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THE ORIGINAL  
'DO-IT-YOURSELF'  
MAGAZINE

# HOBBIES *weekly*

FOR ALL  
HOME CRAFTSMEN

★ *FREE Plan inside*

*Also in this issue:*

MAKE A RADIO  
RESISTANCE METER

COLLECTORS' CLUB  
AND DISC BREAK

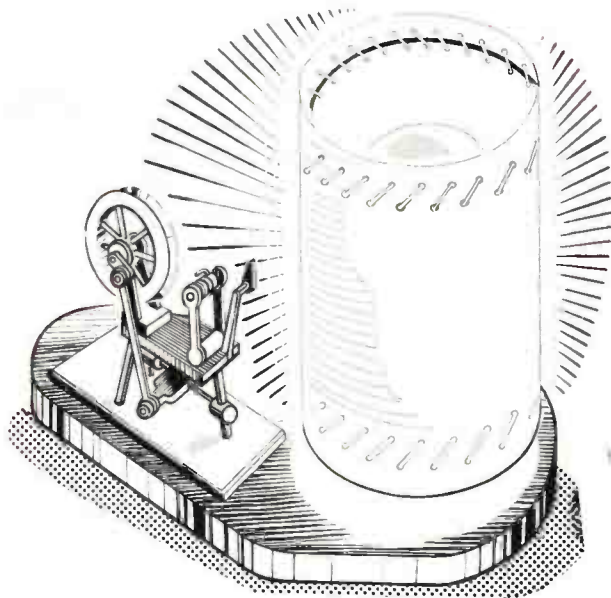
JEWELLERY — RINGS  
AND BROOCHES

KITCHEN WALL  
CABINET

SEA ANGLING TIPS

PATTERNS FOR A  
'HARE' BILL SPIKE

ETC. ETC.



## SPINNING WHEEL TABLE LAMP



*Up-to-the-minute ideas*

*Practical designs*

*Pleasant and profitable things to make*

World Radio History

5<sup>p</sup>



**B**ILL PICKUP of 153 Hardman Avenue, Hall Carr, Rawtenstall, Rossendale, Lancs., writes — 'I am a regular reader of your splendid magazine and very interested in "Collectors Club", but have never come across a collector of football programmes, or football badges. It would be nice to know if any other readers are interested.'

## FOOTBALL MATCH PROGRAMMES

Bill's hobby has been popular ever since England first defeated Scotland in 1873.

You'll need several foolscap pocket files to house your collection. The following system should prove useful.

In file A, say, keep all programmes of international matches between England and Scotland. Carry on with files for Ireland and Wales. Then others for Oxford v Cambridge, English Cup matches, etc. File your foreign programmes under appropriate country headings in similar manner.

In your general notes remember that in early times the great football festival of the year in England was Shrove Tuesday. It is mentioned as being popular in Ireland in 1527.

Many schools played football accord-

ing to Rugby rules in 1860. The Sheffield Club was formed in 1855, and the Blackheath Club in 1860. The English Rugby Union was founded in London in 1871; Scottish Football Union, 1873; Welsh Football Union, 1880; and the Irish Rugby Football Union, 1881. The Northern Rugby Union was formed in 1895.

Association football is generally supposed to be the outcome of the game as played at Cambridge University in the middle of the 19th century. The laws first took practical shape at a meeting held at the Freemasons' Tavern, London, 1863, when the foundation of the Football Association, the national controlling body of the game in England, took place. The Football League was formed in 1888, and the Amateur Football Association in 1907.

Now include notes on the various teams — something like this: **CHELSEA F.C.** Formed in 1904. Headquarters at Stamford Bridge.

Colours — Royal blue and white. Record attendance 82,905—12th October 1938. Add club successes and any personal notes such as:

Ted Drake (manager) won an F.A. Cup winners' medal in 1936 and played for England five times in full internationals. In May 1952, after five years in charge of Reading, he took over at Stamford Bridge.

If you collect stamps, labels and cards, include those depicting the game, famous players, etc, with your programmes.

## A NEW ISSUE FROM SWEDEN



'Carl Gustaf Pilo Commemorative'

## PEN FRIENDS WITH A VARIETY OF TASTES

'I am interested in stamps, birds, and old buildings, and would like pen friends throughout the world', writes **MISS IRENE NICHOLSON** of 23 West Street, Colchester, Essex.

'I would like pen friends from any part of the world', says **MASTER D. SINGH**, 12 Chapel Road, Calcutta 22, India. 'I am fifteen years old, and my hobbies are stamp collecting, swimming, model making, cycling, etc.'

**CLAUD RENNIE**, 33 Webb Street, Northmead, Benoni, Transvaal, South Africa, writes — 'I am eighteen years old and interested in almost anything. I will be glad to hear from pen friends.'

Another stamp collector seeking friends is **MR M. JINADASA**, Divisional Irrigation Office, Polonnaruwa, Ceylon.

'I collect bookplates and stamps, and would like pen friends from all over the world', says **IORG GAMBINI**, Via A. Poliziano, 24, Rome, Italy.

**T**HESE pictorials have recently been issued by Russia. The top set marks the centenary of the Russian poet **T. G. SCHEVCHENKO**. The 3 Kopeks value pictures the young poet against a background of the village and house where he was born.

Bottom left depicts the monument erected in the poet's memory at Harjlov. Next the multicoloured stamp marks the 600th anniversary of the birth of the Russian painter **A. RUBLJOV**. It presents him sitting at work.

The Russian surgeon **N. V. SKLI-FOSOVSKY** appears on the next stamp. It marks the 125th anniversary of his birth. Finally we have a 6 Kopeks value to commemorate the death of the German microbiologist **ROBERT KOCH**.

## RECENT ISSUES FROM RUSSIA



# Make a useful Resistance Meter

A METER for measuring resistance is very useful, and many tests to radio sets, amplifiers, and similar equipment can be carried out with it. The meter described here indicates resistance values from about 100 ohms to  $\frac{1}{4}$  megohm (250,000 ohms), and covers most of the resistances likely to be encountered in receivers, amplifiers, and similar apparatus.

Methods of using the meter to test components or circuits are noted later.

The resistance meter circuit is shown in Fig. 1, and this will help to make the

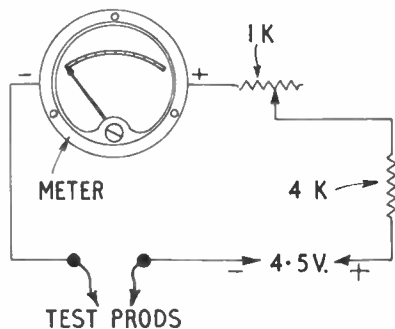


Fig. 1—The resistance meter circuit

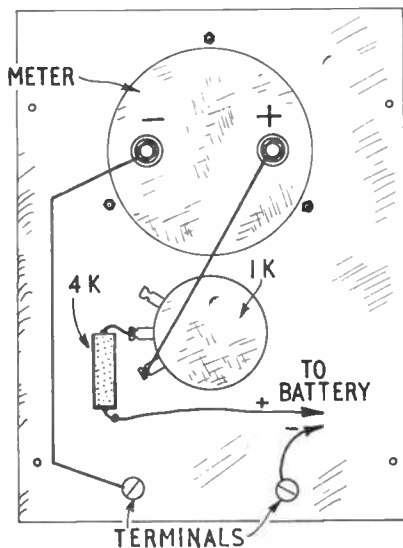
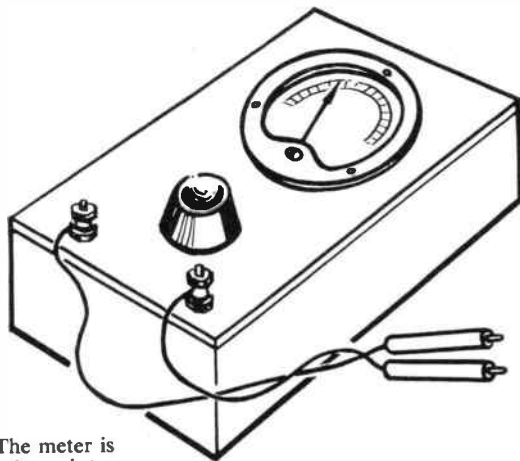


Fig. 2—Meter wiring

By  
*'Radio Mech'*



method of operation clear. The meter is a 1 mA movement. That is, the pointer indicates full scale, when 1 mA flows. Current is drawn from a  $4\frac{1}{2}$ V. dry battery. If a fixed 4,500 ohm resistor were included in series with battery and meter, the meter would show approximately full scale. To allow exact adjustment, the required resistance value is made up by connecting a 4,000 ohm (4K) and 1,000 ohm (1K) variable resistor in series.

To use the meter, the test prods are shorted together, and the knob on the 1K variable resistor is turned until the meter pointer indicates full scale, which is Zero ohms. If the test prods are now applied to a resistor or other component, the meter will indicate something less than full scale, because of the additional resistance in circuit. When the meter has a suitable scale, it thus shows the resistance of the component to which the prods are applied.

A single 5K variable resistor could be used instead of the 1K variable, and 4K fixed resistors. This is not recommended, however, because a heavy current would be passed through the meter if the 5K resistor were carelessly turned to minimum. With the circuit in Fig. 1, it is no longer possible to adjust the meter to read full scale, when the battery has dropped to less than about 4V. This assures that a good degree of accuracy will always be obtained. The current drawn is so small that a new battery should last six to twelve months.

### Meter case

The instrument is best constructed upon an insulated panel, as in Fig. 2. A hole of suitable diameter is cut to hold the meter. The 1K variable resistor is fitted near this, and a small knob is screwed to its spindle. Two terminals are provided, for test prod leads.

A small case or box is constructed

from thin wood, so that the panel may be screwed in position. The box should be deep enough to hold a  $4\frac{1}{2}$ V. flat 3-cell flash-lamp battery, which should be held in position by means of a metal strap. Use flexible leads about 6 in. long for battery connections. As the battery lasts a very long time, leads may be soldered to it. If the meter pointer tries to move the wrong way, the battery is connected in the wrong polarity.

After connecting up, the battery can be secured in the bottom of the case, by screwing down the thin metal strap. The panel, with meter, resistor, and terminals can then be put into place, and held by small screws.

For test purposes it will be handy to

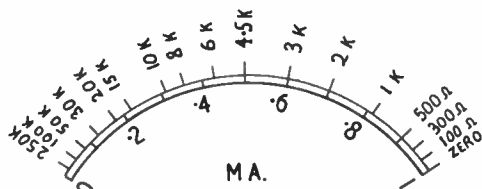


Fig. 3—The meter resistance scale

have both prods and clips. A pair of flexible leads about 24 in. long can be made up with clips, and a similar pair can be fitted with test prods. The latter may be purchased, or made by running stout wire down insulated sleeving.

### Resistance scale

A resistance scale for the meter is shown in Fig. 3. With some meters it is not difficult to copy this to suitable size, and fit it on top of the old meter scale. The pointer will then show resistance values directly.

If the meter is sealed, the scale shown in Fig. 3 can be fitted above the meter, the panel being slightly longer. It is then only necessary to note the meter reading,



and transfer this to the scale in Fig. 3, to read the resistance value.

### Making tests

The radio or other equipment to be tested should always be disconnected from its battery or mains supply. Mains receivers should be disconnected ten minutes in advance, or large condensers in them should be momentarily shorted, to discharge them.

Individual resistors or other components can be tested alone, in exactly the same way. Some of the more usual tests are as follows:

**Resistors.** These should be within about 20 per cent of the marked value. If they have a silver band or end, they should be within 10 per cent. If markings are rubbed off, the actual value can easily be found, with the meter. The values of colour-coded resistors can easily be checked. Variable resistors or potentiometers should show a smooth change in value as their control knobs are turned. Erratic readings show a worn element.

**Condensers.** Mica and paper condensers should show no reading (infinite resistance). Shorted or leaky condensers show a reading. Electrolytic condensers normally show a leakage of a few thousand ohms or more, and this does not indicate a fault. If variable condensers give an abrupt reading at any point, they are shorting.

**Switches.** These should regularly show

infinite resistance when open, and zero resistance when closed. With multi-contact switches, test between all sets of contacts.

**Transformers.** Mains transformers usually have a primary resistance of a few hundred ohms. High Tension secondaries are similar. Low Tension secondaries are of virtually zero resistance. There should be no leakage between one winding and any other winding, or from any winding to core. Speaker transformers have primary windings of a few hundred ohms, and a secondary, windings of virtually zero resistance. Inter-stage transformers have primaries of a few thousand ohms, and secondaries of several thousand ohms.

**Chokes.** H.F. Chokes are of very low D.C. resistance. L.F. chokes will usually be a few hundred ohms. Lack of any reading will, of course, show a broken winding. There should be no reading between winding and core, with L.F. or smoothing chokes.

**Valves.** Heaters or filaments should be almost zero resistance. There should be no reading between one electrode and any others, as this indicates an internal short.

**Coils.** These are of almost zero resistance. Long-wave windings will be slightly higher resistance than medium-wave windings. No reading indicates broken windings.

Circuits can be tested for continuity from point to point, and should always

show zero resistance.

In all cases first short the test prods or clips together, and set the 1K control until the meter reads 1 mA, or Zero ohms. Do not hold bare leads with the hands, because the body will act as a high resistance, and give wrong readings.

### For other meters

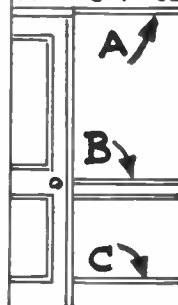
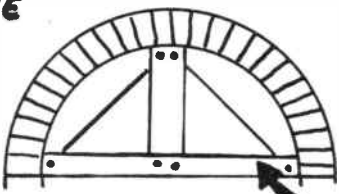
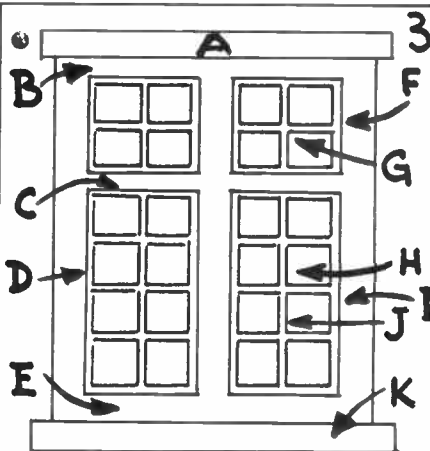
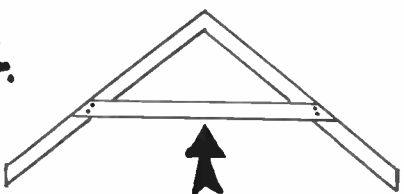
It is possible to draw up a scale to suit meters of other than 1 mA type, and the battery need not be 4½V. The procedure is quite easy if done in the following steps. (Examples refer to Fig. 1.)

(1) Decide on meter and battery (1 mA, and 4.5V.). Divide battery voltage by meter current, remembering 1,000 mA equal 1 amp. ( $4.5/0.01 = 4,500$ ). Result is total resistance to be in series with meter (4,500 ohms). Make up about  $\frac{3}{4}$  or  $\frac{4}{5}$ th of the total value by means of a fixed resistor, for the reason earlier (4K fixed, plus 1K variable).

(2) Write down a resistor value to be marked on the scale (say, 3,000 ohms, or 3K). Add the value found in step 1 (3,000 plus 4,500 = 7,500). Divide battery voltage by this figure ( $4.5/7,500 = .0006$  ampere, or 6 mA). Mark this resistance value at this point on the meter scale. (3,000 ohms, or 3K, at the .6 mA point).

(3) Repeat step 2 for every resistance value that it is required shall be marked on the resistance meter scale.

# TWO-MINUTE QUIZ by Ed. Capper

<p>1. CAN YOU NAME THE...</p> 	<p>2. NAME THE WOOD USED IN BUILDING ARCH</p> 	<p>3. IDENTIFY WINDOW PARTS</p> 
<p>WOOD SURROUNDS IN ROOM?</p>	<p>4. NAME RAFTER TIE.</p> 	

Answers on page 264



## CHAS AND SHIRLEY

**C**HAS McDevitt and Shirley Douglas have emerged during recent years as one of the brightest and most charming acts in the field of popular music.

Through their recordings, broadcasts, television and personal appearances, this young husband and wife act have attracted a large following. Material for their songs is drawn from a wide selec-

tion of ballads, standards, calypsos, folk songs, country and western and rhythm and blues numbers. Chas plays electric guitar and mandolin, while Shirley features the electric bass-guitar. Their guitars are gold plated, and insured for £500.

They are a versatile act, and adapting their music to fit the occasion are equally at home appearing in teenage 'beat'

shows, variety or cabaret.

Born in Glasgow on 4th December, 1934, of a French mother and Scots father, Chas is interested in all forms of contemporary music, but has an expert's affection for American folk music. At 15 he was already playing banjo and guitar with the local jazz band.

At 19 he left college and moved from his home in Camberley, Surrey, to London, where he formed his own skiffle group. With vocalist Nancy Whiskey they recorded *Freight Train* which reached the top of the Hit Parade here and entered the American charts.

In July 1957, they flew to America and appeared at the Palisades Park, New Jersey, for Murray Kauffman and on the Ed Sullivan TV show.

Back in England, Nancy decided to go solo and during an extensive variety tour of Britain, Chas auditioned over 1,000 girls before he chose Shirley Douglas to replace her.

Shirley, born in Athlone on 6th December, 1936, joined the group in September 1957. Born into show business, she made her stage debut, singing and dancing, at the age of 13. Taught to play guitar by her father, she was featured in the family act, 'The Douglas Trio'.

Shirley confesses that she has little love for jazz, preferring ballads and popular songs with a strong melody.

On 5th April, 1959, Shirley and Chas were married in St. Patrick's Church, Soho. They became engaged in Chas' Soho coffee bar, 'The Freight Train', on 7th August, 1958, exactly a year after their first meeting.

Now they not only combine their talents in songwriting and stagework but also in shopping and housework.

Examples of their talents as composers are provided on their first H.M.V. disc, *One Love/Can It Be Love?* (45-POP845).

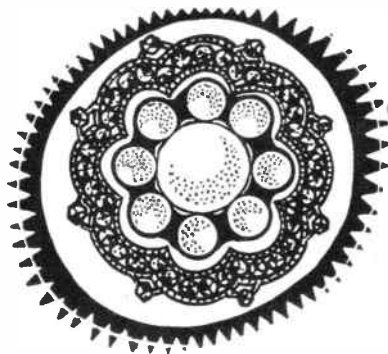
The story of Chas and Shirley lends itself to illustration by stamps and labels.

## REMOVING STAMPS

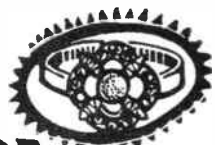
**F**URTHER to a reply to a reader in our 3rd May issue that the use of patent stamp removers has now superseded the wet blotting paper process, we now refer to the original query which was about postmarked specimens which still had the adhesive intact.

In some instances we must emphasize that such stamps are part of issues from certain countries where it is a practice to cancel in the usual sheet form large quantities which are then sold to the stamp trade at a lower price than the mint stamp. Our contributor points out that such stamps are of very little value to the real collector.





# Hand-Made JEWELLERY



**T**HE finger ring in Fig. 1 is designed to represent a miniature belt complete with prong and buckle. Made from sterling silver it costs between 3s. 6d. and 4s. 6d., according to the size of the ring.

All the main parts are cut from one piece of silver, about 1.5 mm. thick,  $\frac{5}{8}$  in. wide, and about  $2\frac{1}{2}$  in. long. Thoroughly anneal this piece, then cut from it a strip  $\frac{1}{4}$  in. wide, bend round a suitable mandrel, cut and file the ends true, flux and silver solder the ends in the way described in the second article in this series.

A slight impression cut in the charcoal block will enable the band to stand upright so that you can solder the inside. The ends must be in very good contact, and both sides of the joint should be brought to the same temperature. Rub the sides of the band on a wide file of smooth cut in order to true them. Tap round the band on a mandrel of the right size in order to arrive at a perfect circle.

From the remaining strip, cut part B, and solder it on the band over the first joint. File the end of part B to make it blend into the main band.

Now cut part C — it is easiest to file the notch first. Shape it carefully and solder it to the band just where you have filed the end of part B. The small strap

across is made from thinner sheet. A small piece of the original sheet may be hammered thinner, and annealed, before bending as part D and soldering in place. Use very little solder on these joints, or the neat appearance will be lost.

and weakening of the joint. The rouge mixture must never contaminate the flux, or a weak joint will result.

Thorough pickling, and the complete polishing routine described in earlier articles, completes the ring.

## Twisted wire ring

Neat soldering is of first importance in making rings of twisted wire. Many alternative patterns will suggest themselves, but that in Fig. 2 is not too difficult, and very attractive if accurately made. A very old design, it is still extremely popular, so the commercial possibilities would be good.

The gauge of wire may be varied within limits, but a diameter of about 1.8 mm. is average. A piece 12 in. long will, when some 7 in. has been cut and twisted, leave enough for the side wires and make a ring of generous proportions. The exact length of wire can be determined by trial, knowing the diameter of ring required, by twisting any odd length of soft wire, and noting the amount by which that particular gauge of wire is reduced in length.

Begin by annealing the silver wire. As the gauge is quite heavy, you may lay it straight on the charcoal block and heat from one end to the other, making certain that every part has reached red heat. Cut the length for the twist, bend it in half, and clamp the loose ends in a bench- or hand-vice. Twist the wires tightly, using a thin rod inserted as shown in Fig. 3. The twist may appear to progress unevenly, but will have rectified itself by the time the twist is tight enough.

Slightly flatten the twist, using a good hammer and bench stake. An old flat-iron is ideal for this, treated as described in the first article in this series. Take care not to make the twists too thin where they cross each other, and to strike very evenly. The edges where the other wires are to be soldered must be quite straight, so that these wires will touch each twist. The twisted length can be trued as far as possible with a mallet and bench stake, then filed slightly to provide good contact with the side wires.

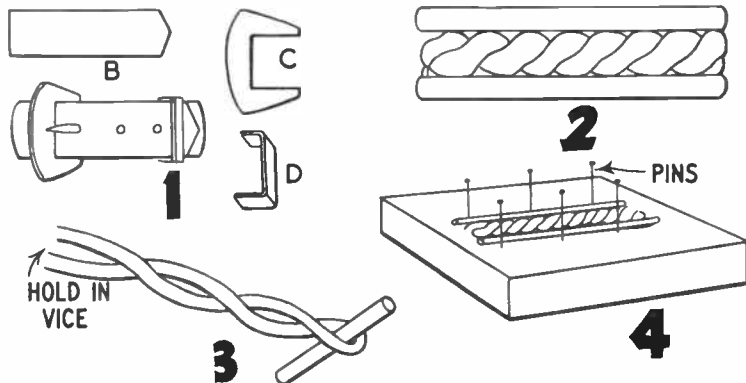
To solder, borax all points of contact, lay the assembly on a charcoal block as

## RINGS AND BROOCHES

By Peter Wix

The small holes are drilled — not quite through the metal — and a small piece of wire soldered in the hole adjacent to the buckle. This hole may be enlarged, or even drilled through to help hold the wire at the right angle.

To avoid re-melting previously soldered joints, they can be coated with a blob of a paste made by mixing equal parts of whiting (the type sold in block form for canvas shoes), and jeweller's rouge, with a little water until you have a thick creamy consistency. If heat is applied gently, this will hold parts in position, even if they attain the melting point of the solder. If this precaution is not taken, previously soldered joints adjacent to the flame must be coated with a little borax to prevent oxidation





in Fig. 4 with several ordinary steel pins stuck in to keep centre twist and side wires together. Small panels of solder are applied to each point of contact, and soldering done by working slowly from one end to the other.

Next, slightly flatten the side wires, and bend the ring round a suitable mandrel, using a mallet where necessary, and allowing the ends of the ring to overlap sideways. Cut cleanly through the ends with a jeweller's saw, then file them if necessary, so that they join perfectly, with no gap, and leaving the pattern of the twist unbroken. Finally, solder the join from the inside, using very little solder, and finish by pickling, filing, and polishing.

Many jewellers prefer to make such a joint in gold by applying solder from the outside, as gold solders do not always penetrate a joint quite as readily as do silver solders.

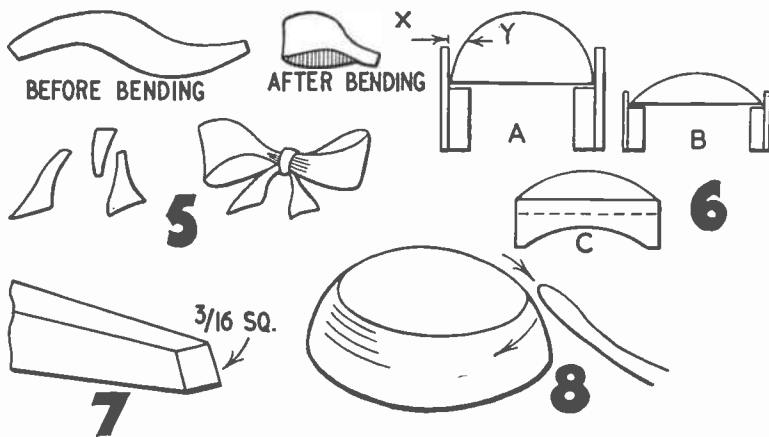
#### A bow brooch

The design in Fig. 5 needs little explaining. The basic design will serve for many variations on the 'bow' theme. If made of fairly thick metal, a pierced design may be cut, using the drill and jeweller's saw; stones may be added if desired, or applied decoration in the form of filigree wire and small grains made in the way described in an earlier article. Twisted filigree wire may be added to the edges of the metal, and this can be held in position for soldering by the use of small split cotters of the type used for securing castellated nuts.

Small curved snips are best used to cut the sheet, the design being transferred to the metal from an accurate drawing, through carbon paper. It pays to coat the metal thinly with Process White or Chinese White before transferring. The lines may be scribed before cutting.

#### Simple 'rub-over' settings

These settings are most suitable for cabochon-cut stones, i.e. those with smooth surfaces, not facets. Fig. 6a shows the construction, and illustrates how the stone is held by the rubbed-over bezel. Upon the distance X-Y in the diagram depends the safety of the stone when set, and this distance is decided by the section of the stone, and by the height of the bezel measured from the base of the stone. Careful thought must be given to this. A stone of the section shown in Fig. 6a obviously will need a higher bezel than the stone in Fig. 6b. You must not, on the other hand, obscure too much of the top of the stone. The other factor influencing the height of the outer bezel, and also the inner bearer on which the stone rests, occurs when the setting is for a ring, and the stone is big enough to necessitate a radius being filed in the bottom of the setting (Fig. 6c).



Bearing these points in mind, first cut a strip of suitable length and width, and, for a stone of between 4 mm. and 12 mm., about 0.3 mm. in thickness. Secure it gently round with a twist of fine binding wire, having cut and bent it to a suitable size, and solder the ends in a neatly butted joint, so that you have an outer bezel into which the stone can just be pressed without having to use force.

Then make the inner bearer from a strip about 1 mm. thick, ensure that the inside of the outer bezel is rubbed bright and clean, apply flux, then push the bearer inside. It should be an accurate fit, but must not be forced into place. Its join — not yet soldered — should come about opposite to the join of the outer bezel. Tie the outer bezel round with binding wire, just as when you soldered the first join. Apply tiny panels of solder from the inside, on the ledge that has been formed, and solder carefully with a gentle flame. Use only just sufficient solder, as no surplus must be left on this ledge. The solder should run down to fill the whole depth of the joint in one soldering operation. If you are afraid of spoiling the first join in the outer bezel, coat it with a small blob of rouge and whiting.

The setting described may be used for a ring, it may form a part of some other decoration and be soldered to a base, or it may have a bottom soldered on to form a 'box' setting. In the latter case you may, if you want a low bezel, dispense altogether with the inner bearer. To add a bottom to the setting, wire it to a piece of sheet cut roughly to shape, solder from the inside, then snip or saw round the outside, and finish by filing to get a neat invisible join.

Decoration taking many forms may be applied to the outside of such settings. Designs from plain or twisted wires, and grains, are only a few examples. To add a circle of twisted wire to a setting, first solder the ends of

the twist together, so that you can just press the twist over the setting. Solder to the setting, using a few very small panels of solder at intervals. Avoid melting the solder where the twists were joined.

Cameos are frequently set and decorated in this way. Many cameos are far from flat, however, and considerable skill is needed in cutting bearer and bezel to follow the contours.

The actual setting of a stone or cameo is done after soldering and polishing.

A small piece of hardwood, e.g. boxwood, shaped at the end as in Fig. 7 is the best 'pushing tool' for a beginner. With this, working round and round, the bezel can gradually be pushed, a little at a time, until it holds the stone, and the rim is almost in contact with it.

The final rubbing may be done with a burnisher. A hardened and brightly polished, round-ended punch of small size may be used for this if a proper burnisher is not available. Leather modelling tools, if of hardened steel, will also make good burnishers. The actual rubbing is done with a stroking motion, commencing with light, and finishing with hard pressure (see Fig. 8). A little soapy water will lubricate.

#### Netmaking

by P. W. Blandford

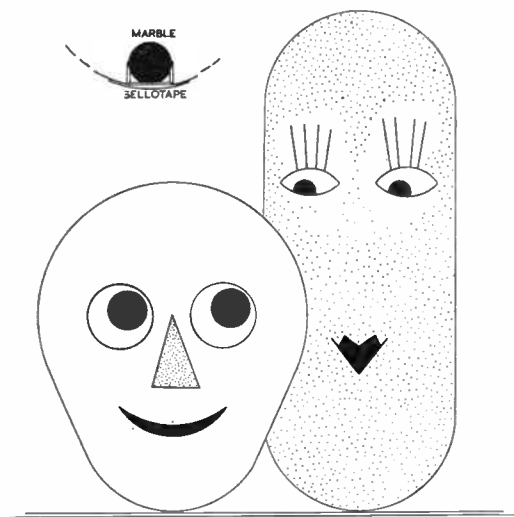
DO you wish you knew how to make nets? Garden nets, rabbit snares, lawn tennis nets, table tennis nets, rack nets, net bags, hammocks — all are covered in this latest edition, which is the third by this well-known writer. Included are many additional details which were not in the two previous issues. This fascinating subject is approached in very easy stages, from the type of tools and their use, simple meshing, straight-forward nets, to tubular, octagonal, and other intricate work. Published by Messrs. Brown, Son & Ferguson, Ltd, 52-58 Darnley Street, Glasgow, S.1 — Price 5s. 6d.

# Wobbling Wally - and Wendy

**A** BALLOON, some scraps of paper, and a marble will suffice to make Wobbling Wally, a charming balancing toy that will fascinate a youngster. Merely inflate the balloon and push the marble into its neck. Your task will be made easier if you begin by wetting the marble. The marble should itself be adequate to seal off the balloon. Gently press the blocked and weighted neck into the interior space of the balloon whilst being careful not to let the marble drop loosely inside. This procedure will be like pushing a glove finger inside out. Use a piece of Sellotape to prevent the neck popping out again. The balloon will now present a neat, regular shape with no protrusions.

Throw the balloon about and note that it will always come to rest standing on end, in the manner of a plastic 'Wobbly Ball'. Turn the bare balloon into Wobbling Wally by sticking on eyes, nose, and mouth made by cutting

up scraps of gummed coloured paper. Give Wally a paper cigar or spectacles if you wish, or make a Wobbling Wendy and give her blue eyes with long black paper lashes and pretty pouting lips. Your completed toy will stand much rough treatment where there are no sharp points or rough edges to puncture the rubber. Balance Wally on your arm and let him nod cheerily and turn slowly round. Stand him on his head and observe how he immediately becomes upright again owing to the fact that any balanced object will not be really stable unless its centre of gravity is as low down as possible. (A.E.W.)



## NATIONAL MUSEUM FOR TRANSPORT TREASURES

**A** SECTION of the Museum of British Transport — the first permanent exhibition in the country devoted entirely to the history of public transport by rail, road and water — is now open at Triangle Place, off Clapham Park Road, London. It has been established by the British Transport Commission for the preservation and display of a large selection of their historical treasures.

Many of these were collected by the former railway companies and other independent transport undertakings, while others were given by members of the public for preservation, and it is the largest collection of its kind in the world.

The first section of the museum contains models, pictures, maps, crests, tickets, timetables, uniform buttons, badges, posters, and many other small items tracing the evolution of transport through two centuries. Larger relics, including locomotives, Royal railway carriages, buses, trams and canal craft, are being assembled for future display.

There are two fine models of the famous Great Western steam locomotive 'The Great Bear' and a Lancashire and Yorkshire locomotive of 1899, which were built by trainees at the apprentices' training school at Crewe as an exercise in locomotive engineering. It is proposed to promote the construction of other models by apprentices which

will serve the dual purpose of enriching the collection and providing a valuable means of training.

A small gallery entitled 'London on Wheels' contains models of now quaint buses and trams which were once a familiar sight on London streets. Among them are Shillibeer's horse-bus of 1829 (the first in London), the Tilling 'knifeboard' horse-bus of 1851 with its 'decency screens' to hide the ladies' petticoats, and the London General Omnibus Company's garden-seat horse-bus of 1886. Dolls dressed delightfully in crinolines and other picturesque costumes of the periods represent the passengers.

There is a small 'theatre' where visitors can see film strips of locomotives, omnibuses and other transport subjects projected on the screens of four rotorvisors. There is also a cinema screen for showing films made by the British Transport film unit.

The main gallery will be the highlight of the museum for most visitors. Here the numerous models include historic locomotives, rolling stock, cross-channel steamers and canal vessels. Large collections of interesting railway tickets and passes are shown, many handwritten in the days before printed tickets were introduced. Of particular interest are models of the locomotive 'Wildfire', built by Robert Stephenson in 1837 for

the Grand Junction Railway, and the L.N.W.R. paddle steamer 'Rose' which was built in 1876 for the Holyhead and Dublin service. There is also a working model of the Stephenson link-motion — which controls the expansion of steam in locomotive cylinders and is still used in British locomotives today.

Among a display of intriguing railway notices is one dated 1835 in which the Newcastle & Carlisle Railway Company threatened seven years' deportation for anyone damaging the railway, a warning, which though drastic, might well deter the perpetrators of similar offences nowadays.

The museum is open to the public from 10.0 a.m. to 5.30 p.m. on weekdays, and the admission price is 1s. for adults and 6d. for children. It should appeal to people of all ages.

### ANSWERS TO QUIZ (see page 260)

1. (a) Picture rail, (b) Chair rail, (c) Wainscot; 2. Centering; 3. A — Lintel, B — Head of Frame, C — Top rail of casement sash, D — Stile of sash, E — Bottom rail of sash, F — Frame, G — Transome light, H — Casement sash, I — Transome, J — Glazing Bars, K — Sill; 4. Collar.



# 'Spinning Wheel' Table Lamp

THE idea for a model of an old-fashioned spinning wheel was sent by a reader of our publications, who, although 76 years old enjoys working on these fascinating projects.

To make it a utilitarian and practical subject as well as a modelling project, we have incorporated the spinning wheel idea into a modern table lamp, the illumination from which will show up the details of this old-time work machine, besides providing a soothing light for reading, etc.

As can be seen from the illustration, the lampshade is of simple design, which can be elaborated on if necessary. But keen modellers will no doubt derive extreme satisfaction in making the spinning wheel, which incidentally has moving parts. The lamp base is 10 in. by 5 in. and stands 9 in. high. It is therefore ideal for use on the sideboard or television.

## Shaping the parts

For the spinning wheel itself, all parts are shown full size on the design sheet. These should be traced and transferred to the appropriate thicknesses of wood and cut out neatly with a fretsaw. Clean up all parts thoroughly with glasspaper and shape those for which sections are shown. For instance, the main wheel (piece 5) is grooved around the circumference with modelling knife, round file or glasspaper wrapped round a piece of dowel rod. Similarly the spokes are shaped and rounded as indicated. Other parts needing to be shaped are detailed

on the design sheet.

Make a start on assembling the spinning wheel by locating the three legs (11) into the base (1) in the holes already prepared. Next the treadle mechanism has to be made up from two pieces 12, piece 13 and piece 14 as seen on the design sheet. Piece 13 (axle) will be a loose fit in pieces 12, and the foot treadle (14) will be fixed by glue to the axle. Slide the pieces 12 on to the two legs as shown, and then cap the model with piece 2 so as to make the structure rigid. The legs can now be glued in place top and bottom.

Next add piece 3 to piece 2 in the position shown by dotted lines on the design sheet. Pieces 4 can now be glued in the slots on either side of piece 3. Make sure these arms are sloping in the correct direction as shown. On the other end of piece 2 add three pieces 15 which are glued together as shown in the detail on the design sheet. To the outsides, glue pieces 16, making sure that the holes for the axle (17) are at the top and level with each other. The axle is inserted through one of these holes and two pieces 18 and one piece 19 are threaded on. Note that wire will already have been added to piece 19. The axle is then inserted through the other piece (16) and glued in position.

Piece 20 can now be added in the slot provided in piece 2 with the addition of pieces 21 and 22.

Now make up the wheel detail which is shown at the bottom of the design sheet. The axle goes through the holes in piece 4 with the wheel in between. A

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 ★ Hobbies Kit No. 3424 for making ★  
 ★ the 'Spinning Wheel' Table Lamp ★  
 ★ contains panels of wood, round ★  
 ★ rod, wire, thonging, parchment, ★  
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washer (piece 8) is glued to one end of the axle and the other end is glued in piece 6. A smaller axle (piece 10) is glued in the other hole in piece 6. Slide on one end of piece 7 and glue another washer (8) to the end of the axle.

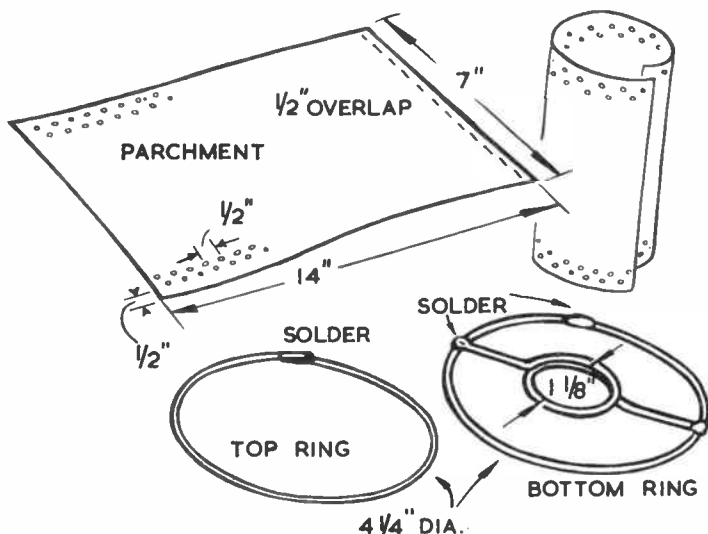
The other end of piece 7 is slid on to the rounded projection on the treadle (14) and held in place by further washer. Note that pressure on the treadle turns the wheel via the connecting rod (7). When the action is working smoothly the spinning wheel can be stained and varnished, or painted as desired ready for mounting on the main base of the lamp.

## The lamps

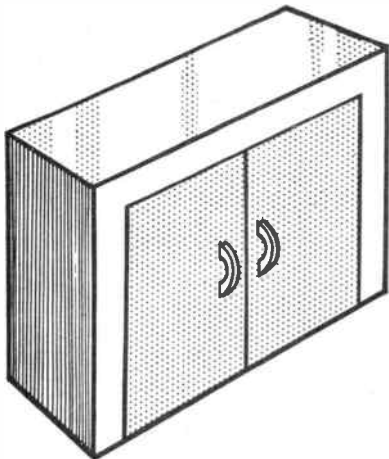
Details of the makeup of the lamp itself are shown in the accompanying illustration. Top and bottom foundation rings are made from medium gauge wire, which is formed and soldered where indicated. The shade is of parchment in which holes are punched for threading with plastic thonging to the rings.

Finish the lamp base (23) as desired, and glue on the spinning wheel in the position shown by dotted lines. Then add the nipple to the base and screw on the bulb holder to which the bottom ring of the shade is fixed. A groove for taking the flex can be made underneath the base, or alternatively three rubber feet can be added to raise it from the table.

Next week's issue will contain full size plans for making a novel game of 'Animal Quits'. Make sure of your copy of 'Hobbies Weekly' by placing a firm order with your newsagent.



# CABINET FOR THE KITCHEN WALL



**T**HE tidy housewife likes everything to be stored away in its proper place, and out of sight, but since most kitchens are too small to accommodate extra floor cabinets, this often means that wall cabinets have to be fixed.

The construction of wall cabinets varies a little, but even so, they are simple to make, and can be successfully tackled by the average home craftsman. The illustration shows an attractive looking cabinet which can be finished in one evening without the use of any intricate woodworking joints or special tools.

The basic framework of the cabinet is shown in Fig. 1 without the side panels or doors. You will notice that the shelves form part of the frame. No measurements are given because this is a matter you can best arrange for yourself to suit your own needs and wall space available. Generally speaking, though, the shelves are obtained from 8 in. or 9 in. broad shelving,  $\frac{7}{8}$  in. thick. If you ask

your local supplier to give you proper shelving wood this will come ready planed and will require only to be cut to the desired lengths. Ensure that all three shelves are cut exactly to the same length and that the ends are perfectly square.

Two pieces of  $2\frac{1}{2}$  in. by  $\frac{7}{8}$  in. planed timber are used for the back members. The length of these should be the depth of the cabinet. Note also that notches  $2\frac{1}{2}$  in. by  $\frac{7}{8}$  in. are required to be cut out of the ends of the shelves in order that the back members will fit flush.

*By Finlay Kerr*

The front frame is made from 2 in. by  $\frac{3}{4}$  in. planed timber, and three pieces are needed for this; two sides and a top. These are jointed together to form the frame by using open half-lapped joints as shown in Fig. 2. To make this joint, half the thickness of the material is removed from each member so that when two pieces are fitted together they produce a flush surface on both sides. Secure the joints with a little adhesive and a few  $\frac{1}{2}$  in. wood screws (inserted from the back).

Assemble the framework, securing the members to each other with wood screws. Ensure that the framework is perfectly square, particularly the front opening which is to receive the doors. This can be done very easily by checking the diagonals with a timber lath. Place the lath across one diagonal

and mark on the position of the two corners. Repeat with the other diagonal, and if the framework is square the pencil marks on the lath will coincide with the other two corners.

The two side panels can be made from hardboard or plywood, and these can now be cut to size and fixed in position with a little adhesive and a few panel pins, the heads of which should be punched below the surface. Round off the exposed edges at the front with a light rub of fine glasspaper. A back panel can also be fitted if desired, but this is really not essential if the wall surface is in good condition, and you have no objection to it being seen from the inside of the cabinet.

One method for making the doors is to make a light framework of  $1\frac{1}{2}$  in. by  $\frac{1}{2}$  in. timber covered with hardboard or plywood. Alternatively use two pieces of  $\frac{3}{4}$  in. thick block boarding or multi-ply. If multi-ply is being used, then the width of each door should be made  $\frac{1}{4}$  in. less than that required to suit the opening. A strip of  $\frac{3}{8}$  in. by  $\frac{1}{4}$  in. wood should then be pinned on to the centre (or closing) edge. This conceals the open grain on the edge of the doors, and produces a more 'finished' appearance. Use brass butt hinges for hanging, and fix handles.

Fix the cabinet in its desired position on the wall by inserting screws through the two vertical back members or by using metal hangers. Paint to match the existing decorations of the kitchen.

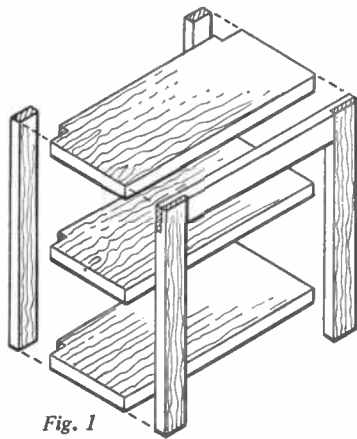


Fig. 1

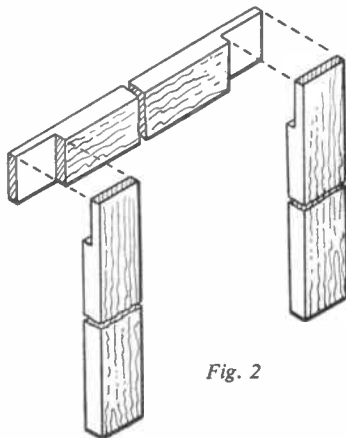


Fig. 2

## DOLL'S MIRRORS

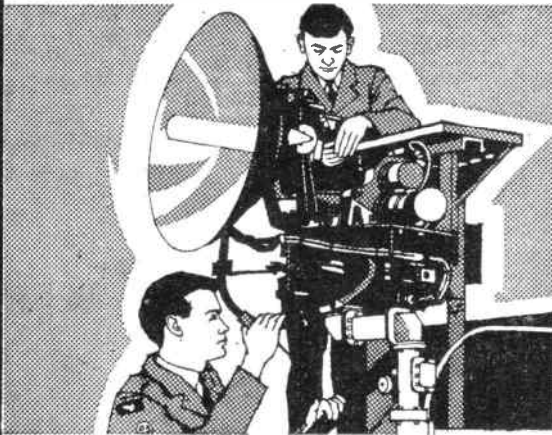
**H**ERE is a simple way of making your own toy hand mirrors and wall mirrors for adding to your doll's house furniture. Cut out the shape of the type of mirror you want from a piece of cardboard. If dad wants to help perhaps he can cut the shapes from a scrap piece of thin plywood. Make sure that the edges are smooth.

Once the desired shapes are cut obtain some silver paper and press this flat to remove all the creases. This may be done with an iron or by placing it between the pages of a heavy book. Attach the silver paper to the shapes, using a very thin paste.

Toy mirrors produced in this way can look very realistic if a little care is taken.

(F.K.)

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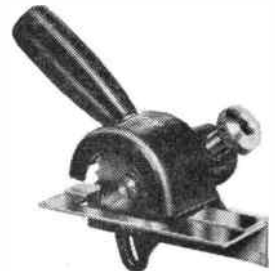
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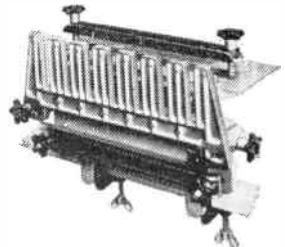
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# Replies to Readers

## Transistor-set Queries

I HAVE recently acquired a transistor radio kit, about 5½ in. by 3 in. by 1½ in., which I have made. It has three transistors and a diode. One problem is I cannot really separate the Home service from the Light service. I can pick up the transmissions alright, but when I have the

Letters seeking information on any of the subjects covered in this magazine are always welcome. It is our aim to help readers with their problems, which should be sent to the Editor, *Hobbies Weekly*, Dereham, Norfolk, with a stamped addressed envelope and reply coupon inside back page.

Light programme on, the Home service can be heard in the background. I am using a small 'trimming condenser' for tuning (250 pf.). Can you help me to solve this problem? Another problem is that of a high-pitched whistling noise I get on parts of the tuner. Can I get rid of it? Thirdly, I would like to fix a volume control switch on to the circuits. If this can be done where shall I take it from? (W.F. — West Hampstead).

THE circuit is one in which a small number of transistors are arranged to provide several stages (e.g. reflexed), and little can be done to remove the defects mentioned. Try adjusting L2 for best results. As there is no means of variable tuning in this coil, try to find a core setting which is best for the stations usually required. It might be possible to reduce whistles by adding a resistor of a few thousand ohms between diode positive and C2, but this will not improve volume. The effect of increasing the value of C2 might also be tried. If the receiver seems to be very unsatisfactory, write to its suppliers.

## Painting a Swimming Pool

I WANT to paint a swimming pool 15 ft. by 7 ft. by 3 ft. 6 in. cement walls and bottom. The cement has not been sealed, and is not very smooth. Your advice would be more than appreciated. (B.D. — Bridgend).

PAINT will not smooth the surface of concrete to any appreciable extent. It is not usual to paint concrete which is to hold water, but you might

find it satisfactory to first get the concrete dry, and treat it with a waterproofing solution such as 'Kuro', followed by at least two coats of a marine quality paint, which can be bought from a yacht chandler.

## Interference from Ultra-shorts

I CONSTRUCTED an Ultra-Short Wave receiver, and was quite satisfied with the results obtained. The stations I picked up included transmissions from West Riding Police and Fire Services, and BBC television. However, I later found out that it was impossible to watch BBC television whilst my Ultra-Short Wave receiver was operating. Could you please advise me on this point? (A.O. — Wakefield).

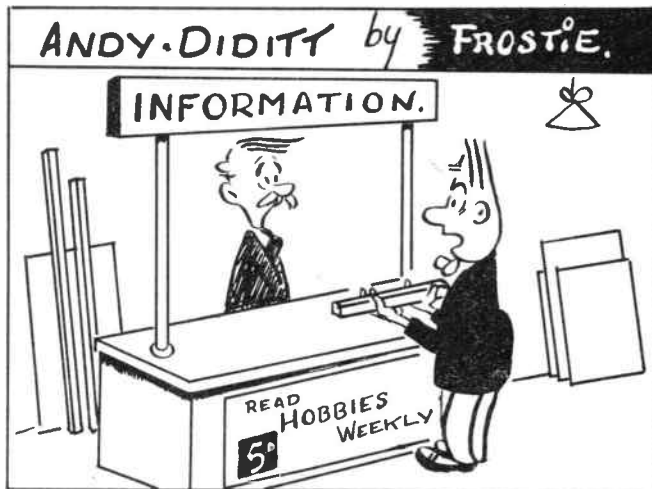
WHEN a regenerative receiver is oscillating, it radiates a weak signal, and this may in some cases cause TV interference. When the receiver design is such that regeneration is essential, this defect can only be cured by using a radio frequency amplifier stage. This stage may be tuned or untuned, and is placed between aerial and detector, so that oscillations generated in the detector no longer reach the aerial. If the receiver is very

near a TV set, it may also be necessary to enclose the regenerative receiver in a metal cabinet or screening box.

## Suppressors for 1 h.p. Motor

I HAVE adapted an old Hobbies fret-machine to work as a lens grinder. I have fitted a quarter h.p. G.E.C. brush type electric motor but it upsets all radio and television belonging to my neighbours. I wish to fit a suppressor but am told that those sold in the shops are only suitable for sewing machine motors and vacuum cleaners. My motor runs on 230 volts, takes 1 ampere, and will run for two hours nicely without getting hot. Please can you describe to me how to make two of the small chokes, one for each brush and how many turns and gauge to go on ¼ in. polystyrene tubes? I have several small condensers I could use from 30 pF. up to 4,000 pF. if these are suitable. (R.B. — Droylsden).

SUPPRESSOR condensers are usually around 0.05µF, but the 4,000pF (0.004µF) condensers might be sufficient. As they are to hand, they can easily be tried. For the chokes, 20 S.W.G. wire should suffice, if a little ventilation is possible. It may be found that condensers alone suffice. It may help to wire further condensers across the mains lead, at the outlet plug; or from each main to earth. Try various earths, if possible. If chokes are necessary, about 100 turns wound in solenoid form should suffice. Avoid stray capacity across the chokes (which will allow interference to pass). If interference is very bad, a fully screened suppressor will be needed, and this will have to be in a separate metal box.



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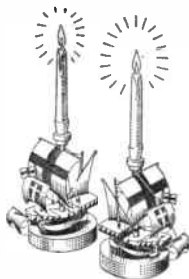
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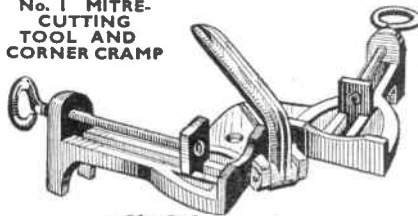
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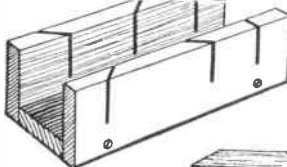
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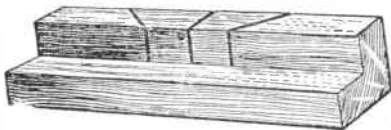
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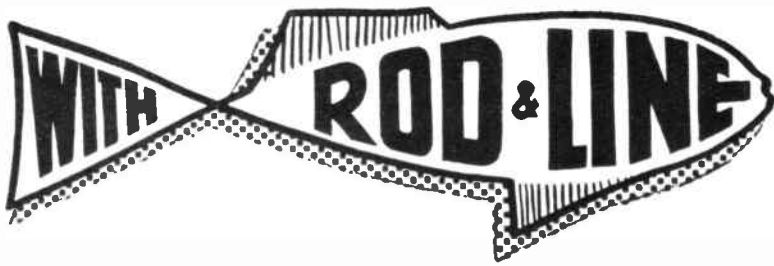
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**M**EETING all kinds of anglers in my trips around the country, I have often been in discussions about bait for sea fishing, and have heard the point raised many times, that one does not have to trouble whether or not the bait is fresh. I strongly disagree with this view, and think that baits should always be fresh. In any case, as such they are certainly far more pleasant to handle.

When on a fishing trip I always find time to walk along and watch other anglers, and for more years than I care to remember, I have yet to see ground-baiting done by sea fishermen except, of course, the odd one here and there, or when out shark fishing. I have also heard this point raised on many occasions, and the argument is that whilst groundbait is an essential with freshwater anglers it is unnecessary when fishing in the sea. To my mind nothing could be further from the truth. The point these chaps try to make is that it is impossible to overfish the sea, and here again I strongly disagree.

Look out to sea from the end of a pier, and there's a terrific area of scores and scores of square miles of unfished water, but we are not interested in that. We

are, however, interested in the fishy population of the water around the pier or just off the rocks and beaches wherever we happen to be fishing.

The number of anglers on a pier who

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## MORE ADVICE ON SEA FISHING *By 'Kingfisher'*

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come away fishless is a pointer that fish are not packed down below just waiting for the angler's bait. To my mind you have to approach this matter from the fish's point of view. He's looking for food and your bait is an infinitesimal bit of food laid on the sea bed. You hope a fish will come along and take it. If it doesn't, the usual excuse is that conditions of the weather, the tide or anything which can be quickly thought of are the reasons why you have a blank day.

This is about 90 per cent all wrong. There may have been fish a few yards away, but your bait was passed unnoticed. Had you been dropping in a few bits of mashed-up fish from time to time the fish would have seen this, and taken notice. Moreover, these bits being carried about by the current would have come to the notice of fish a bit further afield, and soon you could quite possibly have had a lot of fish in your area down below. Then your chances of taking some of them would have been considerably increased.

In your walk along a pier there's another thing to notice — the number of anglers who put out their bait, clip a bell on the rod top, and wait for results. Lazy fishing, I call it. Imagine the bait on the sea bed. The various cross currents are moving the sand about until eventually your bait may be buried under quite a layer of sand. What fish has a chance of seeing it under those conditions?

The correct method is to cast out. Then, in a few minutes, draw in a yard of line so that your bait is kept clear of sand covering, and is visible all the time. Obviously the bit of trouble taken has increased your chances of taking fish, rather than the chap who lives in hope the while he is chatting to other anglers, but doing nothing towards getting the fish towards his bait.

You can go along with the most expensive tackle it is possible to buy. But it's like having an expensive car — you still have to come down to basic facts. Your Rolls will require petrol just the same as an old vintage model. In the same way your expensive tackle is no better than the cheapest if you don't use it right.

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## TIPS AND HINTS

**B**EFORE you toss away crown bottle tops, take out the cork inserts. These have many practical household applications. They can be stuck to flower bowls to save scratching table tops, or stuck on to the bathroom door knob to prevent the knob damaging the plaster on the wall.

### Cutting a bolt

Ever tried to hacksaw through a bolt or a piece of rod whilst holding it in a vice? It usually loosens and twists, ruining the cut. Slip two pieces of scrap wood about 1 in. square between the vice jaws and draw up tight. With a brace and bit (a size smaller than the bolt or bar) drill a hole between the two pieces of wood. Open the vice slightly, insert bolt, and retighten jaws. Cutting will then be easy. This also prevents damage to the

work due to the vice jaws biting into the work.

### Antique finish

To obtain an antique finish on wood carvings, ordinary shoe polish gives beautiful results. The best colours to use are oxblood and mahogany. Rub the polish well into the grain of the wood, then give a brisk polish with a clean soft cloth.

### Mending tears in plastic

Tears in plastic raincoats, car-seat covers and other plastic sheet products can be repaired with a welded seam. Separate sheets can be joined in the same way. Place aluminium foil on both sides of the overlap and run a hot soldering iron quickly along it in one stroke. The foil (which can be reused) prevents burning and helps to distribute the heat to fuse the plastic together.

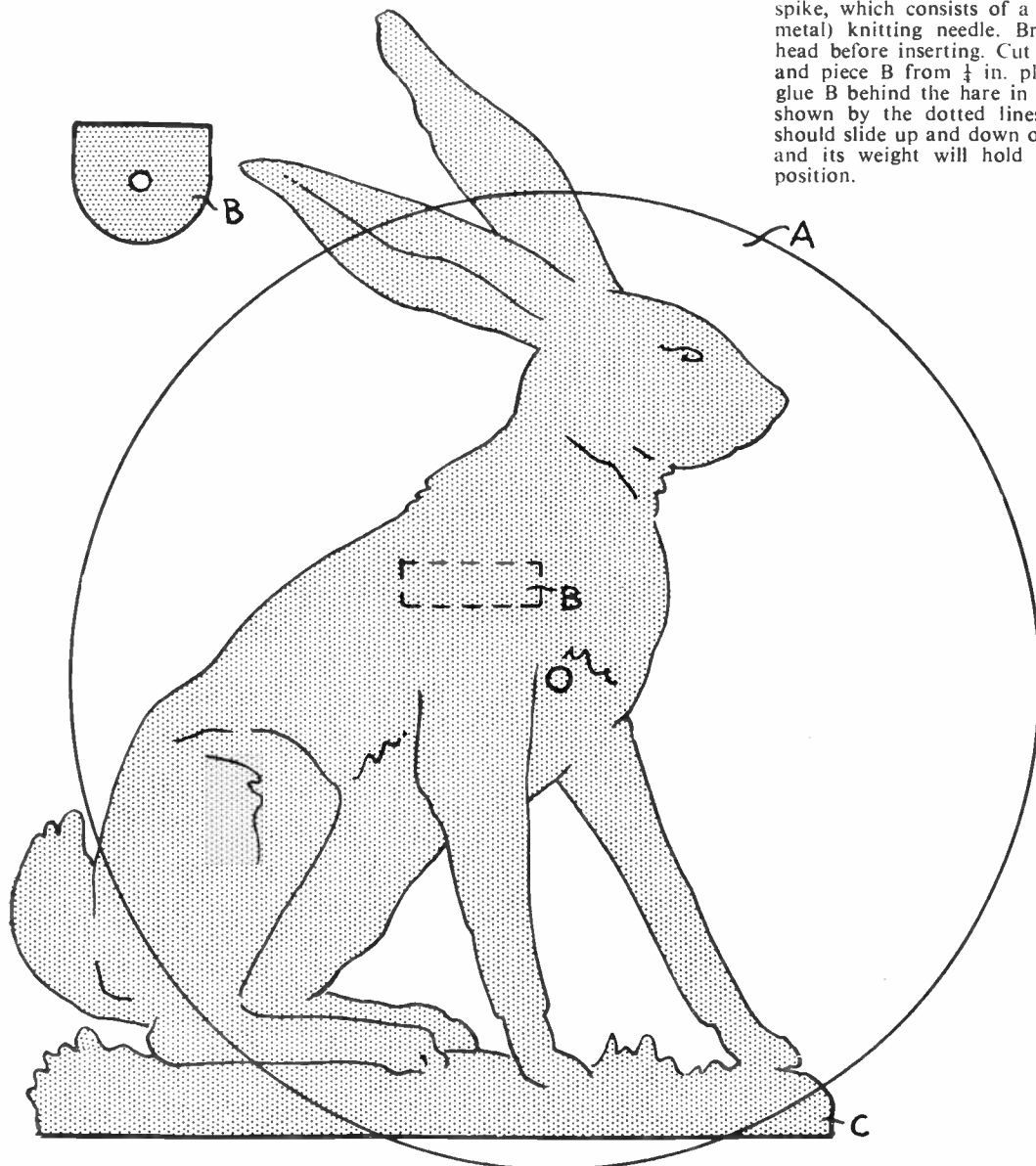


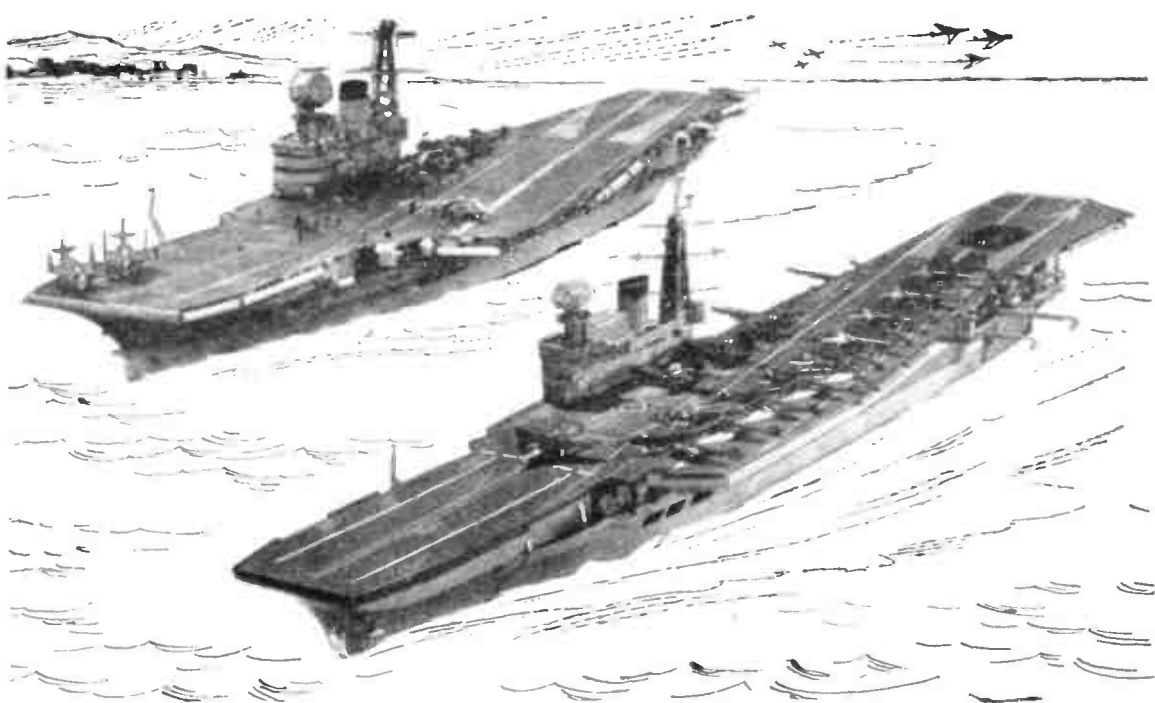
*Winners in 5 classes of a model maker's competition organised in Bristol by Hobbies branch at 65 Fairfax Street*



# 'HARRY HARE' BILL SPIKE

CUT the base A from  $\frac{1}{2}$  in. wood, using a fretsaw, and clean up the edges with glasspaper. Drill a hole in the centre of piece A to take the spike, which consists of a plastic (not metal) knitting needle. Break off the head before inserting. Cut the hare C, and piece B from  $\frac{1}{4}$  in. plywood, and glue B behind the hare in the position shown by the dotted lines. The hare should slide up and down on the spike, and its weight will hold the bills in position. (M.p.)





## Just like the real thing!

Believe it or not, the nearer one is the Airfix model of H.M.S. "Victorious", 1/600th scale (Kit 6/-). Behind it is a picture of the real thing.

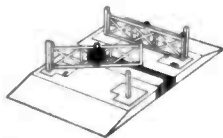
That's how wonderfully realistic Airfix models are. Close attention to every detail gives them their faithful-to-the-original look—makes them true collector's pieces. And every Airfix series is to a constant scale. This means Airfix models look proportionally right, one against another, because they *are* right! You can't beat Airfix for realism—or value.

# AIRFIX

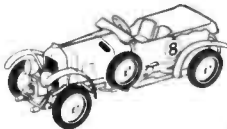
## Constant Scale Construction Kits

From Model & Hobby Shops, Toy Shops, and F. W. Woolworth

There are over 125 Airfix models from 2/- to 10/6.



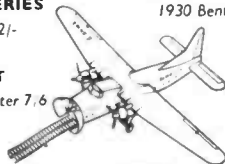
**TRACKSIDE SERIES**  
Level Crossing 2/-



**VINTAGE CARS**  
1930 Bentley 2/-



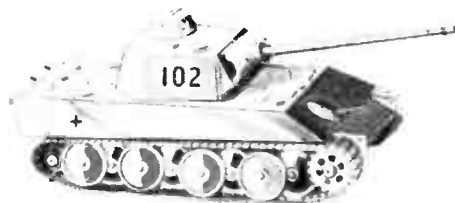
**MODEL FIGURES**  
Lifeguard 2/-



**AIRCRAFT**  
Bristol Superfreighter 7/6

## STOP PRESS!

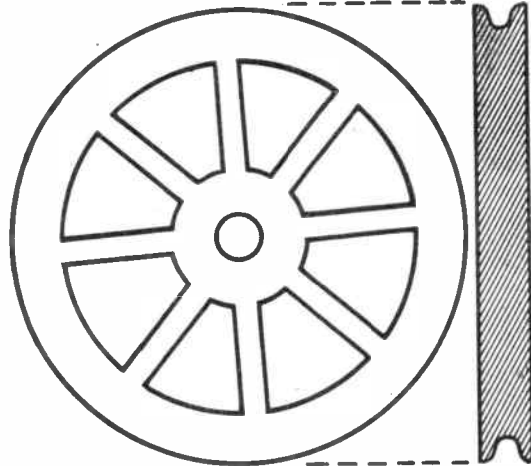
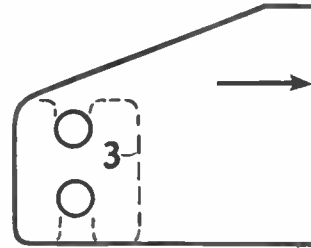
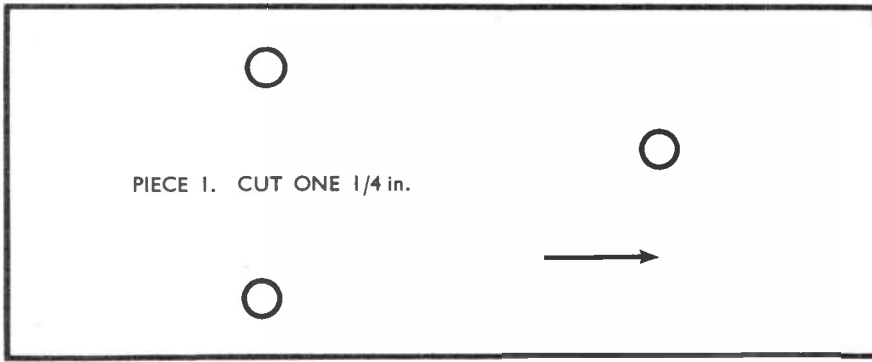
### Latest Airfix Production



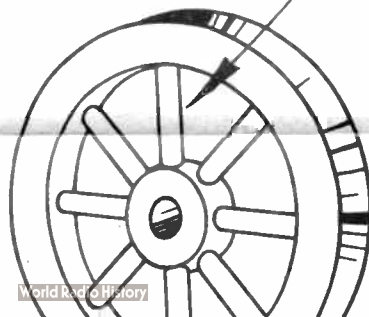
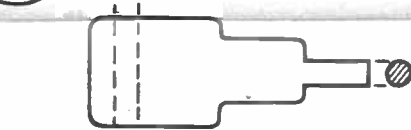
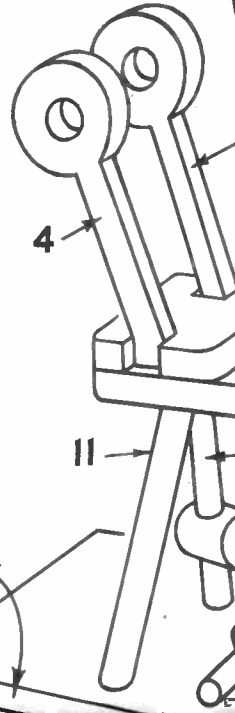
### THE 'PANTHER'

This magnificently detailed model, the first of ANOTHER new AIRFIX series of OO & HO scale models. Fully revolving turret with 75 mm. cannon and 62-piece working track gear, six-piece transfer set of red code letters and black German crosses. 77-part kit . . . 2/-

Also new: H.M.S. 'Daring', another addition to the Airfix British Warship Series. 1/600 scale. 60-part kit . . . 2/-



ROUND SPOKES WITH SHARP PENKNIFE





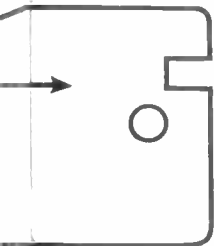


DESIGN

No. 3424

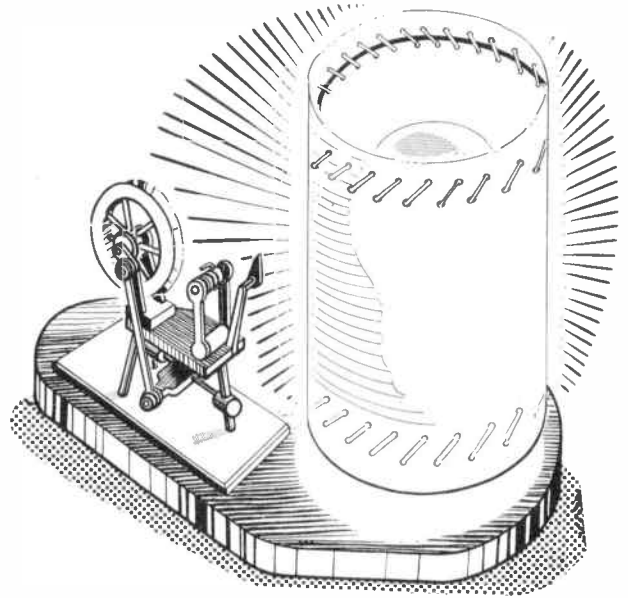
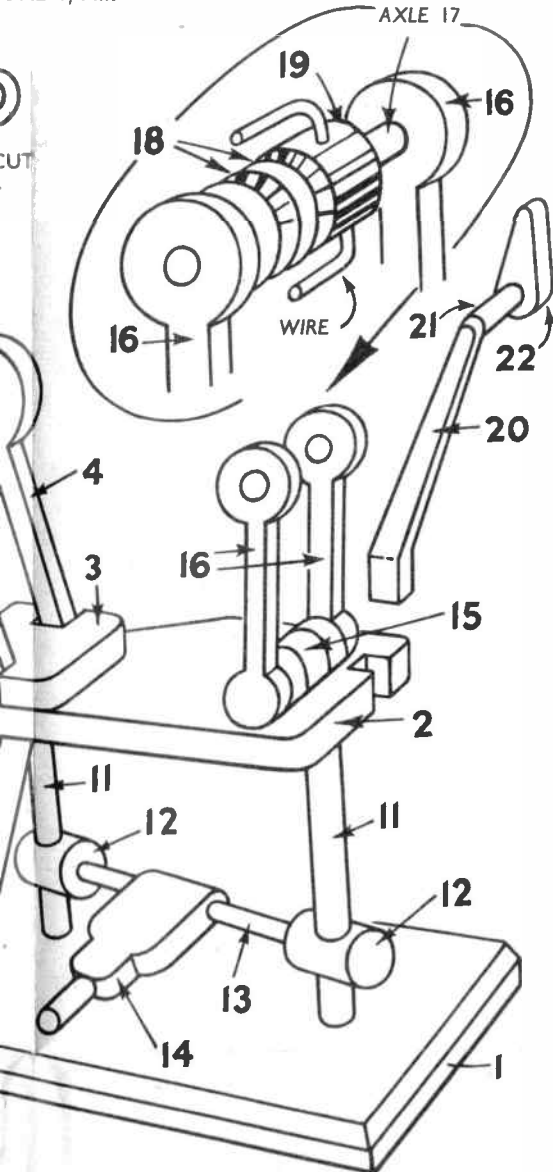
# 'THE SPINNING WHEEL' TABLE LAMP

SIZE: 10 ins. BY 5 ins. BY APPROX. 9 ins. HIGH.



PIECE 3. CUT ONE 1/4 in.

CUT ONE 1/4 in.



A KIT OF MATERIALS FOR MAKING THIS DESIGN IS SUPPLIED BY HOBBIES LIMITED, DEREHAM, NORFOLK. PRICE ON APPLICATION.

Use **CASCAMITE**  
'One Shot'  
Resin Glue  
for all Wood Gluing



- Mixed & use cold
- Waterproof type
- Gap-filling and non-staining

Obtainable in:  
3½-oz.; 7-oz.  
and 18-oz. tins.

Manufactured by:

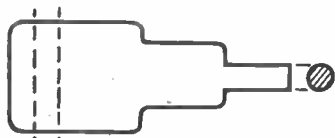
LEICESTER, LOVELL & CO. LTD. North Baddesley, Southampton

ROD.



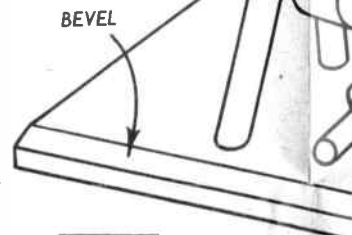
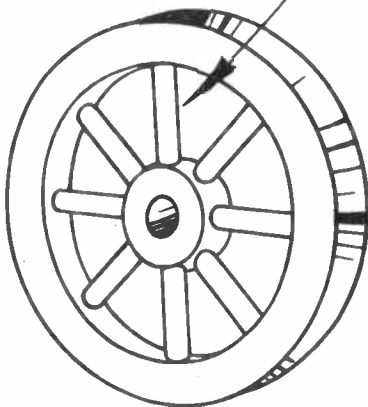
World Radio Histor

PIECES 11. CUT THREE  
3/16 in. ROUND ROD.



DRILL TO  
TAKE 13

PIECE 14. CUT  
ONE 1/4 in.



PIECES 12. CUT  
TWO 3/8 in. ROUND ROD.  
DOTTED LINES INDICATE  
DRILL HOLES.

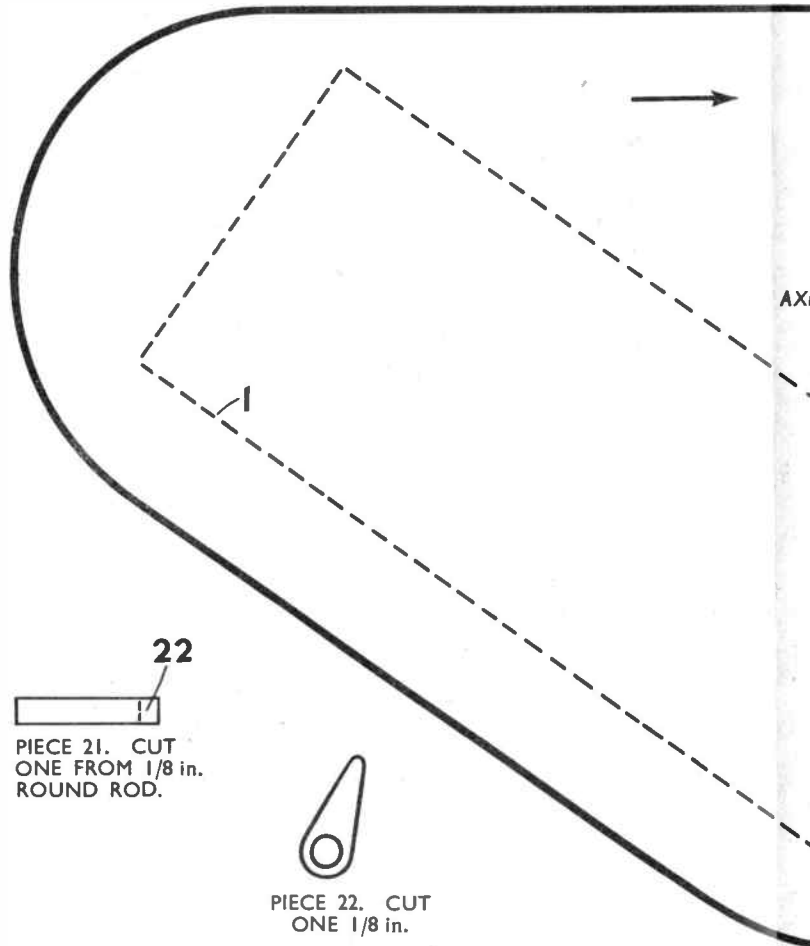
PIECES 15. CUT  
THREE 1/4 in. GLUE  
TOGETHER.



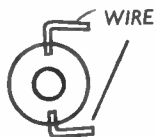
PIECES 16. CUT TWO  
1/8 in.



PIECE 17. CUT ONE 1/8 in.  
ROUND ROD.



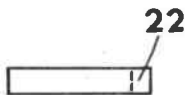
PIECES 18.  
CUT TWO 1/8 in.



PIECE 19. CUT  
ONE 1/4 in.



PIECE 20.  
CUT ONE  
1/8 in.

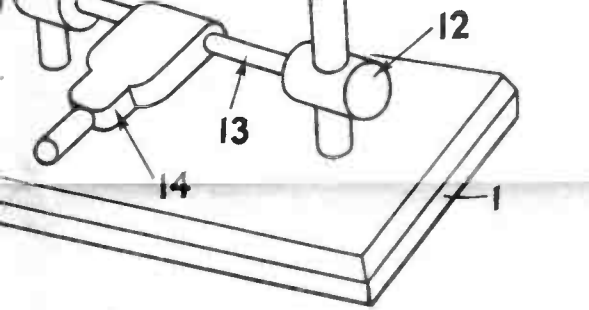


PIECE 21. CUT  
ONE FROM 1/8 in.  
ROUND ROD.

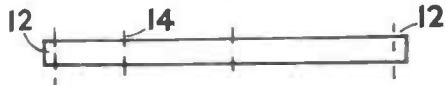


PIECE 22. CUT  
ONE 1/8 in.

PRINTED IN ENGLAND.



ROD.  
TE



PIECE 13. CUT ONE 1/8 in.  
DIA. ROUND ROD.

Use **CASCAMITE**  
‘One Shot’  
Resin Glue  
for all Wood Gluing



- Mixed & use cold
- Waterproof type
- Gap-filling and non-staining

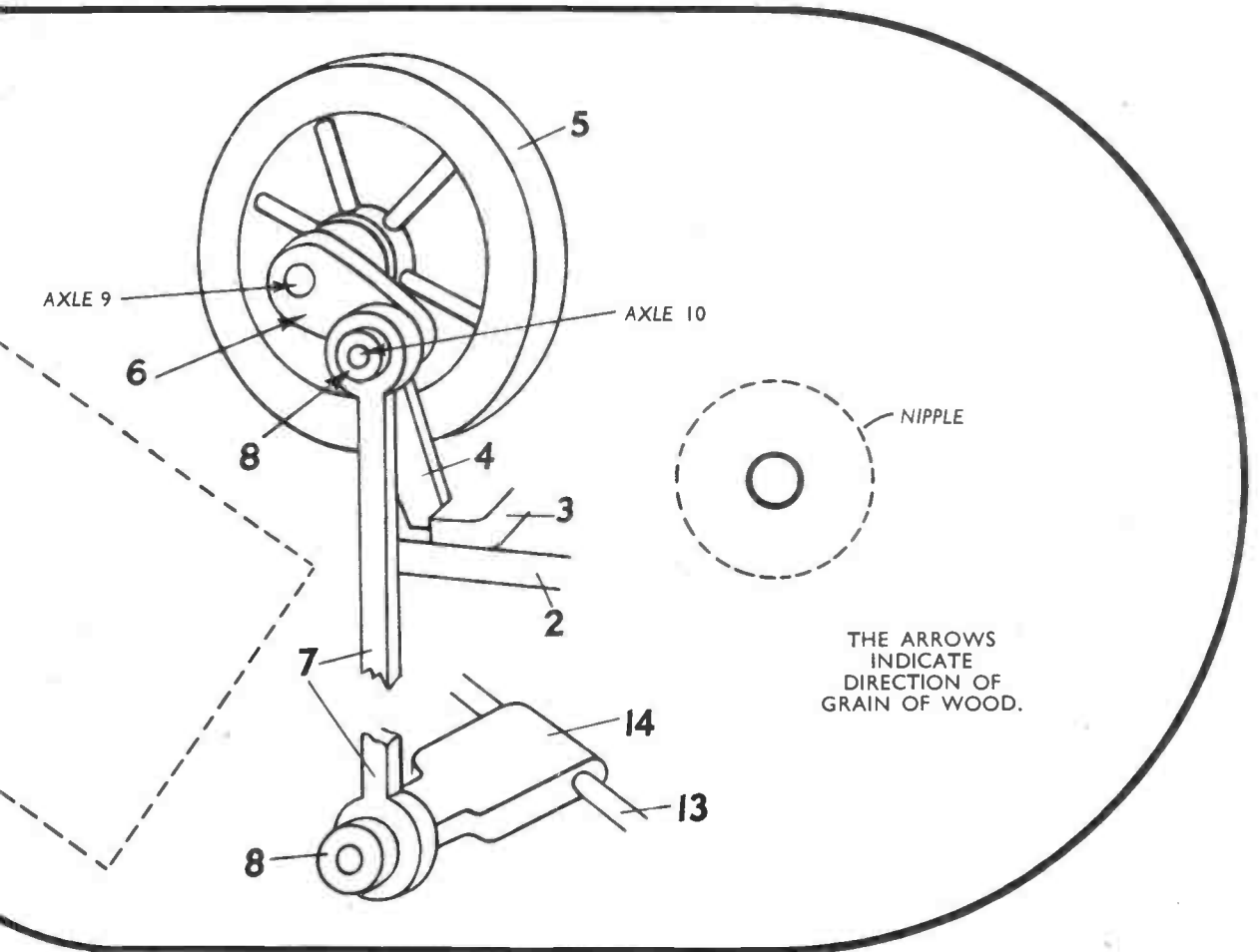
Obtainable in:  
3½-oz.; 7-oz.  
and 18-oz. tins.

Stocked by: Ironmongers, Builders' Merchants, etc.

Manufactured by:

**LEICESTER, LOVELL & CO. LTD.** North Baddesley, Southampton

BASE 23. CUT ONE 1/2 in.



LAND.