HOBBIES WEEKLY

AUGUST 24th 1955 VOL. 120 NUMBER 3121

IN THIS ISSUE

Full instructions for making

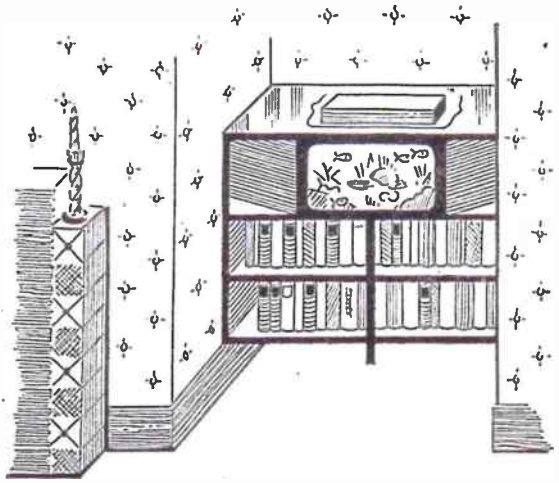
A BOOKSHELF AQUARIUM

WHY not have a living picture on the wall of your sitting-room? You will often find an aquarium in the waiting-room of your doctor or dentist. They have found that when people are watching the ever-changing scene of aquatic life, their minds are almost completely relaxed. What better place than by your favourite armchair?

The place to choose for the bookshelves is the recess next to the fireplace, preferably one with an electric point. The aquarium should be illuminated for the best effect, even if it is not to be used for tropical fish.

Size of Tank

The width and depth of the bookshelves will be controlled by the size of the aquarium to be fitted. A small one will limit the number of fish that can be collected. The depth should not be less than 9ins. A shallow tank is less attractive, as the plants cannot develop properly. The weight of the aquarium is another consideration. A gallon of water weighs 10 pounds, and a tank measuring 18ins. by 12ins. by 12ins. holds 9 gallons approx., so its overall weight, when filled, is about 100 pounds. A length of 16ins., width 8ins., depth 10ins., with a capacity of 6 gallons is ideal for the shelf width.



Exact cutting measurements cannot be given for the bookshelves, as these vary with the size of the recess and tank. The thickness of wood used must be related to the width of the recess. One with a 3ft. span and a 16ins. by 18ins. tank needs ¾in. wood. Larger sizes or a larger span would need thicker wood. The width of the shelves should be at

By J. R. Burt

least ½in. wider than the tank. As for the height, the aquarium top should be at eye level when viewed from an armchair; 33ins. is an average.

Next build your bookshelf as in Fig. 1, making sure the shelves fit

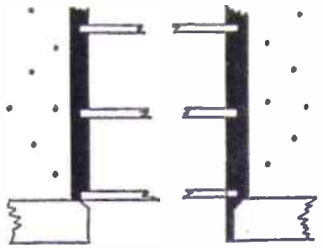


FIG. I

tightly into the joints; the end boards are sprung in position by the shelves. These end uprights can either be fitted neatly round the wainscot in ¼in. thick wood as (A), or on the edge of it as (B). The distance between each shelf is 9ins., the two end boards being projected ¼in. above the height of the tank.

The top is the same as the shelves, but instead of being jointed into the end boards, it is cut with the extra length to rest on the top of each end. Ensure that when in position it can be removed easily. A glass cover plate is fitted into the centre. This glass will keep the tank free from dust, retain heat, and give additional natural light during the day, which is beneficial to the plants. It will also prevent the fish jumping from the aquarium, a constant danger with the uncovered tank.

Cut out a centre panel with a fretsaw as shown in Fig. 2. This should be about 2ins. shorter and 2ins. narrower than the tank. Note the small recesses at the ends which form a finger hole to facilitate the removal of the glass cover. Now cut a 1½ins. wide frame from ¾in. plywood as in Fig. 3; glue into position and screw to the underside of the top cover, to form a ¼in. rebate to take the glass which must be larger than the top of the tank.

Viewing Frame

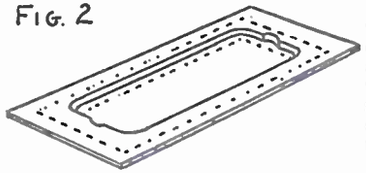
The viewing frame is cut from thin plywood. Cut the width sufficient to overlap the edge of the top cover and shelf on which the aquarium is to stand. Cut the length 1in. longer than the aquarium. The cut-out window should be smaller than the side of the tank to hide the metal frame and water level. The viewing panel is held in position by six ¼in. dowels; three set in to the edge of the top panel, three into the lower aquarium shelf. These engage with six holes of corresponding diameter in the viewing panel.

Side panels can be cut from plywood, and fitted between each side of the aquarium and the end boards of the bookshelves. They are at an angle, the edge next to the end board being set back 3ins. from the edge of the aquarium shelf; the other edge fitting against the aquarium behind the viewing panel. These side pieces, unlike the front viewing panel, fit between the top panel and the aquarium shelf. Mark the position of the side pieces on the shelf and the underside of the top panel. Tack a narrow strip of wood behind the pieces and drill a dowel stud in front to make a guideway for the sides. The viewing panel overlapping the front corner will lock them into position.

Weight Supports

With 1in. by 1in. stripwood, cut a leg to fit tightly between the floor and the underside of the aquarium shelf. Cut

FIG. 2



joints to slot into each shelf to a depth of ¼in. Fit to give support under the centre of the tank.

As previously mentioned, the size of the tank and the span of the recess will control the amount of support needed. Test with the aquarium filled with water. Incidentally it should be filled in position. Never move an aquarium containing water, as this will possibly strain the frame, and cause a leak. If there is a sag on the shelf, use two supporting legs, or fix angle irons between the underside of the aquarium shelf and the wall.

Top Light

The top light can be purchased from an aquatic suppliers or can be made

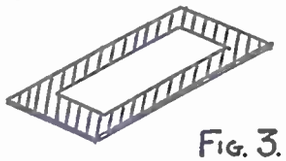


FIG. 3.

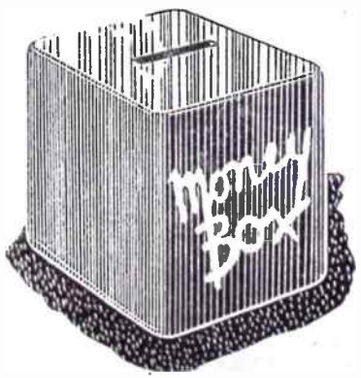
without any difficulty. Construct an oblong box to house the lamp, allowing air vents, and using plastic fittings and waterproof flex. The inside of the box should be white. The light box is placed over the glass panel in the top to diffuse the light into the tank.

Complete by painting to tone with existing paintwork and walls. Small brassware ornaments in the side recesses look attractive and reflect back the light from the tank.

The bookshelf aquarium is now complete. The front can be removed to make adjustments to the tank, or dismantled, leaving a useful set of bookshelves.

SIMPLE FRETWORK

A Child's Money Box



A MONEY box is usually a welcome gift, especially if you start the ball rolling by inserting a few coins. You can make these up for Christmas, or supply them for bran tubs, etc., at local charity bazaars.

Full-size patterns are on page 335

Cut two sides (A), two sides (B), the base and the top from ¼in. wood. The two sides (B) go between the sides (A) and the base between the sides as shown by the dotted lines. The base is simply secured by two screws, so that it may be removed when necessary. The top is glued and screwed in position. The overlay forming the words 'MONEY BOX' is cut from thin wood and glued on one side.

Paint the box bright red and go over the overlay with paint of a contrasting colour.

(M.p.)

FOR AMATEUR PHOTOGRAPHERS

A Pictorial Exposure Guide

By F. G. Rayer

MANY guides to correct exposure exist for the photographer, ranging from the costly exposure meter to tables of light values. The guide set out here has been prepared for those who want a simple, reliable indication of exposure, without the mental calculations which are required by some tables.

From an examination of the guide, it will be seen that four kinds of 'weather' (or lighting conditions) are shown. Beginning from the left, a bright sun in an unobscured sky is shown. Next, the sun is slightly obscured. These conditions are met quite often later in the day, or when the weather is hazy, or occasional thin clouds are present in the sky. In such circumstances the sun is usually bright enough to cast a rather indistinct shadow. Next comes a moderately dull or overcast sky. This is easily distinguished from the previous hazy sunshine, as there is only clear daylight, and no sun visible to cast any shadows. Last, on the right, comes very dull, overcast weather.

WEATHER → / SUBJECT ↓				
	32	22	16	11
	22	16	11	8
	16	11	8	5·6
	11	8	5·6	4

The Subjects

These are shown down the left-hand edge of the guide. At the top are distant landscapes, beach scenes, snow scenes, seascapes, and any large, distant scenic type of subject. Next come landscapes or street scenes which are open, well-lit all over, but contain houses, trees, and other nearer objects. Very many average views will fall in this group.

Third come near subjects, often classified as 'groups'. In this range of subjects will fall groups of people, near shots in streets, close views of houses, trees, or buildings of any kind. Many garden photographs would come in this section.

Lastly at the bottom, fairly close-up shots are illustrated. These may be portraits, snaps of pets, models, or any other near subject, including close shots of groups or single persons.

Lens Apertures

The figures completing the guide show the most suitable lens aperture. Beginners should remember that the amount of light a camera lens passes *increases* as the aperture, or '*f*' number, falls. For example, *f*22 passes twice as much light as *f*32. Similarly, every aperture listed (*f*32, *f*22, *f*16, *f*11, *f*8, *f*5·6 and *f*4) passes twice as much light as that of next highest number.

As the exposure also depends on shutter speed and film, the table is prepared for HP3 film with a shutter speed of 1/50th second, or FP3 with a shutter speed of 1/25th second. Other films of reliable make will be satisfactory in addition.

The exposure is found by noting the subject and weather, and following the columns across and down to the number shown. For example, a near view of houses and trees, in bright sunshine would require *f*16. In hazy weather, *f*11 would be required, with *f*8 if it is dull. Similarly, an open scene with foreground objects would require *f*11 in dull weather, and so on.

If the camera has an adjustable aperture, it is only necessary to set this to the appropriate figure. With simple folding and box cameras, a lens of about *f*11 is usually fitted. Here, the guide can be used to avoid wasted shots. If conditions are such that an aperture of *f*8, *f*5·6, or *f*4 is required, then the exposure should not be made with the box camera, but a future occasion, with better light, should be awaited.

Other box cameras have a metal strip, with holes, giving apertures as small as *f*32. If the guide shows such an aperture can be used, the appropriate hole should be brought in front of the lens. This will avoid over-exposure, and also sharpen detail by reducing distortion in the simple lens.

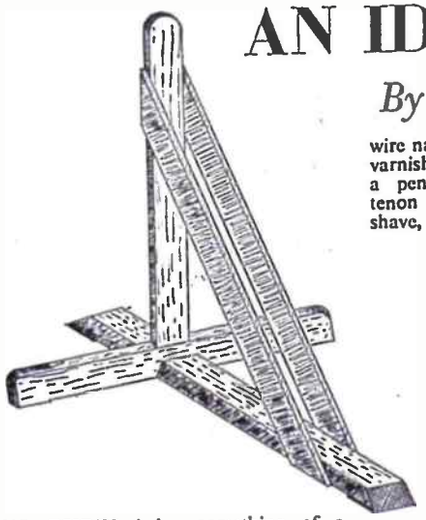
The possessor of a camera with a range of shutter speeds need not keep to the 1/50th or 1/25th second mentioned. If the shutter speed is doubled (for example, 1/100th second used instead of 1/50th) then the table may be consulted as explained, and the aperture halved, or set to the next smallest number (e.g., *f*8 instead of *f*11, and so on).

The illustration shows a correctly exposed snapshot. This is of an ornamental garden, taken in dull weather, receiving an exposure of 1/50th second at *f*8, as shown by the guide.

Sun hidden. Near scene. 1/50*th sec. at f* 8

AN IDEAL CYCLE STAND

By C. L. Marriner



BESIDES being something of a nuisance—not to say a positive danger—cycles propped against the walls in garages and garden sheds are also subject to fairly extensive damage. Few things look worse than scraped and rusting handlebars and badly scored enamel, while bent and broken parts are not infrequently the cause of irritating delays. So why not save your temper and your pocket unnecessary expenditure by investing in this ideal cycle stand, which can be made singly or in units to take one or more cycles?

The only materials that you require for the job are an 8ft. 6ins. length of 3ins. by 2ins., a 6ft. 3ins. length of 3ins. by 1in., a 1ft. length of 3ins. by ¼in. clean-grained wood, a handful of wire nails, some glue and a pot of clear varnish or paint. The few simple tools—a pencil, ruler, compass, set-square, tenon saw, smoothing plane, spokeshave, chisels, light hammer and glass-paper—should be in the kit of the average handyman.

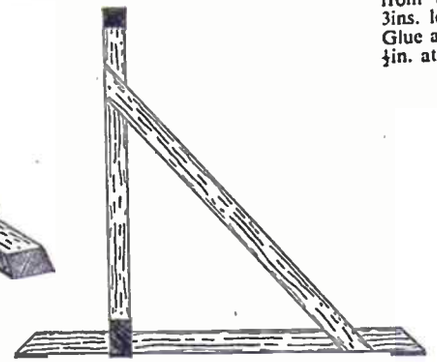


Fig. 1.

First, then, cut the 3ins. by 2ins. material into three lengths: 3ft. 3ins., 2ft. 8ins., and 2ft. 6ins. Cut the 3ins. by 1in. material into two lengths: 3ft. 1in. And cut the 3ins. by ¼in. material into four lengths: 3ins.

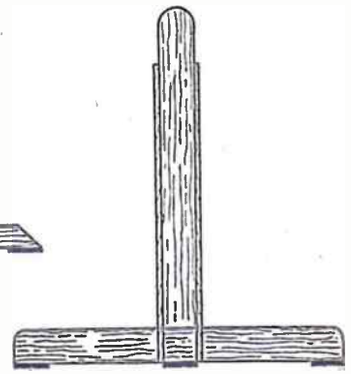


Fig. 2.

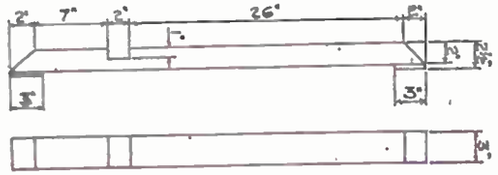


Fig. 3.

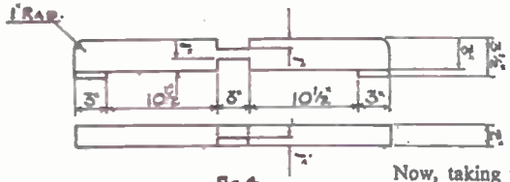


Fig. 4.

Now, taking the 2ft. 8ins. length of 3ins. by 2ins., round off the top corner at each end 1in. radius. Centrally, and across the under face, remove a wedge 3ins. long by 2ins. wide by 1in. deep. Again centrally, and across the top rear edge, remove another wedge 3ins. wide by 1in. square. Glue a couple of feet 3ins. by 2ins. by ¼in. at each end of the under face and secure firmly with wire nails, Fig. 4.

The 3ft. 3ins. length of 3ins. by 2ins. material should next have each end of the top face chamfered to a depth of 2ins. Across the top face, and 9ins. in from the rear end, remove a wedge 3ins. long by 2ins. wide by 1in. deep. Glue a couple of feet 3ins. by 3ins. by ¼in. at each end of the under face and secure firmly with wire nails, Fig. 3.

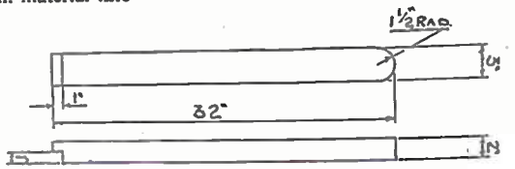


Fig. 5.

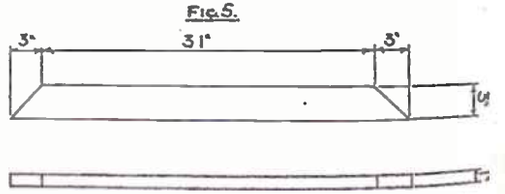


Fig. 6.

Chamfer the top end of the 2ft. 8ins. length of 3ins. by 2ins. material with radius 1¼ins. From the front face at the opposite end remove a wedge 3ins. long by 1in. square (Fig. 5).

● Continued on page 327

How to Analyse a Simple Inorganic Salt—Part 2

IN determining the acid radical present in a salt we follow a similar procedure to that for metals. Namely, we use the action of certain reagents to split them into groups. The individuals of the group are then separately tested for, if the reagent has not already distinguished it from its fellow members in the group.

A little of the solid salt is first treated with dilute sulphuric acid in a test tube and warmed. If gas is evolved—shown by effervescence or the appearance of coloured fumes—there are present carbonate, bicarbonate, nitrite, sulphide, sulphite, thiosulphate or hypochlorite.

Carbonate or Bicarbonate?

If the gas is colourless and has no odour, take up a drop of lime water on a glass rod and lower it into the tube to just above the mixture. If the lime water clouds, carbonate or bicarbonate is present. To differentiate them, make a solution of about a gram of the solid salt in 20 c.c. of distilled water (the original solution), pour some into a test tube and add magnesium sulphate solution. A carbonate gives a white precipitate, a bicarbonate does not. If a bicarbonate has been indicated, boil the mixture, when bicarbonate will be confirmed by a white precipitate now appearing.

If brown fumes are evolved, nitrite is present and can be confirmed by adding first ferrous sulphate solution to a little of the original solution and then a drop or two of dilute acetic acid, when the mixture becomes deep brown.

A colourless gas smelling of rotten eggs indicates sulphide. A strip of filter paper wetted with lead acetate solution will be blackened by it. Where the gas has the pungent smell of sulphur dioxide and turns filter paper wetted with potassium dichromate green, sulphite or thiosulphate is present. To recognise the actual radical, add dilute sulphuric acid to some of the original solution and warm. Sulphite produces no precipitate, whereas thiosulphate gives a pale yellow turbidity or precipitate. Lastly, the odour of chlorine indicates hypochlorite, and if a damp litmus paper is held in the tube it will be bleached.

The next group of acids is detected by warming with strong sulphuric acid. First test for chlorate by placing two or three pin-head sized particles of the solid salt in a dry test tube and add a drop of sulphuric acid. The mixture will turn orange if a chlorate is present. Confirm by warming the tube gently by holding it above a flame, when a crackling will be heard.

Chlorate having been found absent, a larger quantity of the solid should be warmed with strong sulphuric acid. Hold a damp blue litmus paper in the mouth of the tube. If the paper is reddened, lower a glass rod carrying a drop of water into the tube. A clouding of the water indicates fluoride. Where this test draws a blank, repeat with a drop of silver nitrate solution. Should the drop cloud white, chloride may be present. If, on dipping the rod in ammonia, the cloudiness disappears, chloride is confirmed. Bromide behaves similarly to chloride, but is distinguished by giving off brown fumes of bromine instead of colourless vapours. Further, the clouding of the silver nitrate is distinctly yellowish. Violet fumes on heating with strong sulphuric acid show the presence of iodide.

Oily drops on the tube walls and light brown fumes point to nitrate. To confirm, use the brown ring test. Mix some of the original solution with ferrous sulphate solution and carefully run in a little strong sulphuric acid down the test tube wall, so that it does not mix with the liquid, but falls to the bottom forming a lower layer. Where the acid and liquid meet a brown ring appears in the case of a nitrate.

Before passing on to the next group of acids borate must be tested for. Mix a little of the solid salt with strong sulphuric acid to a paste in an evaporating basin and carefully add about an equal volume of methylated spirit. Set fire to the spirit. The flame will be edged with green if borate is present.

Further Tests

All the preceding acids having been found absent, we must now test for chromate, dichromate and permanganate. Pass sulphur dioxide into some of the original solution acidified with dilute sulphuric acid. Chromates and dichromates turn green, permanganates are decolourised. The soluble chromates and dichromates are readily distinguished by the colours of their solutions, chromates being yellow and dichromates orange. The addition of a few drops of strong sodium hydroxide solution to a few c.c. of the original solution produces a characteristic change to yellow in the case of dichromate.

The only remaining common acid radicals now to be sought are phosphate, phosphite, hypophosphite, sulphate, persulphate and silicate. Add barium chloride solution to some of the original solution. If no precipitate appears, hypophosphite or persulphate is indicated. Boil the solution. The appearance of a white precipitate and escape of gas pins down the acid as persulphate. A hypophosphite would undergo no change here.

Where barium chloride forms a white precipitate, one of the other acids is present. Phosphates may be detected by filtering and washing the precipitate and adding a little to dilute acetic acid. If it dissolves, orthophosphate may be present and is confirmed by the original solution giving a yellow precipitate with silver nitrate solution. If the precipitate with barium chloride is insoluble in acetic acid, meta- or pyrophosphate may be present. Dilute a little egg white (albumen) with three volumes of water and add a little acetic acid. Now add some of the original solution. The albumen will be coagulated if a metaphosphate is present. No change occurs with a pyrophosphate.

Brown Precipitate

Phosphite also gives with barium chloride a white precipitate which is soluble in dilute acetic acid, but is marked off from orthophosphate by the original solution yielding a white precipitate with silver nitrate solution. This precipitate turns brown on standing and blackens on warming. A further confirmation of phosphite is to heat a little of the solid salt in a dry ignition tube, when a spontaneously inflammable gas is given off.

The last two common acids to be identified are sulphate and silicate. Both of these give a white precipitate with barium chloride. The sulphate precipitate is quite insoluble in dilute nitric, acetic, sulphuric or hydrochloric acids. Further, the original solution gives no precipitate with silver nitrate solution. If the white precipitate with barium chloride is soluble in dilute nitric acid and the original solution gives an orange precipitate with silver nitrate solution, silicate is confirmed.

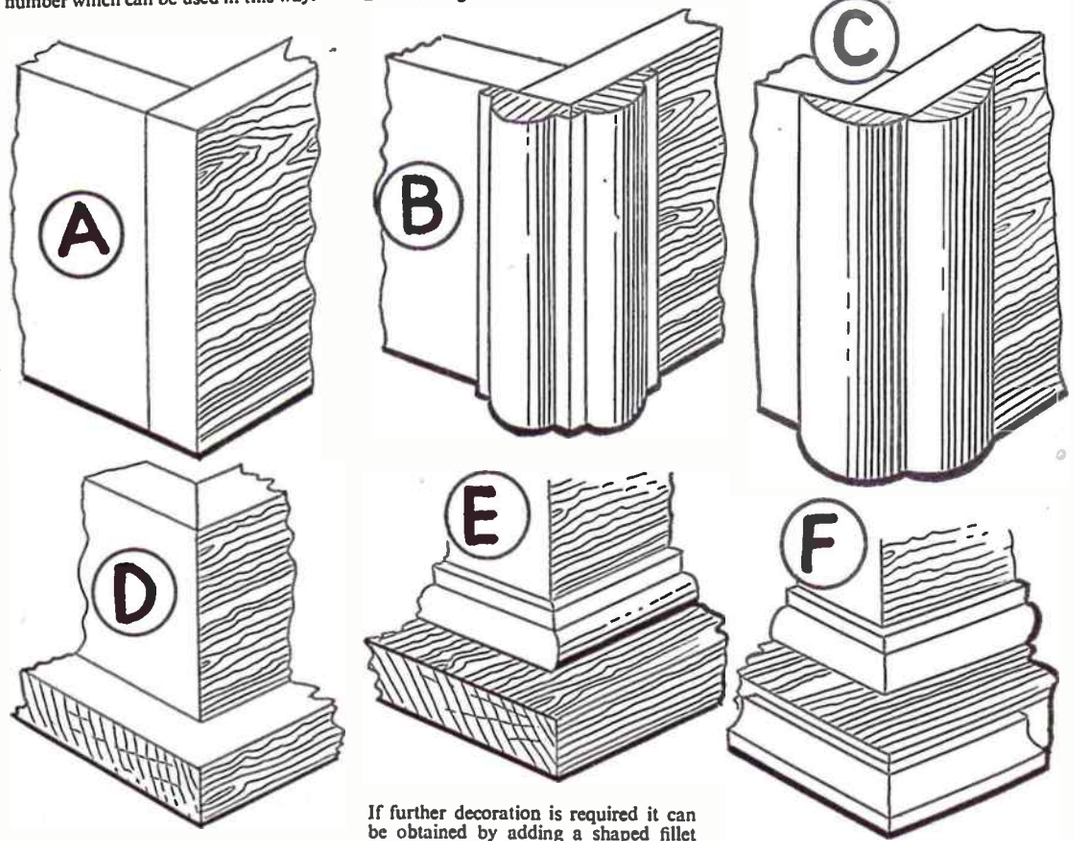
In this and the previous article systematic methods have been given for the detection of no fewer than twenty-four metallic and twenty-three acid radicals. That a large number of simple soluble salts could be analysed by these methods is self-evident from these figures.

(L.A.F.)

Some hints on

Using Mouldings for Decoration

ATTRACTIVE mouldings can be made with a suitable plane, but not every handyman can afford such an expensive tool. By the use of ready-made beadings and mouldings, however, much the same effect can be obtained. Our current handbook lists a number which can be used in this way.



Suppose, for example, you wish to hide the end grain of a piece of wood which forms the corner of a box. Pieces of No. 18 moulding, which is ¼in. wide, can be glued in place and strengthened with pins. The diagram at (A) shows the plain corner and (B) the finished corner with the moulding in place. Note that the moulding must be mitred to fit.

A similar effect can be obtained by using a plain half-round beading, as shown at (C). The beading, which is listed as No. 35, can be obtained in four different sizes to suit different thicknesses of wood. The sizes are ¼in., ⅜in., ½in., and ¾in.

Further effects can be obtained by using a moulding to form a kind of shaped plinth. An example of the plain base is shown at (D) and the method of improving the appearance is shown at (E). Use No. 24 moulding and mitre it round as shown.

If further decoration is required it can be obtained by adding a shaped fillet moulding No. 307 as shown in the diagram (F).

It is a simple matter to cut mitres if a mitre-cutting block is used. Simply place the moulding in the block, after marking the correct lengths, and cut off with a tenon saw. Suitable blocks can be obtained from Hobbies Ltd., Dereham, Norfolk, price 3/- post free.

Prices of mouldings mentioned are No. 18, size ¼in. by ¼in., 3d. per foot. No. 35, ¼in., 2½d., ⅜in., 2¾d., ½in., 3d., ⅝in., 3½d., per foot. No. 24, size ⅞in. by ¼in., 2½d. per foot. No. 307, size ¼in. by ¼in., 2½d. per foot. All are obtainable from Hobbies Ltd., Dereham, Norfolk, and not less than 6ft. are sent by post. You are advised to keep the lengths short to avoid breakages. (M.h.)

Have you tried

WORM-FISHING FOR TROUT?

asks Arthur Sharp

WORM-FISHING for trout, when the waters are flowing clear and bright, can be very enjoyable sport. At such a time the speckled fish are frequently satiated with the abundant feeding on insects and larvae of one kind and another. Therefore, they rove in the shallower stretches of the river, and seem to like a change of diet. Thus, a nice juicy red worm presented to their notice in a fitting manner is often snapped up eagerly.

The tackle can be either a special worming rod, or a lightweight cane rod with fairly stiff top, such as might be used for dace fishing. A fly-rod with a suitable top-joint of greenheart can also be adapted for worming. The reel should be of light metal, with rather large drum, and the line 30-40yds. of dressed silk line or nylon; and the cast itself should be about 3ft. to 6ft. in length, of gut or nylon tapered from 2x to 4x.

The hook tackle may be either a Stewart three-hook or Pennell two-hook. Some anglers prefer to rig up their own hook tackle, tying on to a length of gut or gut-substitute two No. 12 crystal hooks a short distance apart. Others advocate a single round-bend hook, size 12 or 14, on a 12ins. length of gut or nylon 3x strength, looped on to a cast of similar thickness about 2yds. long. On some waters it is not necessary to use split-shot; but in others it is advisable to nip on the cast a medium-sized shot to steady the tackle and baited hook in fast currents.

Baits for upstream worm-fishing should be well scoured before use, to toughen them. When fishing with a single hook, thread the worm carefully over barb and shank of hook; in the two-hook and three-hook tackles the worm is threaded on in a 'serpentine' form. If worms are too freshly gathered and soft they easily flick off the hook when making upstream casts, especially against a strong wind, which is a definite handicap.

Worms, by the way, include the red or cockspur worm, brandling, and the dew worm. Trout take the striped brandling well, but it is rather nasty to thread on the hook, exuding a yellowish fluid with a disagreeable smell. The best are the pink or reddish worms found in well-rotted garden compost or in manure heaps. Keep the baits in well-washed fresh moss for some days before use.

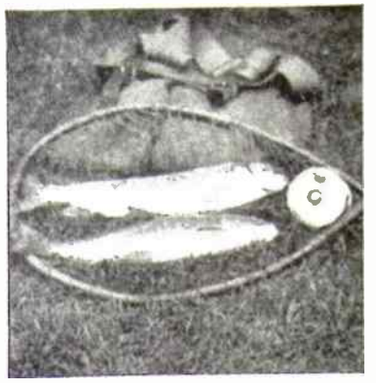
Simple Rules

Here are some few simple rules:

Keep out of sight of the fish and use fine tackle. On these two maxims—fine, good quality tackle and taking cover, or keeping well below the trout if you are wading—depends your success or failure.

Wade slowly to avoid undue disturbance of the water. When fishing from the bank take advantage of all bushes, trees, and other cover, for trout often lie close in under the banks, and sometimes in water that barely covers their spotted dorsal fins.

Fish carefully, casting well upstream and slightly across. Be sure not to 'flick' out the bait too violently in making a longish cast, or the worm will probably leave the hook and fall in the water. In quick waters strike instantly on the sudden stoppage of the line in its progress downstream, as it denotes a 'bite'. Especially when using the two-hook or three-hook tackle is it advisable to strike 'on the dot'.



Trout taken on the worm

Fish every available yard of suitable water, and every spot that looks a likely trout-hold. Do not be in a hurry to fish that other stretch of water beyond the bridge. Quick runs, shallows, eddies behind stones and rocks, streamy bits, places where the current 'creams' away from under ledges of turf, and the heads and tails of wind-ruffled pools are all worthy of your attention. All shallow places with a nice ripple usually harbour trout in summer, and just at the head of streamy runs are good spots to try in calm warm weather. On occasions one may get a big fish from a deep hole.

When a trout is hooked play him downstream into that area you have already fished. If possible, prevent him from rushing headlong upstream, thereby disturbing the water ahead, and possibly scaring any trout lying there.

Upstream worming affords fine sport, and the angler who can work his tackle properly often returns home with a satisfactory catch. After all, the proceedings are simple. The angler casts the bait upwater a fair distance, not out of full control, though well in front. The worm is carried down with the current into the eddies and 'boils' behind stones and boulders, towards the angler, who, as the bait floats along, gathers in the line with his left hand, keeping the floating line in the water as taut as possible; the stoppage of the line or its sudden jerking tells of a 'bite'. He strikes, and with luck, and skill, hooks his fish.

On hill and mountain streams, fishing the worm in the shallow places can be pleasant and profitable sport. Here the method is to cast the bait in the same direction as the water flows. On such

●Continued on page 328

●Continued from page 324

An Ideal Cycle Stand

Now clean up all the parts with glasspaper and set up the base cross in position. Apply glue to the joint and secure firmly with wire nails. Leave to set hard.

The upright should now be set up in position, glue applied to the joint, and the whole secured firmly with wire nails. Again, this must be left to set hard.

Chamfer each end of the two 3ft. 1in. lengths of 3ins. by 1in. wood 3ins. in from the ends on the under side (Fig. 6). These, the side arms, should be cleaned up with glasspaper and set up in position 6ins. down from the top end of the upright and 6ins. back from the front end of the long fore-and-aft member of the base cross (Figs. 1 and 2). Apply glue to the joint and secure firmly with wire nails.

Alternatively, the side arms can be set up in position, secured and the ends trimmed when the whole has set hard.

After this a coat or two of clear varnish or paint are all that will be required to complete this ideal cycle stand, which will give a lifetime of useful service.

Mortar on Brickwork

I HAVE been using a lime mortar with a very small percentage of cement in building a wall. A little of the mortar, however, has got on to the brickwork. Please can you suggest a method or solution to remove it? (S.A.—Weymouth.)

SO far as we are aware there is no solution on the market for removing mortar from bricks. A strong acid might do the job, but it would prove messy and even dangerous to work with. A better and safer plan is to gently chip the mortar away with a steel chisel and hammer. If care is taken this should shift at least the major part of it without damaging the brickwork. Any traces left could be cleaned off by rubbing over with a Carborundum stone, frequently dipped in water.

* * *

Paint for Tiles

I HAVE some tiles from an old-type fireplace, and if it is practicable to paint them, would I need any specially prepared paint? (D.P.—Ipswich.)

THE difficulty with glazed tiles is to get ordinary paint to adhere without subsequent flaking. If you prefer a highly glazed finish, try the following. Roughen up the glazed surface of the tiles with powdered emery, placing a little between the two tiles and after damping with water, rubbing both together. When dry, paint with lead paint, followed up with an undercoat and then a lacquer or enamel.

A MOTTLE FINISH

THE following handy hint for the finish of picture frames where the wood is not good enough for polish, has been sent to the Editor by a Dundee reader:

First coat the frame with flat cream paint and allow to dry. Pour a thin layer of brown gloss paint on to a board and dab it with a stiff brush, such as a tooth-brush or shaving brush with the hairs cut short. Then run the tip of a finger along the bristles and the resultant spray will give a pleasant mottled effect to the picture frame.

Different combinations of colours can, of course, be used, a spraying of white over a black background giving a marble effect, while the principle could also be applied to other small surfaces.

Painting on Glass

I WISH to put a design on a mirror; will you tell me what paint to use? Also what is the best way to remove paint from walls so they can be papered? (G.S.—Wolverhampton.)

FOR painting on glass you would find 'Chintex' quite satisfactory. It can be bought from most art shops and stores, or direct from Beaford, Winkleigh, Devon. For removing the paint on walls, you can employ 'Arnolite'.

* * *

Hardening a Spanner

I HAVE some old ⅜in. by ¼in. spanners. The ⅜in. end fits perfectly our 1in. nuts; the ⅜in. end I would like to file down to fit our ¾in. nuts. This is bound to soften the jaws and in time make the spanner slip. I would like to reharden it, so will you please advise where case-hardening powder can be bought in small quantities, its approximate cost, also the heat required in the spanner before applying the powder? (E.H.—Paddington.)

MOST spanners are made of tool steel, which may be hardened, tempered or softened by heat treatment. Case-hardening, which you mention, is only applied to mild steel, and is unnecessary with tool steel. Before filing your spanner jaws, soften the metal by heating it to redness and allowing to cool slowly—the slower the better. After filing, heat the jaw to redness and dip into water. This will make it hard and brittle. To reduce the brittleness, the next step is tempering. Rub one face bright with emery cloth. Put the end of the spanner on an iron plate or a tray of sand over a fire or gas ring, and watch the oxides form on the bright part as it gets hot. The first colour will be straw and this will darken into a red-brown. When a medium red-brown is reached, plunge the spanner into water. If anything goes wrong, start by heating to redness again. If your spanners are mild steel, they can be case-hardened by heating to redness and plunging and rolling in potassium ferro-cyanide or preferably a commercial case-hardening powder from a firm such as Buck & Ryan, Edgware Road, London. Reheat to redness and proceed with hardening and tempering as for tool steel.

● Continued from page 327

Worm-Fishing for Trout

streams with stony bottoms, strewn with rocks and boulders, and alternating with pools, shallows, rapids, and little natural cascades, the water is generally very clear in summer, so that the need for keeping well away from the quarry you seek is evident.

Usually no float is used on the 3x cast of gut or nylon, but a medium split-shot is nipped on the line about 10ins. or so from the No. 14 'crystal' bend hook. The angler baits up with a small well-scoured worm or a maggot, casts it downwater, and waits a while; then, if no response is forthcoming, he withdraws his line and makes a further cast into another likely spot.

After the bait has settled in the water the line is watched carefully, as any check, slight stoppage, or jerk may indicate a bite. When this happens the angler should strike immediately. It is also wise to watch the rod tip when the baited hook has reached the end of the 'swim', as a trout frequently tugs and pulls at the bait, causing the rod-top to jerk or shake.

An expert's hint may be followed with profit here. 'After casting, and the baited hook is at the end of the swim and has been there for a while, give the rod a slight jerk of a few inches, causing the bait to be suddenly moved upstream. This may cause a trout which has, perhaps, been waiting there with eyes on the succulent titbit, to be tempted to seize it when it moves.'

This downstream method is similar to light ledgering. The operations are carried out in fairly shallow water during summer, when the stream is clear. After you have caught two or three fish from one stretch it is wise to move to another position and try another 'swim', taking care while on the move to keep well back from the water's edge. As in all methods of fishing, practice brings perfection to the art. Once you are proficient the possibilities of sport are doubled. On many Yorkshire streams anglers seek the trout by 'swimming' the worm on fine tackle and a small egg-shaped cork float, paying out line as the current carries the baited hook downstream, as in dace fishing.

LEATHERCRAFT

SANDAL-MAKING

By J. MacIntyre

VARIOUS types of strap-fitting sandals, both men's and women's, can be made from leather. As a rule the straps and inner soles are constructed from cow-hide, and continuous decoration on the straps is stamped with nail-dyes, as described in a previous article.

Fig. 1—Tracing the sole outline

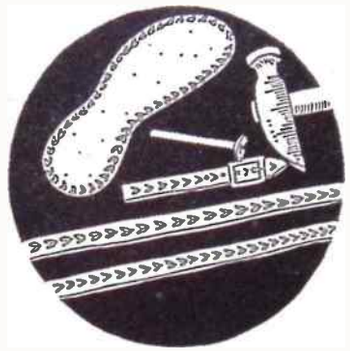


Fig. 3—All surface decoration should be applied before assembly

The accessories and materials include buckles, eyelets, harness needles, waxed thread, tacks, sole cement and, of course, leather. You may experience difficulty in procuring sole cement, but most boot repairers will oblige with information about this.

A tip when applying the sole cement is to allow it to become 'sticky', place together the parts that are to be joined, fit over a last and pound gently with flat-headed boot hammer.

If lighter leathers than cow-hide are used for making the sandals, double thickness, cemented and stitched together, should be employed. A neat look will be imparted to the straps by tooling lines instead of nail stamps. For added foot comfort interlining soles

Fig. 2—Inner sole, bottom sole, heel lift and straps

Fig. 4—Fitting inner sole ready for stitching and cementing

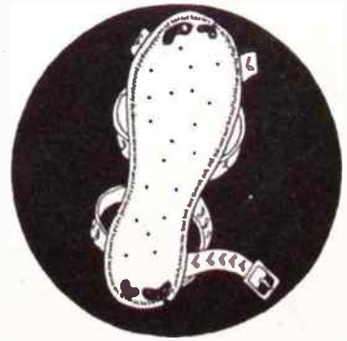


Fig. 6—Add metal tabs for longer wear

should be placed between bottom and inner soles. These can be made from any soft material such as cloth, cork, felt, or any of the varied sponge rubbers on the market. Always remember to cut the inner sole a trifle smaller than the bottom sole.

The first step for making footwear of any kind is to complete a sole pattern of the proposed wearer's foot. A simple and inexpensive method of doing this is to place the person's foot on paper and draw a line around it as illustrated in Fig. 1. As a guiding line for the centre of the foot draw a straight line down the centre of the paper. The pencil should be held vertically while the outline is being drawn. When strap lengths are required, measurements around ankles and over toes may be obtained with a tape measure. Add 1in. at strap ends. This allows for ends to be attached or buckles added (Fig. 2).

Before assembly of the different parts all straps should have their surface decoration added (Fig. 3). To fit up the

Fig. 5—Rounding off the sole

sandals, cement and tack the heel lifts to the bottom sole. Strap ends should now be cemented and stitched to soles as illustrated (Fig. 4). Naturally, the pull on this part of the sandal is severe, so take great care in attaching components. Before stitching inner sole to bottom sole run a light pencil line ⅛in. from the edge around inner sole. With wheel-stitch marker, run over this line, and hammer stitch holes completely through all leathers to be sewn. The awl may be utilised for this work, or the leather drilled with a fine drill. Wax thread (heavy duty yarn) and harness needles will do the stitching. At times the needle may stick or even bend, a condition which should be avoided, as it is liable to snap. A much better idea is to pull the needle through the holes with a small pair of pliers.

The buckles are attached with rivets. Be careful to adjust the strap on the foot for the position of the eyelets for

● Continued on page 330

A Folding Table

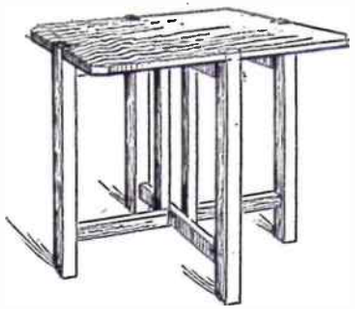


Fig. 1

IN our sketch (Fig. 1) is shown an improved form of portable table. Portable means 'capable of being easily carried' and this description certainly applies to this table. The top is first lifted off, and the two pairs of legs being hinged, they fold together flat. The two can thus rest level and tidy against the wall. Again, it can be seen how simple it is to re-erect, and it stands quite rigid. It is a plain carpentry job and needs but a little simple setting out and attention to the details given.

upright rail (C). Note the measurements given and set out the mortises and tenons as in Fig. 4. Now take careful note of how the rails (B) are hinged to rails (A), and also how the

Two pairs of stout hinges 1½ins. long by ¾in. wide flaps should be used with ¼in. countersunk screws. Take good care when making the mortise and tenon joints to have a tight fit and when

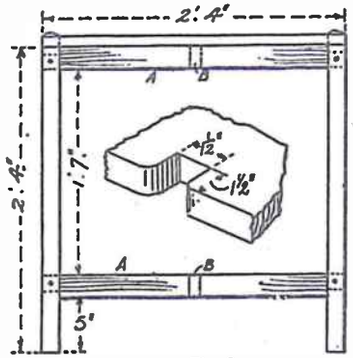


Fig. 2

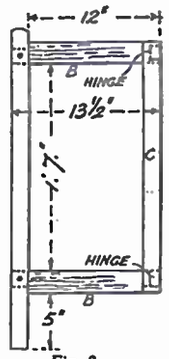


Fig. 3

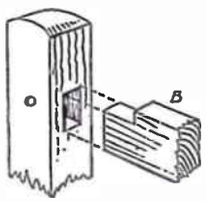


Fig. 4

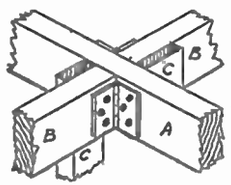


Fig. 5

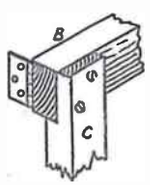


Fig. 6

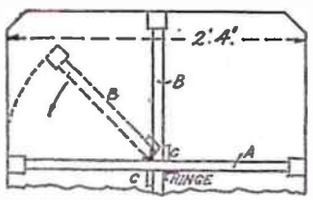


Fig. 7

The table as shown stands 2ft. 5ins. from the floor and is 2ft. 4ins. square, but, of course, these measurements may be increased slightly or reduced to suit any particular need. The legs are 1½ins. square, and the cross-rails (A) and (B) are 2ins. by 1in. in section, and the two upright inside rails (C) 1½ins. by ¾in. in section.

There are three frames to make up; one as in Fig. 2, consisting of two legs and two cross-rails (A), while two frames are made up as Fig. 3, each having one leg, two rails (B) and one

glued up run a hardwood dowel ¼in. diameter through each joint.

A half-plan of the table top is given in Fig. 7, and note should be made from this and the inset enlargement in Fig. 2, how notches are cut on the four edges to fit over the extended top of the legs. The top of each leg should be shaped as shown in Fig. 4. The table top may be made up in four widths of ¾in. wood, 7ins. wide, grooved and tongued together, and having, perhaps, narrow battens screwed on underneath to stiffen the joints. Cut the corners off as shown and glasspaper down all sharp edges and corners before applying the finish to the wood of stain and varnish or a coat or two of paint. (S.W.C.)

uprights (C) are notched into rails (B) and screwed. Fig. 6 distinctly shows this, and also how the hinges are fixed. The plan, Fig. 7, shows how the folding legs are arranged.

● Continued from page 329

Sandal-Making

buckle prongs, before hammering the holes.

The main advantage of sandals is that the arrangement of the straps and accessories is comfortable, and that they are designed, as far as possible, to suit each wearer's foot. For women's wear the straps should be narrow and ornamented, so as to enhance the foot. With men the tendency is more for broadness in the design.

Patterns bought from a shop can be traced on to light cardboard or heavy paper with a hard pencil or with carbon paper. Using patterns in this manner gives the master copy a much longer life. Tissue patterns should be pasted to cardboard if they are going to be used for any length of time.

When cutting a skin from a pattern, choose the flawless leather for prominent parts of articles, such as bag flaps or bill-fold covers, etc. Usually, the best leather is found at the centre back and shoulders of a skin. Marred pieces or thin sections may be used for lining or concealed sections. Naturally, with any grained leather the most clearly patterned parts should be cut for the best effect. For the marking of light coloured leathers a lead pencil is useful, and for dark ones chalk is the best.

BUDGERIGARS—

How to Buy, Feed and Breed Them

By J. Tuffill

FEW pets, and, indeed, few live creatures are quite so amusing as budgerigars; you can easily teach them tricks, and with patience make them talk. They are great mimics, and they always provide their owners with great interest and pleasure.

How, then, does one go about buying a 'budgie'? It is best to go to a really reputable dealer who will be very helpful, and who may know a breeder to whom he would recommend you. Before you do anything about purchasing, it is better to know something about what you are buying, and it is for those without experience that the following information is given.

Cock or Hen?

Firstly, a cock bird is much more likely to speak than a hen bird, although I have heard hen birds talk. So, if you want a talker, you will be advised to purchase a cock, in which case you will need to know how to distinguish between a cock and a hen. This is really quite simple. The main difference is in the colour of the cere. This is the fleshy part, immediately above the beak, in which the two nostrils are situated. If this is a bluish colour, then the bird is a cock; if it is cream to brown, the bird is a hen. Although one cannot be absolutely certain in the case of a young bird, this distinction usually applies.

It is most important that, when buying a 'budgie', it should be a young bird, preferably just off the nest, about 6 weeks old; for unless you have your bird really young, it is doubtful whether you will be able to make it really tame.

The young bird has a distinguishing feature which is unmistakable; this is the appearance of the forehead just above the cere. This will be found to be clearly marked with dark rings right down to the beak, which progressively disappear after 6 months as they are 'moulted out', and give way to a plain, white forehead, in the case of the blue budgerigar, or bright yellow in the case of the green bird.

Another important characteristic which determines the young bird is in the eye. An adult bird has a white ring round the outer edge of his eye, which is absent in the young 'budgie'.

Preference for one colour is unimportant, though I am bound to say that I have known more blue talkers than green. However, I would not say this was a rule.

When considering the purchase of a cage for your pet make sure you choose one large enough to allow plenty of movement for the bird. A well-made cage should not cost more than £2. If you feel really industrious, you can design and make your cage yourself. This needs patience and a fair skill in soldering, as there are many hundreds of soldering joints in a bird cage. The saving in cost is, of course, considerable; 15/- is about the price which represents the cost of the wire, which can be bought specially for this purpose.

The wooden box with wire-front type of cage can be made quite simply, but very great care should be exercised in avoiding a lead paint for finish, and it should be absolutely dry before allowing it to be the home of your 'budgie'.

When you are taking your new pet home in its cage remember to cover the cage with a cloth, because, being young, it will be very nervous. Even when you get it home refrain from going near for at least 12 hours. Allow it to become quite acclimatised to his new surroundings; and make sure you find a position away from draughts. Nothing can harm a 'budgie' more than a draught.

Patience Required

Gradually you will find it settling down, and then, and only then, should you attempt to open the cage door and put your hand inside. Move your hand very slowly towards the bird, which should not flutter or be timid if you are careful, then carefully stroke its chest. If it allows you to do this, it indicates it is no longer nervous and will very soon hop on to your finger. This indicates that it is finger tame, which is the completion of the first stage of taming; but even to attain this success, great patience must be exercised, and until it is finger tame, the bird should not be allowed to fly out of its cage, for if it was necessary to chase and grab it, you would quickly lose the confidence you had so patiently encouraged. The 'budgie' should voluntarily come on to your proffered hand when it can be put back in its cage. Later you will find it quite natural for your pet to return to the cage of its own free will.

From this stage gradual confidence in you will promote friendliness and subsequent tricks. Constant repetition of a short phrase will eventually be picked up, but the operative word from the very beginning is patience.

The normal food for your bird is budgerigar mixture, which is a mixture of ordinary canary seed and millet, but I have found a number of birds prefer just canary seed and a spray of millet hanging from the top of the cage from which they can pick the seeds and swing the while.

Fresh food should be provided daily. Most 'budgies' are fond of fresh lettuce or apple, but always avoid anything which is obviously not a 'natural' bird food; nuts for example are very bad. Very little water is required by budgerigars, although it should be supplied. A cuttlefish bone is much appreciated for keeping the beak in condition.

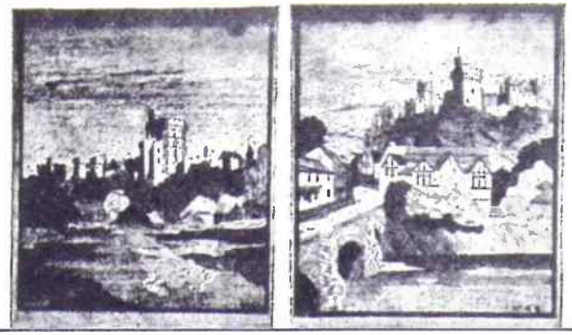
Clean Daily

Remember that the cage should be cleaned each day and the sand changed. The perches should be well cleaned at least once a week. These, incidentally, should be oval in section, as this obviates the danger of the bird sticking its claws in itself when perching.

For breeding it is best to have a really good pair of birds, for it is pointless to try to breed from inferior stock, as only poor offspring result.

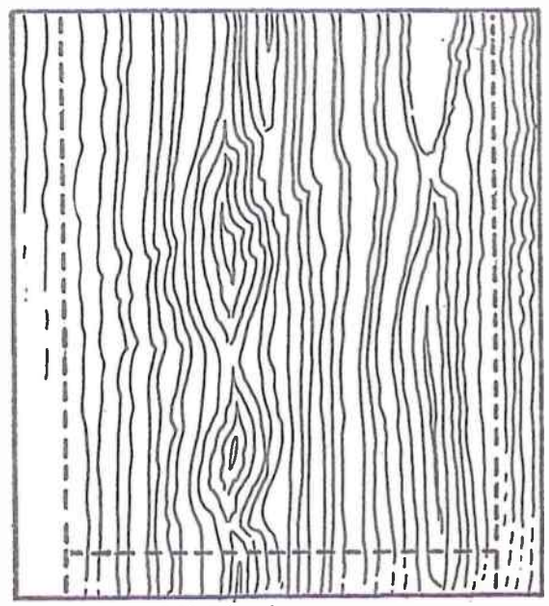
Provide your birds with a breeding cage. This is a large wooden box made of plywood with a wire front, and is exactly the same as was suggested as an alternative to a wire cage earlier on, with the addition of a simple nesting box. This can easily be made or purchased cheaply. With these simple amenities you should have some young in a few months, providing you respect the privacy of the parents. At an early age you should try to make your very young birds tame (after they leave the nesting box), so that they are used to human contact when you sell them.

If you follow carefully these points you will find they provide an excellent basis on which to start keeping these most charming little pets.



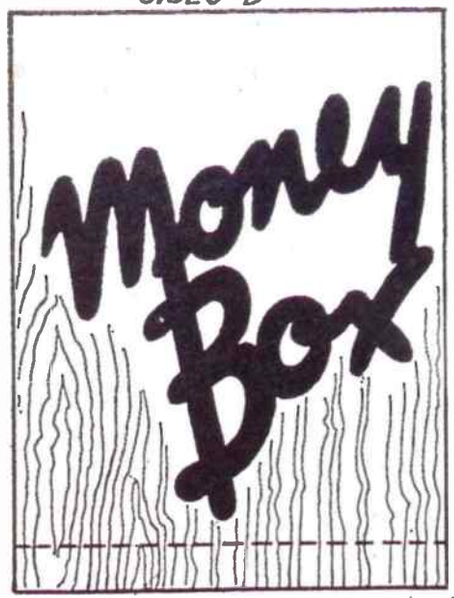
SEE PAGE 322

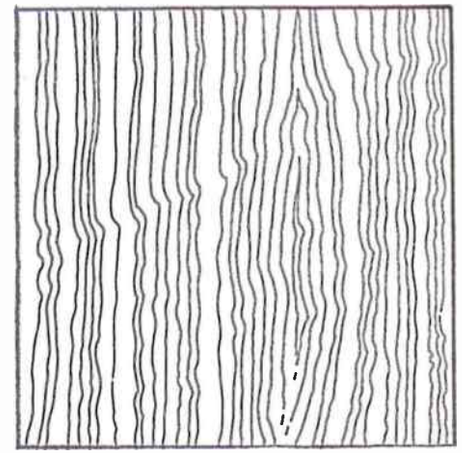
Patterns for the Money Box



SIDES A

SIDES B

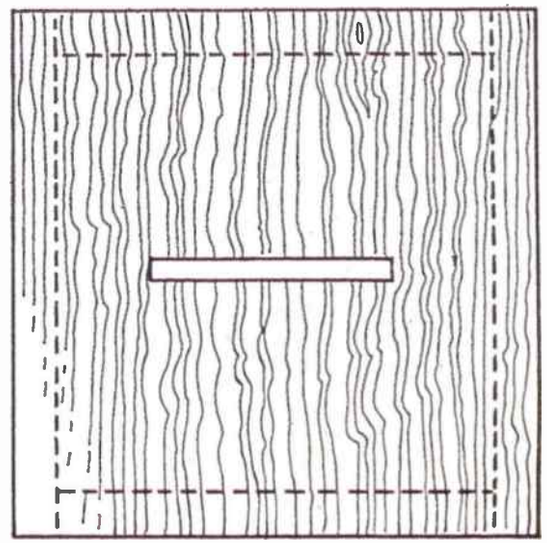




BASE

THE FRETSAW MAKES IT EASY

TOP



THIS IS THE TOOL I'VE BEEN LOOKING FOR

says W. P. Matthew, the T/V handyman

IT'S THE REVOLUTIONARY NEW *SURFORM*

'SURFORM IS A TOOL THAT OUGHT TO GO INTO EVERY HANDYMAN'S TOOL KIT. IT DOES A LOT OF JOBS ON A LOT OF MATERIALS —AND IT DOES THEM QUICKLY AND WELL.'

SURFORM is the nearest approach yet to a general-purpose hand-surfacing tool. It smooths down rough wood like a plane. On red deal, for example, it works twelve times faster than a rasp. On convex curves, it's easier than a spokeshave.

But that's only part of the story. You can use SURFORM on rubber, leather, plastics, "Formica," "Warcite," plywood, hardboard, fibre, non-ferrous metals, and mild steel too. On all these materials it works faster than any other surfacing tool, and gives a fine finish.

THE SECRET'S IN THE CUTTING STRIP

SURFORM has 500 tough razor-sharp teeth set in a hardened and tempered carbon steel cutting strip which is a patented product of Firth Brown Tools Ltd. of Sheffield. These teeth really cut the material instead of just tearing it away. And they can't get clogged up, because in front of each tooth is a hole through which the cuttings pass.

SURFORM 'Plane' Type 17/6.

'File' type 12/6.

Replacement for the long-lasting cutting strip 3/6, from your local ironmonger or hardware store. If you have any difficulty, write to us and we'll tell you the name of your nearest stockist.

Manufactured by SIMMONDS AEROCESSORIES LTD.
TREFOREST · PONTYPRIDD · GLAMORGAN
A MEMBER OF THE FIRTH CLEVELAND GROUP

"SURFORM"
REG. TRADE MARK

CRC 45U

Printed by BALDING & MANSELL, LTD., London and Wisbech, and Published for the Proprietors, HOBBIES LTD., by HORACE MARSHALL & SON, LTD., Temple House, Tallis Street, E.C.4. Sole Agents for Australia and New Zealand: Gordon & Gotch (A'sia) Ltd. For South Africa: Central News Agency Ltd. Registered for transmission by Canadian Magazine Post.