly hatched shell. This will have at least half the egg shell perfect and it is a good plan to take it home in a soft container, mount it against a cotton wool background, perhaps against a small picture of the bird, and the result will be at least as satisfying as if you had a whole egg on show, — and there would be no mixed feelings! A group of hatched shells can look good, too.

The collector in the country must not be in a hurry. It is far better to examine say, a wooded clearing, or a dry hedge bottom fairly closely for a time, and then go on to another likely spot, than saunter slowly along in a way that does not give the eye time for observation. Another thing is that if we sit quiet and still for a while, creatures down wind of us may come out on their business or play and since they are creatures of habit, any route taken is likely to be a much frequented one.

Of course, some creatures cannot get out of the way quickly enough, but we hesitate to touch them because they repel by their appearance. Take the snake, for example. In this country the adder is the poisonous one to keep clear of. It is said to be timid, which is probably why it usually causes trouble when sat on by an unsuspecting picnicker amongst bracken. Speedy hospital treatment is then necessary.

If you study a picture of an adder you will see that the triangular shaped head and heavy markings like lines of diamonds in large and small rows are distinctive. Snakes vary from type, however, and it is best not to touch them unless you have been instructed on the harmless snakes — you may be given the opportunity of holding them or at least watching them at a local museum.

Why bother with snakes if you can't collect them? Well the thing to look for here is the snake skin which is sloughed at regular intervals and left to shrivel up. You may see a grass snake (one of the harmless ones) in the process of sloughing its skin, which may partly split from its body, leaving the creature to slide from it over a period of hours or longer. The sloughed skin has very little colour and looks like a silvery-brown long twist of crisp tissue paper, with faint pattern markings from the snake upon it. It has to be handled gently as it becomes very brittle — but remember, don't help an adder to finish sloughing its skin! — and go to

the museum on a 'see-what-a-grass-snake-or-slow-worm-is-like trip' first.

Feathers make a very satisfying collection, but it is no use following colourful birds about waiting for a feather to drop. If it does it may not be one of the finer tail feathers. Get to know managers or gamekeepers of estates that preserve game, or keepers of bird sanctuaries, and they may remember to save you one or two feathers of rare birds. These will vary from the common and rarer (foreign type) pheasants to rare geese or birds like the flamingo or stork. If you cannot find one or two when at Whipsnade or a similar open zoo, it would not hurt to write to the curator with a stamped and addressed reply envelope of large size, asking if he would

kindly send one or two labelled feathers of colourful type.

If you become really interested on this side of things you could become a member of the Zoological Society which might help you get one or two specimens from Regent's Park. But any day you may find a strange feather, worth keeping and investigating.

Antlers and horns are very interesting. According to the number of 'spikes' on antlers you will know the approximate age of the deer and its type. Most keepers will give permission to keep such a find, perhaps lost in a fight or cast off. You might find antlers of a 'Royal' amongst Red Deer, grand looking with its 12 or more 'points'.

(M.W.)

BOOKS on loan have an unfortunate habit of becoming lost. The usual excuse is that it was not known to whom they belonged. There is far less excuse for their non-return if the owner has his private book-mark inside each cover.

Printed book-plates are not cheap. An expert lino-cutter can produce his own plates, but this calls for a fair amount of skill, expense, and time in cutting and printing. The method described here is quick, cheap, and simple to operate, and is entirely 'home-made' throughout.

A suitable design for the book-plate must be drawn out to full size on a piece of thin tracing paper measuring some 6 in.

Simple Printed Book-Plates

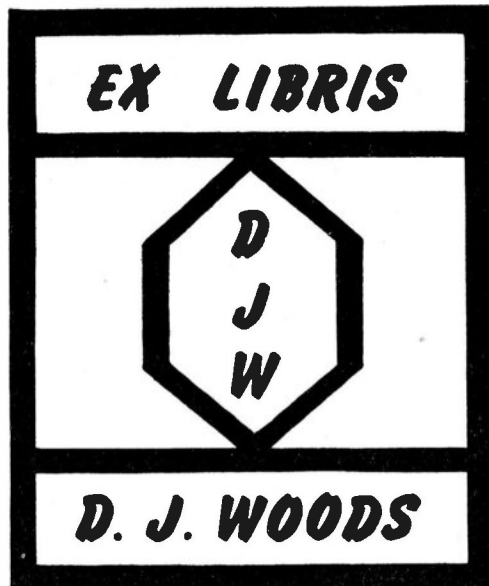
long by 4 in. wide. This design need not be very elaborate and is in the form of three panels surrounded by a plain or fancy border. One panel should carry the words 'Ex Libris', another the owner's name (and perhaps address) while the main panel carries a simple design or monogram.

A simple book-plate is shown in the illustration. To judge the finished effect of the plate all the lettering and design should be blacked in.

From this tracing a glass negative is prepared. A piece of thin glass of the same size as the pattern is taken, and one side of it is given two good coats of black oil paint. The glass must be perfectly opaque when dry. The paper pattern must be laid on it ('wrong' side upwards) and the outlines only traced through on to the paint. The lines can then be scratched through with a finely pointed nail so as to show clear glass.

A damp chamois leather is laid in contact with the paint overnight. Next morning the unwanted paint (i.e. the areas to be printed black) bounded by the various lines can be peeled off. The negatives should be left for a while to let the remaining paint harden when the clear glass can be cleaned up.

The printing frame is a piece of plywood 8½ in. long by 6½ in. wide, with a rectangular opening 6 in. by 4 in. wide sawn out of its centre. Four strips of 1 in. by ¾ in. wood are glued and pinned round the edges of the plywood, and a plywood 'drop in' back is prepared. The back can be kept in close contact with the glass by a thin strip of springy brass, the



ends of which fit into staples on the long side of the frame.

This frame and negative can be used for making contact prints for use as the finished book-plates, but an even cheaper method is to make one's own printing-out paper.

A simple way of doing this is to coat good quality paper with a strong solution of nitrate of silver. This must be done in a dark room, and the drying paper shielded from the light.

Alternatively, blue-print paper can be used. The two solutions needed for making this are (a), an ounce of ammoniac citrate of iron dissolved in 6 oz. of water and (b) 1 oz. of potassium ferri-cyanide in 6 oz. of water.

The two solutions must be kept in the dark in separate bottles. When required for making blue-print paper they are mixed in the dark-room in equal quantities, and swabbed on to a good quality paper with a soft sponge. Again, the drying paper must be shielded from the light.

After exposure to sunlight behind the negative for five minutes or so, the exposed areas will take on a yellowish shade. Developing and fixing is done by plunging the exposed sheet into clean cold water for a short while, and then allowing it to dry.

(E)

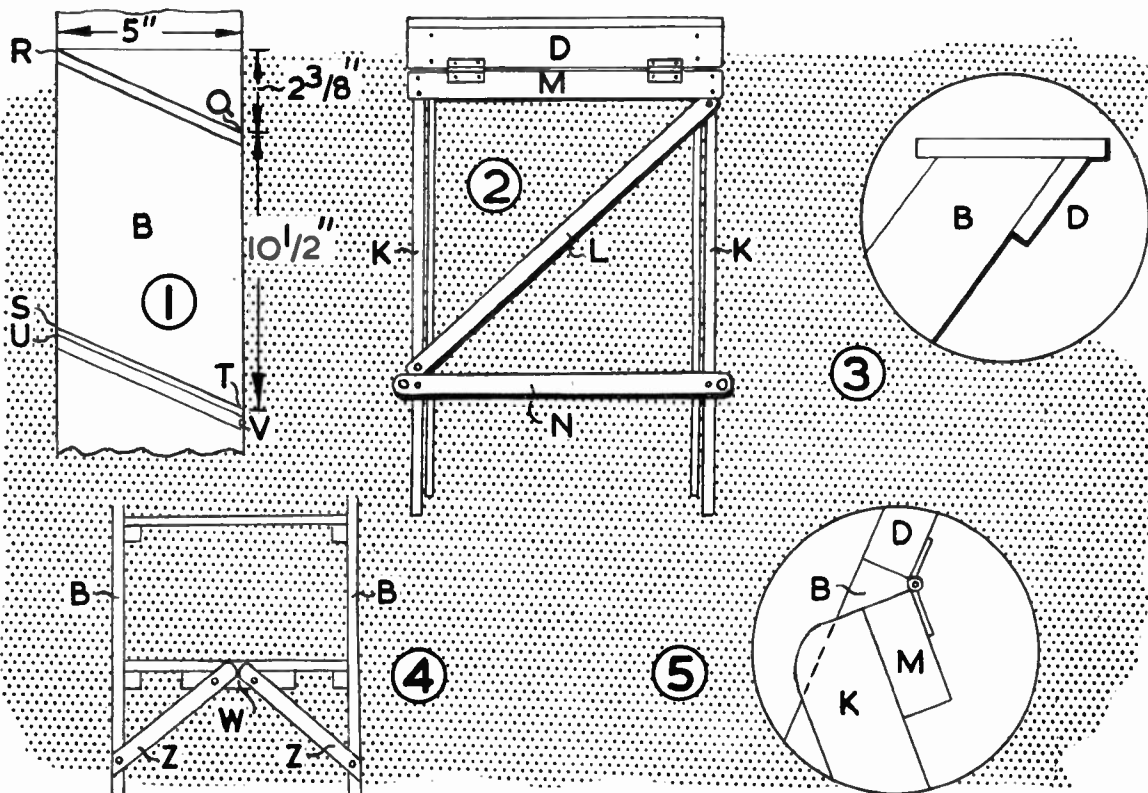
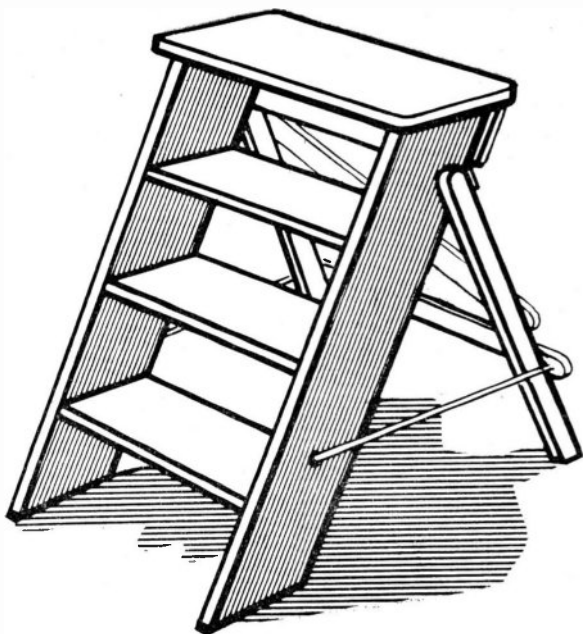
Make yourself a

PAIR OF STEPS

ONE of the most useful items in a household is a pair of steps, and this is where the handyman can show his worth. They are not at all difficult to make at home and the result is, naturally, cheaper and very often stronger and more durable than some sold in shops.

Any ordinary wood will do, and it need not necessarily be new, so long as it is sound. Wood with warps or twists in it should be avoided. Likewise, any with splits or cracks. Remember that defective wood which fails to stand up to the strains imposed on it, can cause serious accidents. So see that each piece is really sound.

In making the steps, you will first need the two side boards B. These should be 5 in. by $\frac{1}{8}$ in. or $\frac{3}{8}$ in. thick. Their length, to start with, should be at least 48 in. for the design shown here. This has four steps, including the top, but the reader can make a higher pair of steps to suit his own purposes. In this case, the side boards will need to be appropriately longer to accommodate the extra steps.



The boards should be treated as follows. With a square, square off the end of the board, leaving about $\frac{1}{2}$ in. to waste. Make a clean thin pencil line. Then from this line, down one side, measure $2\frac{3}{8}$ in. Join this point Q, to point R, on the other edge of the board Fig. 1. This is to get the angle of the steps.

From Q, measure $10\frac{1}{2}$ in. along the board edge, and mark. Do the same from point R. Join points S and T. Parallel to the line ST, draw another line underneath UV, $\frac{5}{8}$ in. or $\frac{1}{2}$ in. away. This represents the position of the step below the top step, and will be $\frac{5}{8}$ in. or $\frac{1}{2}$ in. according to the thickness of the wood you choose for the step. The thicker, of course, is stronger, but adds to the weight of the steps.

While still cramped, it is advantageous to saw off the two ends, thus cutting both boards at one go and with perfect matching.

Remove the cramps and treat each board as follows. Below the positions marked for each step, fix a batten for the step to sit on. This batten should be $\frac{5}{8}$ in. by $\frac{1}{2}$ in. stripwood, and its upper edge should lie exactly along the line, e.g. UV, representing the bottom of the step.

The batten, for the top step, however, comes flush with the top edge of the side board. The battens are shown in Fig. 1. They should be both glued and screwed into position. Counter sunk screws are best.

Cutting the steps

The steps can now be sawn out. The wood, as mentioned before, can be $\frac{5}{8}$ in. or $\frac{1}{2}$ in. thick and should be 6 in. wide by 14 in. Use a square to mark them off and see that all are identical in shape and match each other exactly.

The top step, note, is 17 in. by 7 in.

Before fixing in the steps, saw out the crosspiece D, Fig. 2, which fits across the side boards at the top and back. This should be of $\frac{1}{2}$ in. or $\frac{3}{8}$ in. thick board, 4 in. deep and 17 in. wide. The top edge is chamfered off, preferably, to sit snugly under the top step, when fixed. See Fig. 3.

The steps may now be fixed to the side boards followed by the crosspiece D. Use glue and countersunk brass screws to fix. Holes should be drilled before screwing, to avoid splitting the wood. A tri-square is very useful in ensuring that the steps and crosspieces are perpendicular to the side boards.

Next, under the bottom step, glue and screw a piece of batten W, Fig. 4, and to this and the side boards, glue and

screw the stays Z, Z. These help to keep the structure firm, and can be $\frac{1}{2}$ in. or $\frac{3}{8}$ in. by 1 in.

The step section can now be completed by rounding off the points on the feet and the steps, including the top step. The sharp corners on the top step especially are often liable to do damage, so it is wise to reduce the danger. Lastly, bore a $\frac{3}{8}$ in. hole in each side board, just above the first step, for the rope. Round off the edge of the hole where the rope come out, to prevent fraying.

The back support

Now proceed to make the back support for the steps. This can be seen in Fig. 2. The two legs K, K, are of $\frac{3}{4}$ in. by $1\frac{3}{8}$ in. or $1\frac{1}{2}$ in. wood and are 38 in. long. Larger steps, of course, will need longer ones than these.

The cross-batten M, is first fixed across the legs K, K, at the top, using glue and screws, and a tri-square. This cross-batten should be $\frac{1}{2}$ in. or $\frac{3}{8}$ in. thick, 2 in. or $2\frac{1}{2}$ in. deep, by 18 in. wide. The space left between the insides of K, K, should be $15\frac{1}{2}$ in. The tops of K, K, should be rounded off as shown in Fig. 5.

The bottom cross-batten N, should be fixed next. This should be similar to the top batten M, but of 19 in. length and should have $\frac{3}{8}$ in. holes bored for the rope. It should be fixed with glue and screws 12 in. from the bottom of the legs.

The stay L, Fig. 2, should be of $\frac{1}{2}$ in. or $\frac{3}{8}$ in. by $1\frac{3}{8}$ in. wood and should be fixed as shown, again using glue and screws.

Round off the bottom of the legs and then fix strong brass hinges to the top crosspiece M. The other flaps of the hinges are attached to the crossboard D. For added safety, three or even four hinges can be used.

The rope should be ordinary hemp rope used for clothes lines, and should be new. The length of the rope must be ascertained by setting up the steps to stand correctly and measuring from hole to hole. It should be about 22 in. or so. To this length must be added extra for the knots at each end. A yard of rope for each side should give plenty to work with. Two firm knots should be made at each end and see that both ropes have equal tension when the steps are set up.

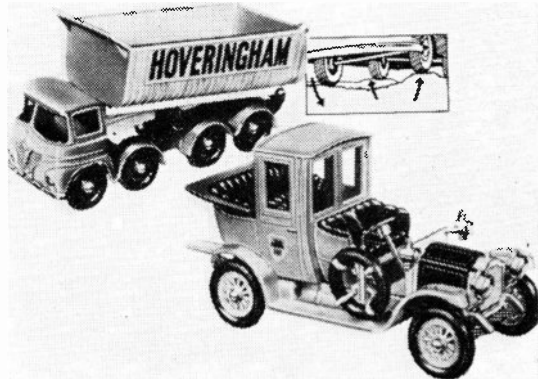
The steps should be given a thorough glasspapering and either left as they are, or given two coats of varnish to preserve and waterproof the wood. (E)

No. 17, 8-Wheel Tipper Truck. Fully tipping and staying in any position, this truck also has spring suspension, opening tailgate, and authentic gravel-company transfers. Overall length is 3 in. Price 2s. (post 4d.)

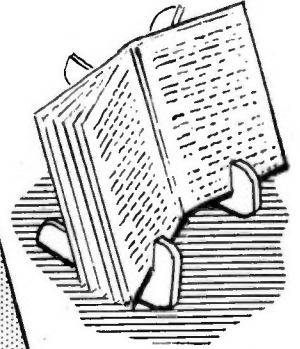
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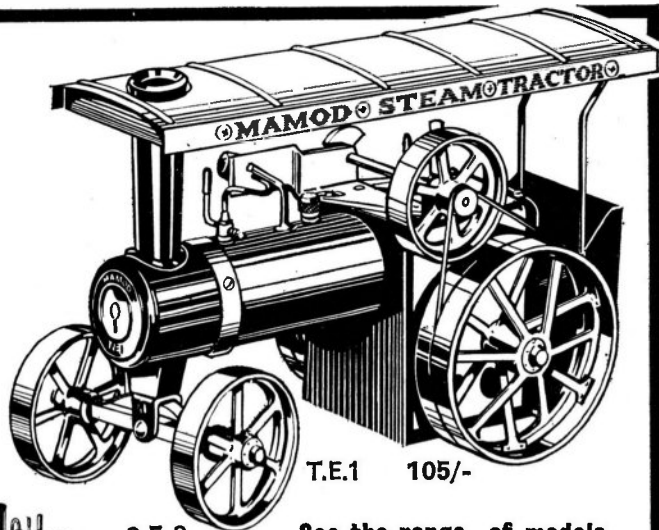
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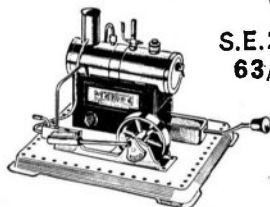
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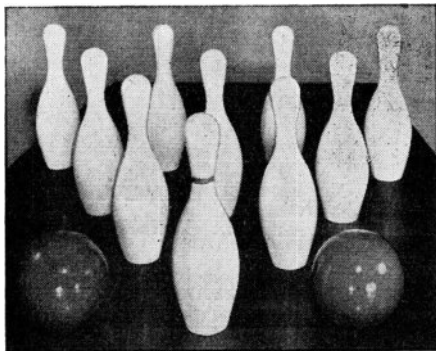


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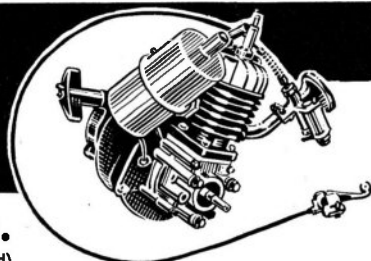
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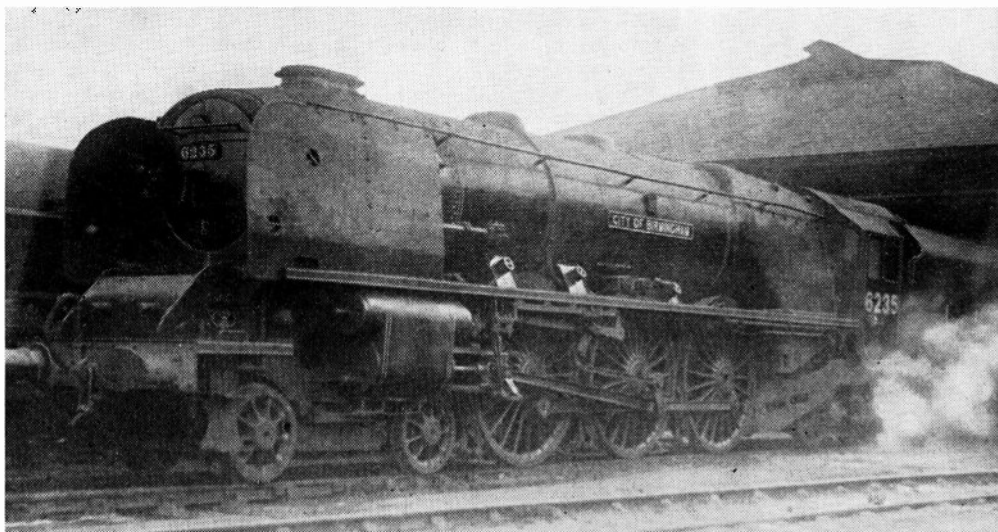
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THE 'CORONATION' PACIFICS



London, Midland & Scottish Railway. Stanier Pacific class 4-6-2 locomotive No. 6235 'City of Birmingham' (with streamline casing removed)

WITHDRAWAL of the former L.M. & S.R. 4-6-2 Pacific class locomotive No. 46220 'Coronation' brings to mind the remarkable instances of high speed running achieved by streamlined 'Pacific' locomotives in the late 1930s. 'Coronation', when first built as a streamlined engine in 1937, attained a speed of 114 m.p.h. on the descent from Whitmore, and averaged 79.7 m.p.h. over the 158 miles from Euston to Crewe. Similarly, on 3rd July 1938, Mr H. N. Gresley's streamlined 'A4' class Pacific L. & N.E.R. *Mallard* (now B.R. No. 60022) reached a speed of 126 m.p.h., acclaimed as a world speed record for steam railway traction. *Mallard* has also now been withdrawn, but has been scheduled for preservation.

When as a new engine, *Coronation* was exhibited at Euston Station together with the former London & North-Western Railway 4-4-0, engine No. 5348 (originally No. 5000) 'Coronation' so named to commemorate the Coronation of George V and Queen Mary in June 1911. No. 6220 being named for the Coronation of George VI and Queen Elizabeth in June 1937. In August 1939 a sister engine No. 6229 *Duchess of Hamilton*, was temporarily renamed and renumbered as 6220 'Coronation' and shipped to the United States for a full scale tour of America railroads together with *The Coronation Scot* train. The out-

break of war however cancelled the tour and the engine was eventually returned to England in 1943 the train however remaining in the U.S. where it was used as a billet for U.S. Army personnel. On its return the Engines, number and nameplate changes were repeated.

No. 6220 was designed by Mr W. A. Stainer, the then C.M.E. of the L.M. & S.R., and was built at Crewe in May 1937. She was the forerunner of a class of 38 engines numbered 6220-6257. Nos. 6220-29 and 6235-48 were built as streamlined engines, (Nos. 6230-34 and 6249-57 not being so treated). In 1946-7 however, the streamlined casing was entirely removed. The last two engines of the class Nos. 6256 *Sir William A. Stanier F.R.S.* and 6257 *City of Salford* were designed by Mr H. G. Ivatt and built in 1947. They differ from the rest of the class in various details including the provision of roller bearings.

The 'Coronation' class were an enlarged 6 ft. 9 in. version of Mr Stanier's earlier 6 ft. 6 in. 'Princess Royal' class of 1933 and, as first built with streamlined casing carried the following details: cylinders (4) 16½ in. diameter and 28 in. stroke, wheel diameter's bogie 3 ft. 0 in., coupled 6 ft. 9 in., trailing 3 ft. 9 in. Boiler barrel length 20 ft. 3¼ in. Diameter outside 5 ft. 8½ in. increasing to 6 ft. 5½ in. Heating surface, tubes 2,577 sq. ft., firebox 230.5 sq. ft. giving a total

of 2,807.5 sq. ft. Superheater surface 856 sq. ft. Grate area 50 sq. ft. Tractive effort at 85 per cent boiler pressure 40,000 lb. Adhesion factor 3.73. Distance between boiler tubeplates 19 ft. 3 in. Weight of engine in full working order 108 tons 2 cwt. Tender, capacity of tank 4,000 gallons, coal 10 tons, weight loaded 56 tons 7 cwt. Total engine and tender 164 tons 9 cwt.

One of the class No. 6235 *City of Birmingham* has been scheduled for preservation in The Birmingham Science Museum when withdrawn from service. (A.J.R.)

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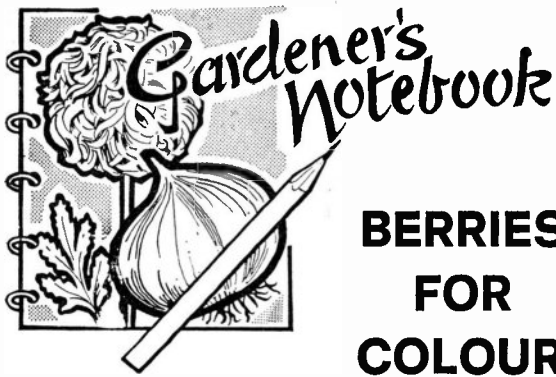
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BERRIES FOR COLOUR



THE coming of autumn is marked by the scarlet and gold leaves, beautifying the countryside and reminding us that soon frosts will denude our gardens of flowers and deciduous foliage.

In gardens that are planned with an eye to autumn and winter beauty, we find a generous planting of evergreens and berried shrubs. The former are pleasing all the year round, but the latter are particularly effective in late autumn. The vivid hues of the berries glow brightly in the sun and they are equally attractive for indoor decoration.

There is a large colour range of berries, but in the main they are red, yellow and orange. Others to look for are white, such as *Sorbus munda*, blue such as *Lonicera tomentella*, black (*Viburnum rhytidophyllum*) and dark purple (*Berberis Hookeri*). Some berries are quickly devoured by birds but others, such as *Cotoneaster horizontalis* may last round into the new year or even to early spring.

A good catalogue will give you a comprehensive list of berried shrubs and among them you will find such favourites as the *Cotoneasters*, *Hollies*, *Berberis*, *Viburnums* and *Pyracanthas*. There are many named varieties of these and most are suitable for garden decoration.

If you wish to acquire a collection of shrubs it is possible to obtain pieces from friends and neighbours, and over a period of two or three years a goodly number may be acquired. Many of these shrubs will root readily if layered, others are easy to root as cuttings, whilst some may be readily grown from seed. Do not forget that many rose species will provide you with brilliant hips as well as attrac-

tive flowers during the summer. *Rosa andersoni* and *Rosa rubus (Ernestii)* are both recommended for their large colourful hips.

Order shrubs now

Planting should be done in the autumn and now is the time to order so that the young shrubs may have time to become established before the winter frosts. Some will need a little protection for a year or two, and you should consult your catalogue to find out the nature of your shrubs. A reliable nurseryman will give you all this information.

Finally, some of your berried shrubs will need pruning to keep them shapely and fruitful. This applies particularly when branches are cut for indoor decoration. Find out from books, which you can no doubt obtain at your local library, how your shrubs should be pruned and you will find pleasure in your shapely and attractive berried shrubs.

(M.h.)

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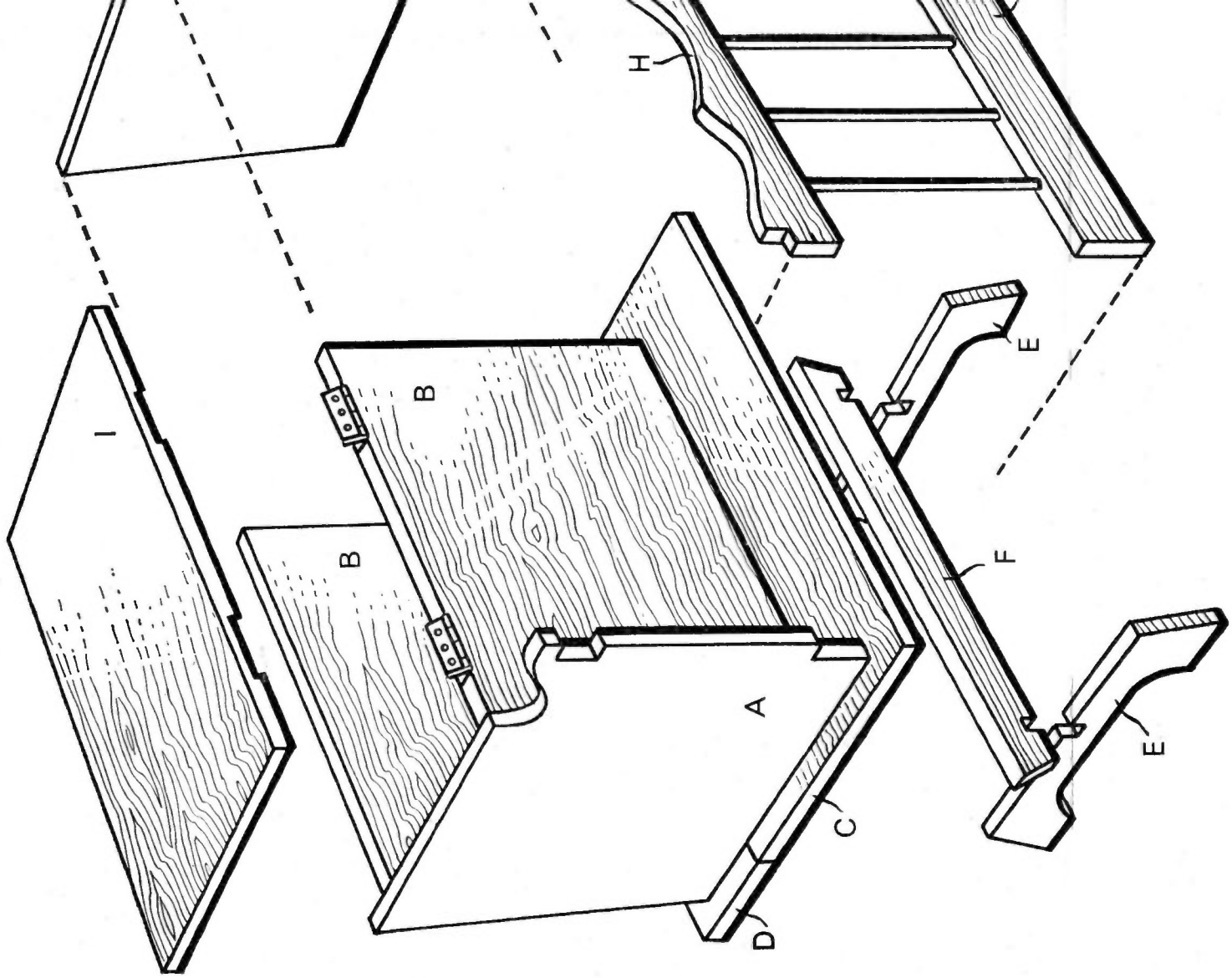
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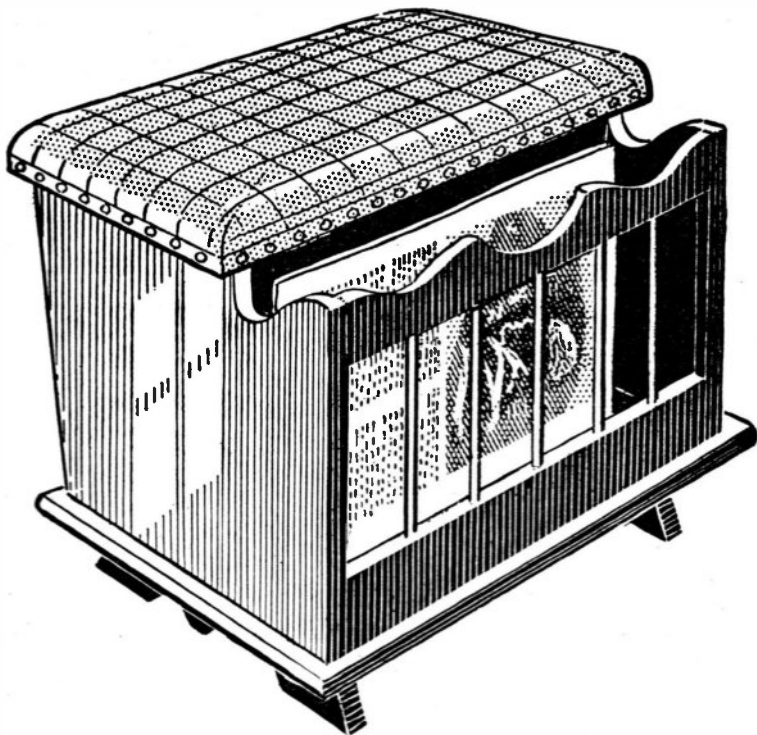
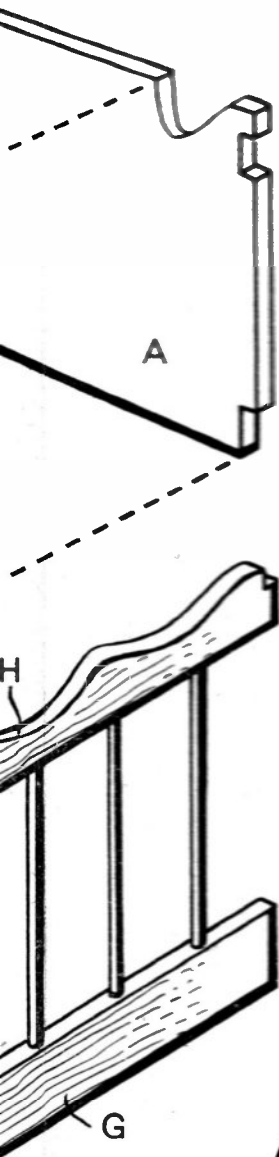
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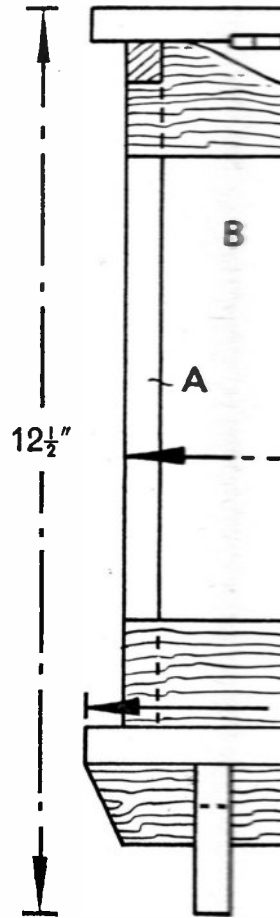
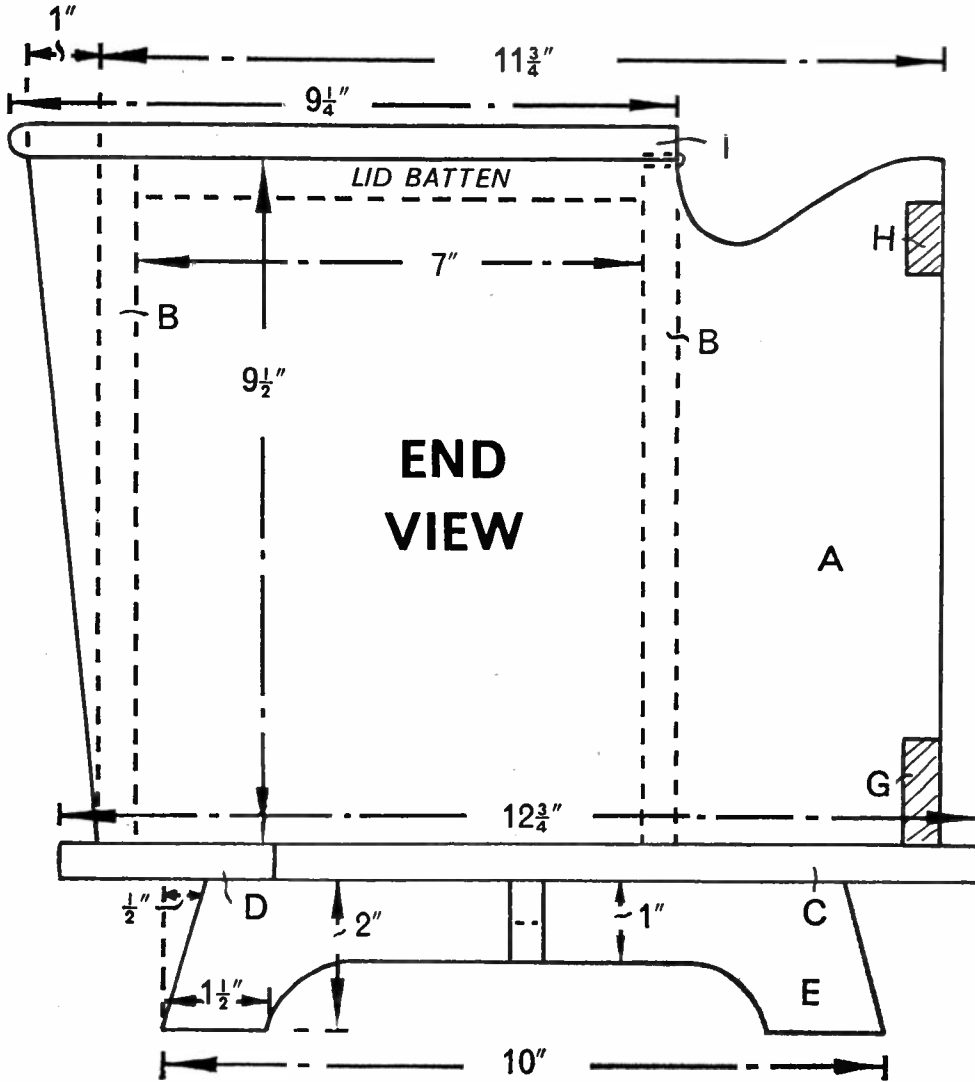
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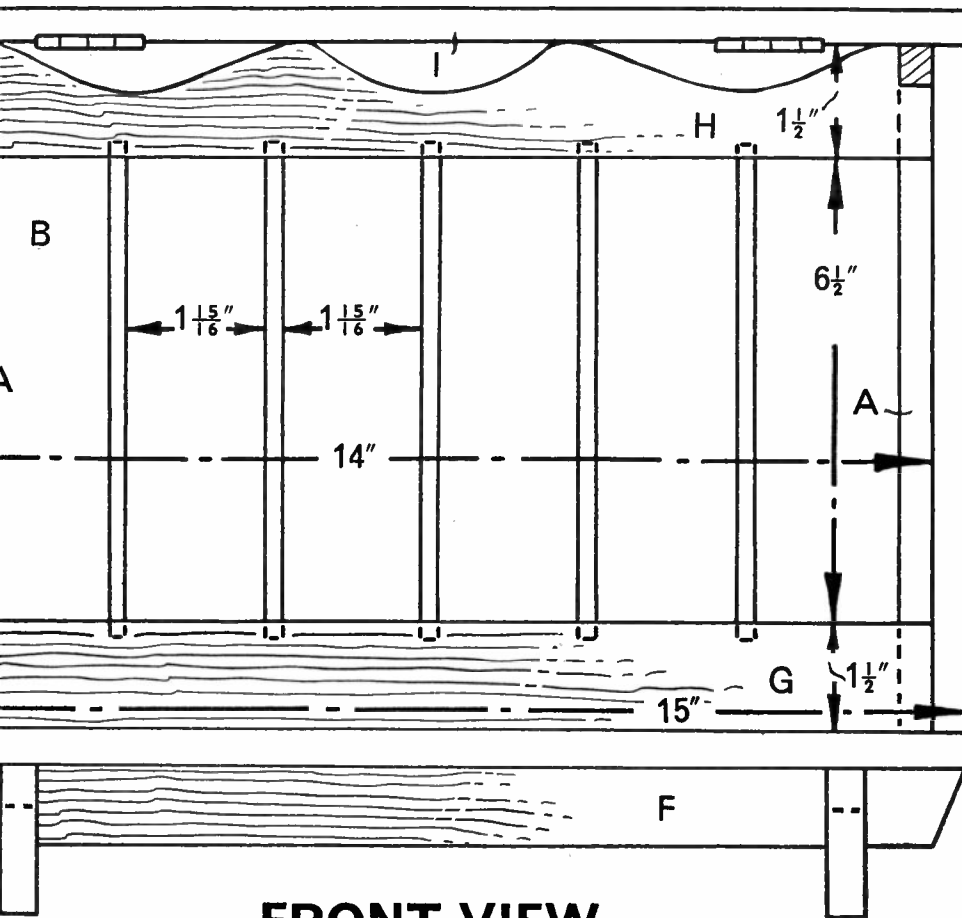
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