7th JUNE 1961 VOL. 132 NUMBER 3417

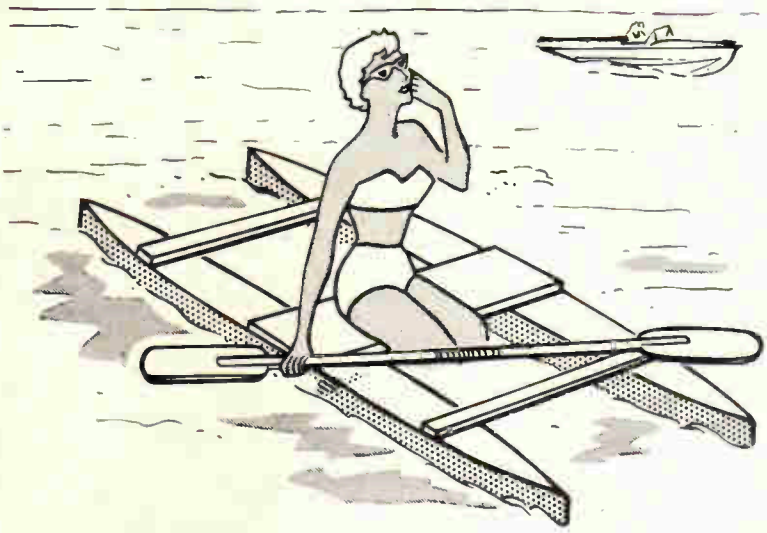
THE **ORIGINAL** 'DO-IT-YOURSELF' MAGAZINE

HOBBIES weekly

FOR ALL HOME CRAFTSMEN

Instructions for making . . .

Also in this issue:



A 'PADDLE-CAT'

FOR FUN ON THE WATER

Hobbies

Up-to-the-minute ideas

Practical designs

Pleasing and profitable things to make

5D.

★★★★★★★★★★★★★★★★★★★★★
★ ★
★ **The free design in next week's issue** ★
★ **will be for making a Record Cabinet** ★
★ **and Stand. Make sure of your copy** ★
★ **of 'Hobbies Weekly'.** ★
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IN view of the change to decimal currency, the administration of Tristan da Cunha released, on April 15th, a new issue of postage stamps with the values suitably converted.

The new stamps are similar to the previous issue depicting different fish found in the waters around Tristan da Cunha, except that the Heron Fish design contained on the original 2d stamp has been omitted.

NEW ISSUES FOR TRISTAN DA CUNHA

Details of the new issue are as follow:

½ cent black and orange — The Star Fish (Allostichaster Inaequalis Koehler) is found in rockpools. It is not normally caught since it is not used for food or bait.

1 cent black and bright purple — The small Concha Fish (Labrichthys Ornatus) is found in large numbers in the rockpools. The children often catch it by hand for amusement.

1½ cent black and light turquoise blue — The Klip Fish (Bovichthys Diacanthus) is another of the rockpool fish. This species is most attractive. It is dark blue in parts, but the colour fades quickly when it is taken out of the water.

2 cent black and sepia — The Sword Fish (Notopogon Lilliei) is a rather rare ugly fish, frequently caught by tern and other sea birds.

2½ cent black and brown/red — The Crawfish (Palinurus) is by far the most important form of marine life for the people of Tristan. The crawfish is caught by the Islanders fishing from boats, and it is either frozen or canned and then exported.

3 cent black and yellow/olive — The Soldier Fish (Sebastichthys Capensis) is very common and a nuisance to the fishermen since it has a very large mouth and body and removes the bait without taking the hook. Used as bait for crawfishing, and occasionally eaten.

4 cent black and orange/yellow — The Five Finger Fish (Acantholatris Monodactilus) is one of the most common. Specimens are up to 7 lb. and the fish is very good to eat. It is most easily recognized by the five dark brown bands crossing the body.

5 cent black and blue — The Mackerel (Decapterus Longimanus) is one of the 'Game Fish' similar to, but much larger than, the English mackerel. Caught mainly as bait for crawfishing.

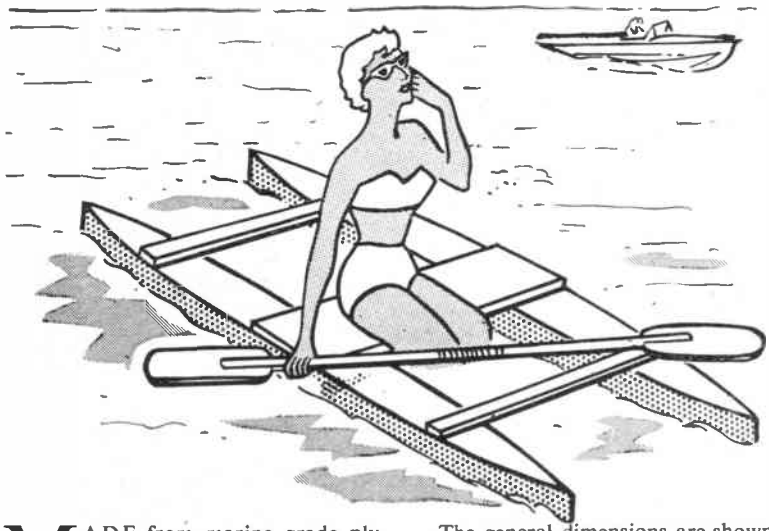
7½ cent black and rose carmine — The Stump Nose Fish (Seriolella Christopherseni) is a big, roundish fish, found only in deepish waters and caught for eating.

10 cent black and light brown — The Blue Fish (Seriolella Antarctica) is a large fish commonly found in deep water around Tristan. Much sought after by the Islanders for food and bait. Specimens of up to 30 to 40 lb. are quite common.

25 cent black and ultramarine — The Snoek (Thyristes Atun) caught around Tristan are mostly in poor condition and worm-ridden. A theory exists that the snoek come into these waters when they are out of condition. It is an unpleasant fish to meet unless one is prepared for it, as its teeth will cut nylon fishing line of almost any thickness; when brought into a boat on a special snoek line it will bite anything and everything and is dangerous company until killed.

50 cent black and light emerald — Fortunately Shark (Glyphis Glaucus) are not often seen in Tristan waters, but they do cause fishermen concern at times.

1 Rand black and violet — It is not possible to do justice to the Atlantic Right Whale (Eubalaena Glacialis) on something as small as a postage stamp. Eighty years ago whaling ships often called at Tristan for fresh supplies and water and the Island benefited from this trade which, with the advent of steam, has died out. It is said that a whaling skipper was persuaded by an Islander, Corporal Glass, to go to St. Helena and bring back three women for the bachelor members of the small community on Tristan. The whaling skipper obliged. It is quite a common sight nowadays to see whales 'blowing' near the Island, and cows frequently bring their young to the North West coast. Whales are thought to come in close to endeavour to dislodge the barnacles from their bodies by rubbing them against the rocks on the coast.



Paddling Catamaran for fun on the water

MADE from marine grade plywood or oil tempered hardboard, this small 'catamaran' has three watertight compartments in each float and by reason of this is virtually unsinkable. It is easily paddled, and is sturdy enough to be used as a diving platform. If made up to the specifications here it is light enough to carry on the top of a car.

The general dimensions are shown in Fig 1. The total length is 7 ft. and the width 3 ft. 6 in. The floats are 10 in. wide and 10 in. deep. They are gently curved from end to end, this curve being drawn out direct on to the wood. If one piece is cut to the exact shape, the rest can be marked out by using the first as a template. These pieces A are $\frac{1}{2}$ in. or $\frac{3}{4}$ in. thick, and can be cut from any good quality straight-grained wood. The spacing pieces B are cut from $\frac{3}{4}$ in. wood to fit. They are glued and screwed in position using waterproof glue and brass countersunk screws. Use the glue liberally, and make sure that there is a complete seal on all the joints.

Fig. 2 shows the spacing pieces B in position, with the 3 in. by 2 in. posts C at each end. These posts are neatly chamfered to provide a surface for fixing the sides of the floats. Give the woodwork so far constructed two coats of clear wood preservative.

The sides are now covered with $\frac{3}{16}$ in. marine grade plywood (Fig. 3), using brass countersunk screws and waterproof glue. The inside of the plywood should, of course, be coated with clear wood preservative before fixing. Use plenty of glue to ensure waterproof joints. Cap the ends, after the plywood has been fixed, with shaped blocks as seen in Fig. 4.

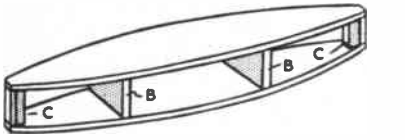


Fig. 2

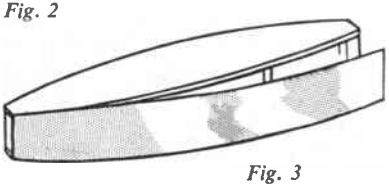


Fig. 3

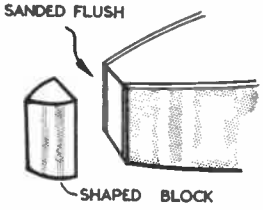


Fig. 4

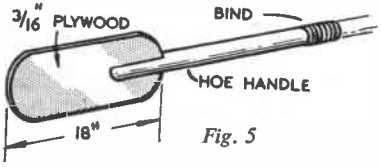


Fig. 5

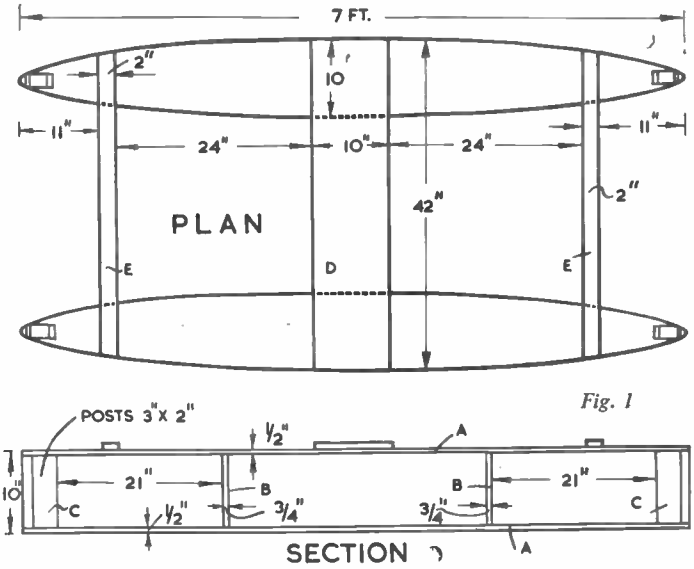


Fig. 1

● Continued on page 149

Filament supply from Mains

THE previous article described how H.T. current for a battery receiver can be obtained from the mains. Such H.T. eliminators are often used alone. But if complete mains-operation is required, a source of filament current is also needed.

A suitable circuit for this purpose is shown in Fig. 3. For a single H.T./L.T. unit, it will be convenient to use a mains transformer with both H.T. and L.T. secondaries. The H.T. winding provides high tension current at about 90V. to 120V. as already described.

The filament circuit rectifier is usually a 6V. or similar type, and is used in a full-wave circuit because this simplifies smoothing. For most all-dry receivers, a ½ amp rectifier will suffice. The older type of receiver with 2V. valves will consume more current, but seldom over ¾ amp. A 1 amp rectifier will thus do for these sets.

The smoothing condenser values are in no way critical, except that condensers of large capacity are necessary, to avoid hum. These are generally about 2,000 to 6,000 mfd each. The condenser wired to the rectifier is usually about 6V. working, but the second condenser can be of 3V. working.

The resistors serve to help smooth the output, and drop the voltage to the exact figure needed by the valve filaments.

Wiring up

Fig. 4 shows wiring up of the filament supply. Note that the transformer centre-tap forms the negative connection. This tap is generally marked 'O'. For example, if the secondary is a 6/0/6V. winding, this shows that 6V. is available each side of the centre-tap.

By 'Radio Mech'

The rectifier is mounted on a small bracket. A metal strap can be cut to hold the two smoothing condensers secure. The components can be assembled on the same baseboard as the H.T. section, which was shown in Fig. 2.

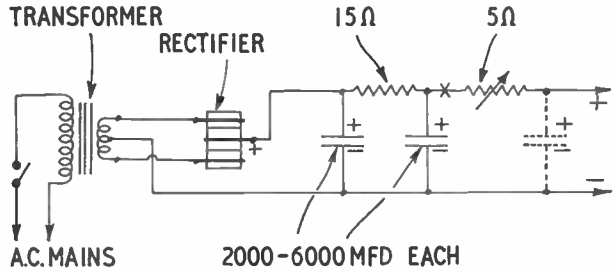


Fig. 3—Filament supply circuit

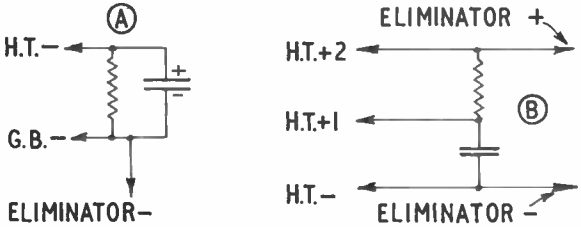


Fig. 5—Circuits for grid bias and H.T. tapping

Provide a socket strip, or two terminals, to take the plug or spade ends of the receiver L.T. leads. This strip will be separate from the H.T. socket strip, if the receiver used separate batteries. But if the receiver used a combined H.T./L.T. battery, use the socket strip from an old battery, by mounting it in small pieces of wood. Connect the H.T. and L.T. leads to the various sockets, so that the receiver can be plugged into the eliminator whenever mains running is wanted.

Many ordinary receivers, including portables, will have ample space for the eliminator. But with miniature or compact sets designed to accommodate a particular battery, space is limited. If the eliminator is built as small as possible, it can often fit in place of the battery. If not, the eliminator may be constructed in a small wooden box or similar case, and this can stand behind the receiver, when working from the mains.

Filament voltage

The voltage reaching the filaments must be correct. For mains running of battery valves, this means 1·3V. for each 1·4V. filament, or within limits of 1·25V. and 1·4V. For 2V. valves, the supply should be as near 2V. as possible, and should in any case lie between 1·8V. and 2·2V.

Most four-valve all-dry portables and similar sets consume about ¼ amp. With a 6/0/6V. transformer winding, the

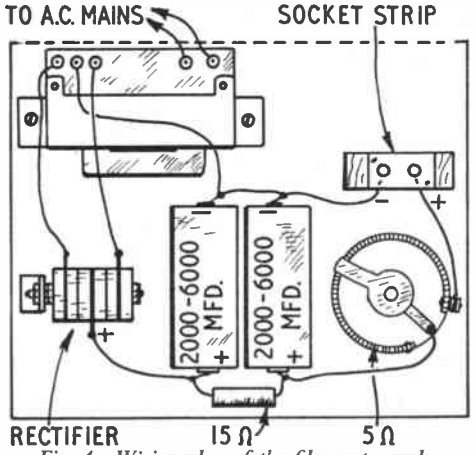


Fig. 4—Wiring plan of the filament supply

resistor values in Fig. 3 will thus generally be suitable. Initially, wire a ·3A. torch bulb to the output, and switch on. A meter should show a little over 1V. The receiver may then be connected instead of the bulb, and the 5 ohm resistor is adjusted until exactly 1·3V. is reaching the receiver valve filaments.

Check the filament voltage with an accurate, high-resistance type voltmeter, if possible. Remember that excessive filament voltage may destroy the valve filaments almost at once. For this reason, ensure that the voltage is not too high, to begin with. Insufficient filament voltage, such as may be encountered while testing or adjusting the circuit, will not cause damage. But the voltage should be increased to the figures given, because long running at low voltage may eventually cause some loss of valve efficiency.

For small one- or two-valve sets, additional resistance will be wanted. This will usually be about 80 to 100 ohms for a one-valver; or 25 to 30 ohms for a

two-valver. To avoid difficulty in finding fixed resistors of suitable value, a 100 ohm, 50 ohm, or similar preset, tapped, or variable resistor can be used. Set it for maximum resistance to begin, reducing the resistance until the filament voltage is correct.

For 2V. valves, the total current will usually be greater, especially if the receiver is a large one with four or more valves. The series resistance will then have to be lower, and a total of about 4 ohms to 6 ohms in all may be sufficient. The voltage lost in the resistors depends on the current flowing, which in turn depends on the number and type of valves in the receiver. It is for this reason that adjusting in the way described, with a meter to check the voltage, is recommended.

Hum

The circuit as in Fig. 3 will normally be satisfactory, but if the receiver is exceptionally sensitive, or used for short wave listening, or if the lowest possible mains hum is desired, then a little more smoothing may be needed.

Extra condensers may be used for more smoothing. One may be wired as shown by the dotted lines in Fig. 3. Further condensers can also be added in parallel with those already fitted.

Another means of reducing hum is to add a smoothing choke, which can be in series with the 15 ohm resistor, or may be at the point 'X' in Fig. 3, when a third condenser is fitted. A useful choke for this purpose can consist of a few hundred turns of stout insulated wire (say 20 s.w.g.) wound on an old transformer core, or upon an iron core some ½ in. or so in diameter, and 1½ in. or so long.

If a choke is added, it will have some resistance. The variable resistor will then have to be adjusted, to bring the filament voltage back up the necessary value.

Grid bias supply

Modern receivers do not need a separate grid bias supply, and thus can be run directly from the H.T./L.T. eliminator.

Old receivers sometimes have a separate grid bias battery. This bias supply is essential, for proper working. As the bias battery is of low cost, and has a long life, it may be decided to retain it, while drawing H.T. and L.T. supplies from the mains.

If automatic bias is wanted, this can be obtained as shown at 'A' in Fig. 5. The condenser can be 25μF or 50μF, 25V. or similar rating. The resistor value depends on the bias voltage, and current. Many average receivers consume about 10mA. In this case, 1V. bias will be obtained for each 100 ohms, e.g., if 4½V. bias is needed, the resistor should be 450 ohms.

When bias is obtained in this way, note that the receiver H.T. negative lead is no longer joined directly to the eliminator negative. Filament negative thus has to be connected at the receiver H.T. negative side of the circuit, not at the eliminator negative side.

H.T. tappings

Old receivers often had one or more intermediate H.T. connections. When a fairly high voltage was applied to these, they can often be joined directly to the full 120V. supply point.

When a lower voltage is necessary (usually for a screen grid, or a detector stage) this can be obtained as at 'B' in Fig. 5. The by-pass condenser can be 1μF, or 2μF, 150V. to 250V. working. Such circuits often require about 60V. at about 1mA. If the H.T.2 point delivers 120V., 60V. must be dropped, to obtain 60V. at the H.T.1 supply point. With 1mA flowing, the resistor will drop 1V. for each 1,000 ohms. The resistor can thus be 60,000 ohms.

If it is required to work out the exact resistor value for a filament, bias, or H.T. circuit, this can be done quite easily. First note the voltage which must appear across the resistor — that is, the voltage to be dropped. (e.g., bias voltage, at 'A', or H.T.2 voltage *minus* H.T.1 voltage, at 'B') Then determine the current flowing, either by looking up the valve types, etc, or by measuring with a meter. Express this current as a fraction of an ampere. 1,000mA equal 1 ampere, so 10mA will be ·01A., and so on. Divide the voltage by the current. The result is the required resistance in ohms.

Some portables have 50mA filaments in series. If so, the average four-valver will then need 6·5V. at 48mA to 50mA. Use the primary switch mentioned earlier for on/off switching.

• **Continued from page 147**

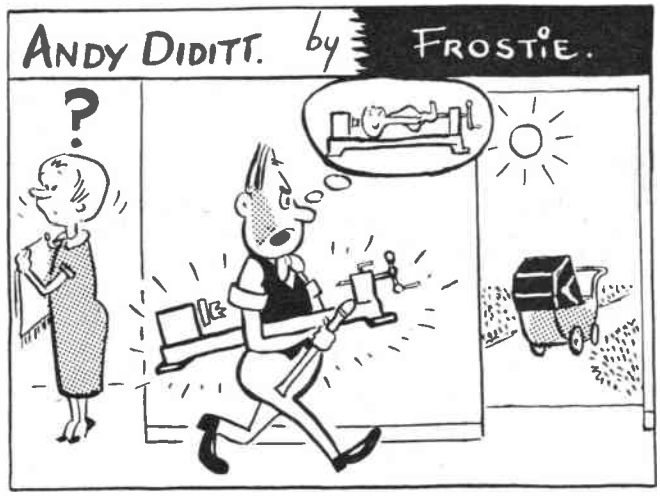
The 'Paddle-Cat'

Having completed the two floats, they are joined together by the seat D and the end braces E, which are glued and screwed to A. The seat is ¾ in. thick and 10 in. wide, and the two braces E are also ¾ in. thick, but only 2 in. wide. Finish off by giving a final coat of wood preservative before sanding ready for painting. Give a good undercoat, and then two top coats.

The paddles are made up as shown in Fig. 5 from hardboard or plywood. Use a hoe handle for the shaft, and make the paddles double-ended as used for canoes. The centre portion is bound with cord to provide a good grip for the hands. The exact amount to be bound will be determined by use.

The usual precautions should be taken when using these floats. Keep to safe and shallow waters, and enjoy your fun without endangering your life.

(M.h.)



"ALRIGHT! ALRIGHT! I'M GOING TO TURN THE BABY ROUND"

Learning to dive—2

THE LUNGE AND PLAIN HEADER

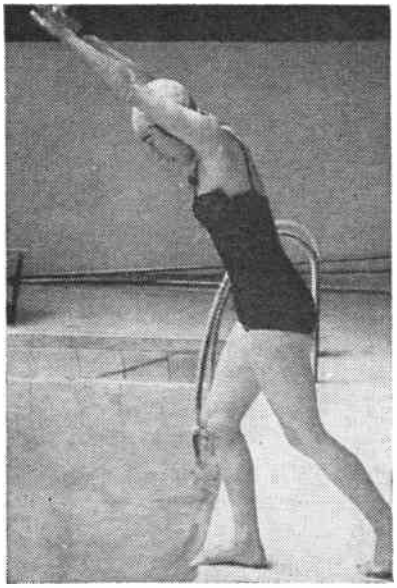
NOW that we have become proficient in entering the water from the bath side, the next stage is to do it from a fully standing position. This can be seen in Photograph A.

You should stand on the edge, toes overlapping, and bend downwards, head between arms. Continue to bend downwards until you topple, finally giving your legs an upward flick.

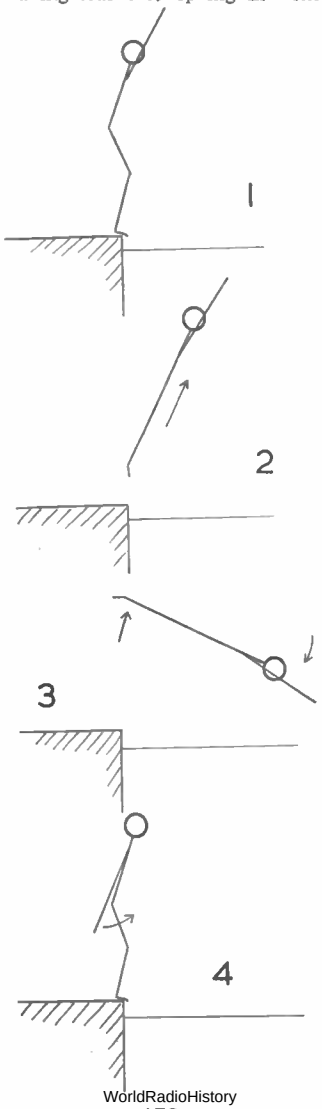
Some people find it difficult to enter in this manner, and in this case the 'lunge' is an excellent way of practising. To do this, stand with one leg behind the other, the forward one being slightly bent with toes overlapping the edge and the backward one almost straight, Photograph B. Bend over towards the water, and by suddenly straightening the bent forward leg, drive yourself forwards. At first you will probably feel happier if you bend over more than shown in Photograph B, to the extent shown in A, but finally you should be more upright at the start, relying on the spring from your leg to drive you into the water head first.

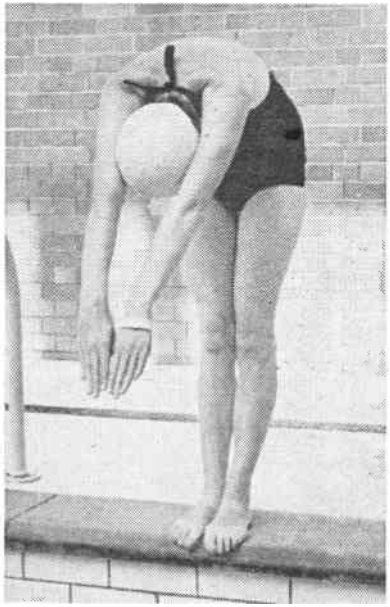
Whilst in the air your legs must be brought together so that you enter in a straight line and as vertically as you can. Even if you can enter successfully as at A, you should nevertheless learn the lunge entry since it can eventually be performed from a more vertical position. Although this may sound complicated, it is in reality quite an easy entry and you should have little difficulty in becoming proficient at it.

Having learnt to spring in with the lunge, we must return to the standing dive and get a good leg spring. Stand as in photograph A but bend your legs slightly at the knees. Then, when you are ready to enter, straighten your knees and feet smartly, so that you shoot upwards and outwards, flicking your legs upwards as you enter. This spring requires strong leg muscles and supple ankles, but these are both necessary for good diving. If you find that you cannot manage a good spring, you may have to



(*B*) *The 'Lunge' entry*





(*A*) *Entering from the side*

(*C*) *Preparing for the Plain Header*

do a bit of land practice, by just standing quite upright, bending the knees, and springing up from the floor. This can of course be practised quite easily at home.

One of the faults of many divers is that although they can make a clean entry there is no 'spring' in it; in other words, they tend to throw themselves into the water with an arm movement. Arm movements will come later certainly, but they should be in addition to the leg and foot spring, not replacing it. This spring is most important and should be practised thoroughly before arm movements are attempted, otherwise it may never be learnt. When you are able to perform this from a bent starting position, gradually straighten until finally you start with hands stretched above your head and pointing upwards, body leaning slightly forward, Fig. 1. You then rely upon your spring and upward flick to drive you upwards and outwards, Fig. 2. If done correctly, you will turn in the air, Fig. 3, and enter almost vertically.

The plain header

When you have learnt to spring in easily and neatly from an only slightly bent position, it is time to start the real plain header. For this you should stand quite upright with your hands extended in front, shoulder width apart, as in Photograph C.

Look straight in front of you and not at the water. Now swing your arms down to just beyond your sides, at the same time bending your legs slightly and leaning a little forwards, Fig. 4. Without pausing, fling your arms rapidly forwards and upwards whilst springing from your ankles and bent legs, just as you have already learnt to do. The maximum force of your spring should coincide with your arms being almost above your head. This combined movement will launch you into the air with more force than earlier dives, and you should turn over and enter as before.

Faults you (or a friend) must watch for in performing the plain header are poising on the toes (a common fault) instead of springing with the feet, not keeping the arms in line with the body during flight, bending the head forward or back, allowing the legs to bend backwards on entering or letting them come apart, and not going to the bottom.

However, if you have carefully practised the earlier stages, you should avoid most of these faults, but should you find yourself developing any of them, the best thing is to return to an earlier stage and practise again. As previously stated, a good diving technique requires much practice, but it is well worth the effort for the gratification of performing something really well in face of the many mediocre or bad dives to be seen.

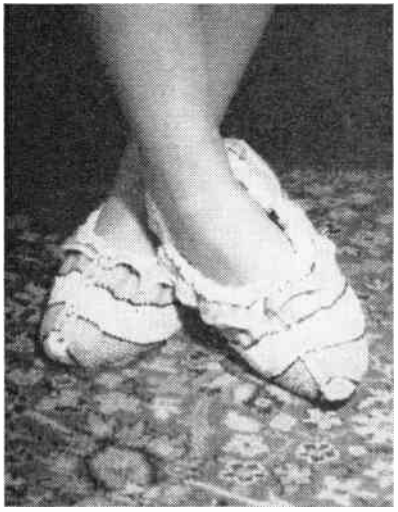
Going higher

When you are satisfied that you can perform a good header from the bath side, go on to the lowest fixed board (we shall deal with the springboard later) and try again. Gradually go from one to the next higher until you can perform a header with confidence from the usual 8 ft. board. If there is a higher one and you feel like it, by all means continue up.

In order to keep your good style it is important to work up to the top in easy stages, making sure that you can do it well from each level before attempting the next one. Most baths have 3 or 4 levels before the top. (P.R.C.)

(To be continued)

A PAIR OF DAINTY SLIPPERS FOR 2/-



THE slippers shown in our illustration are made from two facecloths. They are easy to make, cost from 1s. 6d. to 2s. 0d. for the pair and are extremely handy for slipping on after a swim in the sea or after a bath. Moreover, if you are interested in raising funds at a bazaar or sale of work you will find that they are very attractive 'buys'.

You may use any design of facecloth, which can be purchased cheaply at departmental stores, but remember that if they are striped you should endeavour to pair them so that the stripes will be alike on each slipper. Matching does not matter so much with all-over patterns.

On purchase you will find that the facecloths are already machine hemmed and this saves quite a lot of work. Fig. 1 shows the first step of turning over the top and bottom edges to a depth of 1 in. on the face side and tacking in position ready for sewing.

With matching thread you may now either backstitch or sew by machine ½ in. from the fold, making a pocket for an elastic top.

Now fold in half again with the face side on the outside and stitch up each end. Start this stitching ¼ in. from the row of stitching prepared for the slot and make a ¼ in. seam on the face side. Note that the frill must not be stitched and that both ends are treated alike. This is shown in Fig. 2.

Nothing further has to be done to the toe end. To finish off the heel, take the point of the heel and catch it to the seam at the back on a level with the bottom of the frill.

Now open the seam at the front of the toe end and slipstitch each side to the slipper.

Pieces of narrow elastic 12 in. long are threaded into the top of each slipper. Commence at the back, taking through the pocket and all round the top to the back again. Catch the ends of the elastic into the back seam and neaten off to finish.

You need not be an expert with needle and cotton to make these slippers, which are really attractive if you select a pair of gaily coloured facecloths. (A.B.)

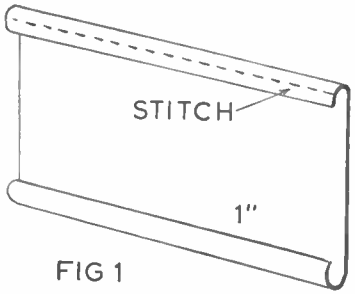


FIG 1

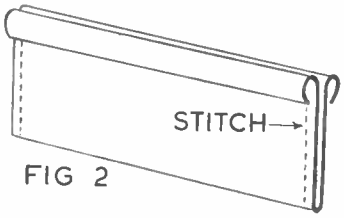


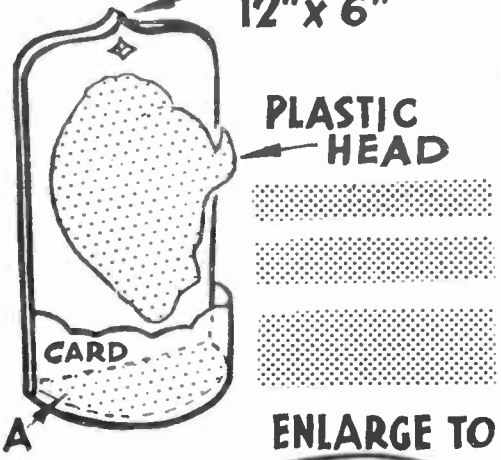
FIG 2

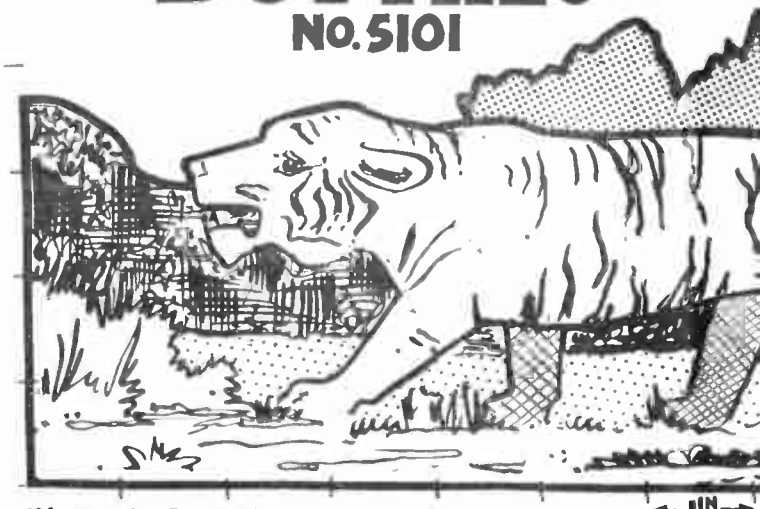
DISPLAY STAND FOR THE American BUFFALO

NO. 5101

*KLEEWARE PLASTIC CONSTRUCTION KITS

*PAGE 86 HOBBIES 1961 ANNUAL





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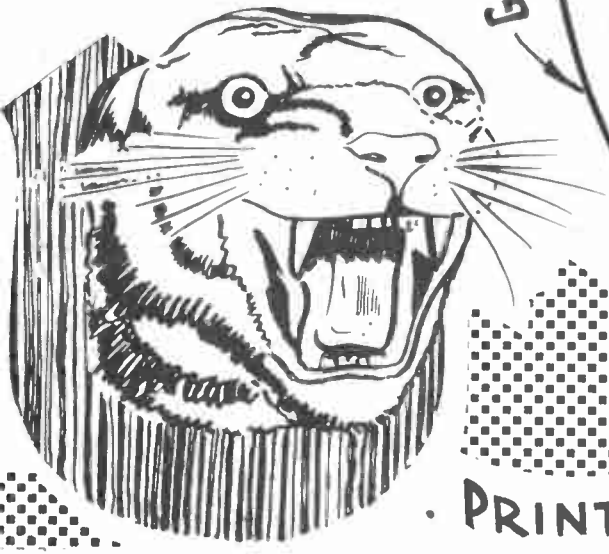

GLUE CARD TO THIS EDGE

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Photographic processing—2

TONING YOUR PRINTS

IN many cases the subtle use of toning will do much to enhance the beauty of a black and white print. Blue toning will greatly improve the appearance of a snow scene or a sea study, while sepia toning is well suited to a subject in bright sunshine.

There are several types of toner which, according to their formulae, lend themselves to either direct or indirect toning. The method used depends on the result required and the paper used for the print.

By K. Baxter

For bromide papers indirect sulphide toning will produce a very satisfactory sepia effect. Direct selenium toning, suitable for use with chloride and chlorobromide papers, gives a somewhat colder, purplish cast.

Toning is not a difficult process to carry out whichever method you decide upon, but it is certainly worthwhile, as the comparison of a toned image with an untoned one will emphasize.

A typical formula for a selenium toner consists of: Sodium sulphite (anhyd.) 150 grams; powdered selenium, 6 grams; ammonium chloride, 190 grams; water to make 1,000 cc. Dissolve the sulphite in three-quarters of the water, which should be at 125°F. Add the selenium and boil the solution until the ingredients are completely mixed. When cool stir in the chloride until thoroughly dissolved and add the remainder of the water. This solution keeps well and can be used until exhausted. For use, it is diluted one part to five parts of water.

Tone separately

Toning can be carried out by normal lighting, provided it is not less than 4 ft. away from your working area and is the only light on in the darkroom.

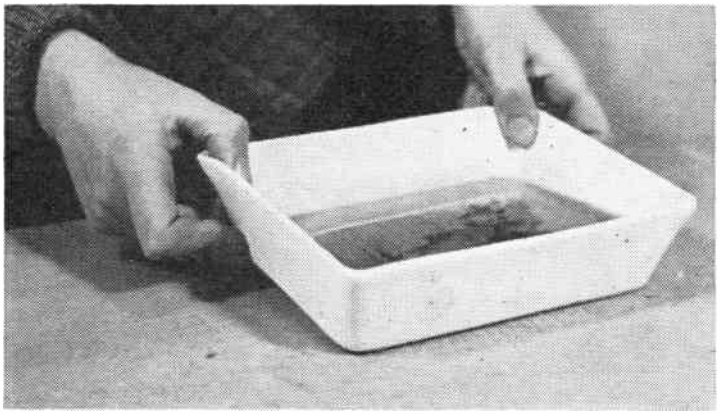
You will require two dishes large enough to contain the print comfortably. Half fill the first one with toner and the second with water at not more than 68°F. Soak the print in the water for about 5 minutes, then transfer it to the toner. Agitate continuously. This is best achieved by gently rocking the dish.

If you have a number of prints to deal with, tone each one separately, as individual timing is all important. Chloride paper responds most rapidly to selenium toning; chlorobromide paper tones much more slowly.

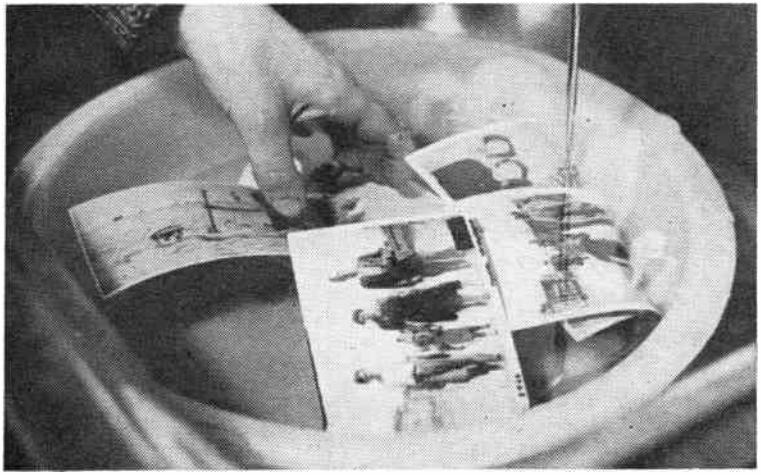
It is inadvisable to stare intently at the print during toning: staring will make it difficult to decide when a satisfactory point has been reached. Instead, glance at the print at intervals of a few seconds.

The length of time the print should be immersed in the toner is strictly a matter of personal choice. After a little over a minute the first results will be observed. The print will gradually turn to a warm black. At this point transfer the print to the water for rinsing and agitate continuously for several minutes.

Some intensification of the print will have taken place, and while the white areas should remain clear, the blacks will appear deeper in value. But washing and drying the print will cause a certain loss of colour, and this should be taken into account when deciding at what instant to remove it from the toning solution.



Agitate the print during toning by gently rocking the dish



The bowl method of washing after toning

Wash for an hour

After rinsing, the print should be washed in running water or in several changes of water, agitating occasionally, for not less than an hour. This ensures that all toning solution in the emulsion is completely exhausted.

When the print is dry, and this should be allowed to take place naturally, further toning can be carried out. This time, however, the action of the selenium toner will start almost at once, so great care needs to be exercised if only a slightly increased effect is required.

After the warm black stage has been reached the print will turn to a warm

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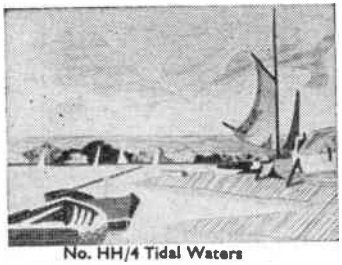

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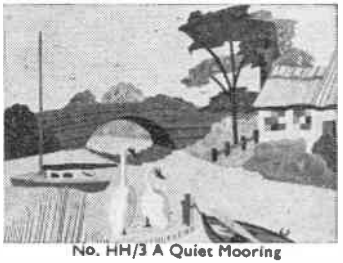

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brown. From this it will turn to a reddish brown.

Sulphide process

Sepia tones, either warm or cold as required, can be readily produced by sulphide toning. This process is equally suitable for both sunlit scenes and portraits.

The first step is to bleach the bromide print. A typical solution comprises: Potassium ferricyanide, 1 oz.; potassium bromide, 1 oz.; water to make 20 oz. For use, dilute one part to nine parts of water.

Place the print in a suitable dish and pour the bleaching solution over it. Bleach until all black sections of the print have disappeared. This normally takes about 3 minutes. Then wash for two or three minutes to eliminate all trace of the bleach.

Transfer the print to the toning bath. A solution of sodium sulphide, 4 oz., and water, 20 oz. will give good results. Dilute one part to 20 parts of water. Immersing the print in this solution for about 1 minute will produce warm sepia tones. Immediately the stage required has been reached, remove the print from the toner and wash in clear water for not less than 15 minutes.

A simple and very satisfactory method of washing is to place the print face upwards in a bowl being filled from a steadily flowing cold-water tap. Give the water an occasional stir with your hand to ensure even washing. If the print is not agitated, streaking or patchiness is likely to occur. This may also happen if the print is not washed face upwards.

To obtain colder tones by the sulphide method of toning, only a slight change in procedure is required. Immerse the print in the toning bath for about two minutes, then transfer to the dish for bleaching. From this point follow the procedure for warm sepia toning.

An alternative cold toning solution consists of: Hypo, 3 oz.; potassium alum, ½ oz.; water 20 oz. Dissolve the hypo in the water, which must be boiling, then add the alum, stirring continuously. For working, the solution is used at 120°F.

When first prepared, this toner is apt to cause a certain amount of reduction. This handicap can be overcome by toning one or two discarded prints before setting to work on your best ones.

Further variations in shade with the sulphide method can be obtained by slightly modifying the procedure. A darker shade will result if only partial bleaching of the print is carried out. And a few drops of 28 per cent ammonia solution added to both the bleach and the toner will produce a dark brown print.

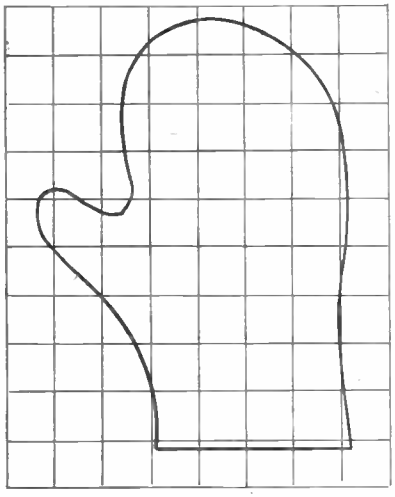
MAKE SOAP MITTS AS PERSONAL GIFTS

OUR illustration shows a novelty soap mitt made from thin sheet foam rubber. The mitt is made so that it will hold a small tablet of soap. It is decorative, and a useful accessory for bathing. As a small 'personal' gift it would be much appreciated.

You will require two pieces of blue foam rubber and one piece of yellow measuring approximately 10 in. by 7 in. The two former are for the back of the mitt while the yellow makes the front. Fig. 1 shows how to prepare a pattern for cutting out the foam rubber to shape. Note that this diagram is prepared on 1 in. squares, and you should first rule these on to thin card copying the shape accordingly. Cut out your card pattern, lay the three pieces of foam rubber together, and cut out with scissors after placing the pattern on top.

These three pieces are ultimately sewn together, but before proceeding further we must consider the addition of some decoration. This is in the form of a flower attached to the back of the mitt, and shown in Fig. 2. Make four petals each 2 in. long and approximately 1¼ in. wide, although the size is not really important. Three leaves 2½ in. long are also required, and all these are tacked in the centre at the back of the mitt. A small circular piece covers the joinings of these petals and leaves, and is sewn to the back with embroidery silk. Needless to say, the flower will look best if made in yellow, in contrast to the blue back, although the leaves may be in blue.

FIG 1



1" SQUARES

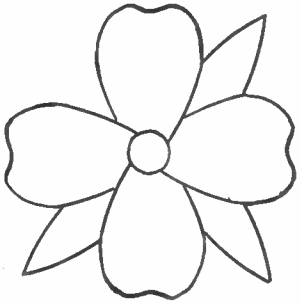
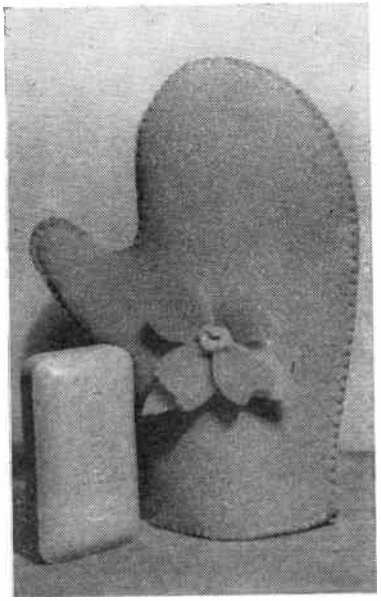


FIG 2



When the decoration has been added and carefully sewn in position all you have to do is to blanket stitch in either matching or contrasting silk thread all the way round the outside of the mitt, binding the three sections together, except at the wrist. Here we blanket stitch each section separately. You may add a small tablet of soap between the palm of the glove (yellow) and the centre piece (blue), and the mitt is complete. For use in the bath the hand is slipped into the mitt between the two blue sections.

Any suitable combination of colours may be used. (A.B.)

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SUMMER CARE OF CYCLES

SUMMER is the time when you use your bicycle to fullest advantage. There is so much scope these long light evenings for after-work runs into the countryside. There are the weekends when we usually enjoy many hours of gay sunshine, and best of all, perhaps, the summer holidays with their promise of happy touring in all sorts of delectable places.

The average cyclist travels much farther in summer than at other seasons, therefore it is necessary to consider the matter of maintenance. The machine must be kept, as far as possible, in tip-top condition, thereby ensuring that it is perfectly roadworthy and safe.

General maintenance is always desirable, and indeed very necessary for riding comfort and safety, but during summer, when a cycle is in almost constant use — and particularly if you are preparing for a long tour — it is imperative to ensure that all is in good order. Though it may not require such constant cleaning and attention as in winter when roads are often splashy and muddy, dust can be a nuisance.

Checking over

If you have the time, a daily check over is an excellent habit. Look to your tyres — keep them hard. Test by pressing the sides with the fingers; you should only be able to make a slight impression. But when riding long hours under a burning sun and the tyres become board hard as the heat expands them, it is sometimes desirable to deflate them a little to avoid 'bumping'. When tyres are too hard they are neither comfortable nor safe. In very hot weather, too, the rubber sleeve of the tyre valve is liable to become gummy or sticky, so that the pump cannot force air past it. With the valve in a horizontal position, hold a lighted match under it for a few seconds, then pump again. It is a good idea in summer to renew your valve rubbers at least once a month.

Tyres and brakes

The tyres should be examined for embedded flints and grit, thorns, chippings of glass, etc. These should be carefully picked out — a few minutes' daily examination may save much trouble later on, since such penetrating scraps picked up from the road surface may eventually work through and result in punctures.

Check the brakes, and if necessary carefully adjust them. See that the wheels do not rub the brake blocks. For really good braking, the blocks should be adjusted as close to the rim of the wheel as possible, without rubbing. See that the brake comes off evenly and quickly after adjusting. Never apply any oil to the brake blocks. With modern cable brakes it is not difficult to adjust the cable lengths to ensure a firm, easy pull-up.

Carefully adjust all bearings at the beginning of a long cycling tour. Oil with discretion. Too much oil collects dust and grit. In hot weather it is a good idea to oil the bottom bracket, the pedal bearings, front and back hubs little and often. See that no oil is allowed to run down the spokes onto the rims when oiling the wheels. The free wheel will also need due attention at frequent intervals. If a free wheel is not sufficiently lubricated the pawls may cease to work and you then have a 'free wheel both ways'. In dusty weather, any surplus oil outside the bearings should be wiped off with a piece of rag.

The chain wheel during summer should be kept well cleaned with a brush. The roller chain does not require oil on the outside; in any case, this would collect the summer dust and grit, and a mixture of oil, grit and dust is certainly not a good lubricant. Keep the chain clean so that the small rollers can revolve on their axles and all will be well. Chain adjustment, of course, is required from time to time. To maintain a clean chain, by the way, brush it down to remove all dirt, dust it with a dry cloth, and give a final rub with a paraffin rag, which will remove any traces of rust.

Lighting set

Although daylight is extended during summer, it is wise to keep your lamps ready for action. Always see that the lamp brackets, front and rear, are firmly fitted. Most front lamps are of the twin-cell battery type, using a 2·5 volt bulb; the rear lamp is generally fitted up with a single-cell battery and 1·5 volt bulb. Spare bulbs and a spare battery should be carried in the kit. Watch the connections of battery terminals and keep them clean. When riding at night after lighting-up time, be sure that your lamps — especially the rear one — are in good order, for your own personal safety as well as a safeguard to other road users.

Servicing a bicycle is never time wasted, nor labour misapplied, especially in summer when there are extra calls upon its performance and the tasks it has to do. Some make a sort of routine job of overhauling their mount at intervals, and this is not a bad plan. General maintenance, when carried out regularly, does ensure that your machine is kept in road-worthy condition. As to when this 'overhaul' should take place, depends to a large extent upon the type of machine and the mileage covered weekly, fortnightly, or monthly. But in any case, the work should be regular and methodical.

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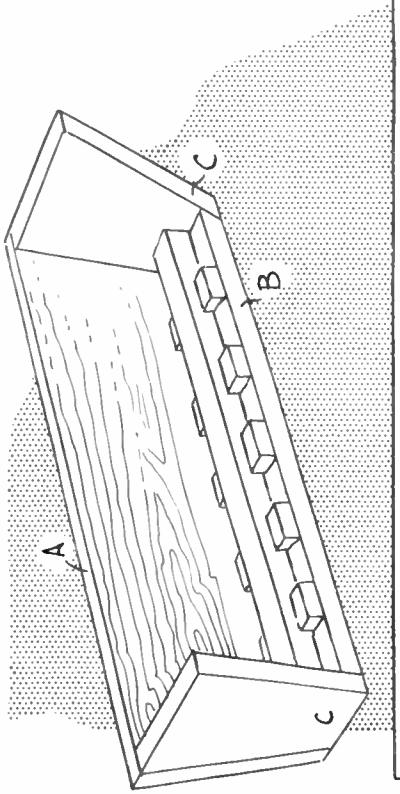

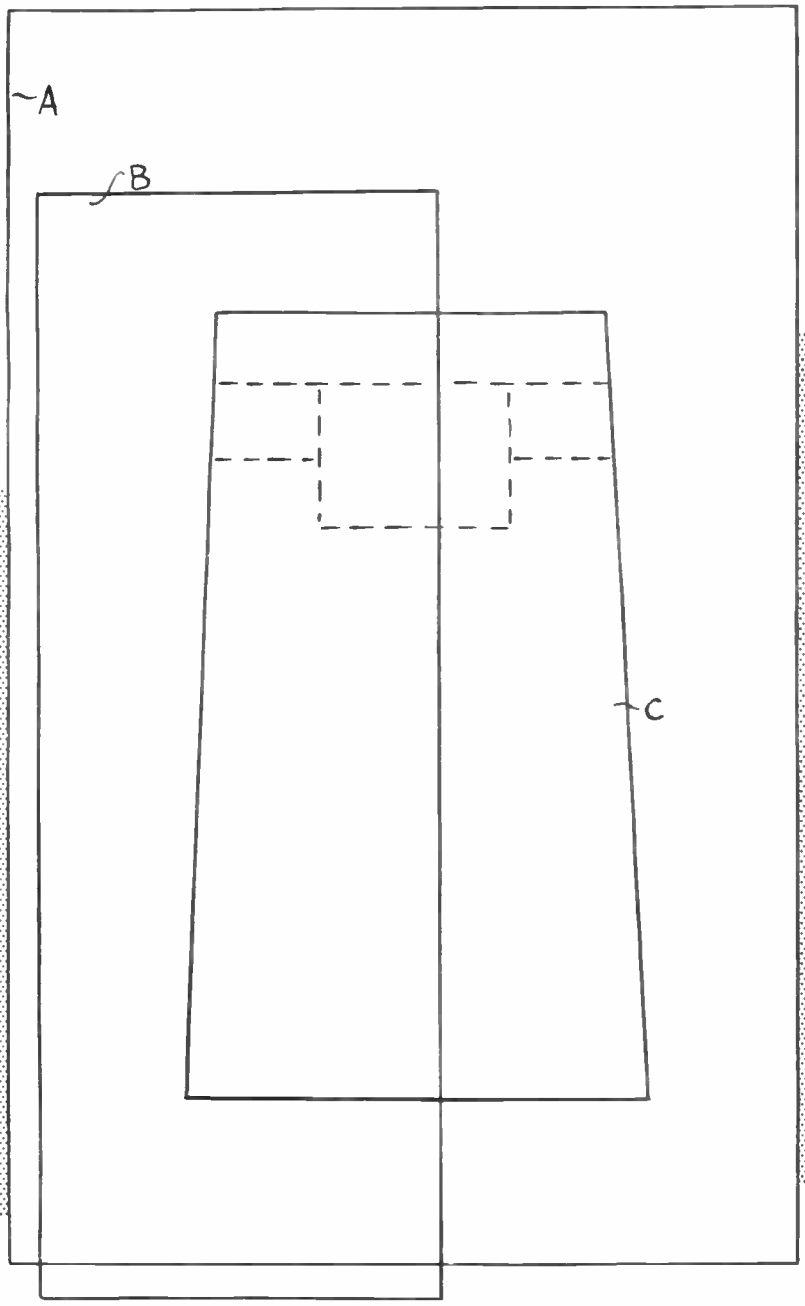

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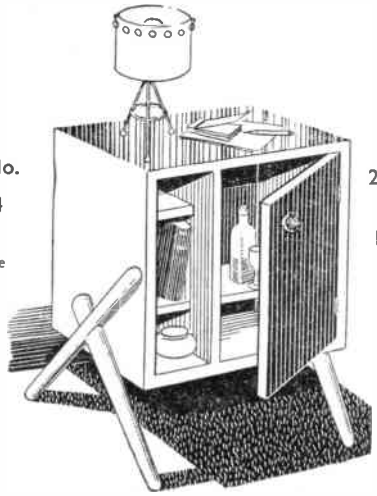

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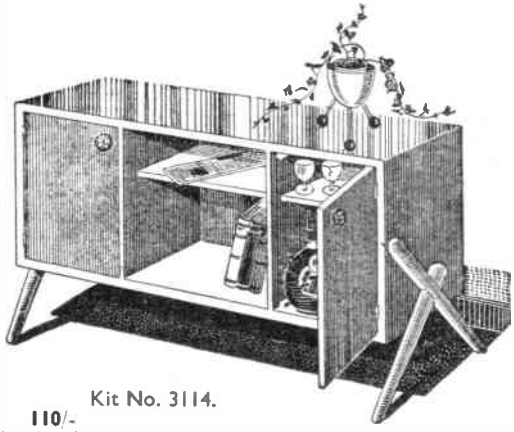

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