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THE ORIGINAL
'DO-IT-YOURSELF'
MAGAZINE

HOBBIES *weekly*

FOR ALL
HOME CRAFTSMEN

DESK FOR A TEENAGER

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BACK REST FOR
A BED PATIENT

COLLECTORS' CLUB

A TRIPOD FOR
STUDIO PHOTOS

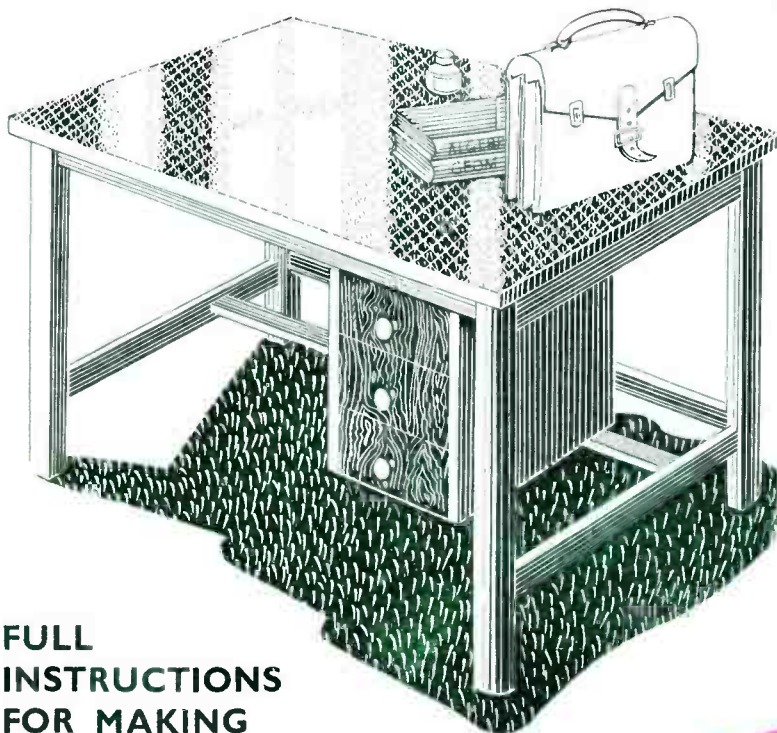
ELEVEN CIRCUITS
FOR CRYSTAL SETS

SPARKLING WINES

PATTERNS FOR A
CHILD'S GAME

ANGLING AND
GARDENING

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FULL
INSTRUCTIONS
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5^D



WHAT do you see when you look at the trees depicted on stamps and labels a strong trunk, branches growing from the trunk, or buds and leaves growing on the branches?

Some stamps show branches growing away from the tree into the ground. These are the beginnings of the roots of the tree. As the roots grow downward, they divide into thousands of smaller and smaller branches.

All the time the tree is growing, its roots are growing too, spreading and winding deeper into the earth. This underground part of the tree is much larger than you would imagine. A big oak tree, for instance, has hundreds of miles of big and little roots. And it needs them too.

Every root has feathery root hairs at its tip. These absorb water and minerals from the soil to nourish the tree. The strong root branches hold the tree in the ground.

A conifer is a tree that bears cones. Most conifers are always green.

The leaves of the Christmas-tree are bright green, and have pointed needles, which thickly cover the twigs.



Last May I took a fox-terrier with me on a day's fishing. After fishing for about two hours, I heard a gruff bark, accom-

panied by crying, as if the dog was in trouble. To my astonishment, I found the dog had got down into the roots of a hollow tree in search of rabbits. He could not scramble up any nearer to me, although I kept calling him.

The best thing now was to get a hatchet and chop part of the tree away. This I obtained from a farmhouse, and with the aid of the farmer, the tree was cut away. The dog, which had been entangled in stout roots, was then released after being trapped for four hours.

The stately oak, the spreading beech, the beautiful elm and graceful ash are all depicted on stamps. They will add beauty to your collection. (R.L.C.)

BANANAS

THE banana is Asiatic in origin, and has been cultivated in China from time immemorial. There are now over one hundred varieties in cultivation, and it is widely grown in tropical regions of the world.

The banana belongs to the genus *Musa*, and the cultivated bananas are probably forms of *Musa sapientum*. Bananas which are eaten cooked are referred to as plantains.

The banana is a monocotyledon (like grasses), and the plant arises from an underground stem or rhizome. The 'stem' is 10 to 20 ft. in height, and is composed of leaf sheaths. The flower spike with its yellowish flowers arises from the centre of the stem. After fruiting the plant is cut down and dies, and is replaced by planting suckers. Normally seeds are not produced.

PEEPS AT NATURE: CRICKETS

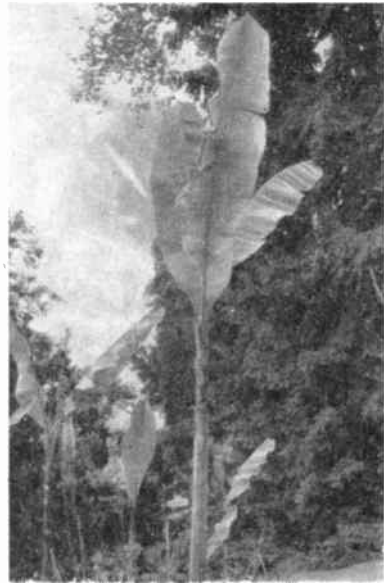


CRICKETS belong to the same group as Grasshoppers, although they are usually more heavily built creatures. They have the typical large jumping legs.

The House Cricket is usually found in bakeries and basements of large houses and factories. It is unlikely to be found inside modern houses, but may sometimes be heard chirping in the garden on summer evenings. Only the male 'sings' or 'stridulates', which he does by rubbing the edges of his forewings together. Both male and female hear through organs in their forelegs.

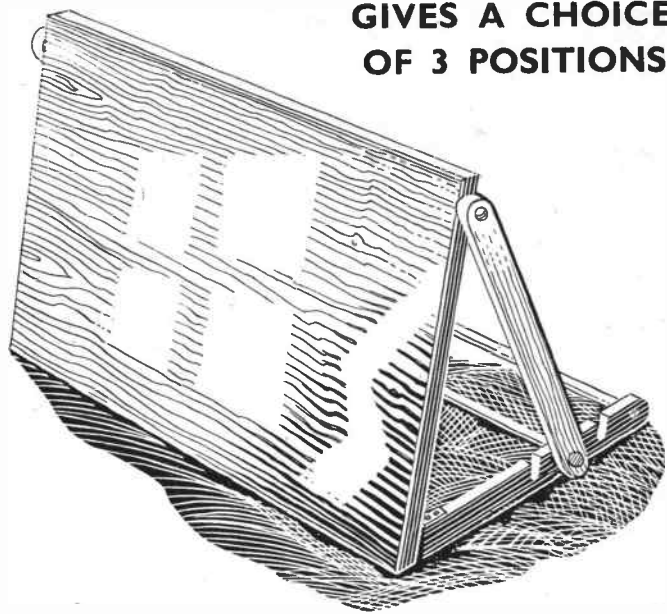
Crickets will eat almost anything; the one illustrated lived for months only on newspaper! They are quite prepared to resort to cannibalism, often the female devouring the male.

In Japan, Crickets are often sold in cages and collected by children. (P.R.C.)



Back Rest for a Bed Patient

GIVES A CHOICE
OF 3 POSITIONS



THERE comes a time in every family when someone is ill and has to stay in bed for a few days, and at the 'sitting up' stage there is always a lot of fuss and bother arranging pillows in a comfortable position.

This back rest, which gives a choice of three positions, should be made up for just such an emergency. It will not cost much to make, and can be put together in a couple of evenings.

The main measurements are shown in Fig. 1, where the side and front views give the general arrangement of parts.

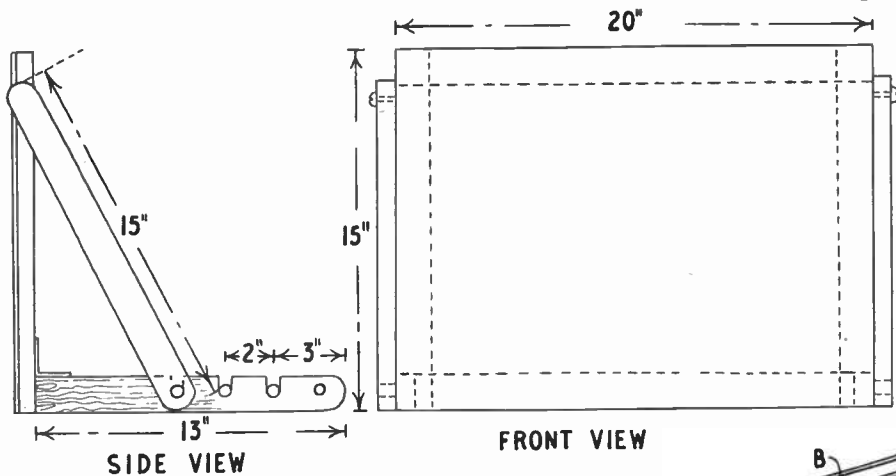


Fig. 1

piece of $\frac{1}{8}$ in. round rod G, as indicated in Fig. 2. Pivot the struts to the back by means of two round-headed screws.

Clean up all the pieces with glass paper and fill the grain with Celestor woodfiller. Follow the instructions carefully to get a good result. Finish with one undercoat and one top coat of high gloss enamel. (M.h.)

The back is shown in Fig. 2. It is made from a piece of $\frac{3}{8}$ in. plywood A and a framework, B and C, of $1\frac{1}{2}$ in. by $\frac{1}{2}$ in. stripwood. The stripwood is halved together for strength. This joint is easy to make with a tenon saw.

Pieces D are next hinged in place. They are cut from $1\frac{1}{2}$ in. by $\frac{1}{2}$ in. stripwood and joined by a piece of $\frac{1}{8}$ in. round rod E as shown in Fig. 2. The notches are first bored $\frac{1}{2}$ in. diameter and them cleared with a tenon saw. The hinges can be $\frac{3}{4}$ in. butt or strap hinges, depending upon what you can obtain locally.

The struts F are also cut from $1\frac{1}{2}$ in. by $\frac{1}{2}$ in. stripwood. They are joined by a

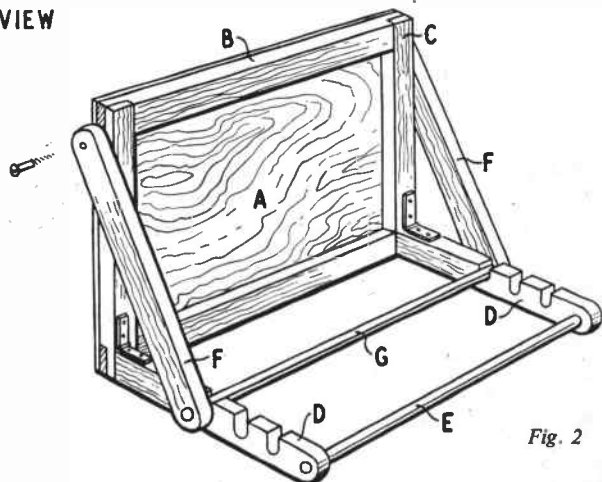


Fig. 2

Make a Studio Tripod

THE height of the camera support of this tripod can be varied from 32 in. to 68 in., an adequate range for most purposes. Construction is quite straightforward, but accuracy in planing is essential.

Plane the sliding stem to $1\frac{1}{4}$ in. square. The 'box' in which the stem slides is built up round the stem (see Fig. 1).

By K. Blackburn

First, plane each piece to a thickness of $\frac{3}{8}$ in. Two pieces are then planed to a width fractionally greater than the width of the stem to allow for free movement — $\frac{1}{16}$ in. is quite adequate for this extra allowance.

The two side pieces for the box need not be planed to width at this stage. The two pieces already planed to width are now pinned, temporarily, to the stem. A thin strip of card should be placed underneath one of them before fixing. Next, pin the two side pieces to the stem, leaving the extra width overlapping at each side. Plane off this overlap so that the side pieces finish flush at the front and back. It is as well

at this stage to number each side of the stem, also put numbers on the corresponding sides of the box, so that all the parts can be re-assembled in the same way later. The box can then be taken apart.

It should be noticed that the front piece must be free to move slightly in order to lock the stem in any desired position. The sides are, therefore, screwed to it only at the lower end. Drill $\frac{3}{16}$ in. clearance holes for the $\frac{1}{2}$ in. No. 6 screws at 3 in. intervals down the rear edge of the side pieces. Drill four such holes also at the front edges, keeping these at the lower end of the box. Countersink all screwholes.

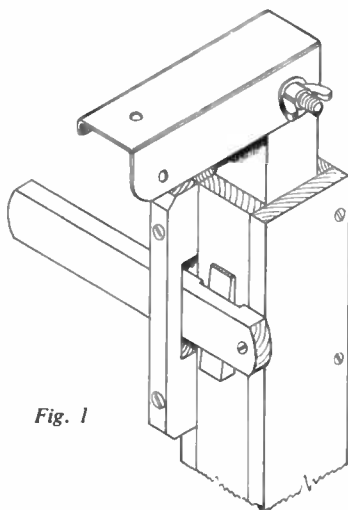
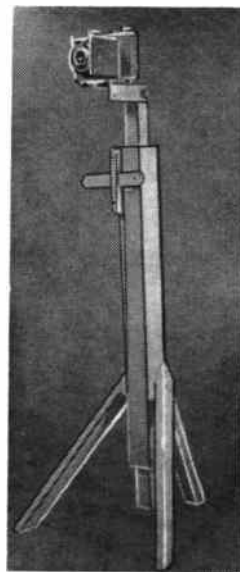


Fig. 1

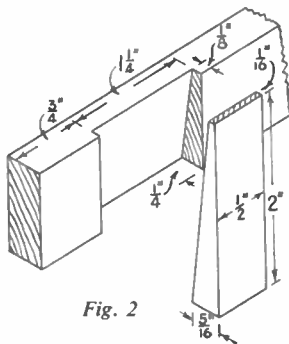


Fig. 2

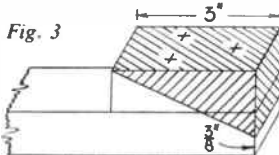


Fig. 3

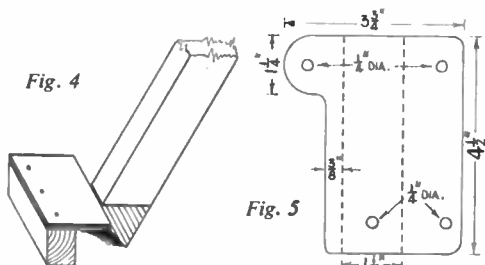


Fig. 4

Fig. 5

The back of the box is subject to pressure when the sliding stem is locked in position, so that it must be jointed as firmly as possible to the sides. Glue the edges of this piece before screwing on the sides firmly. Fix the front piece, without gluing, by means of the four pairs of screws at the lower end. Level off the ends of the box by

LIST OF MATERIALS	
Hardwood (finished sizes)	
Sliding stem	1 piece. 32 in. by $1\frac{1}{4}$ in. by $1\frac{1}{4}$ in.
Box sides	2 pieces. 24 in. by 2 in. full by $\frac{3}{8}$ in.
Box front and back	2 pieces. 24 in. by $1\frac{1}{4}$ in. full by $\frac{3}{8}$ in.
Legs	1 piece. 60 in. by $1\frac{1}{4}$ in. by $\frac{7}{8}$ in.
Support	$4\frac{1}{2}$ in. by $3\frac{3}{8}$ in. 18 S.W.G. aluminium
Also	1 — 2 in. by $\frac{1}{2}$ in. bolt, washers and wing nut
	2 doz. $\frac{3}{16}$ in. No. 6 screws
	4 — 1 in. No. 8 screws
	6 — $1\frac{1}{2}$ in. No. 8 screws
	2 — $1\frac{1}{4}$ in. No. 8 screws

squaring round lines at about $\frac{1}{4}$ in. from each end, sawing off the waste.

The locking mechanism is shown in Fig. 1. The movable lever is made from any suitable piece of waste, the finished size being 6 in. by 1 in. by $\frac{3}{8}$ in. The fixed part measures 5 in. by $\frac{3}{8}$ in. by $\frac{3}{8}$ in. Cut a groove $\frac{3}{8}$ in. deep and 2 in. long in the middle of this piece, and chamfer off the ends as shown.

Fig. 2 gives the measurements for the groove cut on the inside of the lever, and also of the wedge which is later glued to the front piece of the box. Round off the ends of the lever, and drill and countersink a $\frac{1}{16}$ in. clearance hole for a 1 in. No. 8 screw at a distance of $\frac{1}{2}$ in. from the end. Screw the fixed part to one side of the box, using two $1\frac{1}{4}$ in. No. 8 screws. Place the lever in position, and put in the screw on which it pivots. With the sliding stem in position, put the wedge into place, so that the stem is

● Continued on page 453

Taking Care of Masonry Drills

WHEN fixing holes are required to be made in masonry, brickwork, tiling and other hard materials, carbide-tipped masonry drills are unsurpassed for speed and performance. These drills are becoming more and more popular but they must be carefully looked after and correctly used at all times if good service is to be obtained.

The design varies slightly but basically they consist of a hard carbide tip which is firmly cemented into the forward end of a high grade steel shank. The shank is spiral-fluted similar to an ordinary drill for the removal of the ground material from the holes which are being bored. The extremities of the carbide tip denotes the effective diameter of the drill.

The drills may be used with either a hand operated brace, or an electric power tool. If a power tool is used, however, it is essential to ensure that it does not operate too fast. As a general rule the higher the speed the greater the wear on the carbide tip. The popular types of power tool may be satisfactorily used with drills up to about $\frac{1}{2}$ in. diameter if the material being bored is not exceptionally hard. However, when boring holes up to say $\frac{1}{2}$ in. diameter the speed of the power tool should not exceed 450 r.p.m. The greater the diameter of the drill the slower the speed.

For home handymen who will be constantly using carbide-tipped masonry drills larger than $\frac{1}{2}$ in. diameter special two-gear electric power tools are available. These can be used at ordinary speeds for normal use and automatically switched over to a lower gear when required.

To obtain satisfactory results from these drills it is necessary to apply a fair amount of pressure whilst boring. The drills operate by digging into the material, breaking it up to a powder and expelling it via the spiral-fluted shank. Sufficient pressure is therefore necessary to obtain this digging action.

Generally speaking, masonry drills perform satisfactory in boring holes in concrete. If, however, the concrete is made from a very hard aggregate (e.g. granite chippings) then some difficulty may be encountered if the drill should happen to slip down between two pieces of hard aggregate. This is often detected by feeling a strain being imposed on the power tool causing it to lose speed or stall. Don't force the tool to work under

such adverse conditions otherwise you will burn out the motor. Simply remove the drill and use a punch and hammer to break up the obstruction.

Once a masonry drill begins to lose its 'bite' it requires sharpening. Because of the hardness of the carbide tip this can only be done on a diamond impregnated wheel or on a special silicon carbide wheel. The majority of drill manufacturers, however, provide a sharpening service.

When using these drills lubrication is not usually necessary. If desired, however, the drill may be withdrawn and the hole wetted slightly to keep the tip cool but on no account should water be directed on to the carbide tip. Furthermore, the drill must never be immersed in water for cooling. The reason for this is that carbide is a hard and brittle material and if it is subjected to sudden changes of temperature it is liable to shatter and crack.

The depth of hole to be bored is often restricted to the length of the drill. If a deeper hole is required (e.g. boring completely through a brick wall) then some manufacturers provide extension rods.

These are normally threaded to connect with a tapped end on the drill. This speeds up many jobs where it is necessary to pass conduits, pipes, wires, etc, through walls.

When boring large holes with masonry drills the performance is often dependent on the hardness of the material. For instance, with a comparatively soft material large holes (say $\frac{3}{4}$ in. diameter) can be speedily bored without any trouble. With harder materials, however, it is often advisable to complete the job in a series of stages. For example, bore a $\frac{1}{4}$ in. diameter hole first then widen it out to say $\frac{1}{2}$ in. diameter and then finally complete the job to $\frac{3}{4}$ in. diameter.

If holes are required to be made in cavity materials then drilling is the most superior method. Don't use a striking tool and hammer (often known as 'jumping') because as the tool is driven near to the inner surface the material normally breaks away leaving a void which is incapable of receiving a fixing device. Drilling on the other hand provides a clean hole throughout the full thickness of the material.

(F.K.)

● Continued from page 452

MAKING A STUDIO TRIPOD

firmly held when the lever is horizontal. When the correct position for the wedge has been decided, glue it into place.

From the $1\frac{1}{2}$ in. by 1 in. length of wood, cut two 17 in. lengths for the front legs. The remainder makes the shorter rear leg, which is 14 in. long, and leaves a little for blocks used for increasing the thickness of the legs at the top ends. True up the legs, and glue on blocks at one end (Fig. 3). These are cut from the extra length just mentioned. When the glue has dried, saw off the part shown shaded. Each leg is secured with one 1 in. and two $1\frac{1}{2}$ in. No. 8 screws. The centre lines for these are shown in Fig. 3. Drill and countersink clearance holes for these screws.

Glue and screw the rear leg, its top end being 8 in. from the bottom end of the box. Then fix the two front legs, sloping them to such an extent that the tripod is supported in an upright position. If the top ends of these two legs project beyond the line of the box, the excess can be cut off. Fig. 4 shows how the bottom ends of the legs are marked before sawing them to the correct angle. Plane a piece of wastewood to a width of 1 in., and pin a piece of plywood to it, as shown. Stand the tripod on a flat surface

and draw lines round each leg, using the plywood as a guide. Saw off the waste to these lines.

The camera support is made from a piece of $4\frac{1}{2}$ in. by $3\frac{3}{4}$ in. 18 S.W.G. aluminium. Saw and file this to the shape shown in Fig. 5. Bend the metal along the dotted lines, using the sliding stem as a former. The metal is bent downwards at the dotted lines in the support illustrated. This gives two positions for the camera — one in the normal position on top of the support, and one at the left-hand side of the support when facing the subject. Some cameras may be used more conveniently if fixed to the right-hand side of the support. If this is the case, bend upwards at the dotted lines.

Drill the two $\frac{1}{4}$ in. holes which are used for fixing the camera. Round off the top of the sliding stem, place the metal support in position, and drill right through the support and stem to take a $\frac{1}{4}$ in. bolt. A washer is placed at either side, and a wing nut is used to lock the support at any angle.

Glue the wooden parts of the tripod, and finish with two or three coats of French polish applied with a brush.

Next week's free design will be for a modern clock. Make sure of your copy

11 CRYSTAL SET CIRCUITS

A CRYSTAL set will usually give adequate volume in most parts of the country. It needs no battery or mains supply. Wrong connections cannot damage any of the parts. For these reasons, beginners to radio construction may like to try some of the circuits given here.

The detector may be an adjustable crystal detector, or a crystal diode. If the latter, a new one is recommended, because a cheap surplus diode may only give poor volume.

Medium or high impedance phones of reasonable quality will also help to assure sufficient volume. Low resistance surplus phones are not suitable for crystal sets.

The earth connection can go to any earthed object — a cold water pipe, or

an insulated tube about 1 in. to 1½ in. in diameter.

An insulated panel can carry terminals for Aerial, Earth, and Phone connections. The tuning condenser is

By 'Radio Mech'

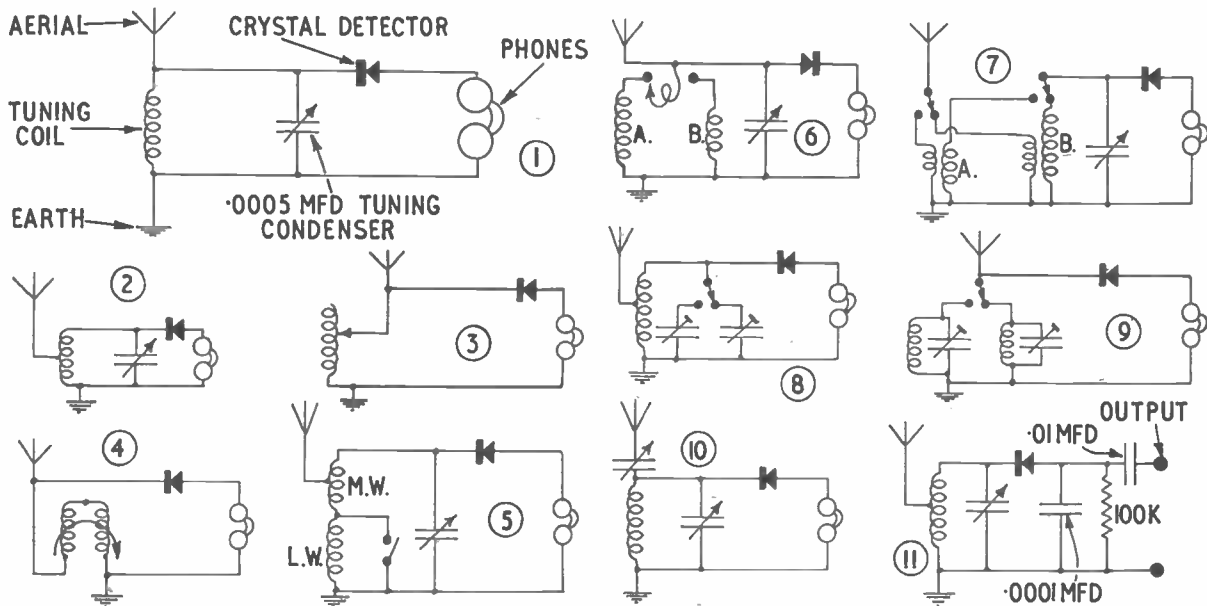
mounted on the panel, and fitted with a knob. The detector can be connected either way round.

(2) shows a way of sharpening tuning. The aerial goes to a tapping on the coil. The closer this tapping is to the earthed

up to about 150, on a 2 in. diameter former, for the M.W. band.

(4) is another way of tuning without a variable condenser. The coil is in two sections, with variable coupling between them. Flat 'basket' coils are convenient for this. To make coils of this type, cut a disc of strong cardboard 4 in. in diameter. Cut seven slots, each 1 in. deep, and about ½ in. wide, from the perimeter of the disc towards its centre. Wind the wire in these slots, passing it through each slot as it is reached. Half the turns will lie on one side of the card, and half the other.

Two such basket coils will be needed, each with about 50 turns. Tuning is accomplished by moving one coil away from the other, or by reversing connections to one coil, if required. It is not



metal spike driven in the ground. For aerial, an insulated wire along two walls of the room will often give enough signal strength. But if an outdoor aerial can be arranged, this will improve volume, and possibly allow other stations to be heard.

Simple circuits

(1) shows the items represented by the various symbols, and is a very easy circuit to wire up. For Medium Waves, use any ready-made or home-wound M.W. coil. It may have about 80 turns of 30 S.W.G. or similar insulated wire, turns being wound evenly side by side on

end of the coil, the sharper will tuning become. But volume will also be reduced, so a position about halfway down the coil is probably best. One or two tappings can easily be made, while winding the coil.

(3) indicates a method of tuning which does not need a variable tuning condenser. Instead, the coil has a variable tapping. This is most easily arranged by winding the coil tightly with enamelled wire, and scraping the enamel away at one point all along the coil, so that a sliding contact can pass over the turns. Rather more turns are required than when a tuning condenser is employed —

necessary that both coils have the same number of turns.

Dual-wave tuning

Quite often both Medium Waves and Long Waves are to be covered. If so, a dual-wave coil can be fitted, as at (5). The M.W. part of this coil can be wound as already described. About ½ in. clear space is then left on the coil former, and about 260 turns of thin insulated wire (say, 36 S.W.G.) are wound on, for the L.W. section. To save space, the L.W. section can be in two compact piles, with about 130 turns in each. Wind the

L.W. section in the same direction as the M.W. part of the coil.

Ready-made coils are also suitable. The switch simply shorts out the L.W. portion, for M.W. reception. The aerial may go straight to the top of the coil, as in (1).

(6) shows another method of covering two wavebands. A switch, or flexible lead with clip or plug, allows either coil A or coil B to be brought into circuit. Quite separate coils may then be used. For example, A may be the L.W. coil, and B the M.W. coil. This is also a simple method of testing coils, or comparing one coil with another.

It is possible to tune short waves by making a coil with only about 8 turns. Fairly stout bare wire, with spaced turns, will be most satisfactory. The actual wavelengths tuned can be modified by changing the number of turns. A crystal set is not an efficient short wave receiver, but at some times of day two or three of the more powerful overseas S.W. stations can be heard at fair volume.

(7) shows another two-waveband circuit. Each coil has its own aerial coupling winding. A 2-pole 2-way switch changes the aerial and detector circuits to the appropriate coil. Coil A may be for M.W., and B for L.W.

This is a good circuit for ready-made, dust-cored, modern coils.

Pre-set tuning

A crystal set is usually employed to listen to one or two local stations. It is thus possible to omit the variable tuning condenser, and to fit a 2-way switch, as at (8). This switch brings into circuit either one of two pre-set condensers. These condensers are initially adjusted with a screwdriver, to tune in the required stations. Either station can then be obtained at once, by operating the switch.

(9) shows another method of pre-set tuning. Here, one station uses the M.W. band, and one the L.W. band. The 2-way switch is thus connected so as to change from one coil to the other, and the pre-set tuning condensers are connected across their own coils. This is a very convenient circuit in those parts of the country where the L.W. Light Programme is well received, in addition to the local M.W. station.

(10) shows a method of sharpening tuning. A spare variable condenser is wired in the aerial lead to the receiver. This condenser can have a maximum capacity of about $0.0003\mu\text{F}$ to $0.0005\mu\text{F}$. As it is opened (its capacity reduced) tuning will become sharper; but volume

will also be reduced, so a suitable intermediate setting has to be found.

The aerial condenser in (10) can be used in any of the other circuits. Spare fixed condensers of fairly small capacity can also be tried here.

Sharpest tuning, with best signal strength, will usually be obtained by using coils with separate aerial coupling windings, as shown at (7). Ready-made, dust-cored coils also give slightly better results than air-cored coils. However, any of the circuits will usually be satisfactory, in average conditions. Some means of sharpening tuning may be particularly necessary when using a long aerial, or in localities very near a BBC station.

(11) shows a radio tuning unit, intended to feed an amplifier, so that reproduction of radio programmes is possible. Such a unit can also give enough signal for tape recording programmes, in many localities. Any of the other circuit arrangements, such as pre-set tuning, or dual-wave tuning, may be incorporated in (11). Do not use the tuner with AC/DC amplifiers, or with amplifiers which draw high tension current directly from the mains, because mains voltages may be present at the chassis and 'earth' side of the circuit with such apparatus.

For young conjurors

THE MAGIC WAND

IT quite often happens that the simplest tricks are the most effective and this one is certainly no exception. It is a favourite with many magicians and no doubt you have seen it performed and wondered how it was done.

The magician holds the wand lightly in an upright position between the fingers and thumb as in Fig. A, then by slightly loosening the grip of the thumb the wand rises without any apparent aid.

Here then is the secret and how you can make the wand. Fig. B shows all the working parts. The wand is actually a light weight tube with a lead weight sliding up and down inside. A length of 'invisible' cotton runs from the weight, over a wire in the top of the tube, down and out at the bottom and finishing with a loop which is put over the performer's little finger.

You will therefore see that the force of gravity causes the weight to fall when the grip on the wand is loosened and at the same time the cotton pulls the wand upwards.

First of all we need a paper tube made to the same size and to look just like an ordinary wand. Magicians' wands vary somewhat in size and appearance, but a

useful size will be about 10 in. long and $\frac{1}{2}$ in. diameter.

To make the tube wrap a piece of light but stiff paper round a dowel rod and glue down the end. When dry pierce the top end with a needle about $\frac{1}{2}$ in. down and insert a piece of thin wire. Bend over the ends to keep it in position but be careful not to crush the tube.

These projecting pieces of wire are covered up with a narrow black band stuck to the end of the wand. A piece about 1 in. wide will do, and the other end is treated in a similar manner. These bands will also help to strengthen the wand where it is most needed.

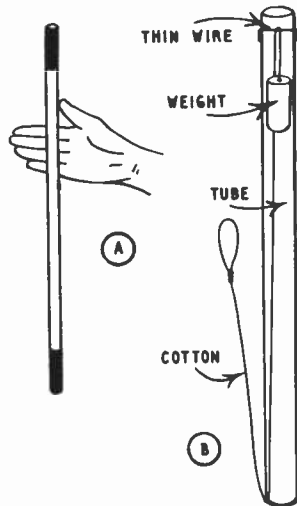
The weight must be just sufficient to allow the wand to rise gently, when the trick is being performed. If it is too heavy the wand will be shot up suddenly and thus spoil the effect of the trick. The best shape for the weight is cylindrical with slightly rounded top and bottom so that there are no rough edges to hinder its progress in the tube.

Solder a small loop of wire into the centre of the weight at the top. Fix the cotton securely to the loop and thread it over the top wire and out of the bottom of the tube. Measure off the correct

length by experiment and make a loop in the end.

With the wand held in the hand about one-third of the way down the weight should be at the top and with the cotton taut and looped over the little finger.

By careful balancing it is possible to take the thumb away and allow the wand to rest upright across the palm of the hand. (A.F.T.)



Tips on Weather Forecasting

WE experienced some extremely bad weather last year, with heavy rainfalls and floods, and although our weather forecasting is more highly organized than ever before, we are still a long way from being accurate.

An attempt at long term forecasting was made by Alexander Buchan, a meteorologist in the Victorian period, who died in 1907. He produced what he termed 'Nine Anomalies', mainly to help Scottish agriculture as a guide to sowing and harvesting. Ultimately, these became known as the Buchan periods, and relate to warm and cold spells which arise during the year.

Buchan's findings aroused a great deal of public interest, and although they may be scorned by present-day weather experts, it is reasonable to say that they are useful guides. He never claimed that the forecasts were infallible, and tried to emphasize they were not to be regarded as anything more than a guide. What he did say was that relatively warm or cold spells seemed to occur at regular intervals, and they could be expected sometime between the same dates each year, while the spells may be longer or shorter than the period specified.

If you wish to test Buchan's theories this year, make a note of the following periods:

Cold Spells

February 7th-14th	April 11th-14th
May 9th-14th	June 29th-July 4th
August 6th-11th	November 6th-13th

Warm Spells

July 12th-15th	August 12th-15th
December 3rd-14th	

Day to day forecasting now attracts the attention of the Meteorological Office, and reports of weather experience in all parts of the world is collected and examined before a bulletin is issued. Even so, inexplicable vagaries in our weather can cause these forecasts to be wrong.

An old saying

If you are a holidaymaker or hiker it is sometimes advisable to make your own forecasts by simple observations of the local skies, while the birds, insects, and animals can be helpful.

You will have heard the old rhyme 'Red Sky at Night, Shepherd's delight, Red Sky in the Morning, Sailor's warning'. And it is remarkable how true this can be. But yellow skies are more frequent than red ones, especially in the summer, signifying the continuance of a fine spell. In the winter a yellow sunset is often followed by rain at night. When the sky is overcast at sunset it is a sign that more rain is on the way.

Blue skies are associated with fine, sunny weather, but at dusk they do not always portend fair weather on the following day. There may be faintly visible wisps of cloud on the horizon, and these will probably obscure the sky within the next twelve hours. In autumn a blue sky in the morning nearly always turns to rain on the same day.

The clouds offer a really good guide for the amateur forecaster, and a first

follow until conditions settle down again.

Throughout the year a wind that backs is often an indication of steady rain for some days, and in the latter months of the year, perhaps, a thunderstorm, bearing out the old jingle 'Rain from the east, two days at least'.

Hikers in the hills or mountainous parts of the country should note that persistent rain often accompanies the prevailing W or SW winds while extremely gusty winds may bring rain which lasts for some days.

It is true to say that various forms of halo around the sun or moon can be a guide to forecasting. These result from the light shining through layers of tiny ice crystals which are very high in the sky. These are a bad sign. A halo around the sun probably means rain within the next twenty-four hours. Haloes around the moon are very similar, and in colder weather indicate the continuance of dampness or even frosty conditions.

Heavy atmosphere

When the swallows or swifts fly low in search of food it is a sign that the atmosphere is heavier, and the insects they seek, are nearer to the ground. So here we can seek the assistance of birds and insects for our forecasting. You may be sure that wet weather is approaching if the swallows fly low in this manner. Insects are also a reliable guide, and when you see gnats spiralling in the air joyously, it is sure to be fine, but they will quickly vanish with the approach of rain.

Rooks will make twice their usual noise in their rookery when bad weather is on the way, but when they fly high, it is a sure sign of fine weather. If they are later than usual in returning to their nests, it is an omen of a fine night, but when the weather is likely to be the reverse, they go to bed rather earlier. When they gather together in the tops of the trees or sit on the fences, it is a sign that they expect windy weather.

Bees are credited with having the finest instinct for weather forecasting, of all the insect kingdom, and there is a saying that 'a bee is never caught in a shower'. It is true that they will travel a long way from the hive when the weather is to be settled, but when they return in large numbers and stay in the hive, there is rain about.

Since the bees are closely connected with our flower gardens, perhaps we can also gather some tips from the plants. Most flowers dislike rain, and before it arrives, they fold up their petals. Good examples are the Scarlet Pimpernel,

By H. Mann

sign of a change from dry to wet weather are the mare's tails or cirrus clouds. If these spread all over the sky at some height, producing a veil-like appearance, rain will follow. When detached clouds group together forming larger ones, showers may be expected, but if they dwindle away we have signs of continuing fine weather.

When you see masses of thick cloud in rolls and reasonably low, with thinner clouds between, plus a little blue sky, we are most likely to be in for more settled weather.

The familiar mackerel skies of hot summer days portend the approach of thundery weather, unsettled and showery but not necessarily continuous rain.

Those towering masses of cotton wool clouds, otherwise termed cumulus, are seen very frequently, and they react in two ways. When they build up and reach apparently immense heights, it is a sure sign of thunderstorms. If the cumulus breaks up during the evening, the weather will probably remain settled.

In all seasons it is advisable to watch for breaks in the low clouds, and if you can detect another layer beyond, rain is on the way, while that big patch of blue sky making a sudden appearance on a summer morning is the forerunner of fine weather.

You will know that areas of high pressure are responsible for the winds which blow from them. We mostly experience veering winds from SE or S towards SW, which back into the opposite direction with the approach of unsettled weather. These are usually followed by a drop in the barometer, and steady rain will come from sheets of low cloud. This in turn may be followed by drizzle or showers, with sudden squalls, and when the rain is heavier in a strengthening west wind, light showers

Ursinia and Mesembryanthemum. Chickweed is also rain sensitive. It will half close its petals for showery weather, and will completely close them on a rainy day. Perhaps the atmospheric changes affect the sensitivity of plants like the insects, but they do not all react the same way. For example, the common dandelion closes its petals to avoid the sun, yet they are open for rain. This plant can always provide another forecast when the down arrives on its head.

When the down drops freely, although there is little or no breeze about, we are sure to have rain.

Even our lawns can tell us something about the weather to come. No dew on the grass means wet weather, but if there is a heavy dew, the next day will be fine.

When weather forecasting we have to remember that Buchan's periods relate more to temperatures than rainfall, and they are only intended to be a rough guide based on observations over many

years. At the same time they are reasonably accurate, and if used in conjunction with the other notes on skies, birds, and insects will be helpful for the amateur forecaster, holidaymaker, gardener, and hiker.

It is true to say that almost everybody is interested in the weather, and it is suggested that you make your own observations, keeping records of similar phenomena, then check your own forecasts with the official ones.

Interesting Locos—No. 32

L. & N.W.R. 'CLAUGHTON' CLASS

MR C. J. Bowen-Cooke's final design of express passenger locomotive for the London and North Western Railway was the well-known four cylinder 4-6-0 'Claughton' class. The first engine, No. 2222 'Sir Gilbert Claughton' left the Crewe erecting shop in January 1913. Named after the Chairman of the Company, this engine was the 5,117th built at Crewe.

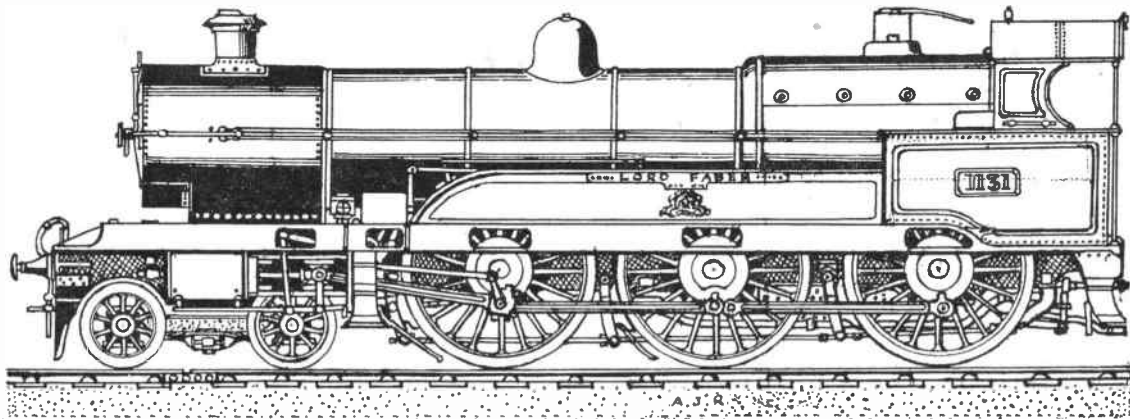
Running in shop black, she was given extensive trials between Crewe and Euston and Crewe and Carlisle for a period of some three months, and it was not until these tests had proved satisfactory that further construction of the class was continued. The second engine of the class, Crewe No. 5138, 'Sir

who had succeeded Mr Bowen-Cooke as C.M.E., built a further seventy, which carried L.M.S. Nos. 5960-6029, making a total in the class of 130. Engine No. 1257, built in January 1920 (Crewe No. 5501) was renumbered 1914 and given the name 'Patriot', the nameplates bearing the inscription — 'In memory of the fallen L. & N.W.R. employees 1914-1919.' This engine was later painted in the L.M.S. red livery and renumbered L.M.S. 5964. The name was of course later revived on the L.M.S. 4-6-0 three cylinder engine No. 45500.

In 1925 the class engine 'Sir Gilbert Claughton' was displayed at the L. & N.E.R. Centenary (1825-1925) at Darlington. She was painted in the

built with larger 5 ft. 5 in. dia. boilers and classified 5X, and these became the forerunners of the present 4-6-0 'Silver Jubilee' class which, when first built, were classified 5X.

The original 'Claughtons' had four cylinders 16 in. dia. and 26 in. stroke, but this was later reduced to 15½ in. dia. Leading details were — Wheels dia.: radial truck, 3 ft. 3 in., coupled, 6 ft. 9 in.; heating surface, tubes, 1,647.2 sq. ft., firebox, 171.2 sq. ft.; total, 1,818.4 sq. ft. Schmidt superheater, 413.6 sq. ft.; grate area, 30.5 sq. ft.; pressure 175 lb. p.s.i., weight: engine in working order, on radial truck, 18 tons 15 cwt.; on driving wheels (all four cylinders actuated the leading coupled



'Claughton' class engine No. 1131 'Lord Faber' L. & N.W.R. Crewe No. 5229, August 1914

Robert Turnbull', running No. 1161, appeared in May 1913, and altogether a total of sixty 'Claughtons' were built at Crewe to Mr Bowen-Cooke's design between January 1913 and October 1917. When these engines were taken over by the L.M. & S.R. in 1923, they were renumbered 5900-5959 inclusive.

In 1920-21, Capt. H. P. M. Beames,

L.M.S. red livery. No. 5900 carried the 12-inch numerals on the tender and the coat of arms on the cab panels. Also exhibited with 'Sir Gilbert Claughton' was Mr F. W. Webb's first four-cylinder Compound 0-8-0 coal engine, No. 1881, which was specially painted in L. & N.W.R. livery for the occasion. In 1929, twenty of the Claughtons were re-

axle) 19 tons 15 cwt., on intermediate wheels, 19 tons 15 cwt.; on trailing coupled wheels, 19 tons 10 cwt.; total, 77 tons 15 cwt. The coupled wheel base was 15 ft. 3 in. and total engine base, 29 ft. 0 in. The tender ran on six wheels, having a tank capacity of 3,000 gal. and coal space of 6 tons, weighing full 39½ tons. (A.J.R.)

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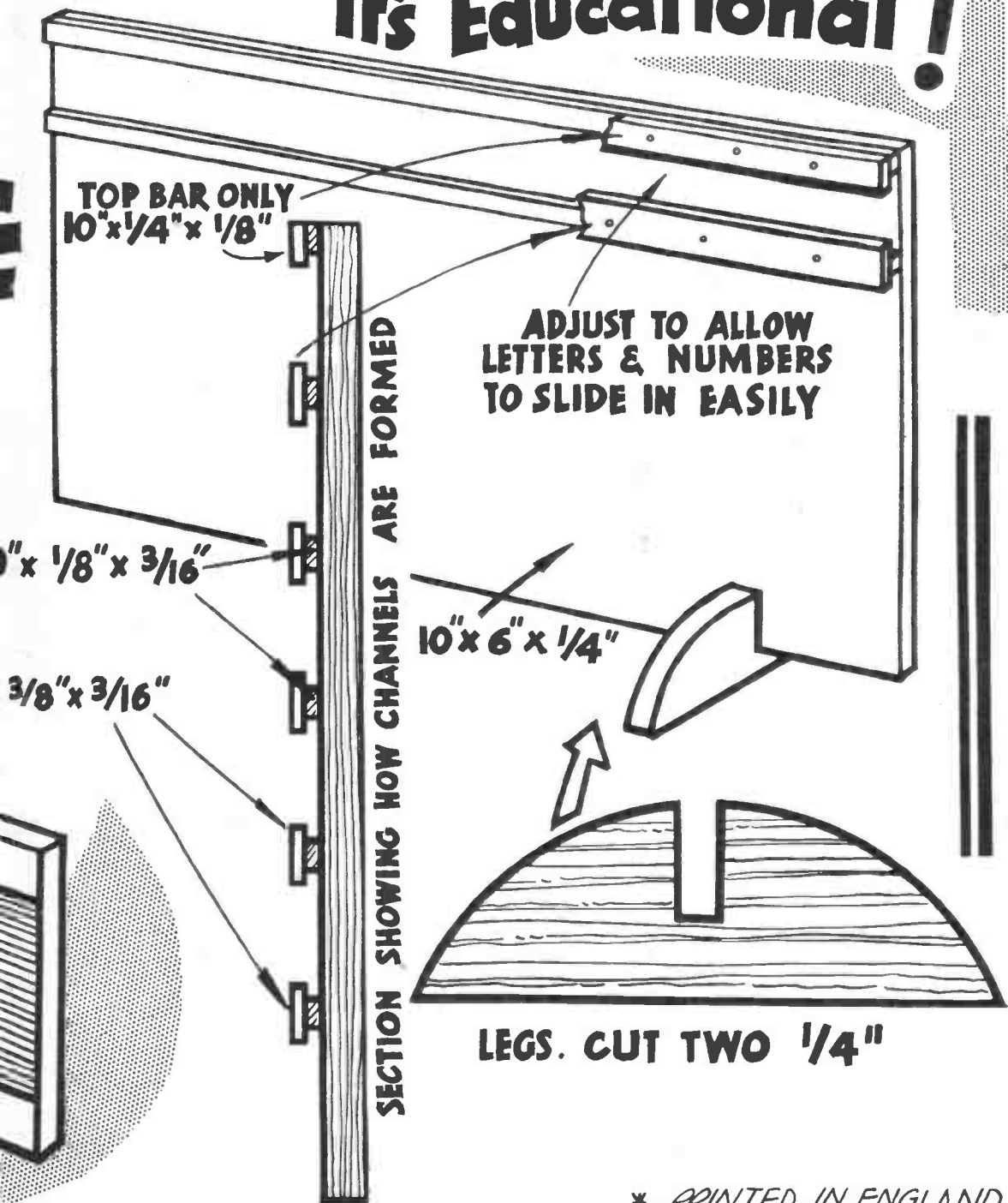
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SOME WINES WITH A SPARKLE

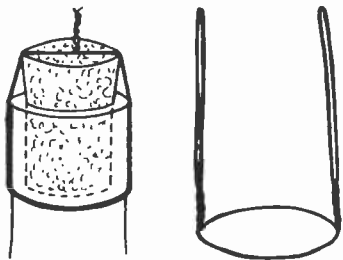
CHAMPAGNE was originally made in the French province bearing that name, but now many other countries produce an excellent type of the wine. It is one of the best known of all wines and is highly prized by the connoisseur.

Genuine champagne is made by a process of double fermentation. First a dry wine is made from red grapes, then sugar is added and the mixture put into strong bottles, the corks wired in and the wine allowed to ferment in the bottle.

The home wine maker need not go to all this trouble, and it is possible to make excellent kinds of champagne quite easily. In many cases the wine is bottled before fermentation is complete, or in other words the fermentation has been arrested.

Most of the flower wine recipes will produce quite good 'champagne', but almost any kind of wine, especially the fruit types, can be used for this purpose. The most important thing to remember is to have good strong bottles, and the best kind are those having hollow bottoms. Never use square bottles as these will soon be blown to pieces by the great pressure exerted by the fermenting process.

Good sound corks are also essential and these must be wired to the bottle neck. String in most cases will snap under the great strain and it needs a well-wired-on cork to keep the contents secure. The illustrations below show the best way to attach the wire to the bottle neck.



Elderflower champagne is one of the easiest wines of its kind to make and will be a good one to start off with.

Elderflower champagne

4 large heads of elderflower
1 gal. water
2 tablespoons white-wine vinegar
1 lemon
1½ lb. sugar

Best results are obtained if the elderflowers are picked on a sunny day when

they are in full bloom. Cut off the small flowers with their tiny stems and put them in a bowl together with the juice and thinly peeled rind of the lemon. Add the white-wine vinegar and the sugar and pour on a gallon of cold water.

Allow this to steep for 24 hours, stirring it as much as you can during that time. Then strain and put into strong bottles, filling them as full as possible and wire down the corks. Lay the bottles on their sides. This keeps the corks wet and prevents the escape of any gas.

It should be ready to drink in about two weeks and when the bottles are opened it should be very effervescent. Like all champagnes once the bottle has been opened it should be drunk as soon as possible. Any left over can be put into a smaller bottle so that the smallest amount of air comes into contact with the liquid.

Apple champagne

7 lb. apples
½ lb. sultanas
¼ lb. barley
3½ lb. brown sugar
1 gal. water

Remove the cores but do not peel the apples, and cut into small pieces. Put into a bowl together with the sultanas and barley and pour on a gallon of cold water. Squeeze the apples each day for about 14 days and stir whenever possible. After this, strain, add the sugar and see that it is thoroughly dissolved before putting into bottles and allowing to ferment for 14 days. This wine does not mature so quickly as the last recipe, but should be ready to drink in about 6 months.

Most recipes for apple wine can be made sparkling by bottling before fermentation has ceased, and this applies also to many other fruit wines of a similar character. The time to bottle up will of course vary with each particular kind and in most cases will be found by experiment. If you can arrange to have several bottles of a particular wine it is a good idea to cork them up at different times and note exactly the results. You can cork them up at intervals of, say, 2 days.

Greengage champagne

3½ lb. greengages
1 gal. water
3½ lb. sugar
16 vine leaves
1 oz. yeast

Cut the greengages in half, place them with the vine leaves in a bowl and pour on a gallon of cold water. After 3 days remove the vine leaves and let the green-

gages remain for another 7 days with periodical stirring.

Now strain through butter muslin, add the sugar and yeast and allow to ferment for 12 days. The yeast should be mixed with a little of the liquid warmed to a temperature of 98°F. before adding it to the wine. Bottle up and wire the corks as mentioned previously.

Cottage cider champagne

3 lb. apples
1 gal. water
2 lb. sugar
1 oz. root ginger
12 cloves
½ teaspoonful cinnamon
½ oz. yeast

This recipe is a great favourite with many country wine makers and is sometimes called Cottage Cider. In fact many kinds of cider are very similar to champagne.

After well washing the apples grate them into a bowl, add the yeast and cold water and allow them to steep in a warm temperature for 7 days. Keep the bowl covered with a thick cloth and stir the contents several times each day.

Strain through muslin, add the ginger which has been well bruised with a hammer, the cloves, cinnamon and sugar. Stir until thoroughly dissolved and leave for 24 hours. Then strain again, put into bottles and wire the corks.

As for all the other kinds of champagne the bottles should be filled as full as possible. This wine will be fit to drink in about 2 weeks.

The same recipe can be used with pears instead of apples, and in some cases this will turn out to be more sparkling and effervescent. Some of the spices may be left out altogether or their quantity reduced.

Gooseberry champagne

3½ lb. gooseberries
1 gal. water
3½ lb. sugar
1 lb. sultanas
¼ lb. barley
½ oz. yeast

Many country wine makers consider that gooseberries will make the finest 'mock champagne'. The best is made with green gooseberries and these should be gently boiled with the sultanas and barley in all the water for about 30 minutes. Strain through muslin and add the sugar. See that the sugar is thoroughly dissolved and while still warm (about 98°F.) add the yeast.

Let this ferment for 7 days, then bottle

• Continued on page 462

DESK FOR A TEENAGER

DESIGNED specially for the teenage sixth-former or part-time student, this desk fits nicely into the modern house. It is neat and functional and at the same time has pleasing lines. The construction is not difficult and is well within the capabilities of the handyman.

The size is just right for everyday use and will suit an economy size 36 in. by 24 in. Waverite panel with which the top is covered.

Study the diagrams and read through the instructions to get a thorough idea

of how the desk is put together, then commence cutting and shaping.

The front and side views in Fig. 1 give the necessary measurements and the various parts are lettered to help in following the instructions. Note that the size of the top is 36 in. by 24 in. It should in fact be scant to allow for planing flush after fitting the Waverite panel. The uprights A are 1½ in. square, the rails B, C, D, E, and F are 2 in. by 1 in. and the rail G 1 in. square. The outside corners of the legs should be rounded to give a pleasing appearance.

The rails should all be mortised and tenoned into the uprights and care should be taken both in marking and cutting these joints. Make up two ends as shown in Fig. 2. Note that these two ends are identical in size, but that the mortises will face inwards to receive the rails E, F, and G.

Continue by adding the rails as indicated in Fig. 3. Glue them together and cramp up to allow the glue to dry. Make sure that the frame is square and true before setting aside to dry.

The top H is also shown in Fig. 3. It

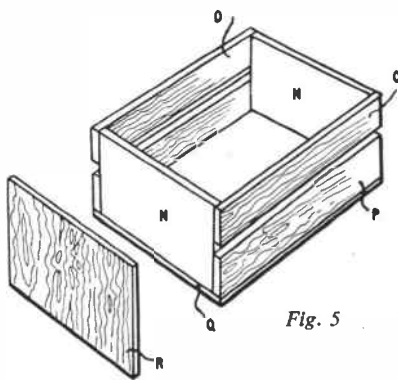
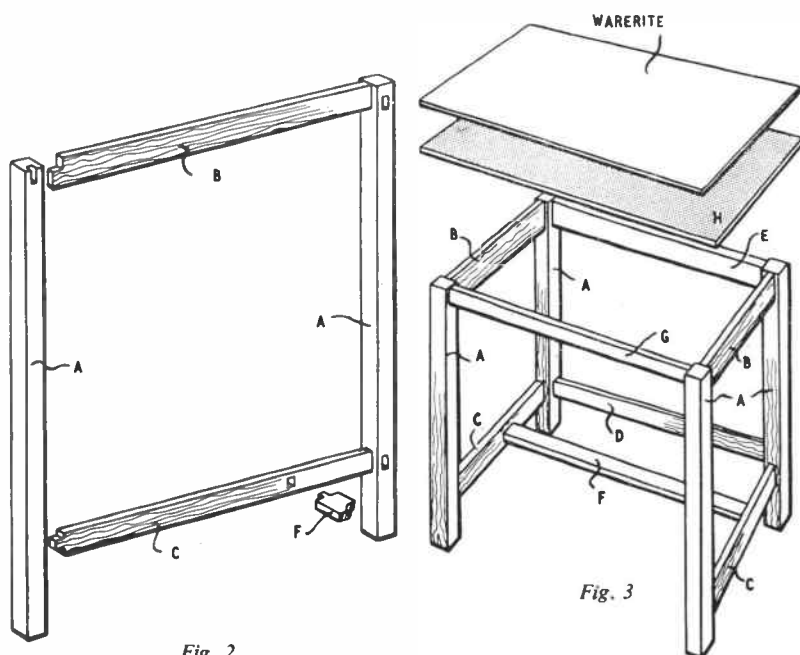
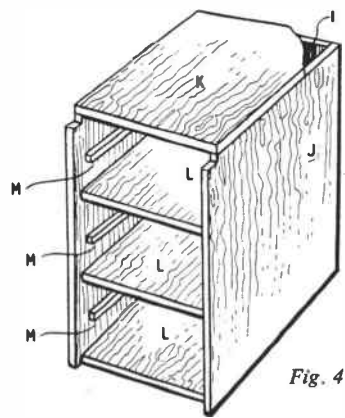
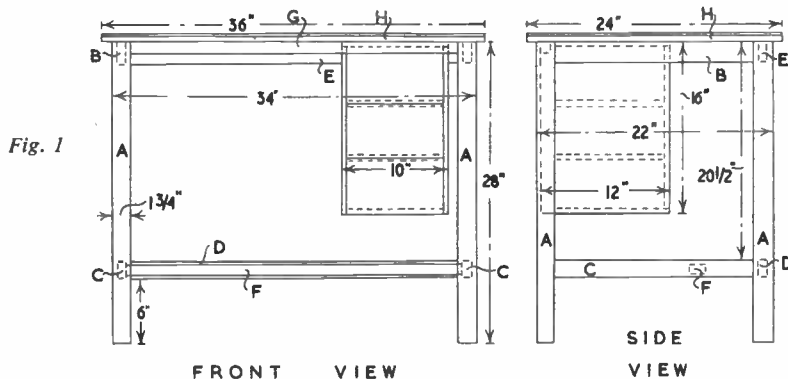


Fig. 2

Fig. 3

Fig. 4

Fig. 5

can be a piece of ½ in., ¾ in., or even 1 in. plywood, or can be made of 6 in. wide boards butted and glued together. The Waverite panel will later be glued on top.

The drawer compartment is made up from ½ in. wood as shown in the view in Fig. 4. The interior height of the drawer is 15 in. and this is divided up equally into three compartments by pieces L.

● Continued on page 462



APRIL is often a month of surprises, sometimes bringing a late flurry of snow unexpectedly. Generally speaking however it is April showers' with the promise of an abundance of flowers in May. Lighter evenings are an encouragement to work and with the extra hour we really feel that spring has arrived.

Do not be lulled into a false sense of

security by a succession of mild and sunny days, but be prepared for that late frost. A fine cloudless day at this time of the year often brings the temperature below freezing during the night.

If you have delayed rose pruning, you **MUST** complete the job during the first week. Cut away some of the old wood on climbers and tie in some new shoots as replacements.

SOME WORK TO CARRY ON WITH

Plant out sweet peas (hardened off)
Plant out chrysanthemums, carnations and other dianthus

Set gladioli and hardy lilies
Lift and divide red hot pokers
Sow hardy annuals in the open

Finish planting potatoes and onion sets

Sow half-hardy annuals under cloches
Protect peas with black cotton or pea guards

Spray apples for weevil, codlin moth and march moth (as blossom appears)
Pick over black currants for big bud
Thin out brassicas, parsnips and early carrots

Sow in the open — French beans, beetroot, lettuce, peas, savoy, spinach, turnips, cabbage, broccoli, carrots and cauliflower

Rake and cut lawns
Finish grafting fruits
Spray for aphid

Set bait for slugs and snails

In the warm greenhouse

Pot up begonias and gloxinias
Repot flowered azaleas in peat and sand (no lime, please)

Pot on other subjects as required
Strike coleus, fuchsias, pelargoniums, etc.

Sow primulas in variety for next year
Repot cacti seedlings and rooted cuttings, inspect for damaged roots and pests, and water as growth commences

Shade in good time
Fumigate regularly

In the cool house

Continue potting and boxing seedlings
Sow primulas in variety
Sow half hardy annuals
Fumigate regularly

Harden off pot shrubs such as fuchsias and hydrangeas

In the cold greenhouse

Water lettuces as required
Plant tomatoes at end of month
Box and pot bedding plants as required

Continued from page 460

Sparkling Wines

up and well cork. It matures fairly quickly and can be drunk in a month. It does however improve greatly with keeping and like many genuine champagnes is excellent after from 12 to 15 years. Some, indeed, may be kept and drunk with relish after even much longer periods.

Prune champagne
3½ lb. rhubarb

2 lb. prunes
4 lb. sugar
1 gal. water
½ oz. yeast

Rhubarb, like gooseberries can make a good champagne and when allied with prunes produces a stronger and more agreeable wine. Cut up both rhubarb and the prunes into small pieces and put them into a bowl and fill up with cold water. Well stir each day for 10 days, keeping it covered with a thick cloth. After straining add the sugar and yeast and allow to ferment for 10 days. Bottle and cork up as for the previous recipes.



TRY growing some of these wonderful little bushes from seed. They are truly miniature, the bush being only about four to six inches high and the leaves correspondingly tiny.

The flowers are a picture. They are single, semi-double and double, mostly in pastel shades from white to red. In pots they are delightful. The tiny flowers, only about ¼ in. diameter, can be appreciated to the full. In the garden they make an attractive addition to the border. They are quite hardy and should be lightly pruned to give an abundance of blooms. (M.h.)

Continued from page 461

Teenager's Desk

The sides J are notched to fit under the rail G. Fix the drawer compartment in position by countersunk screws down through the top.

Make the drawers as shown in Fig. 5. They should be made to fit nicely and should slide easily on the runners. The three fronts R should all be cut from one piece with the grain running vertically. The wood for these pieces should be a contrasting colour to the rest of the desk.

The handles are Hobbies No. 712b, 1½ in. diameter price 1s. 9d. each postage 6d. They can be obtained by post from Hobbies Ltd., Dereham, Norfolk. They are fixed by means of a nut and bolt, the bolt going through the drawer fronts R and N.

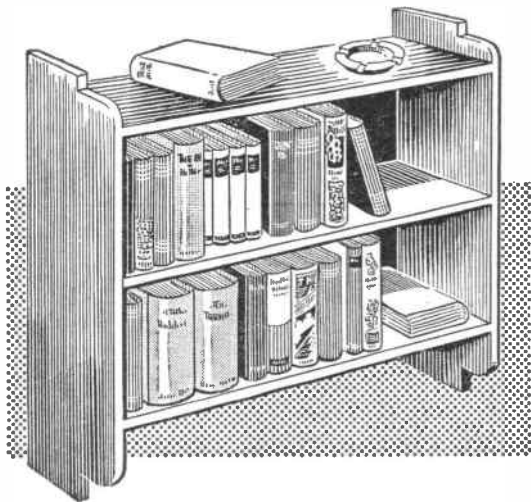
Clean up all parts thoroughly with coarse and fine glasspaper and then fill the grain preparatory to staining and polishing.

The final job is to glue the Waverite panel on the top. The maker's instructions should be followed when fixing. (M.h.)

KITS FOR MODERN FURNITURE

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HANGING BOOKCASE

(DESIGN No. 3326)

36 ins. wide, 35 ins. high, 10 ins. deep

A space-saving unit to hang on the wall. Kit of selected hardwood, plywood for back, design sheet and instructions.

56/- (carr. paid)

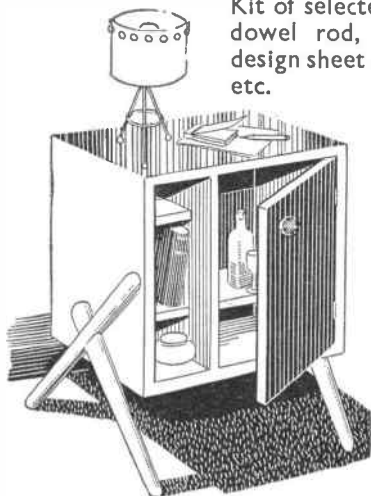
SMALL CABINET

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Ideal as a bedside cabinet.

Size 27 ins. high, 18 ins. wide

Kit of selected planed wood, dowel rod, hinges, handle, design sheet and instructions etc.



72/- (carr. paid)

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SAVE
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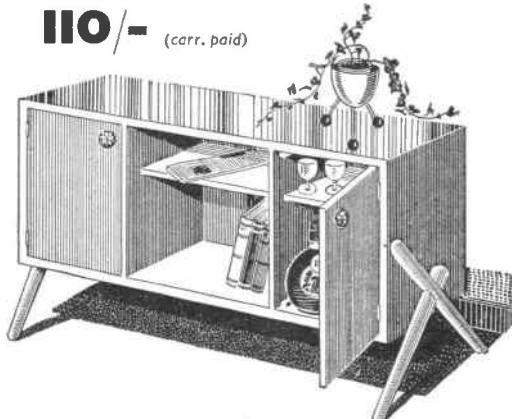
CONTEMPORARY CABINET

(KIT No. 3114)

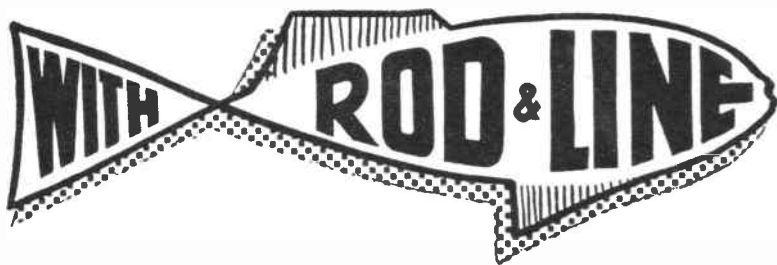
A really outstanding piece of work, of which any handyman can be proud. As cocktail cabinet, sideboard, etc.

Size 3 ft. long, 27 ins. high

Kit of selected planed wood, hinges, handles, design sheet and instructions, etc.



110/- (carr. paid)



NO doubt many of you are in the stages of overhauling your tackle for the trout fishing season. For those of you who are new to this side of fishing, a few hints and tips should be useful.

If the weather is cold, as it often is at the beginning of the season, you can assume that there will be no hatch of fly;

MAKING A TROUT NYMPH

By 'Kingfisher'

but there are some odd days tucked in with the cold weather when you will see a few flies hovering around the waterside, and then you can try an artificial.

However, even when no natural flies are to be seen, you can always fish the type of fly known as a nymph. This creation is tied to represent the larvae or grubs which are to be found on the bed of the stream. It would perhaps be as well at this stage to point out that some of the flies you see near the water, only live for a day, and actually cannot feed as they have no mouths. Prior to changing to flies, these creatures have had an underwater life which in some cases extends over a period of as much as two years.

Another point which you should know is that although trout take flies, these do not form their main diet; in fact about 95% of their food consists of these grubs and larvae plus the young fish of various species, including their own.

Fishing the nymph

First of all I'll describe the dressing I use when tying a nymph — I tie all my own flies, by the way. Sizes vary from a size 16 to a size 12 hook with turned down eye and thin in the wire. Now I don't use silk for the body of any fly or nymph. I use various coloured tinsels which when wet do not assume a darker colour as silk will. The tinsels remain true to colour and give 'flash' to the

nymph, and so are visible over a greater distance when in the water, with the added attraction that the glint draws the eyes of the fish and they come up to investigate.

The sketches will show what the finished nymph looks like. You will note that short hackles are used, and that in every case the body is created from a strand of either peacock or ostrich feather. These strands are covered with tiny hairs and so give bulk to the body.

The tinsel is tied in with silk at the bend of the hook, and at the same time the strand of feather which goes by the name of the herl is also tied in. The silk is then wound spirally up the hook to the eye, and the herl is then closely wound up to the eye followed by the tinsel, which is wound up spirally but evenly spaced. When winding the tinsel, it must be spaced so that each turn is about its own width from the turns on either side of it. It is bound down tightly to the shank

along with the herl near the eye. A short hackle is then given a couple of close turns, and tied in. The silk is only used for the tying, and none of it is seen at all.

This creation is fished wet, that is under the surface. You can let it sink almost to the bed of the stream, as it is here where the trout expects to find the natural in the colder weather. Later on, as the sun warms the water, the nymphs come nearer the surface, crawling up the stems of water weeds. Fishing the nymph near these weeds will often give you a fish, which otherwise, and when keeping to the open water, would only result in a blank day.

Seek out, then, some place where weed beds flourish, and cast your nymph to float down past these places at the risk of getting snagged on the weeds and perhaps losing a nymph. That is one of the hazards of this method, but well worth it when the results are considered.

An excellent dressing and a great favourite of mine is made up as follows: Black Ostrich Herl, Orange tinsel for



ribbing, orange Hackle. You can get orange hackles by dyeing white feathers from the neck hackle of a domestic fowl.

EASILY-MADE GATE LATCH

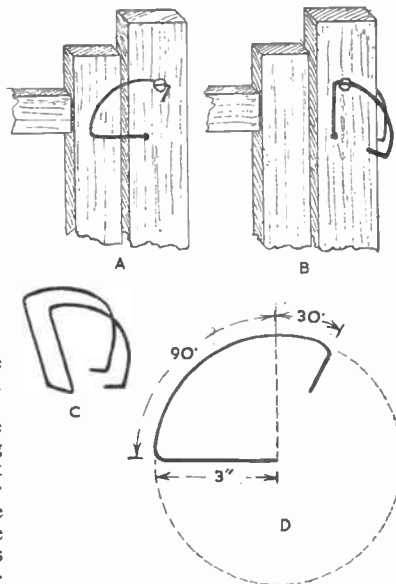
HERE is a simple little latch which can be fitted to a garden gate which opens both ways. It is easy to make and enables the gate to be easily opened and closed.

Stout galvanized iron wire is best for the job and is shown with the gate closed at A. The position when the gate is open is shown at B and shape of the wire at C.

Actual size will depend of course on the size of the gate and post, but the measurements given at D should be about right for most general purposes. The curve of the latch is formed of part of a circle having a radius of about 3 in. The length of the curve extends to about 30° more than a quarter circle.

Care must be taken when bending the wire in order to get a perfect curve so that it will open and close easily.

Drill the hole in the gate post large enough to allow for the wood swelling during wet weather, but don't make it too large. A large round-headed screw forms the stop for the latch. You can use a good sized staple to straddle the wire and this will serve the same purpose as the round headed screw. Either can be fixed to both sides of the gate post. (A.F.T.)





A NEW RANGE OF JOHNSON DO-IT-YOURSELF OUTFITS

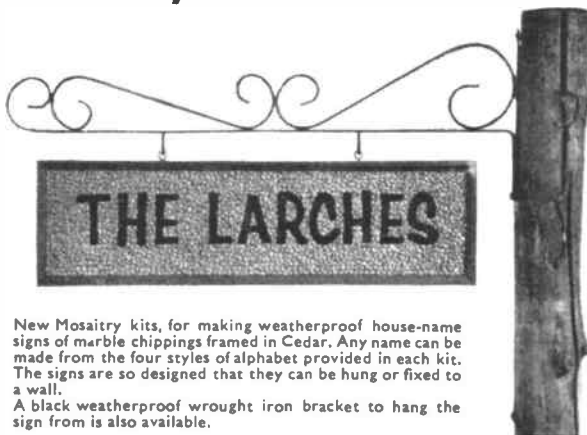
Here's excitement! The new Johnson range of "Do-it-yourself" outfits makes it so easy to develop and print your films at home.

These outfits contain everything you need. They range from sets for the beginner, to outfits for the more advanced enthusiast. And full instructions go with every outfit. Prices from £1-17-6 to £5-12-6.

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FOR CONFIDENCE
IN PHOTOGRAPHY

Mosastry House-Name Kits



New Mosastry kits, for making weatherproof house-name signs of marble chippings framed in Cedar. Any name can be made from the four styles of alphabet provided in each kit. The signs are so designed that they can be hung or fixed to a wall.

A black weatherproof wrought iron bracket to hang the sign from is also available.



House-Name Kits

18/6

from your
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ATLAS *Handicrafts*

Descriptive leaflet "F19" from Desk "B"

ARCOY PRODUCTS



make ideal
tools for
the handyman



ARCOY RABBETTER

For use with any Portable Drill. A boon for all workers in wood. It rebates for panelling, etc. It slots for drawers. It strips for laths. It tongues, grooves and fillets.

PRICE £22.6

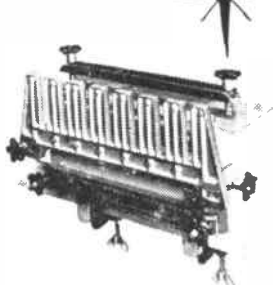
Moulding cutters for use with rabbetter £13.6 each.



ARCOY POWER PLANE

Combines the handiness of the normal smoothing plane with the efficiency of the planing machine. Will never split wood, lift fibres or tear. Depth of cut adjustable from 0- $\frac{1}{4}$ in.

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With the aid of any $\frac{1}{4}$ in. capacity power tool you can produce joints at $\frac{1}{2}$ in. pitch in timber up to 9 in. in width in any combination of thicknesses from $\frac{1}{8}$ in. to 1 in. in five minutes!

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PRICE £2.16.6

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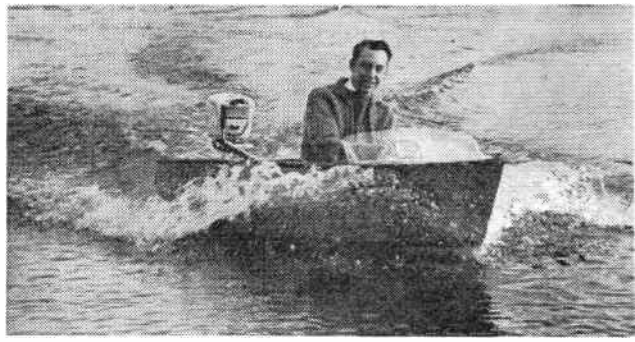
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RUNABOUT 'ZIP'

Length 7 ft. 8½ in. Beam 2 ft. 10½ in.
 Weight 80 lb. (without motor)

A kit designed especially for the beginner to make as an inexpensive introduction to water craft. Skinned with oil-tempered hardboard and suitable for a small h.p. outboard engine. Will carry an adult and one or two children. Steering by wheel and/or motor.

COMPLETE KIT OF MATERIALS FOR BUILDING 'ZIP' includes PARANA PINE, MAHOGANY MARINE PLYWOOD, OIL-TEMPERED HARDBOARD, STRIPWOOD, BEADING, PERSPEX, BOWDEN CABLE, SCREWS, GLUE, FULL-SIZE PLAN, etc. (not paint and varnish). **CASH PRICE**
£19. 19. 0 (plus 30/- part carriage & pkg.)

KIT EASY PAYMENT TERMS—£5 down (plus 30/- part carriage and packing) and 6 monthly payments of **£2. 13. 0**
 Total E.P. price **£20. 18. 0** (plus 30/- part carriage and packing).

FULL-SIZE PLANS AVAILABLE SEPARATELY, 16/6 (post 9d. extra)

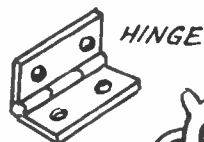
Kits from branches, etc., or direct from the factory **HOBBIES LTD. (DEPT. "99"), DEREHAM, NORFOLK**

A FISHING TACKLE TIDY

MAKE up your box from $\frac{1}{2}$ in. hardboard and $\frac{3}{4}$ in. by $\frac{3}{8}$ in. stripwood. The stripwood may be halved as at A and the corners mitred as at B or they may be butted together.

Make the box in two pieces, lid and bottom. Hinge the two pieces together and use a hook and eye for fastening.

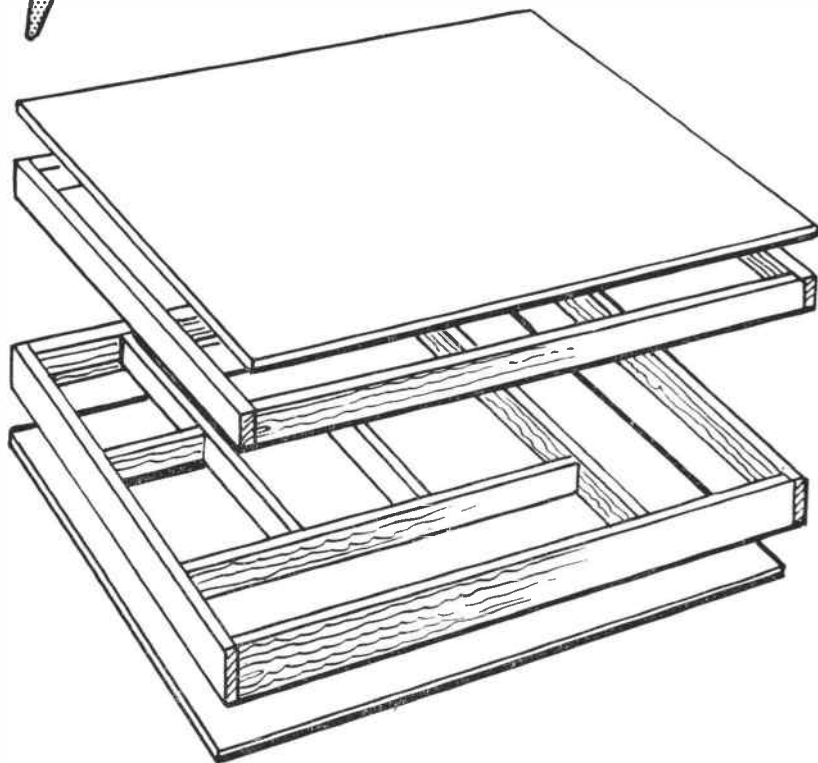
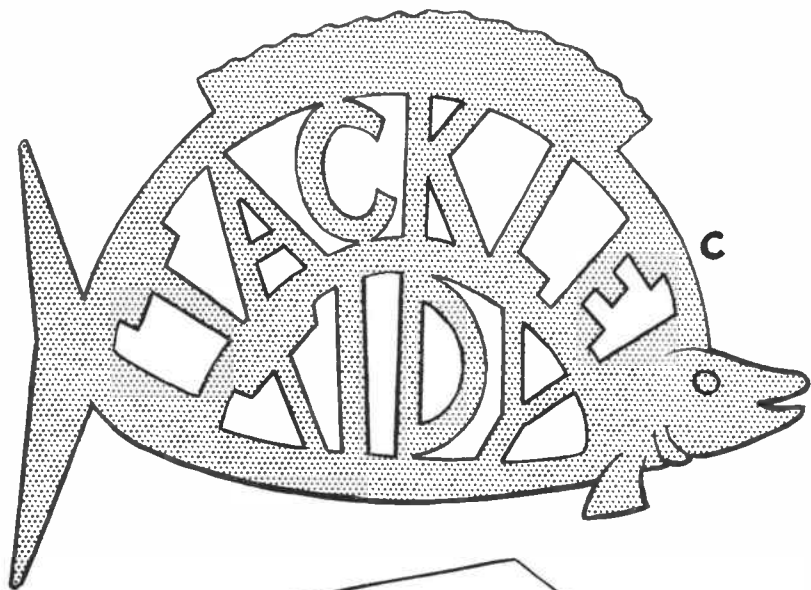
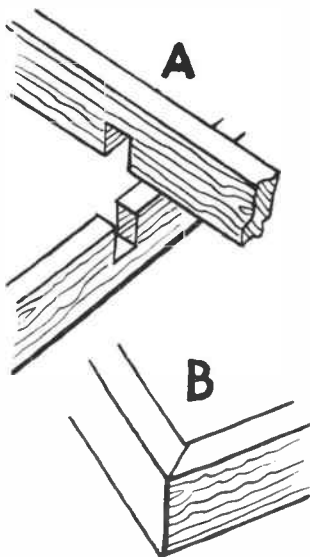
The overlay C is cut with a fretsaw from $\frac{1}{8}$ in. wood. It is glued to the centre of the lid. Clean up and paint. (M.p.)



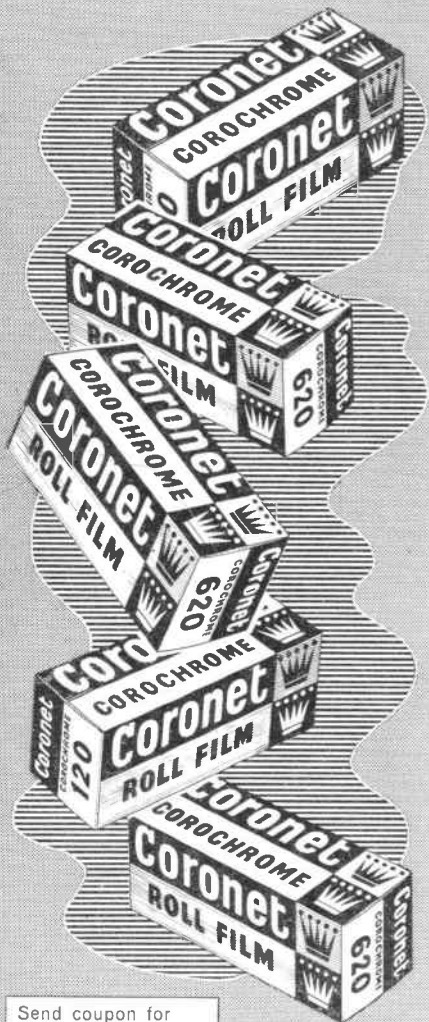
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