

28th SEPTEMBER 1960

VOL. 130

NUMBER 3381

THE ORIGINAL
'DO-IT-YOURSELF'
MAGAZINE

HOBBIES *weekly*

FOR ALL
HOME CRAFTSMEN

**Instructions
for making . . .**



A SELF-PROPELLED **GO-KART**

Also in this issue:

MAKE A SMART
TOWEL RAIL

COLLECTORS' CLUB

OCTOBER IN
THE GARDEN

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5^D



INDIANS are not the only people who wear birds' feathers. The Turks and Persians wear egret feathers in their turbans. Soldiers wear cocks' feathers in their hats. We've all seen the Scottish Highlanders on parade wearing eagles' feather in their bonnets.

Feathers are used for making fans. In many countries great fans or screens are always carried by attendants to shade the king. Large fans made of ostrich plumes are borne behind the Pope on great occasions.

FEATHERS — By R. L. C.

The Aztecs or Mexicans made beautiful robes of coloured feathers. In the Sandwich Islands a splendid robe, made of thousands of feathers, was for ages worn by the King when he was crowned. This cloak was buried with the last of the Kings.

There are hundreds of stamps and labels depicting birds. Why not get started with the latest sets from Czechoslovakia and Russia. These labels are in full colour and cost 1/- a set.

The Drum Major

ACENTURY ago soldiers wore gay uniforms, most of which are shown in full colour on stamps and labels. But blue coats and red trousers made the soldier an easy target for the enemy. So khaki became the order of the day.

The smartest man in a procession was then, as now, the Drum-Major.

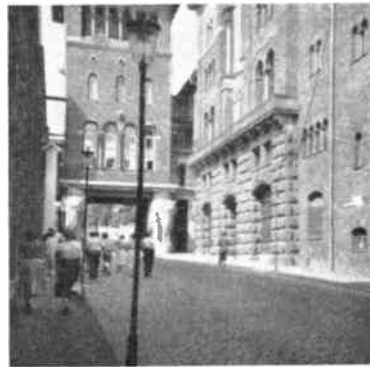
The drum-major drills the musicians, sees that they are rightly equipped, that the brasses are bright and the music in order. He gets his name from the fact that he was formerly the chief drummer of the regiment.

It's a thrilling moment when the drum-major shouts 'Play' and 'Forward March'. With a quick turn of the wrist he points the ferrule upward, letting it slant slightly to the right. Then, raising his staff to the height of his chin, he thrusts it the full length of his arm to the right and draws it back again. This is the signal to play. Then, turning, he points the staff to the front, thrusts it the full length of his arm forward, and music and march begin.

The drum-major and the band are not fighting men. In battle they help the R.A.M.C.

Carlsberg Brewery

THOSE who are lucky enough to go to Copenhagen, Denmark, are in for an enjoyable time,' writes Mr J. Thornhill Kent. 'But if they are collectors of beer labels they will be thrilled with a visit to the Carlsberg Brewery. I shall long remember the great welcome given to our party by the Carlsberg guide. We followed him to see the various processes in the brewing and bottling of this famous beer. After this came the museum, a mine of history and information.



Mr. Kent and party going through the Elephant Gate of Carlsberg Brewery.

Finally, we arrived at the beer hall, where the tables were laid with every branch of Carlsberg beer and soft drink. Our guide invited us to taste anything we wished and joined us in making a jolly party.'

If you want a good pen friend, write to Mr Kent at 33 Lakeside Road, W. Kensington, London, W.14.

PEN FRIENDS

JOHAN Hadley (14), of 16 Haylake Road, Moreton, Wirral, Cheshire, would like pen friends throughout the world. His hobbies — stamps and postal chess.

'My hobbies are radio, collecting match labels, cycling and camping,' says Richard Alan James of Porch House, Upton Magna, Shrewsbury, Shropshire.

David Gemmell is interested in languages. He is also a keen musician. Write to 5 St. Ninian's Place, Hillhouse, Hamilton, Lanarkshire, Scotland.

Hundreds of readers are now corresponding with each other. Our pen friend service is free. But please remember to enclose return postage and send all requests to The Editor, *Hobbies Weekly*, Dereham, Norfolk.





IF no frosts occur to cut down tender plants like dahlias and salvias, the gardens may well show plenty of colour right through the month. Unfortunately, however, October is the best month for planting polyanthus, wallflowers, and other spring blooming bedding plants. Therefore, in many seasons you must be quite ruthless and dig up the plants which are still blooming if you want a good spring display. Wallflowers and polyanthus should certainly be planted before the end of the month.

Outside

IF dahlias have been cut down with the frost the foliage should be cut through just above ground level, and heaped over the crown for a few days to allow the tubers to ripen before lifting. They should be dried off and cleaned before storing in a frost-proof place. Label them as you lift them, otherwise

you are certain to forget them later.

Perennial herbaceous plants can be set out this month. Gladioli corms should be lifted and stored. Divide peonies and montbretias. Sow sweet peas for early flowering. Continue to plant spring flowering bulbs such as crocuses, snowdrops, hyacinths, etc.

ROCK GARDEN — Give shelter to plants which are affected by the weather. Use small cloches and pieces of glass. Renew slug bait. Clean up pockets and remove dead foliage.

FRUIT GARDEN — Take cuttings from and prune gooseberries and currants. Make new rows of raspberries, using suckers from old plants if these are healthy stock. Plant fruit trees from now until March when weather is suitable.

VEGETABLE GARDEN — Gather and bring in any green tomatoes left on the plants. Ripen off indoors. Lift and store beetroot and carrots. Sow lettuce under

cloches for a spring crop. Lift potatoes and dry off. Store under cover or outside in clamps. Lift and store onions.

Inside — warm house and cool house

YOU will be able to gradually reduce watering. Clean glass inside and out. Commence with a little heat, and ventilate well to keep down mildew. All chrysanthemums should now be housed. Pot on cinerarias, schizanthus, and calceolarias. Pot up tulips. Stop watering cacti this month.

Cold house

GIVE chrysanthemums plenty of ventilation when possible. Prick out a few lettuces for an early spring crop. Burn dead foliage from previous crops.

General

COLLECT and store stakes and canes. Repaint stakes when dry. (M.h)

GIVE A NEW LOOK TO AN OLD MIRROR

SMALL mirrors taken from old-fashioned overmantels can often be picked up for a few shillings at auction sales or second-hand shops. Often they are of unusual shape and have rough edges, but with a little patience they can be brought up to date, and will provide attractive decorations for your walls.

The cost of the conversion is low, but will vary according to the size of the mirror and the surround you choose. The one illustrated measures 18 in. by 8 in. complete, the oval mirror itself being 16 in. by 6 in. The materials used for making the ornamental surround were one small tin of cement (as used for mosaic work, and obtainable from handicraft suppliers) and ordinary coarse grit which can be bought from any shop which sells poultry foods, etc. The cement used was Mosacol (2/6 for a 5 oz. tin), and the grit was approximately 4d. per lb. The backing for the mirror is wood of a suitable thickness, cut to the required shape, and to this should be fixed a ring

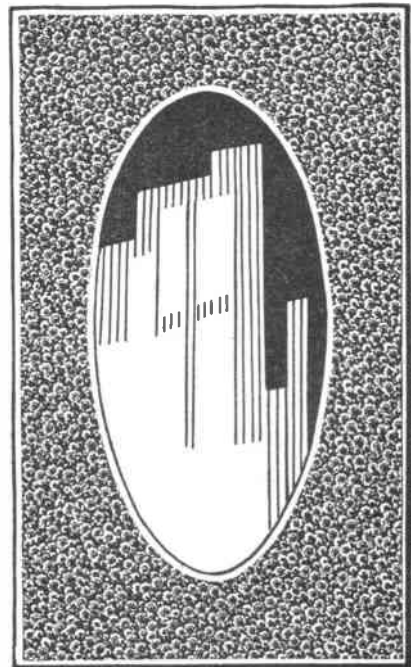
or chain for hanging.

Place the mirror in position on the board and fix it temporarily with strong adhesive tape across the middle. Now spread cement at one end of the backing board to a thickness slightly above the mirror, overlapping its edges by about one eighth of an inch. On to this layer of cement, sprinkle a fairly liberal covering of grit, and press it in gently but firmly.

Treat the other end, and partly down the sides in the same manner, then leave overnight to set firmly. Next day the mirror should be held securely enough by the cement mixture, and the adhesive tape can be removed. Apply the surface to the remaining wood surround, forming a complete 'frame' for the mirror.

When the work is thoroughly dry, colour to suit your own particular scheme. A pleasing effect can be obtained by painting with an off-white flat paint, flecked with antique bronze, or multi-colouring can be used to produce a 'mosaic' appearance.

(M.W.)



PROJECTS FOR CARD LOOMS

THE following specific projects may be undertaken on card looms similar to those described in the last article, or on looms especially shaped.

Scarf

The loom for a woven scarf which is 3 ft. long and is suitable for a man or a woman is made from a piece of thick card measuring 20 in. long by 10 in. wide. Draw a border on it 1 in. wide. On the border lines at the top and the bottom of the width make seventy-three holes $\frac{1}{4}$ in. apart, as described in the previous article. Use a bradawl to make these holes rather large.

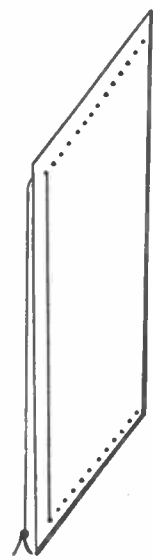


Fig. 1—Mounting the warp for a scarf

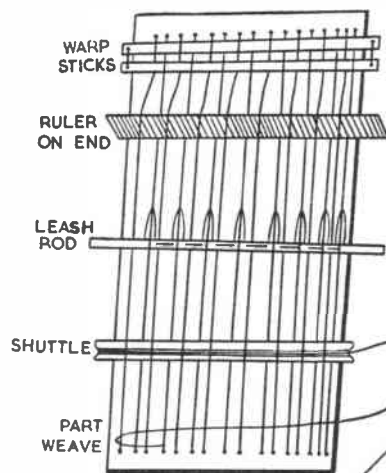


Fig. 2—Beginning weaving, showing method of alternate sheds

Fig. 3—Removing rectangle of card at bottom of loom to enable the warp at rear to be pulled to the front

Cut seventy-three strands of three-ply wool for the warp, in one or more colours, depending on the pattern, each strand being 3 ft. 4 in. long. To cut each strand separately would take a very long time, therefore the wool may be wound around the card loom lengthwise the appropriate number of times, and cut at one end.

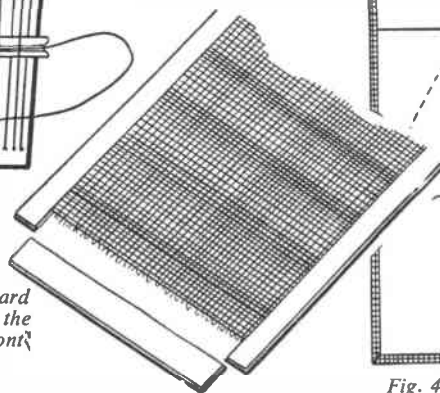
Each warp strand is threaded as in Fig. 1. The first strand is taken from below through the first left-hand hole at the bottom of the loom. It is taken up to the first left-hand hole at the top of the loom, goes through to the back, and

returns to the bottom, where it is tied to the other end of the thread. It is not tied to the loom.

The remainder of the warp threads are set up in the same manner, so that the warp covers the front and back of the loom. The scarf will be woven on the whole of this warp.

It would be a very slow process to use a weaving needle for this length of warp, unless it is the weaver's intention to make a complicated colour pattern. To make weaving of plain colours, checks, tartans, or simple borders, then the work progresses very quickly if a shuttle is used to hold the weft, and the warp is divided into sheds.

A ruler may be used to raise the first shed. It is inserted into the warp half-way up the loom so that, of every pair of warp threads, the first is above and the second is below. By turning the ruler onto its edge the upper warp threads are raised, thus forming a shed.



The remaining threads, which in this case are every second one, are more difficult to raise as a shed, but it may be done by the use of a leash rod which can be made as follows:

Cut a piece of card as long as the width of the warp and $\frac{1}{4}$ in. wide, and make holes every $\frac{1}{4}$ in. along the length. This will give as many holes as there are warp threads in the second shed. Lace the holes in the following manner with very fine string or strong sewing thread. Tie a knot at the end of the string and

thread through the first hole up to the knot. Take the string around the first thread in the second shed, and back to the first hole, which is now entered from the back of the card. The loop thus formed should be at least 2 in. long. Take the string through the second hole, down around the second thread in the second shed, and back to the rear of the same hole. In this way deal with every warp thread in the second shed, ensuring each loop thus obtained is of the same length. Knot off at the end of the leash rod.

If this leash rod is fitted lower down the loom than the ruler for raising the first shed, then it will be found that the following weaving movement is performed. Lifting the leash rod raises the second shed. Releasing the leash rod and turning the ruler on end raises the first shed. These movements are continued throughout the weaving and, because of these two movements, the loom is called a two-way loom.

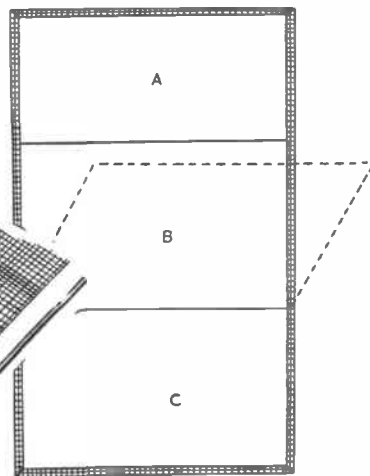


Fig. 4—Showing make-up of bag

Now the weaving can begin at the bottom of the loom. It can be started at either side according to the handedness of the weaver, but whichever side is chosen, an inch or so of weft must be woven into the preceding shed first. This will lock the beginning of the weft into the warp (see Fig. 2).

The weaving continues normally in whatever pattern is required until the top of the loom is reached. Remember to

ensure that the warp remains the same width throughout by checking occasionally with the side lines on the loom. To save too much apparatus, the edge of the shuttle may be used as a beater. The shuttle is made from thin smooth wood which is U-notched at both ends, and is about 1 in. wide and a little longer than the width of the warp. The weft is wrapped around the shuttle over the notches, and is unwound as the weaving progresses. If more than one colour of weft is used, then each is wrapped around different shuttles to save time when weaving.

The beginner may query why the second shed is raised first. There is no rule about this; it is included in these instructions because the warp has an odd number of warp strands, therefore the first shed will include the first and the last strands. An inexperienced weaver is likely to miss these strands

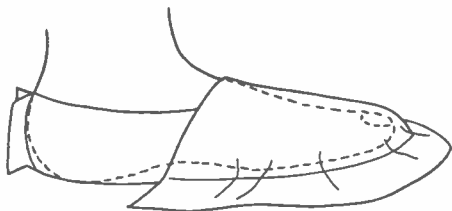


Fig. 5—Making template for slippers

during the weaving if he commences with the first shed.

When the weaving reaches the warp sticks at the top of the loom (see Fig. 2), the weaver is faced with the problem of how to weave the warp at the back of the loom without any break in the continuity of the weaving.

There is a simple solution. Cut the spaces between the holes holding the weaving at the bottom of the loom, then continue the cut back so that a narrow rectangle of card is removed (see Fig. 3). This will allow the weaving to be moved freely. Now hold the weaving carefully at the top with both hands, and pull gently downwards. The woven part of the warp will move through the rectangle to the back of the loom, and the unwoven part will move to the front for the weaving to continue. This process may have to be repeated twice before the whole of the warp is woven.

Care must be taken to keep the weft level as it is pulled through. If it is not, it must be levelled by holding the beater, or shuttle, in the shed which follows the last shed used, and regulating each strand. If, when the warp was originally set-up, the ends of the warp threads were each tied round a thin wooden rod at the back of the loom, this could be used together with the beater to keep the weft level.

When the knotted ends of the warp reach the top of the loom, the weaving is finished. Before the weaving may be removed from the loom, the ends must be oversewn or hemstitched. When this is done, cut the scarf away and then, if required, attach a fringe of the appropriate colours.

Bag or pouch

This is woven in the same way as the scarf, except that only one side of the loom is used. When the weaving is oversewn and removed from the loom, it is sewn to whatever material is to be used

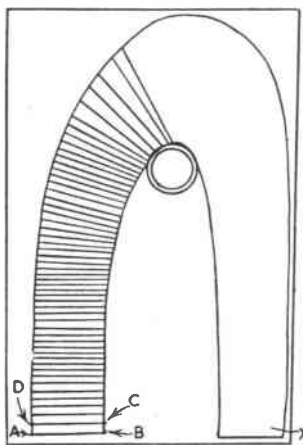


Fig. 6—Setting up the loom

for lining the bag.

The bag is made by dividing the length of the weaving into three parts by folding, as in Fig. 4, where parts B and C are equal in length, and A is the shorter. C is turned on to B, and they are sewn together along the edges. A is left as a flap. The flap may be fastened to C by press studs.

To obtain a shaped flap whilst the weaving is still progressing, part A could be decreased in steps by leaving out two warp strands at each side of the loom for each weft. Experiment is the best guide here.

To use the bag as a belt pouch, two plaited braids may be sewn to the back of the pouch to fit on the belt. To use it as a shoulder bag, or handbag, a strap may be woven on a thin warp or on the tablet method of weaving, details of which will appear in a later article.

Slippers

The loom required for making slippers is set up in an entirely different way than are those for making scarves, bags, and other articles based on the rectangular loom. Articles such as slippers, berets, and tea cosies are woven on shaped card looms.

To make the slipper card, a template of the foot is needed. Take a sheet of foolscap paper and press it around the front of the stockinged foot, with the foot on the floor, as in Fig. 5. Ensure that the template touches the floor all around and that there are not too many creases in it, or it will not show the correct shape when it is cut out. Cut out the shape thus obtained and replace it on the foot after cutting out a V-shape for the top of the foot. Then cut two strips of paper where the width equals the height of the slippers. Place one of these on either side of the foot so that the edges of the width touch the template of the front of the slipper. Mark the point where these strips touch at the centre of the heel. Cut them to that length and paste them, with the front, to a card of suitable size (Fig. 6).

Now the loom is ready for the marking of the holes. Make holes with a

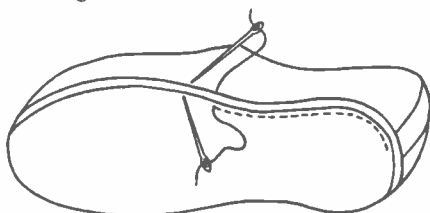


Fig. 7—Sewing uppers to soles

bradawl $\frac{1}{4}$ in. apart on either side of the straight lengths and around the front of the slipper shape. The spaces between the holes may be a little wider as the curve becomes more pronounced.

A curtain ring is lightly sewn across the V-shape, so that it is held in place whilst the warp is being set-up. The setting-up with three-ply wool starts from below and through point A; up to point B, down and up through C; down to D; and so on until the curve is reached.

When the hole nearest to the ring on either side is threaded, the warp is taken through the ring and down to the next hole at the edges of the loom. From then on, until the curve is completed, as the thread comes from an outside hole it is taken through the ring. Then the other side is threaded as before.

The weaving is done with four-ply wool on the long weaving needle, or with one hand-made from stiff wire. Start at A and weave under and over all around the outside of the loom, and then weave back again to the start to make the second weft, remembering that, where in the first weft the thread went over, in the second it goes under. To stop the warp from waisting, take the thread through the card when one weft is completed and before another is begun. Begin the third

● Continued on page 455

CROSSINGS FOR TOY RAILWAYS

CROSSINGS and points add a great deal of interest to toy railway layouts. The three models described here are extremely simple to make.

Easiest of all is the right-angled crossing. Cut a straight rail into three lengths so that each section has a metal sleeper attached as in Fig. 1. Screw these sections to a piece of hardboard, leaving $\frac{1}{8}$ in. gap between them. Glue two wood blocks 1 in. by $\frac{1}{2}$ in. by $\frac{3}{8}$ in. in the positions shown, leaving $\frac{1}{8}$ in. between the sides of the blocks and the rails.

Now cut a second rail in half, and fix it to the base as in Fig. 2. It may be necessary to support the ends of the rails not held by sleepers with small strips of hardboard or plywood glued to the base.

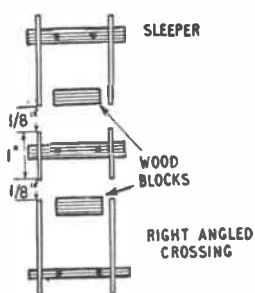


Fig. 1

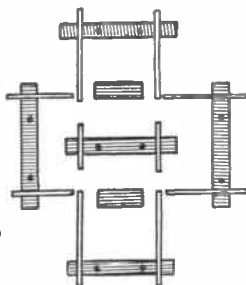


Fig. 2

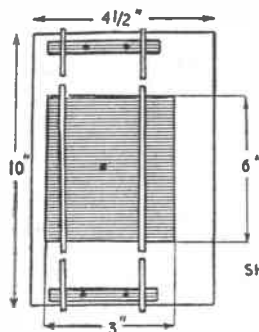


Fig. 3

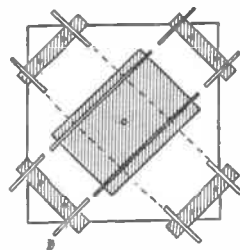


Fig. 5

TURNTABLE

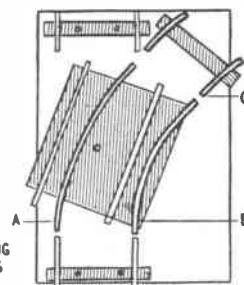


Fig. 4

$\frac{1}{8}$ in. thick washer between the two boards.

Now cut another straight rail into four equal lengths and screw them — each with a sleeper attached — to the base-

find that the two short end-pieces of rail are not firmly fixed with screws alone. They can be made rigid by using small wedges of hardboard glued between them and the base.

The third model — a turntable — presents little difficulty. You require one piece of hardboard not less than 13 in. square, and a second piece 10 in. by 2 in. This narrow strip forms the base for the centre swivelling rail.

First remove the sleepers from a straight rail and fix the two separate lines to the smallest board with adhesive. Glue two small strips ($\frac{1}{8}$ in. thick) of hardboard to the underside of this board approximately 1 in. from each end. Make a small hole in the centre of the

For the second model you require one straight and one curved rail. First cut the straight rail into three lengths as seen in Fig. 3. Remove the sleeper from the longest portion and glue the two separate lines to a piece of hardboard 6 in. by 3 in.

Screw the two short end-pieces of rail to a piece of hardboard 10 in. by $4\frac{1}{2}$ in. Now drill a small hole as shown through both pieces of board. Screw the two boards together with a $\frac{1}{8}$ in. washer between them so that the centre rail section is free to swivel and will match up with the two end rails when in the straight position.

The next step is to cut a curved rail in half, and remove the sleeper from one half. This will give you the two lines A and B in Fig. 4. C is the remainder of the curved rail. Screw C to the base; not too firmly at first, as you may need to adjust the position later.

Mark the positions of lines A and B and fix them with adhesive, taking care that they form a smooth curve with line C, and that they are parallel with each other. You must also take care that the ends of the swivelling rail and the fixed rail are as close together as possible. Gaps should not exceed $\frac{1}{8}$ in. You may

swivelling rail board, and screw this to the centre of the larger board, placing a

board. The position of each piece is clearly shown in Fig. 5. (G.J.C.)

● Continued from page 454

PROJECTS FOR CARD LOOMS

weft at point A, and the fourth at point X (see Fig. 6) until the whole weave is finished.

Remove the weaving from the card and sew it carefully to felt or any other material suitable for lining slippers. Sew with long zig-zag stitches. Cut away the excess material, leaving $\frac{3}{8}$ in. all round the weaving.

Pull the heel pieces together, and sew the felt at the heel as close as possible to the weaving; then turn back the felt and sew it to the weaving. A thin strip of felt can be sewn to the inside and outside of the heel to make a firmer join.

The $\frac{3}{8}$ in. of felt left around the weaving is now folded on to the face side of the weaving and sewn there with a strong

blanket stitch, shaping the upper as the sewing grows.

Soles of leather, or similar material, lined with lambswool, can be purchased. The weaving is first tacked to the soles here and there before the sewing proper is begun. Using two needles and strong thread, start at the heel and sew downwards through the upper and sole with the first needle, and upwards through the same hole in the sole and uppers with the second needle. Continue all the way around, sewing downwards with one and upwards through the same hole with the other (see Fig. 7).

The second slipper is made in the same manner, based on a template of the other foot. (G.A.E.)

CHEMISTRY

AT HOME

THE colours the Old Masters used for their paintings were often prepared in their own studios and it was a common sight to see their apprentices patiently grinding minerals and coloured earths. Centuries of chemistry have given us a wider range than they enjoyed. To make a collection of pigments is a fascinating sideline in the home laboratory. There is the added advantage that should you require a small quantity of a particular shade of paint you will be able to draw on the collection for its preparation.

A PIGMENT COLLECTION FOR ARTISTS

Attention is often drawn in these articles to substances which are used as pigments. These should certainly be included and so gradually build up a comprehensive range. A start can be made with what you already have in stock and a further selection is given in this article.

The housing should be attractive. Uniform specimen tubes may be used of about 2 in. by $\frac{5}{8}$ in. and displayed in single layers in flat boxes. Small labels bearing a brief note in small letters on the chemical composition of the pigment as well as the pigment's name in block capitals will interest any friend who uses paint, whether artist or decorator.

White lead (Flake White) is the well known base for many paints. Its composition varies somewhat, but it is a basic lead carbonate, generally close to $2\text{PbCO}_3 \cdot \text{Pb(OH)}_2$. It may be prepared by precipitation from lead acetate, $(\text{CH}_3 \cdot \text{COO})_2\text{Pb} \cdot 3\text{H}_2\text{O}$, and sodium carbonate, $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$:

$$3(\text{CH}_3 \cdot \text{COO})_2\text{Pb} + 3\text{Na}_2\text{CO}_3 + \text{H}_2\text{O} = 2\text{PbCO}_3 \cdot \text{Pb(OH)}_2 + \text{CO}_2 + 6\text{CH}_3 \cdot \text{COONa}$$

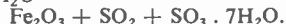
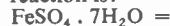
Stir sodium carbonate solution into lead acetate solution until the mixture is shown to be alkaline by its turning red litmus paper blue. The pigment appears as a white precipitate. The sodium

acetate, $\text{CH}_3 \cdot \text{COONa}$, and most of the carbon dioxide, CO_2 , remain dissolved. It is therefore a simple matter to separate the white lead by filtration. Wash it well and let it dry. This and all other pigments should be finely ground before putting them in the tubes.

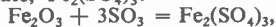
Chinese White is zinc oxide, ZnO , and should be available from stock, or you can make it by heating basic zinc carbonate (formula indefinite, since it is a mixture) until it is wholly yellow and allowing to cool, when it becomes white.

Black pigments are furnished by lamp-black (commercially produced by burning oils) and Spanish Black, which can be made by heating cork in a closed crucible until no more vapours are evolved and allowing to cool with the lid on. Both consist of carbon, C. Another black available from stock is Manganese Black, which consists of manganese dioxide, MnO_2 .

Reds are many. Two easy ones to prepare are Rouge or ferric oxide, Fe_2O_3 , and Light Red, which consists of ferric oxide diffused through a clayey base. Rouge is prepared by heating ferrous sulphate, $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$, to redness in a crucible for an hour or two. The main reaction is:



The sulphur dioxide, SO_2 , sulphur trioxide, SO_3 , and water, H_2O , mainly pass off, but some sulphur trioxide reacts with the ferric oxide to form ferric sulphate, $\text{Fe}_2(\text{SO}_4)_3$:



so when the crucible is cold the Rouge should be washed free of ferric sulphate on a filter. When the wash waters run through colourless, dry the Rouge.

Light Red is quickly made by heating Yellow Ochre (which itself may form part of the collection and consists of a clayey ferric hydroxide, Fe(OH)_3 , until it becomes dark red. The ferric hydroxide simply parts with water:



On cooling, the product lightens to the familiar tone.

Minium, or Red Lead, is mainly triplumbic tetroxide, Pb_3O_4 , and should be available from stock as a fiery orange-red pigment.

Yellows, too, are many. Most familiar as an intensely coloured pigment is Chrome Yellow, which is lead chromate,

PbCrO_4 . Prepare this by adding a solution of 6.7 grams of potassium chromate, K_2CrO_4 , in 100 c.c. of water to one of 12.6 grams of lead acetate, in 100 c.c. of water:



Let the precipitate of Chrome Yellow settle, pour off the upper liquid and wash several times by decantation to free it from the soluble potassium acetate, $\text{CH}_3 \cdot \text{COOK}$, then filter off and dry it.

Ultramarine used to be a dear pigment, for it could be obtained only by grinding up the scarce mineral lapis lazuli. It is now made synthetically and is so cheap that it is the basis of laundry blues. It contains sodium, Na, aluminium, Al, silicon, Si, oxygen, O, and sulphur, S. Its precise formula has not been conclusively proved, but it is possibly $\text{Na}_4(\text{Na}_3\text{Al})\text{Al}_2(\text{SiO}_4)_3$.

To extract it from laundry blue, stir one with boiling water, filter off, and wash well on the filter to remove soluble matter. Then dry it.

A darker blue is provided by Prussian Blue, whose preparation has already been dealt with in the recent article on ferric compounds, as was also the pigment Prussian Brown.

Of the greens, Malachite, Mountain Green, or basic copper carbonate, $\text{CuCO}_3 \cdot \text{Cu(OH)}_2$, was given in the articles on copper sulphate.

Chrome Green, or chromium sesquioxide, Cr_2O_3 , is one of the most permanent colours known. There are various ways of making it, each giving a particular tone. An easy way is to heap up some powdered ammonium dichromate, $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$, on a tin lid and to light the tip of the heap. The salt glows and throws up a voluminous mass of Chrome Green, and giving off water and nitrogen, N:

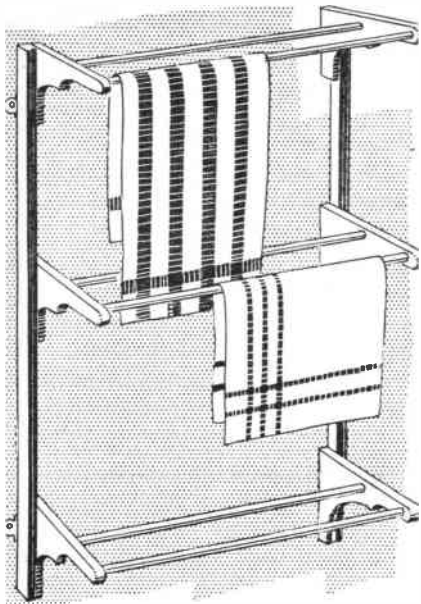


Grind the product and wash well on the filter with water to remove any unchanged ammonium dichromate and then dry it.

By building from this nucleus collection you should soon have an extensive range of pigments. To make up small quantities of paints different vehicles are, of course, needed. For water colours dissolve 5 grams of gum arabic in 50 c.c. of water, stir in 0.5 gram of glycerine and a few drops of chloroform. Rub up the pigment with the vehicle on a glass sheet by means of a flexible steel spatula.

Oil paint can be made from clear varnish, thinning with a little oil of turpentine. Cellulose lacquers can be made by thinning clear dope or cellulose adhesive with a mixture of equal volumes of amyl acetate and acetone. Rub up the pigment with a little amyl acetate before stirring it into the vehicle.

MAKE A SMART TOWEL RAIL



views in Fig. 1 should be suitable for the average home. The main uprights (A) are cut from 1½ in. by 1 in. wood to the length shown.

The brackets (B) are shaped as indicated in Fig. 2. The squares should be enlarged to 1 in. and the shape drawn in carefully. Transfer to a piece of thin card by means of carbon paper, and use as a template for marking the six brackets.

The rails (C) are lengths of ½ in. diameter round rod which are let into the brackets as shown. Glue the rails in place and secure with pins through the tops of the brackets.

The brackets (B) are now screwed to uprights (A) approximately in the positions indicated in Fig. 3, with a touch of glue added for extra strength.

Paint the whole assembly in colours to match the existing decorations, making the brackets and rails one colour and the uprights to contrast. A better finish will result if the grain of the wood is filled before applying the undercoat.

Four Hobbies wall hangers (No. 121, price 1½d. each, postage 3d.) are now screwed to back of the uprights, and then fixed to the wall. The hangers may be obtained direct from Hobbies Ltd, Dereham, Norfolk. (M.h.)

THIS smart rail for hanging towels upon may be fixed to the wall with Rawlplugs or may be screwed to the back of the door. It is quite simple to make and can be constructed in one evening.

The overall dimensions are not critical, but those shown in the side and front

BRACKET B

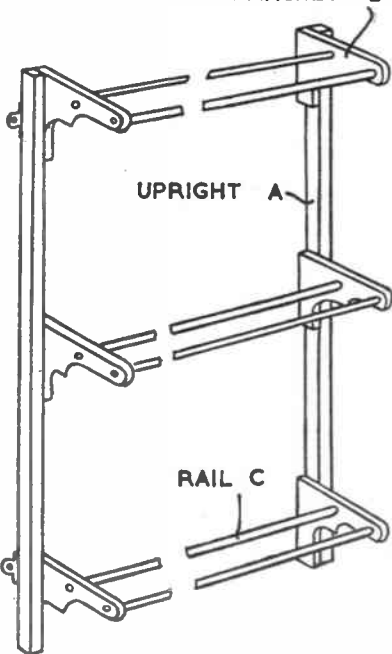


Fig. 3

Fig. 1

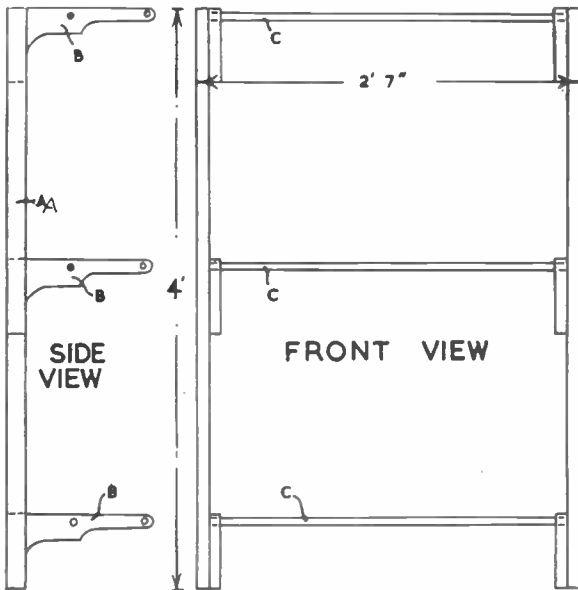
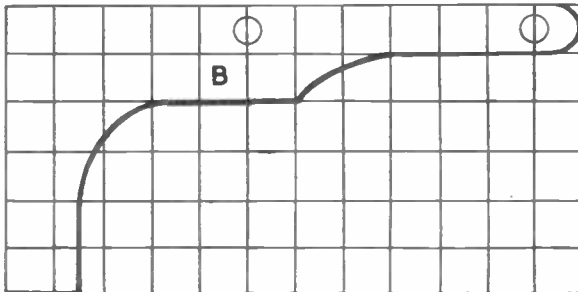
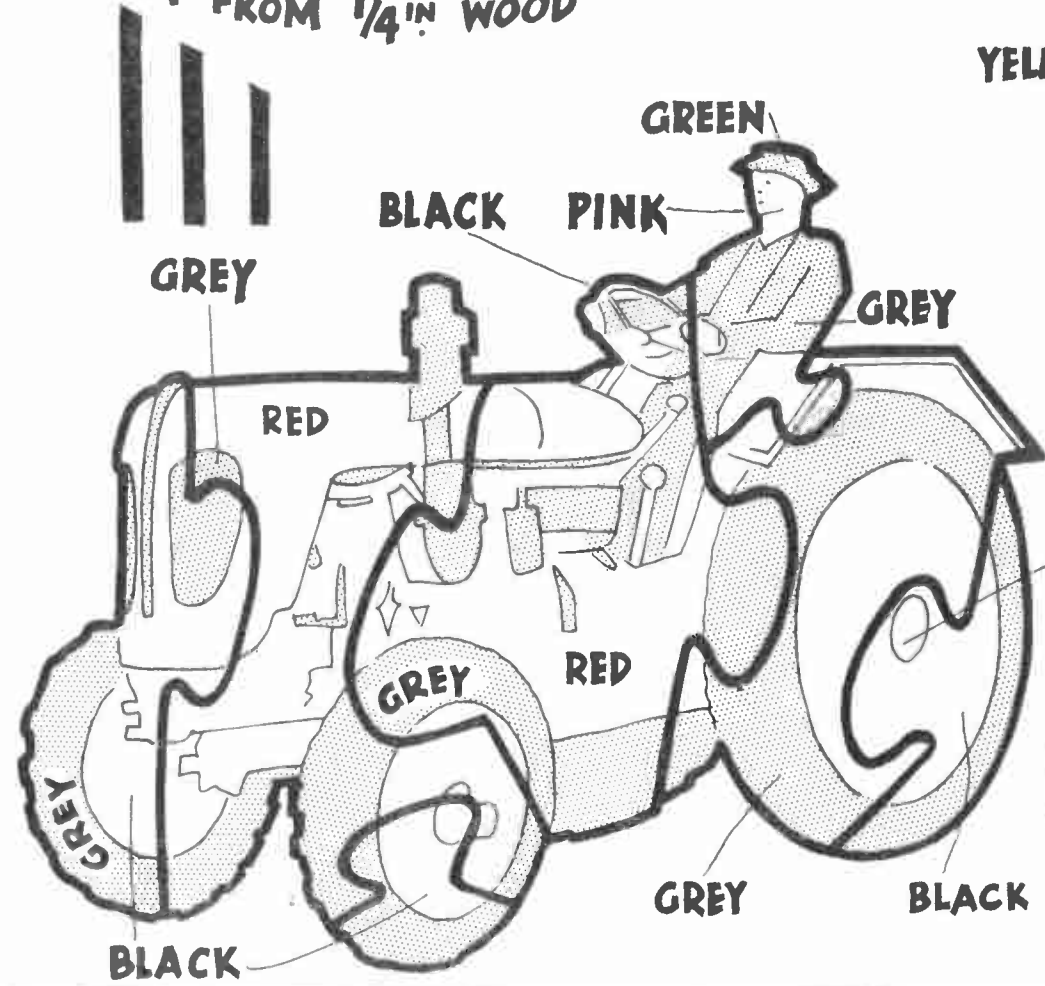
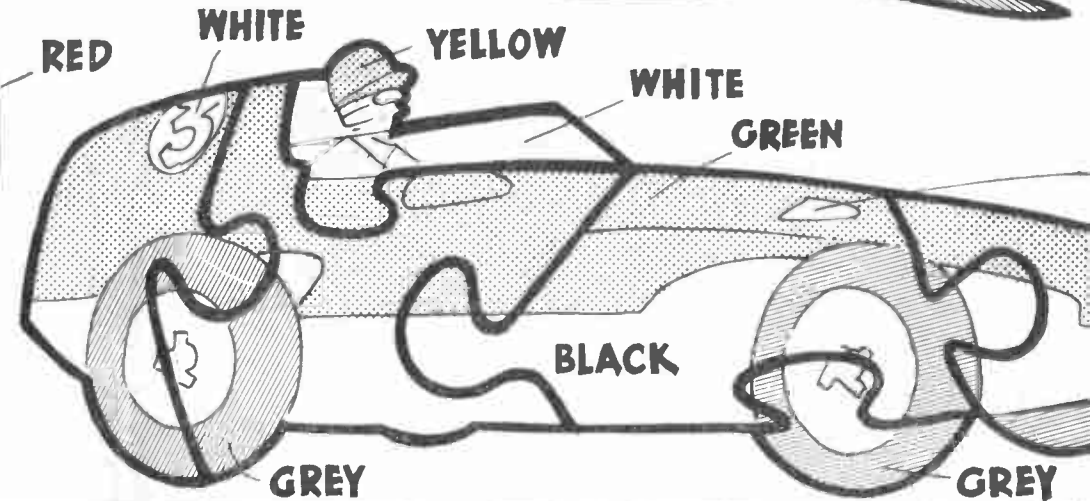
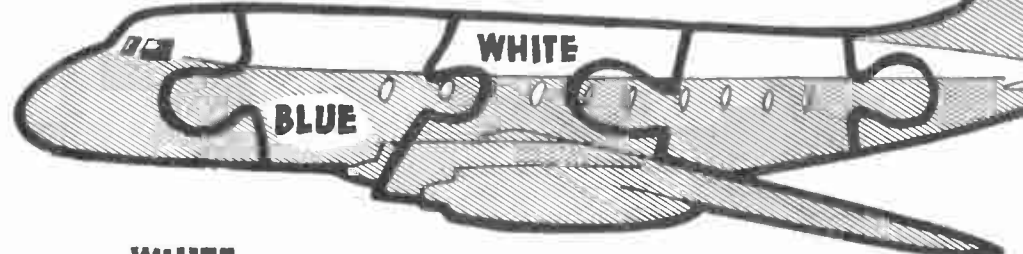
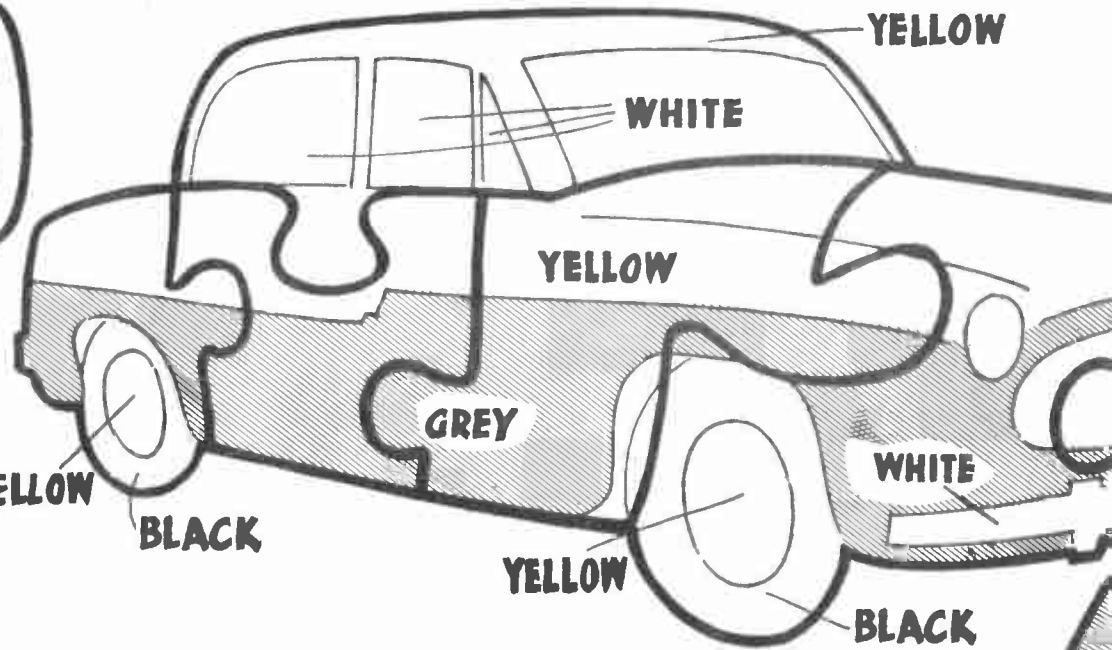


Fig. 2



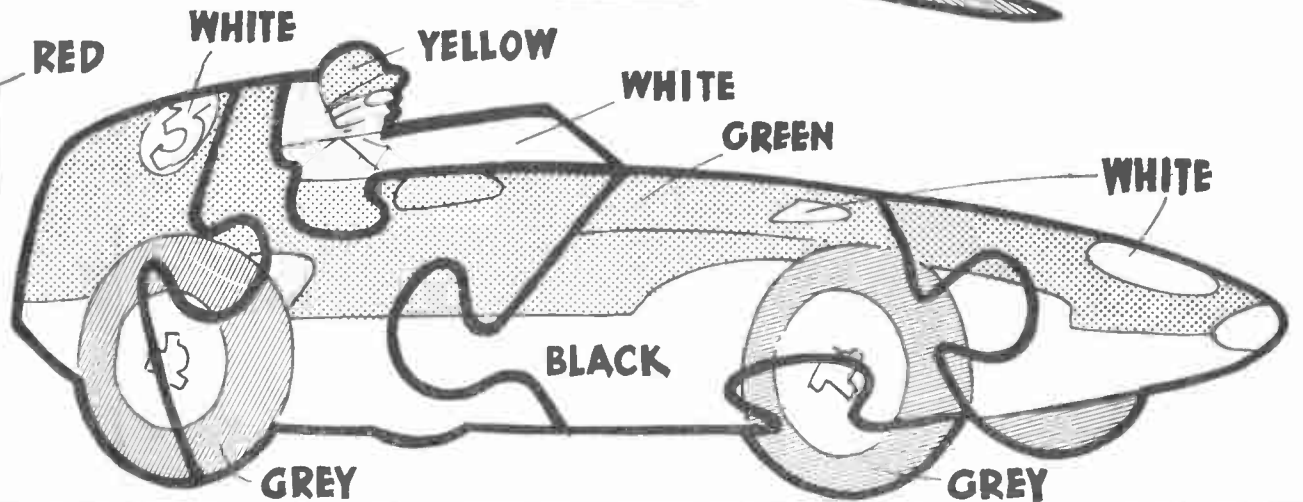
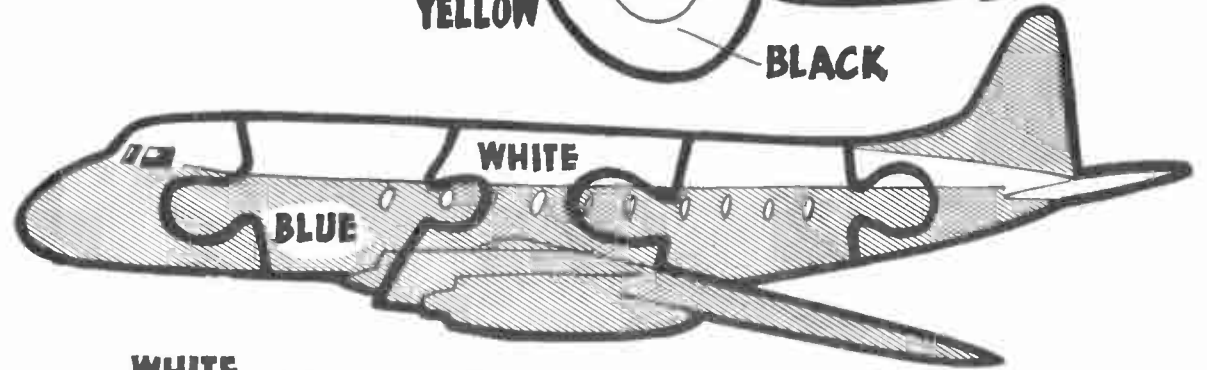
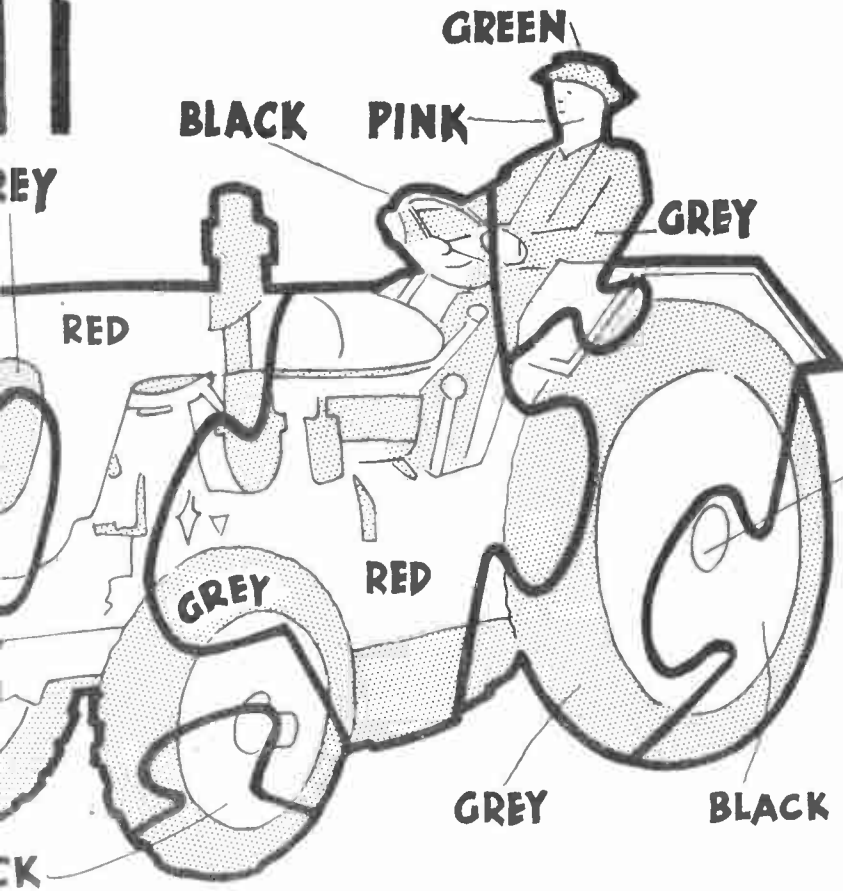
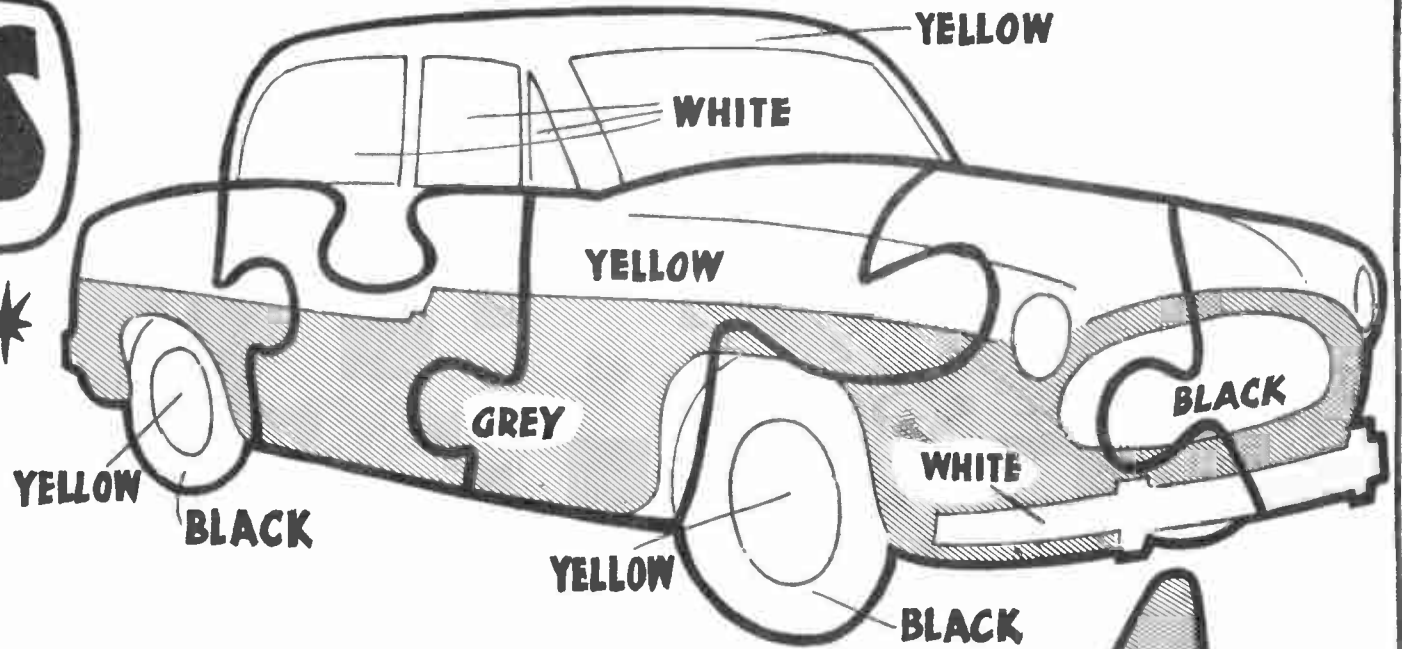
JIGPIGS

EDUCATIONAL PUZZLES ... *
CUT FROM 1/4" WOOD



PIGPIGS

NATIONAL PUZZLES ... *
FROM 1/4" WOOD



ACTI & SUCCULENTS

THE biggest family of succulent plants after the Cactaceae is the *Mesembryanthemaceae*. Mesembryanthemums are exclusive to Africa and range from shrubby bushes to tiny mimicry plants such as the Lithops, which closely resemble small pebbles, and are often known as 'Living Stones'. The flowers superficially resemble daisies, and come in brilliant, almost fluorescent colours. The only colour that

grows as a half hardy annual. This is one of the few annual members of the family.

Although these easily grown bushy Mesems. are very colourful, it is the more succulent members of the family which are the most fascinating, and with which we are concerned here. The easiest of these are the *Faucaria*, *Stomatium*, and *Glottiphyllum*. They lie half-way between the small shrubs and the completely stemless stone mimics. *Faucaria* are winter growers, and should be watered sparingly during the summer and more generously during



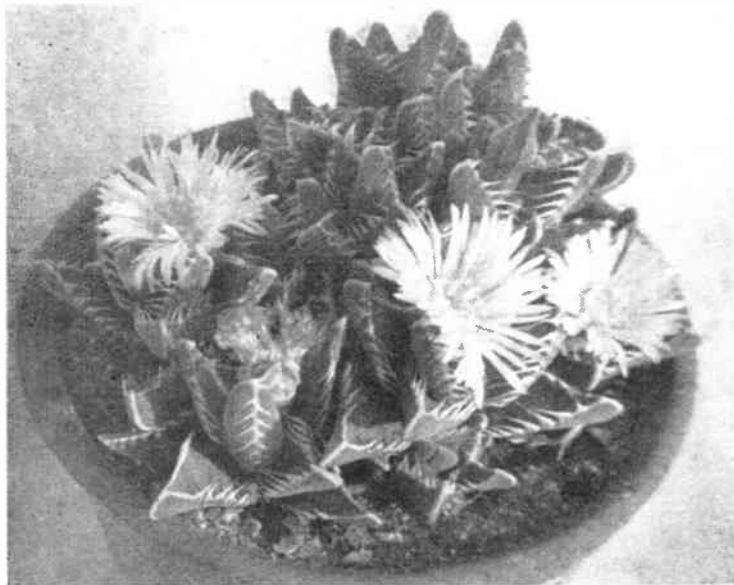
Conophytum Truncatellum

size from *G. latum*, which has leaves about 6 in. long, to *G. neilii* with 1 in. leaves. The flowers are large and golden yellow. Other good species are *G. fragrans*, and *G. taurinum*. The active period of these plants is from June to January when they should be kept moist. For the remainder of the year they should be kept dry.

5—LIVING STONES

is not found is blue; this colour is almost entirely absent from succulent plants.

Shrubby Mesems. such as the *Lampranthus* make spectacular pot plants, and can be bedded out during the hottest part of the year. These plants are usually treated as annuals, cuttings being taken in the late summer for flowering during the next summer. Another well known Mesem. is the Livingstone Daisy, *Mesembryanthemum criniflorum*, which is often grown in our



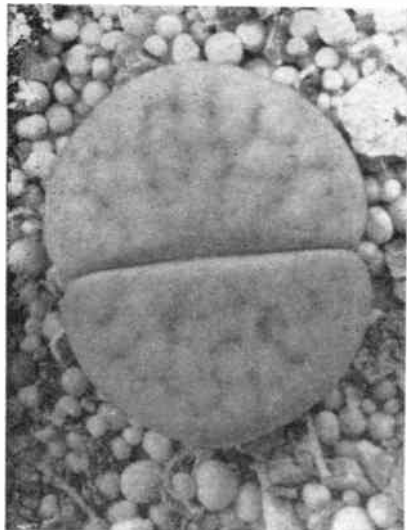
Faucaria Tigrina

the autumn and on bright days in the winter. They have rosettes of thick with small toothed edges. In the early autumn they flower freely, the flowers being of a metallic yellow colour. Good species are *F. tigrina*, *F. felina*, and *F. tuberculosa*. *Stomatium* are rather similar to *Faucaria*, but have a summer growing period.

Glottiphyllum have long tongue-shaped leaves which are rather soft to the touch. They vary considerably in

The most extreme forms of the Mesems. have lost their stems altogether, and are known amongst collectors as 'stemless Mesems.' There are many types of these, but the most attractive and easy to come by are the Lithops, *Pleiospilos*, and *Conophytum*.

Lithops consist of two leaves which have a narrow fissure between them. In the summer the flower arises from this



Lithops Tuibesensis

● Continued on page 461

PRODUCTS NOTED . . .

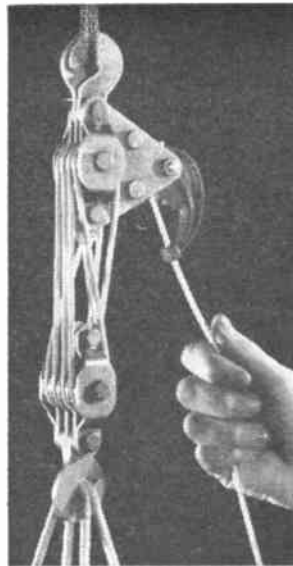


Latest aid for 'Do-it-Yourselfers' is the 1/6 Poly Roll giving over 100 feet of strong absorbent paper. You just tear off a fresh bit for each job. It has dozens of uses - from wiping up paint to polishing metal, leather and wood surfaces.

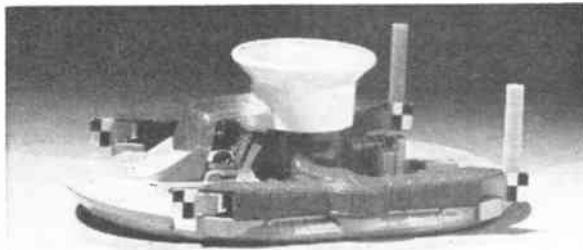
● Continued from page 460

Haltrac Autolock Midget Hoist

Haltrac Ltd, Bourne Works, Weimar Street, S.W.15, have introduced a Midget Hoist incorporating an Autolock device which will hold a load suspended when the cord is released. This hoist (pictured on right) is operated by braided nylon cord which has been tested to a breaking strain of more than 1,000 lb. on a straight lift. The price with Autolock is 87/6 and without the Autolock the hoist costs 57/6.



Corgi Hovercraft



This Corgi model introduced by Playcraft Toys Ltd. is the first accurate die-cast scale model of the revolutionary Hovercraft. In keeping with the Corgi tradition, it incorporates a wealth of detail, including the ducting on each side of the main intake for the engine, the cab (which has clear plastic windows) and the seats. Price 8/6, the model is 4 7/8 in. long and 3 3/8 in. wide.

CACTI AND SUCCULENTS

slit. The top of the plant varies in colour from greyish green to beautiful ochre tints. The plants are speckled and closely resemble the stones amongst which they grow. This camouflage gives them protection from grazing animals.

Lithops have either yellow or white flowers. After flowering the plant divides and eventually forms a clump. The growing period is during the summer, and the plants should be kept completely dry from about October until April. The old plant body will shrivel and the new one appear between the old leaves. Not until the old leaves are completely dried up should watering be re-commenced.

Pleiospilos are said to resemble pieces of granite. The thick triangular leaves are speckled, and the large yellowish flowers are borne in the Autumn. The growing period is from the late summer to early winter, and, as for Lithops, watering should not be re-started until the old leaves have completely shrivelled. Good species are *P. bolusii* and *P. simulans*.

The Conophytum have reached the stage when the two leaves have completely fused, and a tiny slit in the middle, from which the flowers emerge, represents the division between them. These plants are clump forming, and the large plant bodies divide into two and sometimes three annually. These also flower in the autumn, and have quite a wide colour range, white, yellow, and purplish reds. Their growing period is not considered to be during the winter, and watering can be started as a rule in June or July, when the plant body has shrivelled back. During the winter the plants should only be watered on sunny days.

Stemless mesems. are not the easiest of succulents to grow, but are very rewarding when treated correctly. When the above plants have been grown successfully, there are many other genera to try — *Fenestaria*, *Gibbaeum*, *Odontophorus*, etc.

Next: *Euphorbia* and *Stapelia*.

METAL PRIMER

TO ensure the best possible adhesion of the paint finish it is desirable to use a primer prior to painting on metal. The new Humbrol Chromate Primer is particularly intended for preparing all metal surfaces, especially those subjected to heat, such as boilers and pipes in model locomotives, ships, etc. Possibility of discolouring or deterioration is thus minimized, and rusting prevented. This product is easy to apply and flows on smoothly. To meet the needs of the modeller it is packed in handy tins priced at 2s. each.

FIXING FIBRE BOARDS

FIBRE building boards are quite often used nowadays by the home craftsman for lining walls and ceilings and when properly done they make a satisfactory job. It is necessary, however, that care is taken to fix the board properly in position otherwise bulging may result.

There are two main types of fibre building boards, namely, *Insulating Board* and *Hardboard*. Insulating board is soft and lightly compressed during manufacture and has a rough texture finish. Being highly absorptive, it has good sound and thermal insulation properties and greatly helps to reduce condensation. It should be noted, however, that untreated insulation boards may increase the fire hazard of a building, because of the rate of flame spread. This, of course, can be easily rectified by painting with one of the excellent fire retardant paints that are now available.

Hardboard, on the other hand, is manufactured under heavy pressure, and is produced with a smooth, hard surface.

Subject to moisture

Both types of boards are subject to moisture movement, i.e., they are liable to expand after absorbing moisture and contract when they dry out. Consideration must therefore be given to this matter at the fixing stage. When the boards are intended to be fixed on to a newly-built wall it is advisable to allow the wall to dry out first.

Although fibre building boards are obtainable in small quantities in a variety of standard sizes sometimes the home craftsman may wish to tackle a job requiring a fairly large number of

sheets. With large orders, therefore, it is common for builders' merchants to supply the sheets in packing cases without having them unpacked. When this happens it is necessary to unpack the sheets and stack them loosely for at least 48 hours before fixing, preferably in the same temperature as the room in which they have to be fixed. The reason for this is that during manufacture

By Finlay Kerr

the boards are heated under pressure and then immediately packed into crates. It is not uncommon, therefore, to unpack the boards and find them still warm.

During the time the boards are being acclimatized to their new surroundings it is important that precautions are taken to prevent damage to the edges. With hardboards, many manufacturers recommend wetting the backs of the boards a day or so before they are used. They say this avoids the boards swelling afterwards. A pint of water for a 6 ft. by 3 ft. panel will give some idea of the amount of water to use.

Fibre building boards are normally nailed on to timber studding or timber battens plugged to the wall. The spacing of these battens is most important if they are to give adequate support to the boards.

The main studs or battens of the framing should be arranged to suit the size of the boards used and should be not less than 2 in. wide. These are the members on which the edges of two adjacent boards are fixed. The intermediate supports may be reduced to a width of 1½ in. if desired. The vertical members of the framework should be spaced at intervals of about 14 in. to 16 in. for both insulating boards and hardboards. The horizontal members should be spaced at the top and bottom of each board and intermediately at not more than 4 ft. apart.

The cutting of fibre building boards may be done with a fine toothed saw. If, however, the joints between insulating boards are to be exposed then a special cutter is available for producing neat, clean edges. When cutting hardboard keep the saw as flat as possible and always cut from the smooth, hard side. When cutting long, narrow strips of hardboard get someone to support the strip while you are sawing. This will prevent the strip breaking off.

Allow for expansion

Neither insulating boards nor hardboards should be sprung tightly into position. Whenever possible, always try and arrange for the joints to be covered up with beading or timber strips. By doing this, a small gap can be left between the boards at each joint to allow for possible expansion. The illustrations at Fig. 1 show two ways how this can be done. The result is a delightful panelled effect. Metal cover strips may also be used.

The fixing of fibre building boards to the framework may be done with adhesives but nailing is the more popular method. For insulating board, rust-proofed clout nails are used and for hardboard it is normal to use stout panel pins. In both cases where the nails are not covered by mouldings, etc, the neads can be punched below the surface and the holes filled up. The spacing of the nails should be approximately 4 in. to 6 in. on all edges and 6 in. to 8 in. on intermediate battens.

When nailing the boards in position it is essential to start at the centre and work out towards the edges in order that bulges may be avoided. The illustration at Fig. 2 shows a simple pattern how the nailing should be carried out initially.

Finally, care should be taken when inserting the nails not to damage the boards with a hammer, particularly with the last blows. Many jobs have been spoilt by the unsightly appearance of hammer marks.

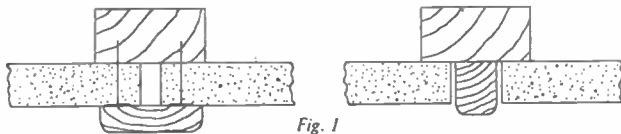


Fig. 1

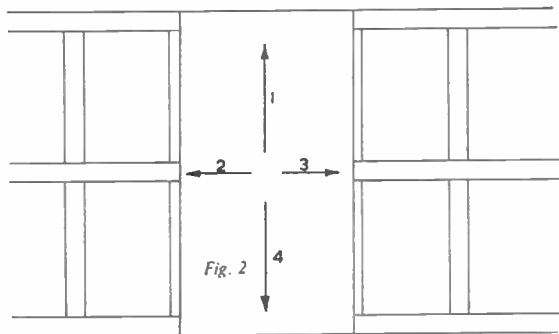


Fig. 2

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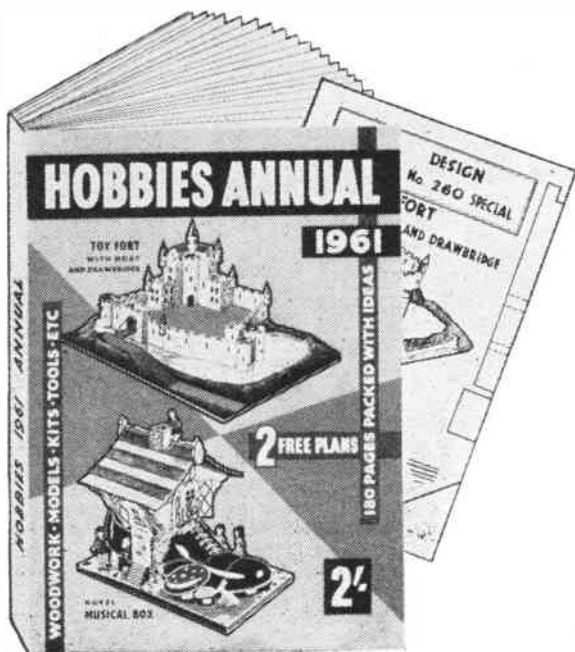
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For home photographers

DECKLING and PLATE MARKING

THE majority of greetings and invitation cards are given a deckle edge, and there is no reason why you cannot similarly enhance your small pictures or photographs. The original reason for this treatment was not only to improve the appearance, but also to strengthen the edges, giving a much firmer product. This is due to the action of tapping in the indents which compress the material slightly, adding the strength as mentioned.

Although the bulk of commercial cards and picture mounts are now deckled by means of die stamps the more expensive cards are still hand treated, and do not conform to regular patterns of the mechanical process. A quantity of cards are stood on a table while held by one hand or fixed between clamps or bulldog clips, so that the edges are all level. The instrument used is a paper folder or reamer, primarily intended for folding or scoring, but you may use the edge of an ordinary ruler.

The cards are held quite firmly; the edges tapped at irregular distances with the edge of the ruler. Here we should emphasize that the edges are *tapped* and not struck vigorously, and an endeavour is made to see that each stroke is of equal power. This operation will quickly make the familiar im-

two pieces of cardboard of equal size. The cardboard holds the pictures firm and upright, and also counters excessive tapping. On removal of the prints you will find a perfectly deckled edge results.

A sunken plate mark undoubtedly improves the appearance of a mounted picture, and observation will quickly

We first require a gauge, cutting a piece of stiff cardboard to the full size of the mount. An aperture is cut from the centre of this cardboard to the same size of the required plate marking. The latter is always larger than the actual picture, and as a guide it may be taken that a full half-plate size is correct for a half plate print after trimming, or otherwise adding $\frac{1}{2}$ in. to the picture dimensions to give a $\frac{1}{4}$ in. margin.

Mark out the cardboard to produce the required size, ensuring that the margins are equal — although the base margin may be a little deeper. Moreover, you must ensure that the angles are perfectly square. Cut out the central aperture with a sharp knife, then trim away the corners of the rectangle a little for ease of working. This is shown in Fig. 1, and you will observe that we now have two pieces — a frame and the portion removed from the aperture — and both pieces are required for the marking operation.

We now come to the actual operation of plate marking, and this is shown in Figs. 2 and 3.

The entire piece of cardboard, including the central rectangle restored to its original position, is laid on the face of the mount and both squared together by tapping on the table top. Lay both on

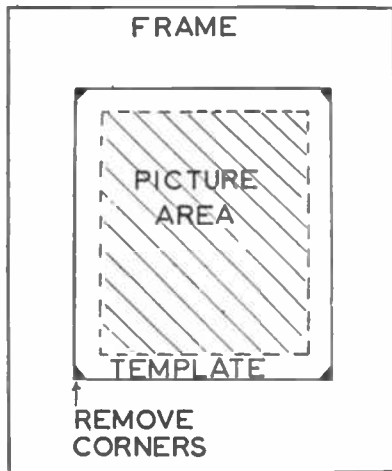


Fig. 1

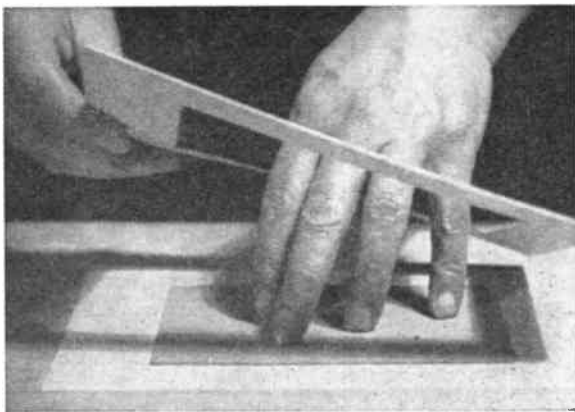


Fig. 2

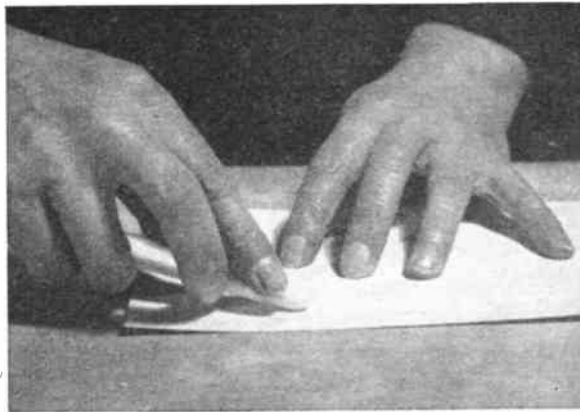


Fig. 3

pression along one edge of the cards, and if necessary all four sides are treated similarly. When greetings cards are being deckled it is usually the practice to treat only the edges on the front of the card, and the fold is left untouched.

When dealing with a few photographs printed on thin quality paper the best method is to place a few between

reveal that engravings and small prints are so treated. Here again the procedure is quite simple once you know the secret and have acquired the little skill necessary.

When it is proposed to mount a photograph or picture on a plate sunk mount the latter must be of a lightweight grade of card or a very stiff paper.

the table, as shown in Fig. 2, and hold the centre piece firmly while removing the outer frame. Now turn the mount and the rectangle over on to the table without allowing the latter to slip. A piece of clean board with a sheet of fine glasspaper glued on top provides a non-

● Continued on page 466

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Hobbies Weekly is a regular source of ideas and inspiration for readers all over the world. Free design plans worth at least 1s., for making all kinds of projects such as toys, novelties, models and furniture, are included in every alternate issue. Costing only 5d. each Wednesday, *Hobbies Weekly* is therefore a sound investment for the craftworker and hobbyist.

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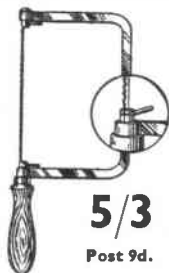
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MAKE A WEATHER STATION

RUNNING your own meteorological office and keeping notes on the weather can be a fascinating hobby, and a model weather station is surprisingly simple to make.

First, you will need a barometer to record atmospheric pressure. All that you require to make this is a jam jar and a bottle which is thin enough to go inside the jam jar. Fill the jar and the bottle three quarters full with water coloured with a little ink. Holding your finger over the neck of the bottle to prevent the liquid from running out, place it upside down in the jam jar. Your barometer is now ready for use. A rise in pressure, which usually means fine weather, will make the water level in the bottle rise, while a drop in pressure, usually bringing rain, will make the water level fall. A strip of adhesive tape on the side of the bottle, marked in numbered lines,

will help you note whether the pressure is rising or falling (Illus. A).

A simple rain gauge can be made from a bottle and a tin tray. Punch a hole in

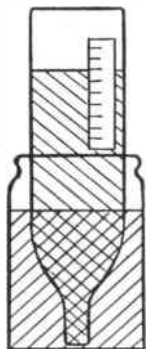
Place the bottle below the hole to collect the rainwater (Illus. B). A strip of adhesive tape marked in inches, halves and quarters, on the side of the bottle will enable you to measure the rainfall each day, when the bottle should be emptied.

These inches of rain which you record will not be the same as those recorded by the Meteorological Office, but they will enable you to compare the rainfall of your area from month to month.

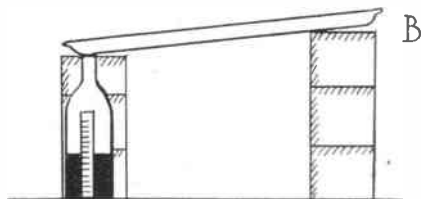
A wind vane for noting wind direction can be made from a strip of wood about 2 ft. long. Screw a triangular piece of plywood, about 9 in. wide, to one end

By A. Liston

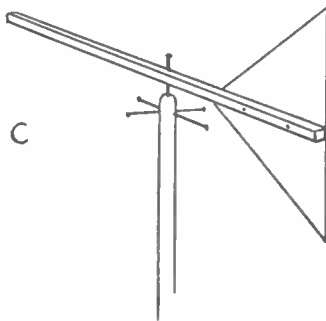
the corner of the tray with a nail and place it on bricks so that the tray slopes down to the corner where the hole is.



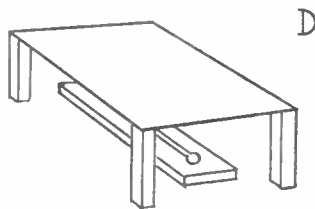
A



B



C



D

● Continued from page 464

DECKLING YOUR PRINTS

slip surface, and is ideal for this work.

The centre of the mount is now held quite firmly by the hand, as shown in Fig. 3, keeping the underlying cardboard in position, and a knife handle is run along the edge of same. Work from the centre of the card outwards until you feel the handle engage with the edge, and you may follow same around the perimeter until the mark is complete. Only slight pressure is required to make what is really a crease but once made it cannot be removed, hence the necessity for keeping a firm hold of the card while turning over the mount, and similarly while applying the knife handle.

Earlier we mentioned that the tem-

plate should be trimmed at the corners, and perhaps you will now appreciate that this was not only for easy release of this portion from the frame, but also to produce a slightly rounded corner. Note that it is only necessary to remove the pointed corners, as shown in Fig. 1.

While deckle edge photographs have an attractive appearance in your albums we would not advise this treatment if they are to be attached to a plate sunk mount. Both methods will certainly enhance the appearance of a photograph but it should be remembered that the first process is to enhance and strengthen the unmounted picture while plate marking is a supplementary feature of mounted pictures. (S.H.L.)

(Illus. C). Find the point of balance by resting the strip of wood on your finger then drill a hole through the strip at that point. Mount it on a broomstick, using a nail as a pivot, then drive four nails in the post at right angles to each other to indicate north, south, east and west. Use a compass when erecting the post, to ensure that the directions are properly oriented. The nail pointing north should be painted red to avoid confusion, or the initial letters of each direction could be painted on the post below the nails.

For recording temperatures, all that you need is a small thermometer costing two or three shillings. It must be kept out of direct sunlight, but should be open to the air. To do this use a piece of plywood on four legs as a cover, rather like a small table. (Illus. D).

Your last requirement is a notebook for your weather readings, noting the temperature, wind direction, pressure and rainfall. It is best to do this at the same time each day, or even twice a day if you can. The more readings you have, and the longer you keep your records, the more fascinating it becomes as you compare the weather of the different months and seasons.

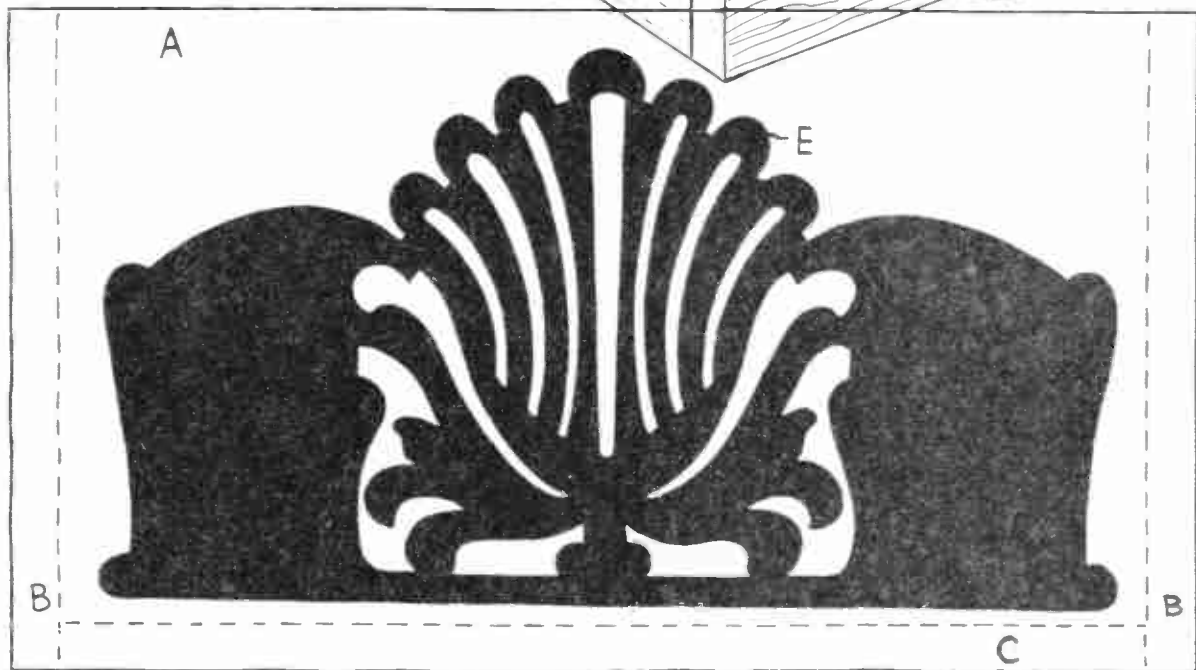
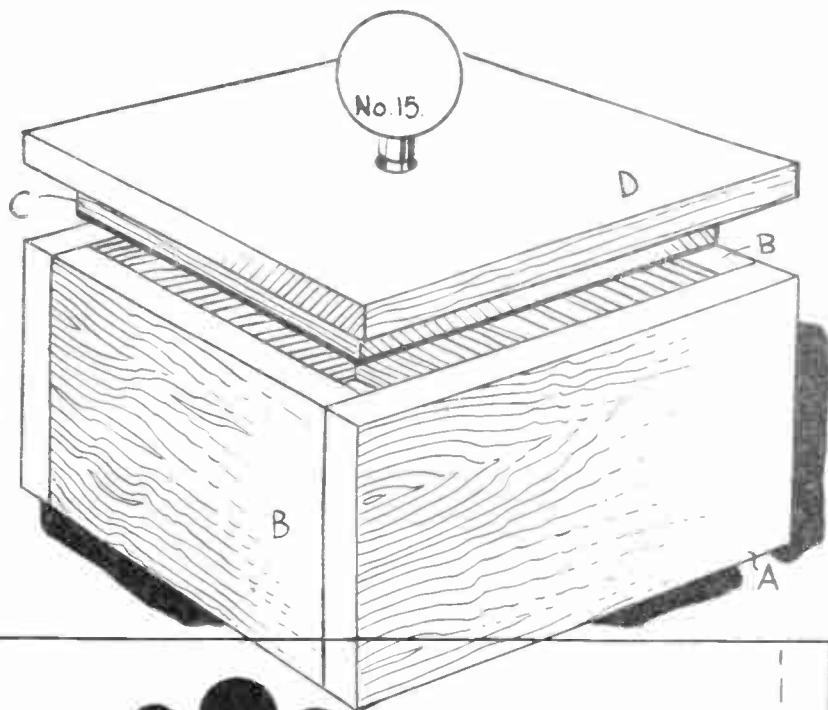
HANDY HANDKERCHIEF BOX

MAKE IT UP AS A GIFT

CUT one of piece D and two each of pieces A, B and C from $\frac{1}{4}$ in. wood. Piece D measures $6\frac{1}{2}$ in. by $6\frac{1}{2}$ in., pieces B measure $5\frac{1}{2}$ in. by $3\frac{1}{2}$ in., pieces C $5\frac{1}{2}$ in. by $5\frac{1}{2}$ in., and piece A is shown full size.

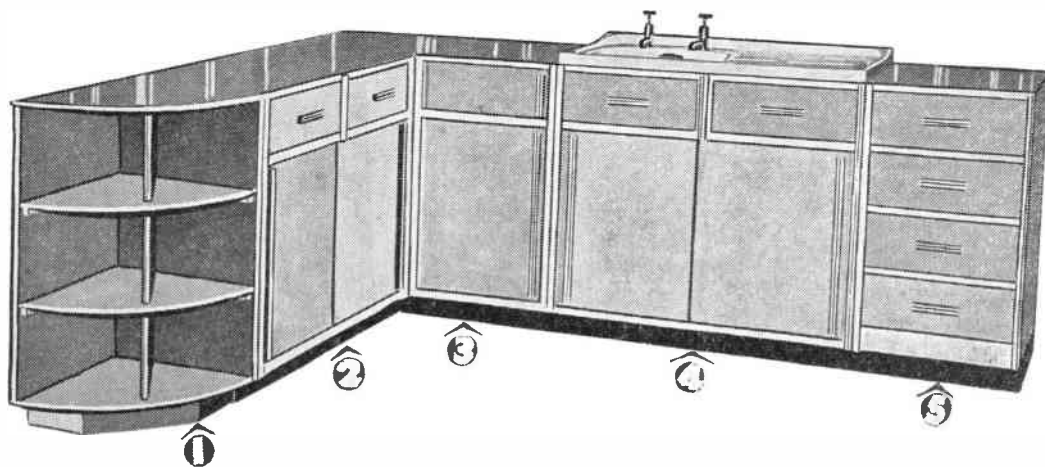
The pieces are glued together, as shown in the diagram, piece D and one piece C forming the lid. The remaining piece C forms the bottom. The decorative overlay is cut from $\frac{1}{4}$ in. wood, and glued to the front.

Add a Hobbies No. 15 $\frac{1}{2}$ in. diameter wood knob, clean up, and stain as desired. Finish by polishing or varnishing. (M.p)



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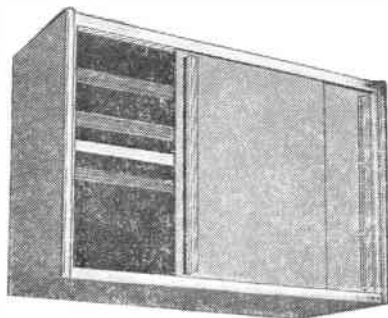
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468