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THE ORIGINAL
'DO-IT-YOURSELF'
MAGAZINE

HOBBIES *weekly*

FOR ALL
HOME CRAFTSMEN

Also in this issue:

ABOVE-GROUND
GARDEN POOL

COLLECTORS' CLUB

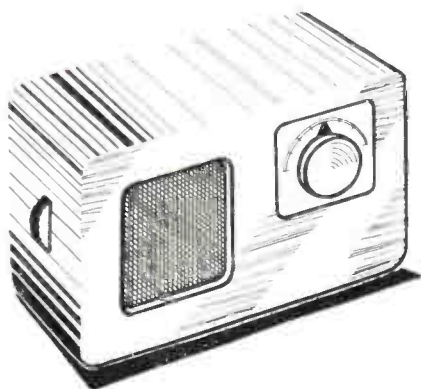
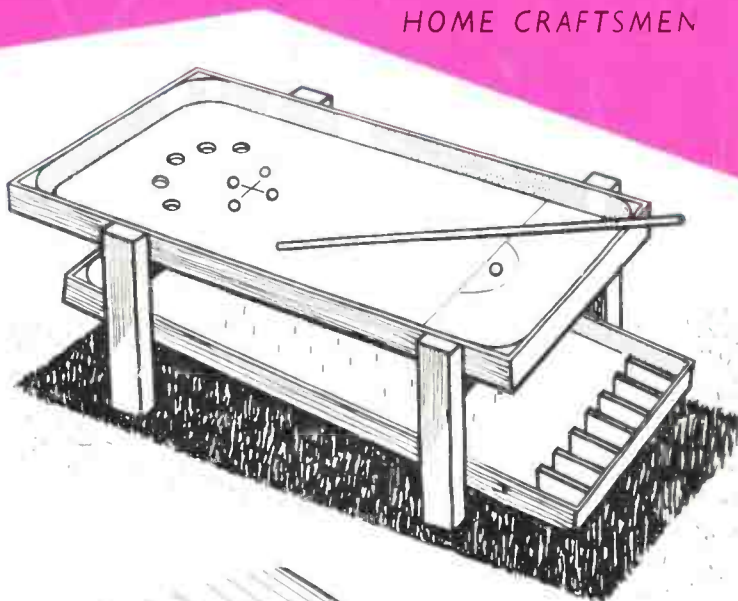
TOYS, NOVELTIES
AND PUZZLES

TIPS ON FISHING
FOR GRAYLING

FULL-SIZE PLANS
FOR AN INKSTAND

ANOTHER FEATURE
ON WEAVING

ETC. ETC.



**A GAMES
'PINTEL'
TABLE**

TRANSISTOR PORTABLE



Up-to-the-minute ideas

Practical designs

Pleasant and profitable things to make

World Radio History

5^p



UNITED Nations stamps are used on U.N. official mail sent from U.N. Headquarters to points throughout the world, and may be used on private correspondence sent through the U.N. Headquarters Post Office. All U.N. mail is carried by the U.S. Post Office.

The U.N. has been made the subject of a number of special anniversary issues, as well as printings in honour of United Nations Day. In addition, most of the 'Specialized Agencies' connected with the U.N. organization and world conferences have been recorded in world stamps.

In June, 1946, for example, Austria issued a stamp (on sale for one day only!) to coincide with the 1st anniversary of the Signing at San Francisco by fifty national representatives of the United Nations Charter. The design consisted of a typical landscape scene with a globe of the world superimposed on it.

In April, a year earlier, the United

States printed a stamp to mark the First San Francisco Conference, to discuss plans for the setting up of the world organization. The design for this showed an olive spray, and the words attributed to President Roosevelt, one of the U.N. 'architects': 'Toward United Nations.'

STAMPS OF THE UNITED NATIONS

When, in 1943, the Foreign Ministers of Great Britain, U.S.A., and Russia met at Teheran, in Iran, to consider combined plans for Allied Victory during the last war, and to eventually set up an International organization, Russia marked the event with a new stamp.

The flags of the 'Big Three' countries were shown, and the inscription in Russian also appeared, reading: 'Long

Live the Victories of the Anglo-Soviet Military Alliance.'

Then on June 14th, 1944, as part of the celebrations marking the 'Day of the United Nations,' two other Russian stamps went on issue, being distinguished by featuring the flags of Britain, U.S.A., and the Soviet Union.

Although the United Nations' Postal Administration began to circulate its own stamps in 1951, the first of its commemoratives appeared the following year. The common motif pictured the Veterans' War Memorial Building at San Francisco, inscribed as the 'Birthplace of the Charter'.

A Belgian artist was responsible for the design of the two stamps, of which six million copies were printed and inscribed in the five official U.N. languages, namely, English, French, Spanish, Russian, and Chinese.

Another country to bring out U.N. 'Anniversary' stamps was Afghanistan, when, in 1948, the third anniversary of the organization was recalled in a stamp. A globe, a portrait, several ears of wheat, and the national arms figured on the designpiece.

Afghanistan the next year included a ceremonial arch and ears of wheat on the issue marking the fourth anniversary, while a similar format appeared on the 1950 stamp.

For the United Nations Day commemorative issue printed by that country in October 1951, a dove of Peace was depicted flying towards a globe of the world.

Other stamps bearing symbolical designs relating to the U.N. organization were on issue throughout Afghanistan on United Nations Day in 1952, 1953, and 1954.

The U.N. emblem surmounting a globe figured on four stamps issued in 1950 by the Central American Republic of Bolivia when it celebrated the fifth anniversary of the organization in this way.

The three stamps provided for United Nations Day in 1951 by the Philippine Republic pictured a young woman holding flags of both the Philippine Islands and the United Nations.

The six stamps in the set from Indonesia in 1951 on the occasion of United Nations Day illustrated a number of doves in flight. The design also included the date of U.N. and the date '28th September, 1950', the latter marking the naming of 'Indonesia' against its original title of the Dutch East Indies.

Thailand, also known as Siam, has produced several issues in connection with United Nations Day.

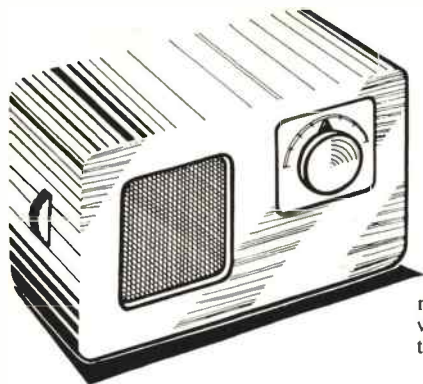
Brazil, for United Nations Day, 1952, struck a large stamp which displayed the U.N. emblem, a dove and a globe of the world encircled by a ribbon composed of flags of some of the U.N. member nations,

● Continued on page 32



A 5-TRANSISTOR PORTABLE SET

By
'Radio Mech'



THIS layout and circuit can be used in small, medium or ordinary sized transistor portables. If the set is as compact as possible, it will fit in a box about 5½ in. by 3½ in. by 1½ in., with loudspeaker and battery, and cases of similar size to this can be bought from radio component suppliers. If the case is made from thin wood, its inside dimensions should not be less than those quoted, or it will be almost impossible to accommodate the parts.

miniature transistor components which will be needed when the set is to be of the smallest size.

The receiver has a self-contained rod aerial, and will be found to give satisfactory loudspeaker results from local BBC stations and a number of the more powerful foreign transmitters.

From the circuit, in Fig. 1, it will be seen that particular transistors are specified, and the resistor values are such as will allow these to give best results. This does not mean that surplus or other transistors cannot be used, if they are of correct type. They must, however, be intended for the particular circuit positions. For example, surplus

XC101. 165mW output transistor.

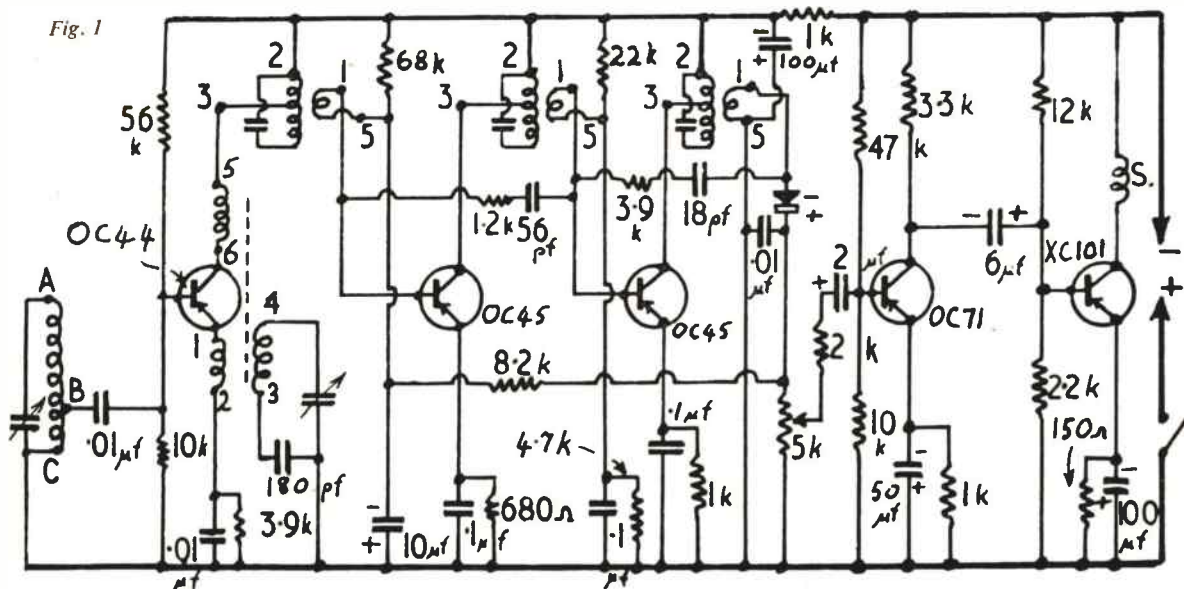
With all the 'OC' transistors, the Collector lead is marked red, the centre lead is Base, and the remaining lead is Emitter. With the XC101, the Collector is coded white, the Base is the centre lead, and the remaining wire is Emitter. Surplus and other transistors have their own coding, and the supplier's data must be followed in order that the three leads from each transistor shall be connected properly.

In the diagrams, the oscillator coil has six pins, numbered from 1 to 6. The I.F. transformers have five pins, No. 4 not being used.

The pin positions and numbering are for the oscillator coil and transformers listed. In Fig. 1, each I.F. transformer has a small condenser and these are ready fitted inside by the makers.

You can fit other kinds of transistor

Fig. 1



For a slightly larger receiver the box can be increased to about 6½ in. by 4½ in. by 2½ in. The set is then easier to construct, because there is extra free space between leads and components.

If a miniature receiver is not wanted, you can build the set in an ordinary small cabinet and fit a larger loudspeaker. A battery with larger cells can also be used (but not over 9 volts), and ordinary radio resistors and condensers, instead of the

audio-frequency transistors will not oscillate, if wired in the OC44 position, and the receiver could not work. As surplus transistors are sometimes listed according to their function, the transistor details are as follows:

OC44. Frequency changer, gain 100.

Two OC45. Intermediate frequency amplifiers, gain 50.

OC71. 50mW maximum audio amplifier, gain 30-75.

oscillator coil and I.F. transformers instead, with satisfactory results. When wiring to the pins of these, follow the maker's instruction leaflet, because the pins are in different positions.

The oscillator coil and 180pF condenser joined to pin 3 are intended to suit the small 2-gang condenser of 208/176pF capacity, with internal screen, as listed. This item is available from most transistor component suppliers. If other

sleeving where wanted to prevent short circuits.

The transistors are joined in as follows:
OC44. Base to junction of 56K, 10K, and 0.01 μ F. Emitter to pin 1 and Collector to oscillator coil pin 6.

1st OC45. Base to 1 on 1st IF transformer. Emitter to junction of 680 ohm and 0.1 μ F. Collector to 3 on 2nd IF transformer.

2nd OC45. Base to 1 on 2nd IF transformer. Emitter to junction of 1K and 0.1 μ F. Collector to 3 on 3rd IF transformer.

OC71. Base to junction of 47K, 10K, and 2 μ F. Emitter to 1K and 50 μ F. Collector to 3-3K and 6 μ F.

XC101. Base to junction of 2.2K, 12K, and 6 μ F. Emitter to 150 ohm and 100 μ F. Collector to speaker (or transformer primary).

When the transistor leads are soldered, the hot iron should not be kept in contact with the wire more than about 2 seconds.

The miniature type of volume control has small tags which project through the panel. A length of thin flex from the flat tag is for battery positive. Battery negative is taken from the 12K resistor. A lead from this point also goes to the speaker. The speaker lead from the transistor XC101 is anchored by passing it through two small holes. The large condensers have plus and minus ends, and are connected as shown.

To wind an aerial on a $\frac{3}{8}$ in. by 5 in. ferrite rod, use 80 turns of 26 SWG wire in all, tapped at 12 turns from C, to form B. Wind the turns side by side on a thin card tube so that the rod will slide inside, securing the ends of wire with adhesive. For a $\frac{3}{8}$ in. by 8 in. rod, which can be used in a larger case, employ 70 turns, similarly tapped. Small wooden pieces are cut to hold the rod to the panel. Metal clips are best not used. The beginning of the winding 'A' goes to the fixed plates tag near the condenser spindle. Tapping 'B' is a short loop taken to the 0.01 μ F condenser. 'C' goes to the common earthing point 'E' on the condenser frame.

The rear tag of the tuning condenser is connected to pin 4 of the oscillator coil. Wire one 50 pF trimmer from each of the fixed plates tags to the condenser frame. For the miniature design these trimmers can lie against the panel, at the front, near the condenser.

Carefully check all components and connections before adding the battery. In particular see that transistor leads are joined up as explained, and that no wires can touch each other. With colour-coded resistors, it is wise to make sure no error has been made in reading the figures or number of noughts.

Battery and adjusting

The set is intended for a 9V. battery, but will give good results with a 6V. or 7 $\frac{1}{2}$ V. battery. If a meter is joined in one lead, and shows about 10mA to 15mA, upon switching on, this will show that direct-current parts of the circuit are probably in order.

If a signal generator is available, align the IF transformers for maximum output at about 465kc/s, using a small insulated tool. If no generator is to hand, tune in the local station, with volume control at maximum, and adjust the IF transformer cores for best volume. If signals are at all loud, choose a weak station, because you can make adjustments more accurately with this. Once you have been able to 'tune in' the station for best volume with the cores, don't touch them again. Remember to keep the volume control at maximum, but to choose a weak station, for all adjustments.

The two 50pF trimmers are then set at about half capacity, and a weak station is tuned in near 200 to 250 metres (gang condenser nearly open). Then leave the tuning knob untouched, and turn the trimmer screws for best volume. When this has been done, tune to 400 to 500 metres (condenser nearly closed) and slide the aerial winding along the rod to get best volume from a station there. If the winding comes too far off the rod, screw in the oscillator coil core and repeat trimming. If the winding is too far on the rod (near its centre) unscrew the oscillator core a turn or two, and then repeat the trimming. When you cannot improve volume any more by adjusting the 50pF trimmers at 200 to 250 metres, or the rod winding position at 400 to 500 metres, this part of the work is finished.

Cabinet

With this type of receiver you can use a fairly large diameter tuning knob directly on the condenser spindle, with no reduction drive at all. The condenser can be obtained with a tapped spindle so that a thin knob-dial can be attached by means of a 6 BA bolt.

The speaker has to be so placed that it clears the oscillator coil and transformer cans. To obtain a better front appearance, the aperture in the cabinet can be made larger than the speaker, and arranged to match up with the tuning knob. A piece of silk is then glued behind this opening. A piece of stout card, or thin wood large enough to cover the opening is then screwed inside the cabinet, and this has a circular cut-out so positioned as to agree with the speaker cone. The speaker can be attached with small screws, short flexible leads passing to it from the receiver. Some units have one tag common to the metal

COMPONENT LIST

Transistors, OC44, two OC45, OC71, and XC101.

Three I.F. transformers } (*Osmor Radio*
Oscillator coil } 418 Brighton Road
S. Croydon)

OA70 or similar diode.
70 ohm (approx.) speaker.
5K volume control with switch.
2-gang tuning condenser.

(*Jackson Bros. Available from Home Radio (Mitcham) Ltd, 187 London Road, Mitcham, Surrey.*)

Aerial rod and wire.

Two 50pF trimmers.
Resistors: 150 ohm, 680 ohm, three 1K, 1.2K, 2K, 2.2K, 3.3K, two 3.9K, 4.7K, 8.2K, two 10K, 12K, 22K, 47K, 56K, and 68K.

Mica condensers: 18pF, 56pF and 180 pF.
Paper condensers: three 0.01 μ F, three 0.1 μ F.

Electrolytic condensers: 2 μ F, 6 μ F, 10 μ F, 50 μ F, and two 100 μ F.

frame. If so, take this tag to battery negative, but assure no wires or other parts such as the IF transformer cans will touch the speaker frame.

The Ardenite VC1126 type of volume control, for which connections are shown in Fig. 2, is intended to project through a slit in the side of the cabinet. It is turned by finger pressure on the projecting rim. Ordinary type volume controls can have a small knob on the cabinet front.

The wired panel can be screwed to small wooden blocks fitted in the cabinet. Very slight re-adjustment of trimming may be necessary, after placing the set in its cabinet, for best results. The trimmer screws should therefore be placed so that they can be reached from behind. After adjustment, tiny spots of adhesive are used to seal trimmers, cores, and the aerial winding on the rod.

Improvised Latch

THIS simple latch is quite adequate for the chicken run or fruit cage. Bend the skewer, as shown, and fasten to the post by means of a large staple or nail bent over. The second staple is inserted in the other post.

(M.H.)



AN OBEDIENT SPINNING TOY

THE simplest toys usually provide most pleasure, and colour, movement and noise are the blended ingredients of the most successful playthings. An 'obedient' propeller is such a toy and its mysterious rotations will prove puzzling to its young users.

Paint the ruler and propeller in gay colours. Mount the propeller, upon one end of the ruler, between two little coloured beads, using a pin as a spindle. A 6 in. length of $\frac{1}{4}$ in. diameter dowel completes your apparatus.

Hold the ruler firmly in your left hand with the 'saw-teeth' upwards and the

against the right-hand edges of the wooden teeth. Incline the ruler towards your right and rub the left-hand edges of the teeth if you wish the propeller to turn in an anti-clockwise direction.

The faster you rub, the faster the propeller will spin. Obviously vibration is responsible for the uncanny behaviour

By A. E. Ward

To make the toy you will need a ruler, some small beads, a pin and a length of $\frac{1}{4}$ in. strip balsa wood, in addition to a piece of thin cardboard and a 'stick' of $\frac{1}{4}$ in. diameter dowel.

Begin by cutting a neat series of deep notches, a quarter of an inch apart, all along one edge of the ruler. A twelve-inch ruler will serve best. Use a penknife and glasspaper to taper the wood slightly on the lower edge of the ruler at the end where the propeller will be mounted.

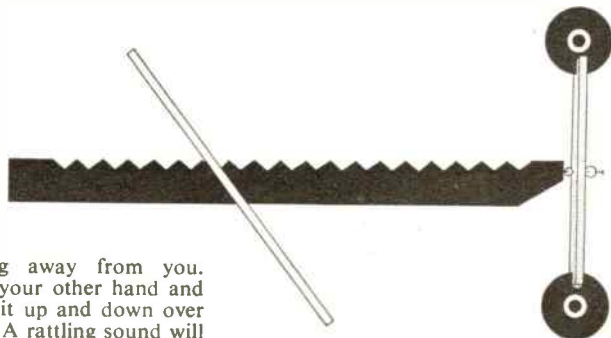
Make the propeller by boring a small hole across the middle of a 5 in. length of $\frac{1}{4}$ in. strip balsa wood. Prepare two $1\frac{1}{4}$ in. diameter discs of cardboard by first marking them out with a pencil and compasses, and then cutting with sharp scissors. Glue the discs into little slots cut in the ends of the propeller.

propeller pointing away from you. Take the stick in your other hand and commence to rub it up and down over the wooden teeth. A rattling sound will be produced and the propeller will start to spin.

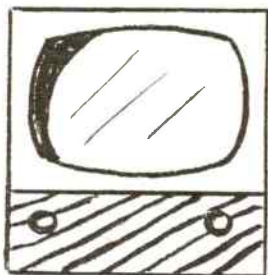
You will learn by experience the most effective way of holding the ruler and stick. Next, you must practise controlling the direction in which the propeller will spin. To make the propeller turn in a clockwise direction, incline the ruler towards your left and rub the stick

of the propeller, but a more detailed explanation would not be easy to give.

Try drawing a black spiral pattern upon a 4 in. diameter cardboard disc, and use this as a substitute for the propeller. The rotating diagram will produce a different effect, depending upon which way the disc is caused to spin.

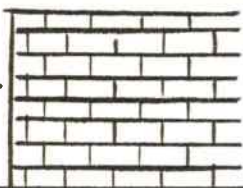


TWO-MINUTE QUIZ *Ed. by Capper*



1. WHERE WOULD YOU FIND A 'GETTER'?

2.



WHICH PART OF THE WALL IS THE PERPEND?

3.



IS THIS BOLT USED IN A CLOTH FACTORY?



4.

THE INITIALS M.O.U.S.E STAND FOR-what?

5. HOW DO YOU CHASE BRICKWORK?



Answers on page 32

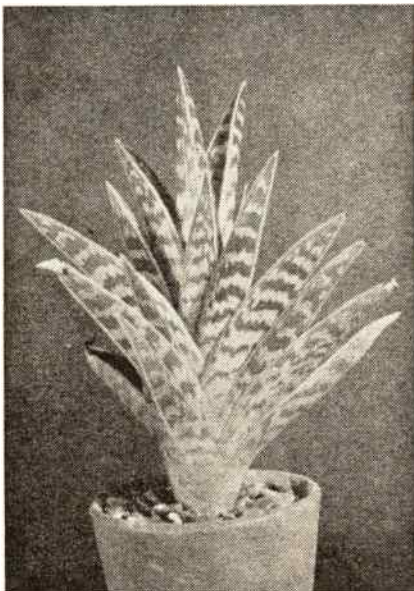
ACTI & SUCCULENTS

IN preceding articles I have dealt with the three main families of non-cactus succulents, but there are many other families that have succulent members.

The Lily family contains the Aloes, which are very common plants of the African landscape. The most attractive specimen is the small growing *Aloe variegata*, the 'Partridge breasted Aloe'.

7—SOME OTHER SUCCULENTS

This has green and white striped leaves, and orange bell-shaped flowers, which are produced in March. The large Aloe-like plants seen on the Mediterranean coast are Agaves and members of the Amaryllidaceae family, to which our Daffodil belongs. Most of these become very large plants, but young specimens make tough pot plants.



ALOE VARIEGATA

The Haworthia is another genus of succulent plant having rosettes of tough, leathery leaves. The insignificant flowers are produced on ridiculously long stems; in *H. tessellata* they are very sweetly scented.

The Andromischus are low growing plants with thick beautifully marked leaves. *A. cooperii* has brown markings on a dark green ground. Other good specimens are *A. cristatus* and *A. maculatus*.

The Crassulaceae is a family that is found in both the new and the old world. The Crassula themselves vary



HAWORTHIA TESSELLATA, showing long flower stalk.



ANDROMISCHUS COOPERII

from small shrubs to tiny extreme succulent forms. *C. nealeana* is a good plant for a hanging basket, the pairs of thickened leaves are strung on the pendant stems like beads. *C. lycopodioides* is a small bush; the tiny leaves are so tightly packed on the stems that they are not recognizable from a distance.

Other attractive members of the Crassula family are the Pachyphytum. These come from the tropical regions of America, and have fat leaves with a white, mealy coating. It is important not

to finger these plants, or the bloom on the leaves will be ruined.

Finally there are the Echevera. These are also American plants. *E. gibbiflora*, variety *metallica* has beautiful bronzy red leaves. *E. derenbergii* is a rosette-shaped plant with pale green leaves tipped with orange.

In addition to the above plants there is a long list of other succulent genera, all of which are worth trying; Sedum, Sempervivum, Senecio, Kalanchoe, etc.

Next: Cacti for the Connoisseur.

Tablet Weaving with Braids

BEGINNERS who have an urge to try their hand at complicated patterns, can find themselves rather frustrated with card or two-way looms unless they are prepared to submit themselves to the slow picking-up process. Tablet weaving, which is a very ancient craft, offers great opportunities for experimentation in pattern-making.

Braids only can be made by this method, but there are very many uses for braids, from belt-making to edging curtains and cushions.

By G. A. Edmonds

One great difference in the finished tablet weaving, as compared with that obtained from the normal methods, is that the weft plays little part in the making of the pattern. With the exception of the edges, little of the weft is seen; whereas in normal weaving an equal amount of warp and weft is visible. This fact allows for easier pre-planning of the tablet pattern.

Materials required are:

Tablets. Two inch square cards of strong smooth material. Thick cardboard, or celluloid, is suitable.

Small shuttle.
Small beater.

Warp. Different colours of mercerized cotton or thin macramé.

Weft. One colour. The choice of colour depends upon what edging is required.

Squared paper and coloured pencils for planning the patterns.

Some means of supporting the warp (a suggestion will be given later).

A hole is made in each corner of each of the tablets, and a larger hole, equal to the diameter of a pencil, is made in

each thread determines how the pattern is formed, therefore a means of identifying each hole must be used. They can be marked in numbers from the left with numbers 1 and 2 at the top, and 3 and 4 at the bottom. For the beginner, it will be easier to paint each corner of the tablets with the colour of the warp that passes through the hole in that corner. In this way, the weaver can see at a glance that he has the correct permutation of colours to be woven at any stage of the weaving.

The beginner can quite conveniently begin with ten tablets, although the weaving thus attained will be very narrow. Two posts, made from 6 in. lengths of broomstick, are nailed or screwed to the ends of a 3 ft. lath. A 3 ft. 6 in. length of 1 in. by 1/2 in. wood is nailed to the other side of the lath so

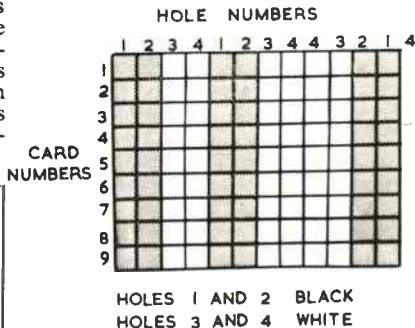


Fig. 3

that 3 in. projects at either end. These posts are clamped to the working surface as shown in Fig. 1.

The first tablet is threaded with the correct colour passing through the appropriate hole, and ends of the warp are fastened together to each post. The

When all are threaded, a pencil is pushed through the centre hole of each tablet to keep them immobile whilst all the ends opposite to the post from which it is decided to start the weaving are removed, straightened out, and tied altogether around the far post in one knot. There should be some excess length of warp here when the strands are tightened, because the weaving shortens the warp considerably.

The loom is now set for weaving. If, however, the weaver would prefer the loom to be more portable, then one end of the warp, the weaving end, may be tied to a belt at the weaver's waist, and the other to a table, chair, or any other convenient heavy object. Remember that the warp must be tight.

It is suggested that the first attempt should be a sample weave, so that the

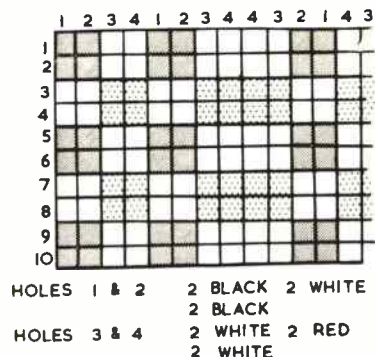


Fig. 4

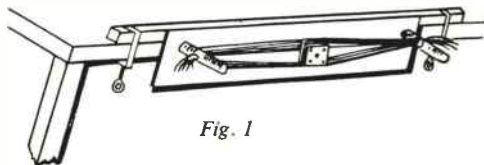


Fig. 1

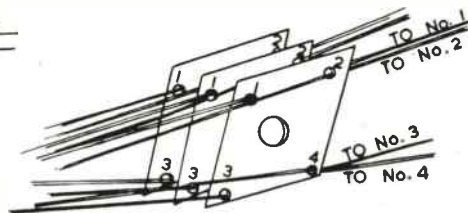


Fig. 2

the middle of each card. The purpose of the middle hole is to provide a means of keeping the tablets in the correct position, when the weaving is interrupted, by inserting a pencil through these holes on each tablet.

The corner holes are for the warp threads, and each tablet holds four threads. The position on the tablet of

tablet is then turned so that its edges are pointing to each post. (See Fig. 2.) The remaining tablets are then threaded in the same way, ensuring that each tablet is turned after the threading so that the warp threads pass through each hole in the same manner as in the previous tablet.

weaver can get used to moving the tablets, and try out the different permutations of movements as given at the end of this article.

The nearest hole to the weaver at the top of the tablets should be considered as number one, with the others numbering from this hole as in Fig. 2. A shed is

formed with numbers 1 and 2 at the top and numbers 3 and 4 at the bottom. Pass the shuttle holding the weft through this shed.

Now give the tablets a quarter turn towards you so that number 2 hole is now in the position previously occupied by number 1. Pass the weft back through the shed formed by numbers 2 and 3; and by 1 and 4. Make another quarter turn towards you so that number 3 is in the position previously occupied in sequence by 1 and 2, and pass the shuttle through the shed formed by numbers 3 and 4, and 2 and 1.

Now turn number 4 to the position previously occupied in sequence by 1, 2, and 3, and pass the shuttle through as before.

A complete circuit has now been made and a pattern is beginning to appear, locked together by four weft threads. Of all the four threads passing through the tablet at each turn, only one appears on the surface of the weaving for every weft strand, and this one determines the colour at that particular point. Therefore, for the ten tablets used, only ten threads appear for each weft.

Turn the tablets for another complete circuit, passing the shuttle through at each quarter turn, and the full pattern will now show. If the remainder of the weaving is repeated in this fashion, the pattern will be repeated identically.

Now is the time for experiment. When four circuits are made, carry on weaving, but this time make the tablets turn away from you, after making one more turn towards you, so that the pattern is not interrupted.

When satisfied as to what sort of pattern is produced in this manner, stop weaving and reset the loom by turning the first five tablets from the left to number 1, and the next five tablets to number 3. Insert a matchstick between the shed, to show where the pattern commences, and begin weaving, turning the tablets towards you. If the original threading had the same colour through 1 and 2 and another colour through 3 and 4, two bands of colour are produced with the reverse on the rear of the braid. If the turn is reversed after four normal quarter turns, then a chequered pattern will appear.

Because the process is an easy one, the beginner must not be misled into thinking that there is nothing at all to tablet weaving. As in all crafts, much practice and care is needed before worthwhile work is produced.

The biggest factor causing frustration is the fact that the tablets can appear to have a will of their own and may refuse to move together. The following are a few suggestions that will help to keep the weaving moving smoothly:

1. Keep the warp taut. Allow no strands to be looser than the others. Do not use wool in early work, as this stretches.

2. Use a stiff substance for the tablets that will not bend easily, and is smooth enough to allow the warp threads to glide over it. If card is used, smooth-off the edges and affix metal eyelets into the holes to allow a smoother running of the weft through them.

3. Do not have the warp holes too near the edge of the tablet, as there will then be less likelihood of the tablet edge catching in the warp. Rounding off the edges will also help.

4. If the tablets refuse to turn, do not force them. Look for any of the following causes, and put them right: (a) The movement of the tablets as the weaving progresses has caused the warp beyond the tablets to twist tightly. This is perfectly normal and is expected. Undo the far end of the warp, untwist and re-tie. Continue weaving until the twist is again too tight. (b) Weaving is too near the tablets. Move the tablets along as the weaving progresses. (c) The edge of one tablet has fouled the warp on another tablet. Remove the offending edge, check the others, then continue weaving.

5. When the weaving has grown too long, put a pencil through the centre holes of the tablets; untie the far end and allow out more warp before re-tying;

undo woven end and take in weaving, tying farther up. Continue weaving.

Pattern planning

Patterns may be planned on squared paper. Mark off and number at the side as many squares as there are tablets and in each one put in the colour for the warp in the number 1 position on the corresponding tablet. (See Fig. 3.) In the next squares put the colour of the warp in number 2 holes for the corresponding tablet. Do the same for the third and fourth columns of squares. Number these columns at the top so that, if planning a complicated pattern, you can see at a glance what permutation of colours each column will give.

In this way a pattern can be reduced to a system of quarter turns as shown at the top of the plan. For instance, to obtain the pattern illustrated in Fig. 4, set up the tablets as for the first four squares, then follow the sequence of movements as shown at the top of the plan. Remember to weave one more quarter turn before turning the cards in the opposite direction.

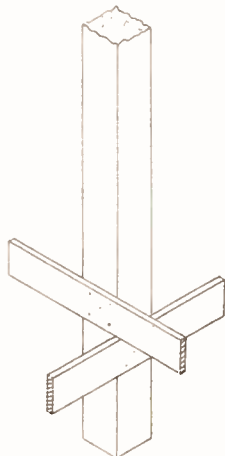
An interesting variation of the normal pattern is to have some tablets with the warp coming through from the left, and some with the warp coming from the right. This will give a wavy texture to the pattern. Normally the tablets are set-up in the same direction

MAKING FENCE POSTS RIGID

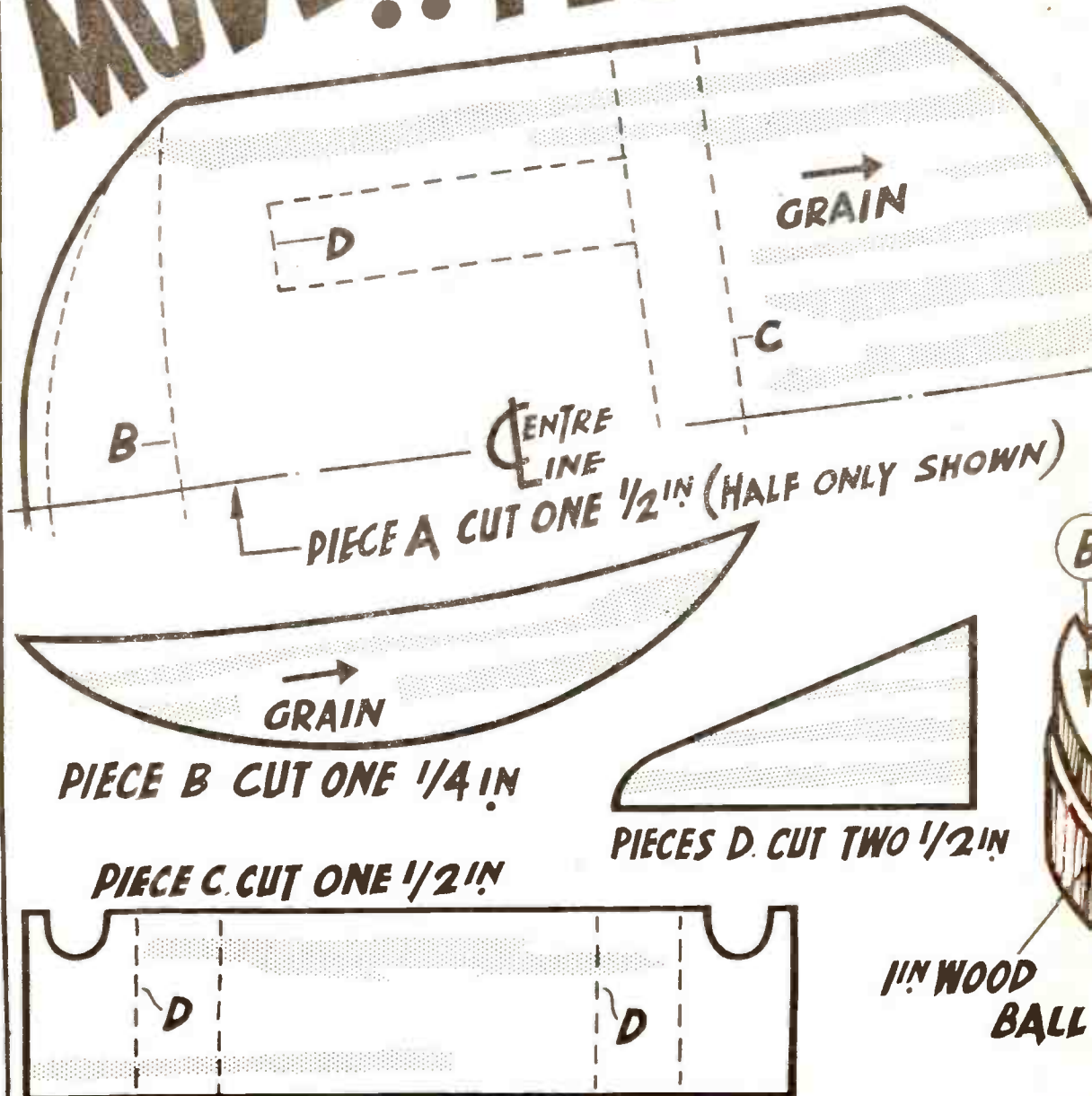
HAVE you ever considered the tremendous amount of strain exerted on fencing posts during gales and stormy weather? It is not surprising then, that so many posts are 'uprooted' or overturned because they had not been firmly fixed in position. The method of surrounding the bases in concrete is probably the best way of obtaining a rigid job. However, the posts are difficult to remove without damage at a later date, if required, and the use of concrete puts additional costs on to the job.

A proved method to give stability is to nail two pieces of scrap timber at right angles to each other about a foot or so from the bottom end of each post as shown in the illustration. Insert into the ground and pack bricks, rubble, clay, etc. tightly around the base, particularly around the two ledges. Make sure that the hole is tightly backfilled. If correctly done you will find that the ledges will give added rigidity to the posts and then will not require any further means of support.

By K. Finlay



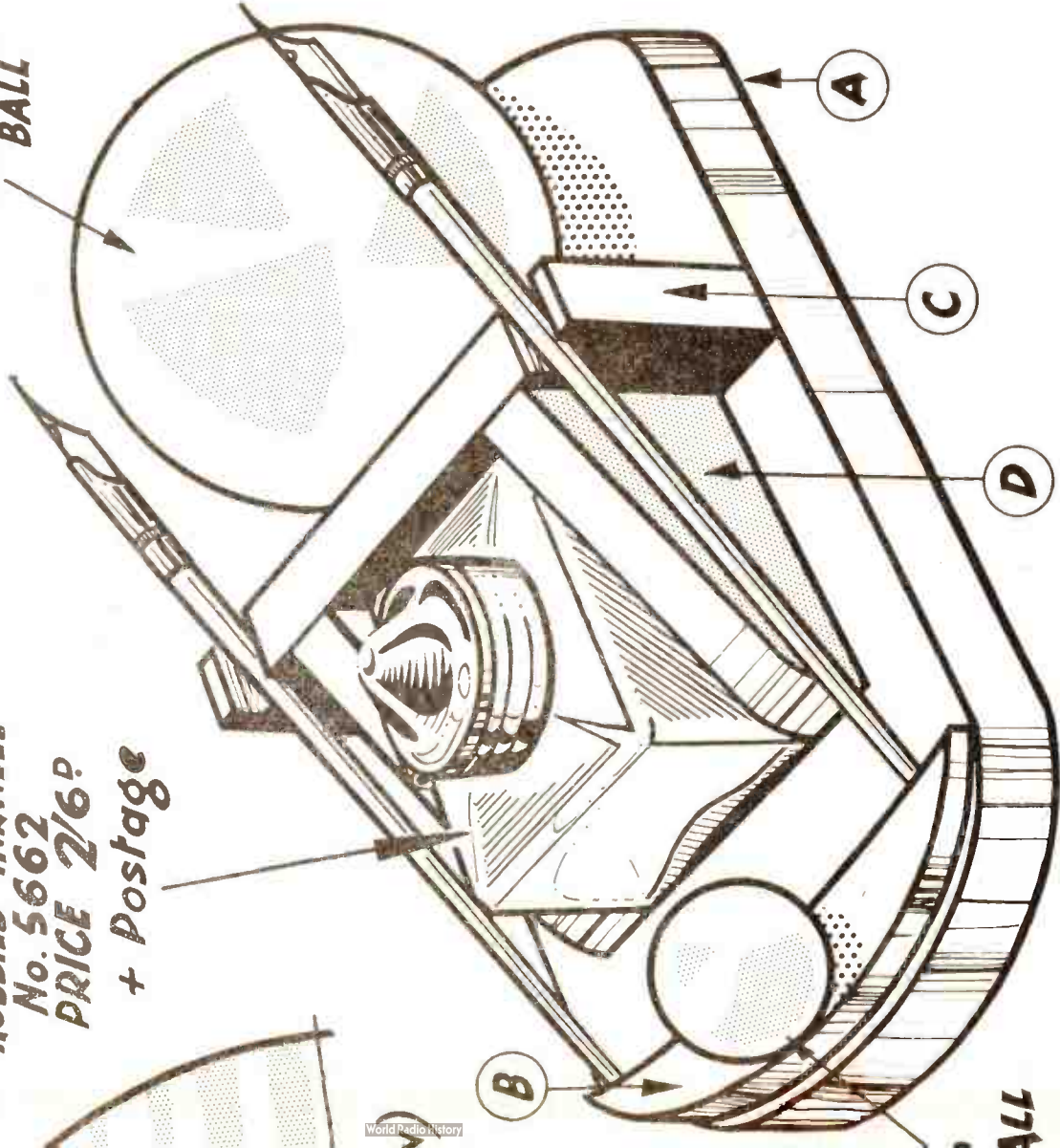
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THIS GARDEN POOL SAVES MUCH WORK

THE advantages of building a garden pool *on* rather than *in* the ground are many. Digging is reduced to a bare minimum, the very method of construction is simpler, while the finished pool tends to become a more important garden feature. The cost for materials is slightly higher, but this is offset by the advantages. The project should of course be undertaken when there is no risk of frost.

The first step is to remove surface grass, etc. to a depth of about 2 in. over the area to be covered by the pool (including its walls), and to well ram the earth so exposed.

For concrete walls it is necessary to erect 'shuttering'. This is done by driving a series of stout wooden posts around the outside of the site. A second series of posts is situated inside the site. There should be a distance of about 7 in. between the inside faces of these two sets of posts, and allowing for 1 in. shuttering, this will give a wall thickness of 5 in. If a pool of 2 ft. depth is required, posts should be about 2 ft. 6 in. long (driven 6 in. into the ground), and be spaced about 3 ft. apart. Very stout posts should be used at the corners, and intermediate posts should be staggered (see Fig. A).

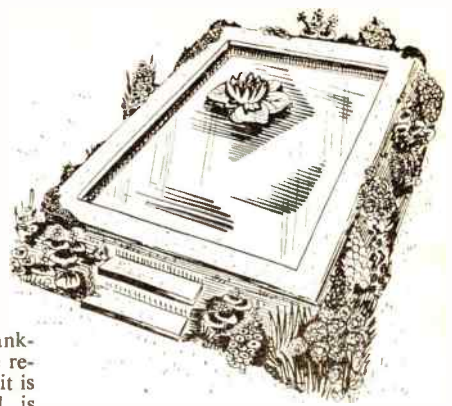
The inside faces of these posts have to

be lined with 1 in. thick vertical planking. Quite old timber (which will be recoverable for later use) is suitable if it is not too badly split. If the pool is sufficiently small it will be possible to nail these boards on to the posts before the latter are driven into the ground, but for larger pools it will be necessary to fix the bottom board on each side, and

By B. Nicholas

to fix the planking, board by board, on each side alternately, for convenience in nailing.

Having erected the shuttering, the inside of it must be whitewashed to prevent the concrete sticking to it. The concrete is a 1:2:3 mixture of cement, washed sand, and gravel, thoroughly mixed first in a dry and then in a wet state. It is poured into the shuttering



mould, and rammed well down, the mould being filled level with the top. Any odd pieces of iron rod may be positioned in the mould (clear of its faces), to serve as reinforcement.

Fig. A gives a plan view of one corner of the posts, the vertical boarding, and the concrete can be followed from this quite readily.

The top of the concrete walls should be covered with damp sacking, and the whole allowed to stand for five or six days before the shuttering is removed.

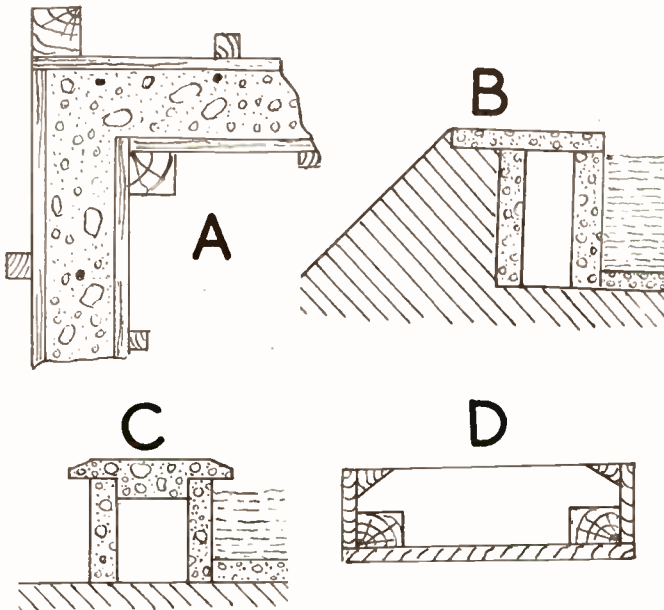
A thin layer of coarse stone is put on the bottom of the pool, and the concrete floor laid over this to a depth of at least 2 in. With this type of pool, water may easily be siphoned off with a hose direct to a convenient manhole or drain. If desired, a hole (to be closed with a stopper) may be left in one of the walls by leaving a suitable piece of wood between the sides of the shuttering, and withdrawing this when the shuttering is taken down.

Having allowed some time for the concrete to thoroughly harden, the inside of the walls and bottom may be treated with a thin layer of waterproof cement.

Double wall system

In a built-up pool the pressure exerted on the walls by the water will be considerable, so with a very large pool of this type a double wall system, as indicated in section in Fig. B should be adopted. Here there are two concrete walls, and against the outer one earth is stacked to make sloping flower beds. Simple concrete slabs (cast in a shallow box) cover the tops of the walls, and form a path round the pool. The space between the walls (which should be about 1 ft.) is filled with large stones, rammed earth, etc. Incidentally, this space is an ideal place for disposing of builders' rubble, etc. in a brand new or neglected garden.

● Continued on page 29



Make this 'Telepathy' Puzzle

PUZZLES are always intriguing, and most people love to try their skill in attempting to solve them. This 'telepathy' puzzle will cause endless fun among your friends.

It consists of a box and four apparently identical blocks of wood, each one of which just fits inside the box. Without opening the box, you, as the owner, will be able to say which block has been placed inside by one of your friends and thus claim 'telepathic' powers. Any one of these blocks is placed inside (the other three are hidden away), the lid put on, and the box put down on the table. A casual glance is all that is necessary to tell you which block is inside the box, provided, however, that you know the secret.

The box can be thoroughly examined, also the four blocks, and except that they are numbered from 1 to 4 there is absolutely nothing unusual visible to the uninitiated.

The secret of the puzzle lies hidden inside the four blocks, which are weighted with lead. The weight is placed quite near to the edge, but in each of the four blocks it is put in a different position. Fig. 3 explains this in detail, the shaded portions showing where the weights are located in each block.

First make the box according to the measurements given in Fig. 2. It is a square box with sides 6 in. in length and with an outside depth of $1\frac{3}{4}$ in. Cut the base of $\frac{3}{8}$ in. wood, and the sides, which are $1\frac{3}{8}$ in. wide and $\frac{1}{2}$ in. thick.

Two pieces 6 in. long and two of 5 in. are glued and tacked securely to the base.

Complete the box with a neat lid 5 in. square and $\frac{3}{8}$ in. thick, and fit two lengths of dowel rod exactly in the centre of the lid and base (Fig. 1). These project about $\frac{1}{2}$ in., and in order to make them secure drill a hole $\frac{1}{4}$ in. deep and glue them in position. The exposed ends of the dowels must be well rounded.

When the lid is in position it is secured with four small brass buttons as shown in Fig. 2.

It is very necessary that each block is placed in the box in exactly the same way, and in order to ensure this a small strip of wood is fixed in the bottom and on the left side of the box as shown in Fig. 2. This strip is 5 in. long, $\frac{1}{2}$ in. wide and $\frac{1}{4}$ in. thick.

Fig. 4 shows a similar-sized recess cut on the left side of a finished block, and we can see from this that it is only possible to put each block into the box in just one way.

The best way to make the blocks, complete with weights, is to make each in two pieces, which are then glued

together. Cut the top piece $4\frac{1}{2}$ in. square and $\frac{1}{2}$ in. thick, and the bottom piece $4\frac{1}{2}$ in. by $4\frac{1}{8}$ in. and $\frac{1}{2}$ in. thick. Be sure that the grain runs the same way in each piece. Then when they are glued together and finished off each block will

be placed on the table with the lid underneath, you must calculate in the opposite direction when giving your answer.

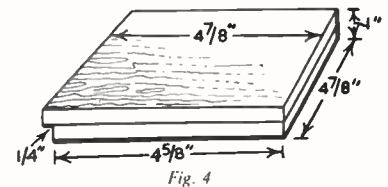
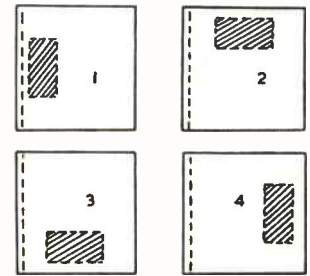
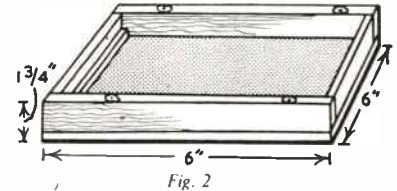
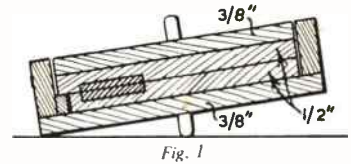
By A. F. Taylor

appear to be made of one piece of wood.

Cut a recess in each piece and make them to exactly correspond so that the lead weight to be inserted will be a nice fit and not shake about. Be careful to get the recess placed in the centre of each side so that the balance will be correct. Fig. 3 indicates the position of the recess in each block, shown shaded. The dotted line down the left side of each block is the cut-away portion on the bottom.

It is a good idea to glue the sheets of lead into the recesses so that there will be no fear of them rattling when inspected. Thoroughly glasspaper the blocks and pay special attention to the edges, which should be nice and smooth and with no apparent joints. The blocks are numbered 1 to 4.

When the box is closed it is important for your calculations that you should know on which side the narrow strip of wood is situated and which therefore coincides with the recess on each block. Mark this side of the box with a small dot either painted on or made with a countersink bit. This will be No. 1 side. If, when placed on a table, the box rests on this side you will know No. 1 block is inside. Nos. 2, 3, and 4 will follow in a clockwise direction when the lid is at the top. If, however, the box is



● Continued from page 28

BUILDING A GARDEN POOL

With sloping flower beds against the wall, steps to the top of the pool will be necessary. These should be of concrete slabs on well-rammed earth, and should be comparatively long and broad to obtain the best effect.

The double wall system may also be used for very shallow pools, with concrete slabs across the top to form a low seat. These slabs may be anchored down by a 4 in. deep projection, as shown in Fig. C. A section through a wooden mould in which to cast the slabs is given in Fig. D, the triangular top pieces being removable in order to get the slab

out of the mould.

If a 'static water tank' effect is to be avoided, flower bed surrounds are essential. The pool could also be of brickwork, but here some degree of skill in bricklaying is necessary and, as before, the inside and bottom of the pool would have to be treated with waterproof cement. Flower beds and paths (the latter in brick) would add to the attractiveness of the pool.

Pools of all types should be emptied and scrubbed periodically for some weeks, to ensure freedom from lime and other impurities.

MAKE A GAMES 'PINTEL' TABLE

By *W. J. Smith*



A COMBINATION of bagatelle and pin table is something which will keep children of all ages — and their parents — happily engrossed for long periods. It can be quickly constructed from easily and cheaply obtained materials.

In essence, it is composed of two trays of the same size, mounted one above the other, the lower one being set at a slope. (See illustration.)

The bases of the trays may be of hardboard or ply. To the edges are panel-pinned lengths of lath, the corners being reinforced with wooden pieces curved on the inside. A suggested size for the trays is 3 ft. by 1 ft. 6 in., but this can be varied according to the materials at hand.

The upper tray (Fig. 1) is covered with fine felt, but blotting paper will serve, and the sides are lined with strips of foam rubber. A semi-circle of five holes, large enough to take a large size marble, is let in towards the bottom of the top tray. In front of these holes are four marked positions for setting up four marbles before play begins.

Play is made from a marked semi-circle at the lower end, the cue ball or marble being struck with a tipped dowel rod.

Balls coming through the holes in the top tray drop on the lower tray (Fig. 2). As they do so and roll down the slope of the tray they meet with a design of stout pins, and finally enter one of the divisions at the front end of the tray.

The scoring division are made with short lengths of lath, say 3 in., and score numbers are affixed.

Four legs of 2 in. by 1 in. wood are screwed to the upper tray. To make this attachment firm, two battens of 2 in. by 1 in. are run under the tray and fastened to it. To the ends of these battens the legs are secured with angle brackets.

The lower tray is attached to the legs in a similar manner, but positioned so that it is at a pronounced slope and projects 4 in. in front of the top tray.

This is so the players can readily see into which compartments the marbles run. This lower tray must also be set so that the balls falling through drop on to it just above the pins.

Four marbles are set up on the marked spots on the top tray. Then an agreed number of marbles are cued one at a time. Any marbles which go down through the holes score in the lower table.

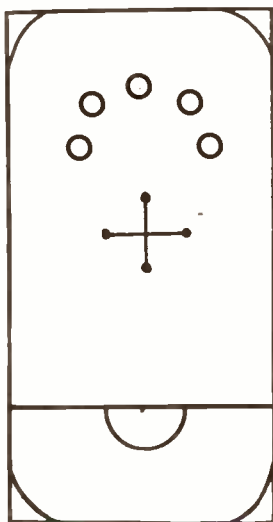


Fig. 1

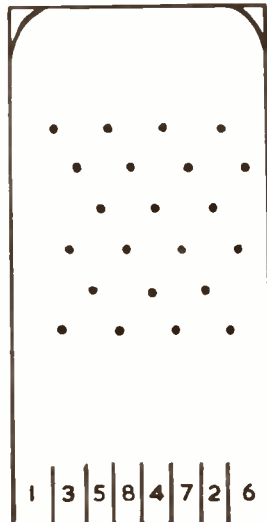


Fig. 2

FIXING FOUNDATION BOLTS

SMALL pieces of machinery (such as lathes) and the bench must be securely fixed to the workshop floor if satisfactory work is to be done. Bolts that are fixed with cement usually need several days for the medium to set properly, but with this method it is only a matter of minutes before the job is ready.

First cut out a hole in the concrete workshop floor, and if possible this should be slightly larger at the bottom. It is also an advantage to leave the sides of the hole rough in order to obtain a stronger hold for the filling material.

The ordinary bolt A will need a large washer or sheet of stout metal slipped over it to give a firm hold. A bent bolt B is, perhaps, an even better and stronger

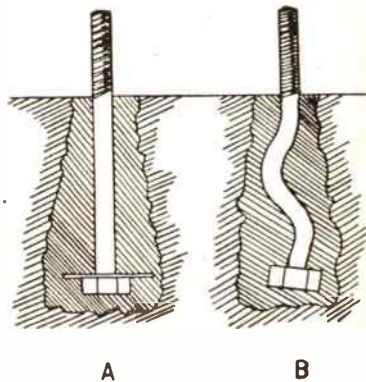
means of holding the fixture secure in the floor.

Sulphur, either in the form of rock sulphur or the powdered variety better known as flowers of sulphur, is the filling agent; and when this has been melted and poured in it will grip and hold the bolt with great efficiency. It is claimed to be superior to many other forms of fixing and is a clean and easy job. Water and dampness do not affect this mode of fixing, which makes it so suitable for work on the floor.

Because of the strong fumes given off by sulphur, it is best to melt it in the open air in an old saucepan. When thoroughly melted, it can be poured immediately into the hole, and it sets almost at once. A little sand can be added to the sulphur

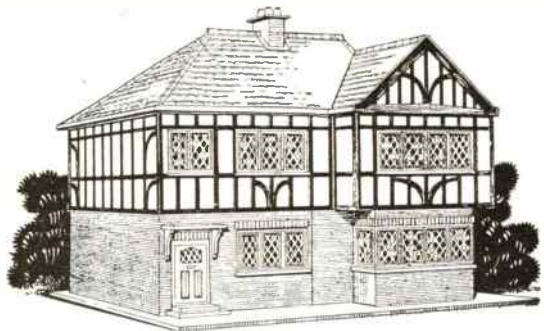
just before it is ready, but it should be warmed first, and well stirred in.

(A.F.T.)



GIFTS FOR BOYS & GIRLS

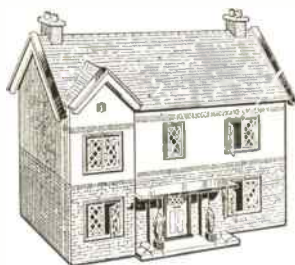
The making of these gifts is a job well within the capabilities of any handyman. With a fretsaw, a few simple tools and one of Hobbies kits, he can make a lasting model of which he can be really proud, and one which is certain to please its small owner.



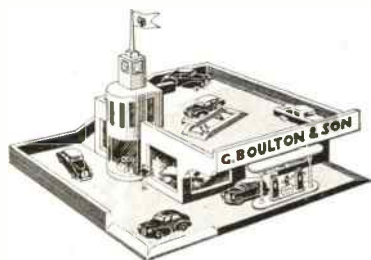
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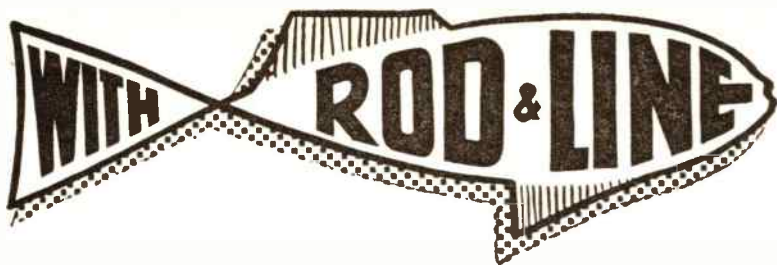
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WITH the end of the trout season a lot of fly-rods will be put away with a sigh. I often wonder why this should be. We have a fish which will provide the flyfisher with a great deal of sport, and even if fly tackle is not available, then the grayling can also provide some nice and dainty fishing.

The grayling is in reality a member of the salmon family, but owing to its spawning period being the same as that of our coarse fish, it is classed under the latter heading. This fish is to be found in a great many trout waters, and in Yorkshire it is also found amongst the coarse fish. The lower reaches of at least two rivers very well-known to and fished by myself hold a good stock of grayling. I refer to the Wharfe at Ulleskelf, and the Nidd at Skip Bridge not far from York.

Now, with regard to catching grayling. With fly tackle, of course, the method is the same as for trout fishing, but if using float tackle, then the method is to fish off the bottom, letting the tackle travel downstream with the current. Very little weight is required,

and you don't have to use groundbait. If you have maggots on the hook, then throw one or two behind your float from time to time, and this will be sufficient to keep the grayling on the alert.

OUR FAIR LADY —THE GRAYLING

Max Walbran, the famous angler, developed a method of float fishing for grayling, and this entailed the use of a small float which had an egg-shaped cork body. This enabled it to be seen a long distance downstream and where the water happened to be a bit rough. The method is still in use today. Unfortunately Max lost his life in the river he loved so well.

When grayling fishing I use the same tactics as when fishing for dace. This is to have the heaviest shot the nearest to the float, allowing the current to lift the

bait up and down in the water. Grayling love to lie at the tail-end of a pool, and when they see your offering coming downstream, they will rise up from the bottom to inspect and take it.

Trout, of course, will be found at all depths, and very often are swimming just under the surface waiting for the nymphs to come up. Now although grayling may do the same I have never experienced this when fishing for them, so cannot pass an opinion. But what I can say is that my offering always seems to be taken in the slightly slower water — and a bit deeper, of course — near the end of a pool, and just before the river shallows off again. In fact I have seen the fish on more than one occasion come up from the bottom to intercept my bait or fly. They will then turn straight down again.

Now you have to remember that the grayling has a very soft mouth, and if you give a hefty strike you are quite likely to tear its lip. The method I recommend is as follows: when your float goes down do not attempt to strike but give way to the fish whilst you can see your line moving fast. When it slows down almost to a stop, gently tighten, and the barb of the hook will be home. Play the fish gently and you will soon have it in the net.

Regarding the size of these fish. For years the record stood at round about 4 lb., and it was often said that grayling of much larger weight did not exist. As is usual with angling, it only needs statements like this to confound the issue, and if I remember aright it was whilst letters to the angling Press on the subject were being published that an angler suddenly confounded all the theories by setting up a new record with a fish of 7 lb. 2 oz. This record still stands today.

However, if you can get fish of an average of 1 lb., you will be doing well.

—'Kingfisher'

● Continued from page 18

STAMPS OF THE UNITED NATIONS

United Nations Day, 1953, was duly celebrated by Persia (Iran) in two stamps. The design featured a mother with two children at the left and the U.N. badge on the right.

In 1954 Persia also commemorated U.N. Day with two stamps, but this time a woman with one child was depicted at the left.

On issue on United Nations Day in 1953 were two further stamps from the U.N. postal administration. These related to the technical assistance programme of the organization for the under-developed countries of the world.

A member of the United Nations International Secretariat designed the stamps which illustrated three intermeshed cog wheels, the top one containing the U.N. emblem.

A striking picture of the lotus blossom, a symbol of purity and fertility was represented along with a miniature

badge of the U.N. on a single stamp issued by India in 1954.

I have mentioned some of the most interesting U.N. stamps. But many others have been issued to date by Jugoslavia, Syria, Mexico, France, Honduras, Nicaragua, Liberia, Belgium, Turkey, Korea, the Lebanon, and Italy.

Some of the stamps deal with the various 'Specialized Agencies', others publicizing the General Assembly, International Bank, W.H.O., F.A.O., U.N.I.C.E.F., U.N.E.S.C.O., I.C.A.O., U.P.U., I.L.O., and I.R.O., all of which play important parts in the United Nations set up.

There is a great interest in U.N. stamps. Special U.N. albums have now been published.

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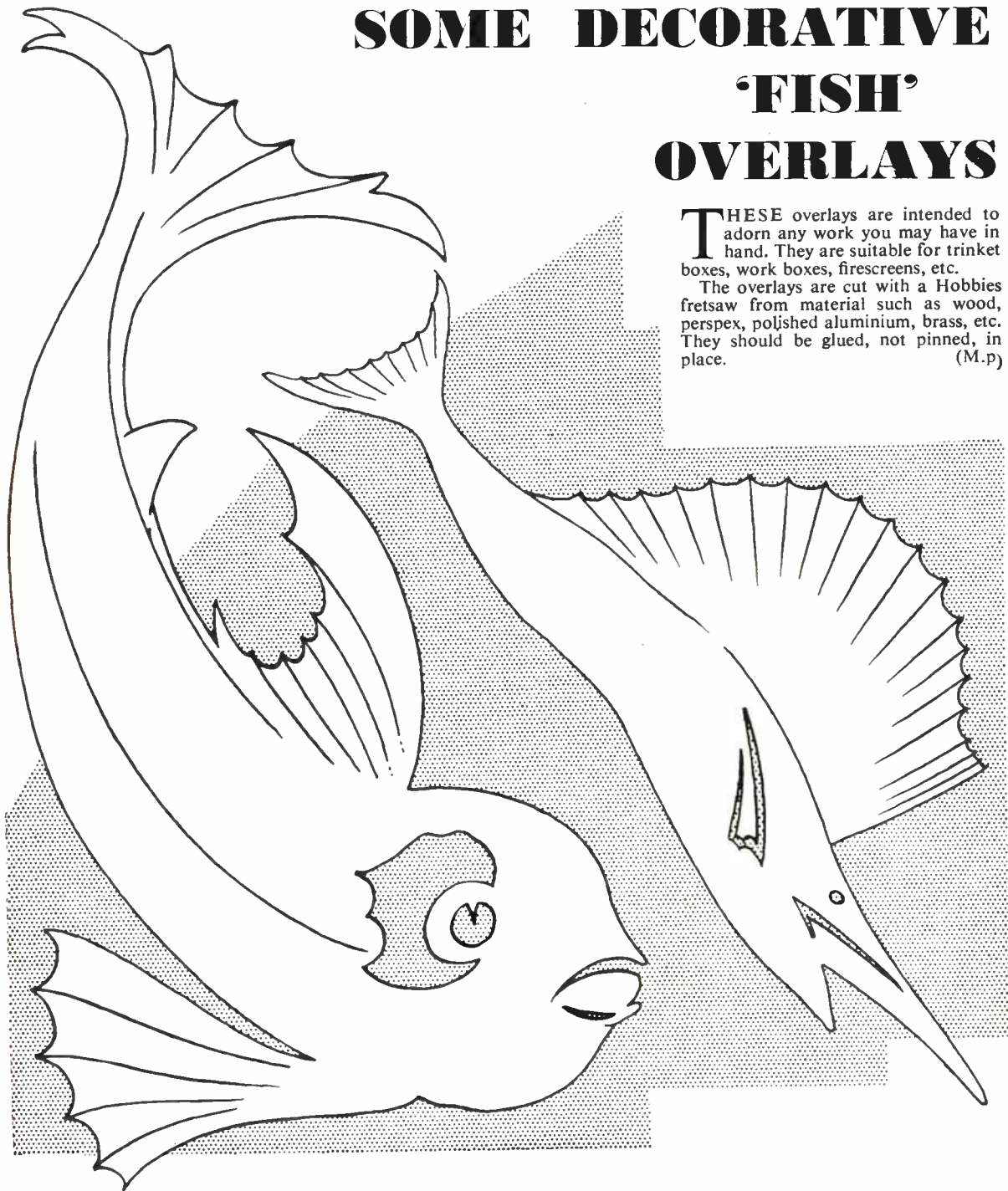
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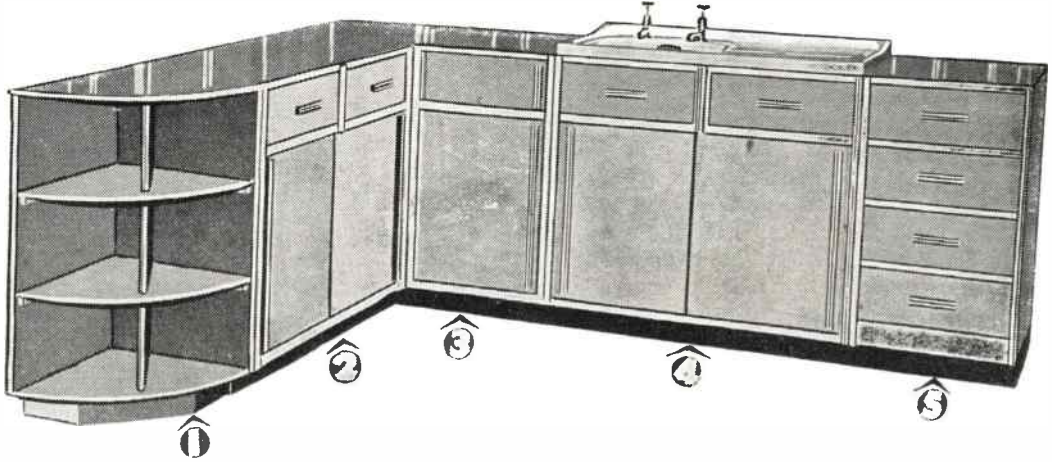
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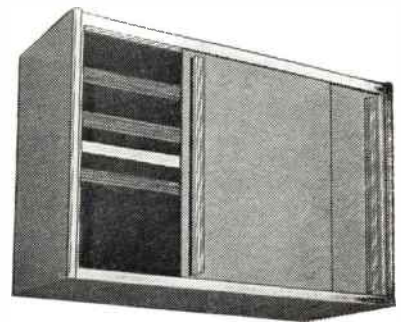
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