

HOBBIES

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A dual-purpose Bench and Chest



FOR CRAFTSMEN OF ALL AGES

6^p



THE bird-watcher in winter cannot fail to be interested in looking for the many species that visit Britain's woods, marshes, and hedgerows.

The **Bramblings** or **Bramble-finches** in the young trees in the plantations are worth noting. They come from Norway to enjoy the ripe beechnuts and other food, so if you live near a beech wood that is a likely spot to see them. The Brambling often mixes with the flocks of bachelor finches, such as the **Chaffinch**. You may easily distinguish between the two. The Brambling is recognized by the white patch just above the tail, displayed when the bird is flying.

Foreign **Goldcrests** journey across the North Sea to spend winter here, traveling 300 miles or more. If you live within reach of fir woods you may see the wee bird. It is recognised by its small size and the crest or crown of golden-yellow on the head bounded on either side by a black streak. There are white bars on the wings, plainly visible in flight. A flock of Goldcrests fill the winter copse with eager shrill call-notes as they quest for food, 'tsit, tsit' echoes their needle-like efforts. Most of them return overseas in spring, but some will stay and breed here.

'Gipsy migrants'

Also, while among the firs and conifers look out for the **Crossbills**, members of the finch family. These handsome 'parrot-like' birds come to Britain from parts of Scandinavia during winter months. Keep a special watch for them as they are worth seeing. Crossbills have beak-tips that overlap, enabling them to extract seeds from the pine cones, their special diet, to obtain which they often hang upside-down like tits. The male is handsome, with bright red plumage, and the female has greenish-yellow feathers.

They wander about the countryside a lot, 'here today, gone tomorrow'. Some people refer to them as 'gipsy migrants' owing to their wandering habits.

The pretty **Redwing** is another winter visitor, a lovely bird with a ruddy patch of feathers on the flanks — a notable feature as the bird expands its wings to fly up from the ground. The wings are not red, as one might surmise from its name. Sometimes, on a mild day, the Redwing warbles a sweet, low song.

Then we have the **Fieldfares** from Norway. These are the biggest members of the thrush family, very handsome, with auburn mantle and general plumage of grey and buff, black and white, in contrasting shades. You may watch for these fine birds and hear their characteristic 'chak-chak-chak'.



STILL another interesting winter bird is the **Snow-bunting**, which, on arrival in this country, is of sober, mottled plumage, but as winter develops changes its feathering to a much lighter colour, often pure white. But you have to visit the moors and hilly countryside to come across these pretty creatures.

A further visitor to our hedgerows and coppices is the pretty little **Siskin**, a bird which roams about in small flocks, haunting the alders by the riverside, where they feed on the kernels of the catkins. It is a pleasure, indeed, to watch a party flickering about the black boughs and naked twigs like bright green-olive and yellow canaries, their gay colouring showing up in contrast. The cocks are very striking with their gold-banded wings, yellow rumps, and greenish backs. As they flutter about the trees, they utter snatches of linnet-like notes ending in a rather drawn-out 'tsy-e-e'. Siskins are erratic visitors, some years fairly plentiful, other seasons scarce. It is a red-letter entry for your diary when you see a party of these gay-hued birds on a winter day.

The songsters

Although the number of birds that indulge in winter song can be counted on your fingers, they are worth notice. The warbling of a bird at such a time is one of the most delightful sounds that fall upon the ear of a bird-lover. Here are the most noticeable winter singers; **Misselthrush**, **Song thrush**, **Starling**, **Robin**, **Wren**, **Dipper** or **Water Ouzel** (a bird of the stream-side), and occasionally the **Hedge-sparrow**. Of course, many other birds utter their call-notes, and **Goldfinches** twitter sweetly as they wander about the banks where seeded heads of weeds provide food. There are the calls of **Tits** in the garden and orchard, where they inspect every tree and fruit bush for scraps to eat.

But real song is scarce during winter. The **Robin** will give good measure, so will the **Dipper**, but you will need to go to the hillside stream to hear him, for he is a bird of the wilderness. The **Dipper** tunes into the metallic flow of the rock-strewn beck, raising his notes above the gurgle and splash of the fretting water.

In mid-winter, too, you will at times hear the **Misselthrush**, or **Stormcock**, singing from the uppermost boughs of the tall elm tree, defying the wintry wind. It takes a lot to dishearten him from throwing forth his clarion notes, just as the **Starling** on the chimney-pot defies the blast and chitters and whistles in rain and sleet, frost and snow. The little **Wren**, too, is a persistent winter songster and will sing undismayed.

(E)



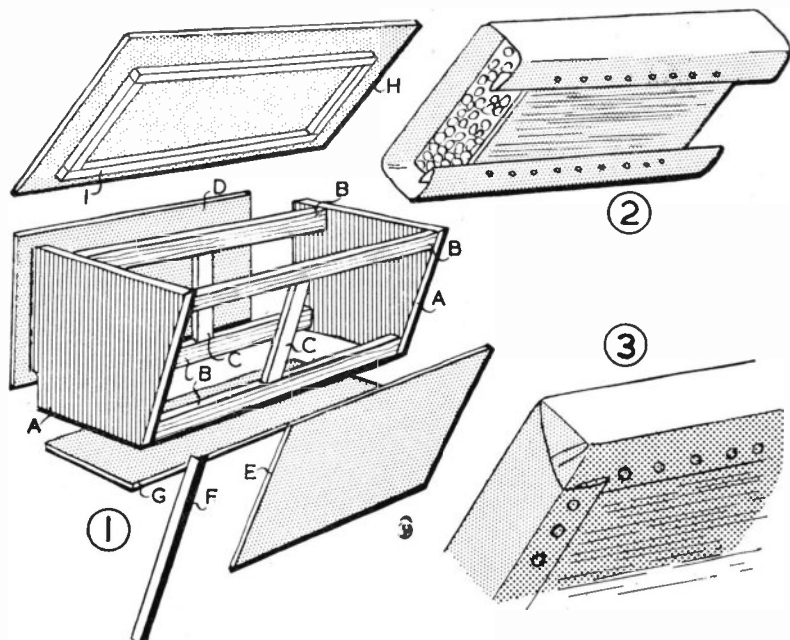
chipboard, and measures 46 in. by 20 in. A frame of 1 in. square stripwood on the underside of the lid I forms a lip to locate it squarely on the frame of the seat. The rear edge of the lid must be flush with the back of the base; it projects at each side and at the front.

The seat is padded with a 1 in. thick piece of foam rubber, the same size as the seat top. It is covered with leather-grained P.V.C. sheeting usually used for upholstery work. The front edge of the sheet is secured with upholstery tacks on the underside, then the rear edge is similarly treated Fig. 2, so that the rubber padding is held firm but not compressed. The ends are folded in and the short sides are then tacked in place. Fig. 3.

The width of the material after it is folded over and tacked on the underside should be slightly less than 1 in., so that it does not come into contact with the wood of the frame when the lid is closed. The set-in framework at the rear enables the material to clear it on the rear edge. The one point to watch is that the tacks are not driven in at the point where the lid rests on the projecting rear corners of the chipboard ends.

The base is painted inside and out with emulsion or oil paint, as is the underside of the lid, and the seat is ready for use. The dimensions given here can, of course, be altered to suit the length and sill height of any particular window.

By A. Liston



IN most houses, extra storage space is always welcome, and the fitting shown here is both a bench window seat and a capacious chest.

The method of construction, which is simple and straight-forward, is shown in Fig. 1. The two ends A are made of $\frac{1}{2}$ in. thick chipboard. They are 12 in. high and 19 in. wide, tapering by 2 in. down their front edges to a width of 17 in. at the bottom. A cut-out section at the rear accommodates the skirting board and allows the seat to fit snugly against the wall. Four 42 in. lengths of 2 in. by 1 in. wood B are screwed to the end pieces, the ones at the rear being set forward 1 in. from the rear edge.

Two upright supports C also of 2 in. by 1 in. wood, are fitted, and the back D, is a 12 in. by 42 in. piece of hardboard or thin plywood. The front panel E is also of hardboard or plywood. It should cover the front edges of the chipboard and so is 43 $\frac{1}{2}$ in. long, and 12 in. high. It is pinned and glued in place, and the corners finished off with wood or plastic edging F which can either be glued, pinned, or, if plastic, held with upholstery tacks.

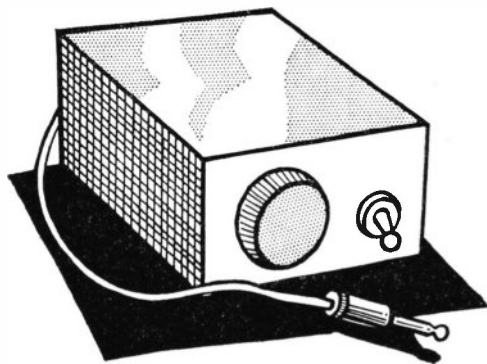
The plywood base G is then screwed in place; it is 43 $\frac{1}{2}$ in. long, and as it must not protrude into the skirting-board cut-out, its depth depends on the size of this cut-out.

The lift-off lid H is made from $\frac{1}{2}$ in. thick

Make this Radio Feeder

For Amplifier or TAPE RECORDER

Described by
'Radio Mech'



A GOOD deal of interest can be obtained by recording programmes from the radio, and the feeder described here is intended for this purpose. It is, of course, possible to make recordings of radio programmes by placing the tape recorder microphone near the radio receiver loudspeaker. This is very straightforward, but has the disadvantage that some distortion is introduced by the loudspeaker, and microphone.

To avoid this difficulty, a tuning unit can be employed to feed the tape recorder direct, without any loudspeaker or microphone being in circuit. Recordings of very good quality are obtainable in this way.

The feeder unit described here has a single transistor, and this will give enough output in very many parts of the country. The feeder is not intended for reception of overseas or very distant stations, but can easily provide a strong enough signal from local stations.

The circuit is shown in Fig. 1, and is intended for an OC71 transistor. Other kinds of audio frequency transistors will work instead, and can be used if to hand. A small dry battery of 3V. to 9V. provides current, and will have a very long life. The voltage is not important, and 3V. or 4.5V. may easily give enough volume in some localities. More than 9V. should not be used.

An ordinary medium wave tuning coil is satisfactory. A coil can be wound with 32 s.w.g. enamelled wire, on a 1 in. diameter former, if preferred. Referring to Fig. 1, 40 turns of the wire are wound on, side by side, between points 1 and 2. A space of about $\frac{1}{8}$ in. is then left, and 75 turns are wound on, also side by side, between points 3 and 4. The wire ends can be left long enough to reach the various components.

Assembly

The diode should be of good quality, either new, or tested. The resistor values should be reasonably near those given. The condenser values are, however, much

less critical. In the $5\mu\text{F}$ position anything from $2\mu\text{F}$ to $8\mu\text{F}$ may be used. The $50\mu\text{F}$ condenser could equally well be $25\mu\text{F}$ or $100\mu\text{F}$. Both these condensers are low voltage, miniature transistor type components. The $0.1\mu\text{F}$ condenser is a normal paper type, of about 150V. to 250V. or so rating.

In the diagrams, C shows the transistor Collector, B the Base, and E the Emitter wires. With the OC71 transistor, a red dot marks the Collector, as in Fig. 2. Leave the wires their full length, and make the soldered joints quickly, with a really hot iron, so that the transistor itself is not heated. It should not be necessary to keep the iron in contact with the joint for longer than a second or so. Cored solder is most convenient for all joints, and it is applied to the joint at the same time as the heated iron.

Lengthy heating of the other components should also be avoided, es-

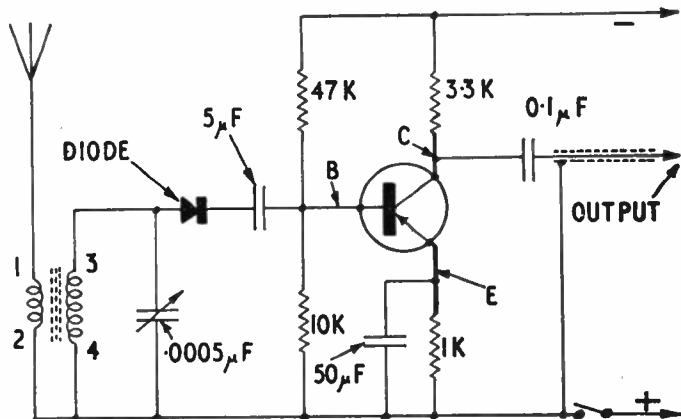


Fig. 1—Feeder circuit

All the parts are mounted on a small insulated baseboard, as shown in Fig. 2. A small panel holds the switch and $0.0005\mu\text{F}$ tuning condenser. At the other end of the baseboard, a twin socket strip is screwed.

The coil tags in Fig. 2 are numbered to agree with Fig. 1. If a ready made coil is used, the tags may be in different positions. If so, simply connect the tuned winding (3 and 4) to the tuning condenser, and the aerial coupling winding (1 and 2) to aerial and earth circuits.

Small transistor type condensers usually have a rim near the positive end of the condenser will bear positive and negative markings. Wire these items as in Fig. 2. The $0.1\mu\text{F}$ condenser, and all resistors, may be wired in either way round.

pecially when wiring in the diode.

The screened lead is best kept reasonably short, and reaches from the feeder to the tape recorder. The correct type or jack plug should be obtained, so that this can be inserted in the microphone or radio tuner socket of the recorder. The centre, insulated lead in the screened cable passes to the tip of the jack plug, while the woven metal braiding forms the stem, or outer, connection. At the feeder end, the lead is held by a small clip, as shown. The braiding is pulled to one side for 1 in. or so, and the strands twisted together, and soldered to a lead going to the earth circuit. The inner, insulated lead is connected to the $0.1\mu\text{F}$ condenser.

The battery may be a miniature transistor receiver type, or a torch or

flashlamp battery can be used. The battery leads must be joined up in the correct polarity. Receiver batteries have the polarity marked on them. Flashlamp batteries are not usually marked in this way, but the zinc case is negative.

The battery voltage can be chosen to suit the volume required, as mentioned. There is no point in using a 9V. battery if a 4.5V. or 3V. battery will suffice, because this is likely to increase background noise. A clip is cut to hold the battery in place.

Using the feeder

If the recorder has a socket marked for use with a radio tuner, this will probably prove best. If there are alternative microphone input sockets, try these to find which is most satisfactory.

If the recorder has a switch giving 'straight through' operation, the radio programme can be checked by listening with the recorder loudspeaker. This also allows tuning to be adjusted. If there is no provision for working in this way, the best solution is to listen to the signal obtained, by connecting phones across the jack plug.

When the station is correctly tuned in, the recording level is adjusted by means of the tape recorder volume control, exactly as when recording from a microphone. Some recorders are so made that the signal can be heard on the loudspeaker, while being recorded, and this is a convenient method.

In most cases no earth will be necessary. If one is available, it can be taken to the E socket of the feeder. An earth may be worthwhile in some localities,

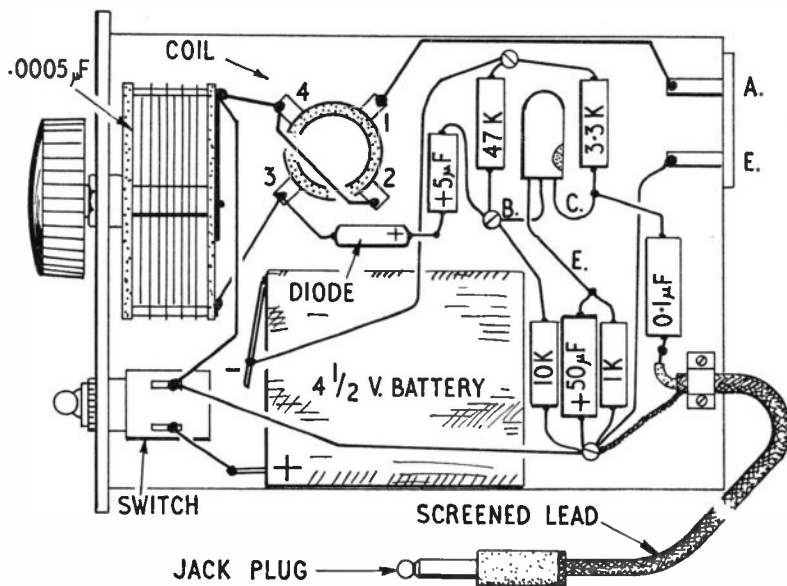


Fig. 2—Parts and wiring plan

to reduce interference, or improve signal strength.

An aerial is required, but the type of aerial necessary will depend on the strength of the local station, and the sensitivity of the recorder. In many

areas, a simple or temporary indoor aerial will be sufficient. Elsewhere, an outdoor aerial may be needed. An elaborate aerial is not likely to prove necessary, so the wire can be of any reasonable length, supported by two or three insulators.

Use as receiver

The feeder can be used as a 1-transistor receiver, and can give very good headphone reception. If the unit is to be employed for this purpose only, omit the 3.3K resistor, 0.1µF condenser, and screened lead and jack plug. The phones are then connected from the transistor collector C to battery negative. Two terminals or sockets can be provided for this purpose.

If the feeder is normally used with a tape recorder, but is occasionally used for headphone listening simply connect the phones to the tip and stem of the jack plug. This is most readily done by connecting the phones to a spare socket, into which the plug is inserted. It is then possible to remove or connect the phones at once.

A small case to take the feeder can be made from thin wood. Clearance holes for the jack plug and lead, and aerial and earth socket plugs, should be provided. The completed unit can then be inserted in the case from the front.



"I'M AFRAID THAT IS NOT FOR SALE SIR!"

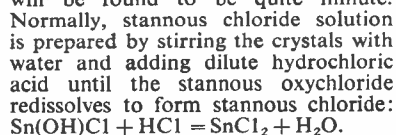
CHEMISTRY

AT HOME

MOST experiments require that stannous chloride, $\text{SnCl}_2 \cdot 2\text{H}_2\text{O}$, be in solution. It is here that new acquaintances of stannous chloride may be baffled, for on attempting to dissolve it in water the crystals break down into a white insoluble powder. This is due to decomposition by the water, H_2O , forming hydrochloric acid, HCl , and insoluble stannous oxychloride, Sn(OH)Cl :

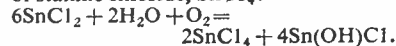


This, however, occurs only to a very small extent, the bulk of the stannous chloride passing into solution. This may be confirmed by stirring 10 grams of stannous chloride with 100 ml. of water, allowing to stand overnight, filtering off the stannous oxychloride, washing and drying it in the filter, when the amount will be found to be quite minute. Normally, stannous chloride solution is prepared by stirring the crystals with water and adding dilute hydrochloric acid until the stannous oxychloride redissolves to form stannous chloride:



but for the purposes of the following experiments the solution filtered from the stannous oxychloride will serve well enough.

If, however, the solution is to be kept for more than a week, acid should be added to clear and a small piece of metallic tin added, otherwise the oxygen, O_2 , of the air will cause precipitation of stannous oxychloride and also formation of stannic chloride, SnCl_4 :



STANNOUS CHLORIDE EXPERIMENTS

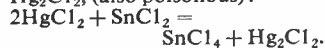
By L. A. Fantozzi

The hydrochloric acid hinders formation of stannous oxychloride and the tin reduces any stannic chloride back to stannous chloride:



This tendency of stannous chloride to pass into stannic chloride indicates reducing properties. These are amply confirmed by simple experiments.

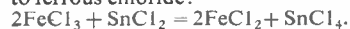
Put a little solution of mercuric chloride, HgCl_2 , (poisonous) into a test tube. Add a few drops of stannous chloride solution. A white precipitate appears. The mercuric chloride has been reduced to insoluble mercurous chloride, Hg_2Cl_2 , (also poisonous):



Warm the mixture and add further small quantities of stannous chloride solution. The precipitate turns almost black owing to further reduction of the mercurous chloride to metallic mercury,

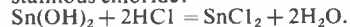


Ferric salts, too, are reduced to ferrous salts. To a little solution of ferric chloride, FeCl_3 , in a test tube add a few drops of dilute hydrochloric acid and warm the mixture. Note the orange-yellow colour of the ferric chloride. Drop by drop add stannous chloride solution. The orange-yellow colour is discharged owing to reduction of the ferric chloride to ferrous chloride:

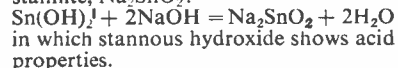


A further example of reductions may be seen with the product of the next experiment. To stannous chloride add a solution of sodium hydroxide, NaOH , drop by drop. A white precipitate of stannous hydroxide, Sn(OH)_2 , appears: $\text{SnCl}_2 + 2\text{NaOH} = \text{Sn(OH)}_2 + 2\text{NaCl}$ (sodium chloride).

Divide the mixture into two halves. To one add dilute hydrochloric acid. The stannous hydroxide redissolves, forming stannous chloride:

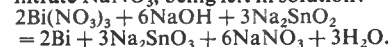


To the other half add more sodium hydroxide solution. Here, too, the precipitate redissolves, forming sodium stannite, Na_2SnO_2 :



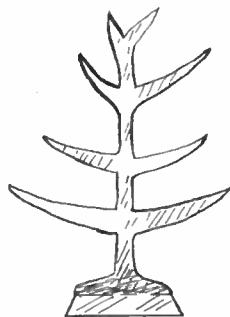
This strange behaviour of a substance behaving as a base to acids and as an acid to bases is not uncommon with oxides and hydroxides of some metals. Such substances are said to be amphoteric.

The solution of sodium stannite may now be used to show a further reduction reaction, in which by reducing another substance the sodium stannite oxidises itself to sodium stannate, Na_2SnO_3 . Add some sodium hydroxide solution to the sodium stannite and then some solution of bismuth nitrate, $\text{Bi(NO}_3)_3 \cdot 5\text{H}_2\text{O}$. The bismuth nitrate is reduced to metallic bismuth, Bi , which appears as a black precipitate, sodium stannate and sodium nitrate NaNO_3 , being left in solution:

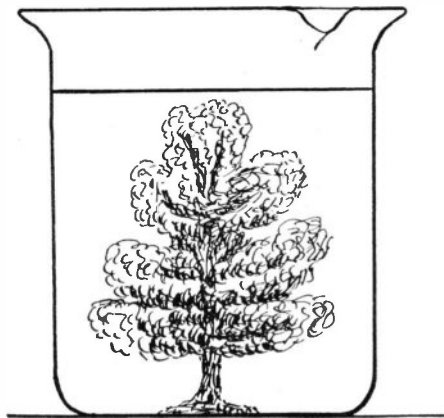


Though we think of tin as a white metal, as foil, in block, or granulated, it can be produced as leaf-like crystals and as a mossy growth. Zinc, Zn , and stannous chloride are all that are needed to carry out a quite beautiful experiment.

From a small sheet of zinc cut a skeleton outline of a tree, bending the branches so as to give a three-dimensional effect. Cut the foot of the trunk broadly as in the diagram and bend it at right-angles to form a stand. Put this in a 100 ml. beaker containing a filtered solution of 4 grams of stannous chloride in 80 ml. of water.



ZINC SKELETON



Grow a 'tin' tree

● Continued on page 23 I

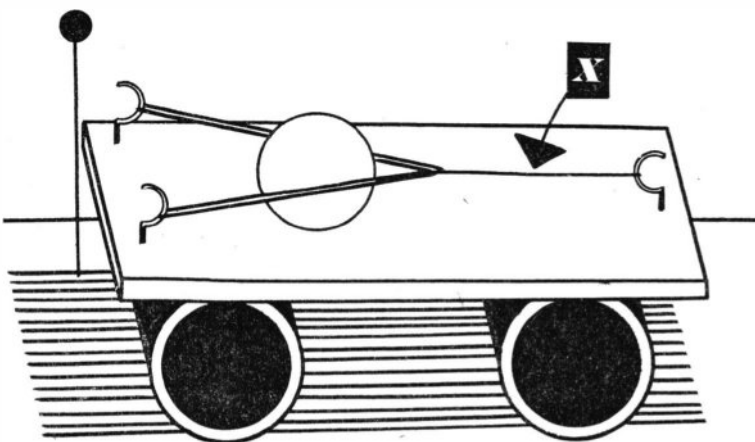
RECOIL DRIVES THIS TROLLEY

IN movies featuring old-time sea battles you can see how ancient ships' cannon were mounted on four wheels. When the guns fired, their carriages rolled back violently — so the gunners always needed to step aside, for safety. The guns were secured with ropes to prevent them reversing too far and thus damaging the ship. Recoil is the name given to the force which pushes backwards the instant a gun is fired.

To illustrate recoil, you can make a trolley that will roll backwards dramatically when an elastic catapult mounted upon it 'shoots' at a table tennis ball. Use a 3 in. by 9 in., thin plywood rectangle as your trolley base. Insert a ball-spaced pair of metal hooks at one end, and put a third hook in the middle of the opposite end. (See illustration.)

Loop a rubber band between the pair of hooks. Pull back the band, to apply tension to the rubber, and tie back the stretched band to the third hook, using a cotton thread. Place a table tennis ball between the V of the extended elastic. Rest the wooden base upon two similar tins. Do this in the middle of a table. You can employ a hatpin as a marker to indicate the position of the trolley front before the ball is fired.

To shoot the 'cannon ball', hold a



match flame underneath the cotton X. Instantly the cotton breaks and the ball is propelled forward by the elastic. At the same time the trolley recoils and the hatpin is left behind.

A scientist would say that the 'ball-propelling force' is the action, while the recoil is reaction. Explosive action propels a rifle bullet, while reaction to this force 'kicks back' the gun butt against a rifleman's shoulder.

Recoil drives a gun backwards when it shoots — but a rocket actually uses this principle. A machine gun mounted upon a light railway truck and firing continuously back along the track would propel the truck forwards. In the same way, the kick-back of reaction to the particles of hot gases roaring out below a rocket, drives the vehicle skywards. A rocket is driven by continuous recoil. (A.E.W.)

● Continued from page 230

Stannous Chloride Experiments

A grey mossy growth almost at once begins to clothe the branches. Soon, too, silvery leaves intersperse the mossy growth and the tree looks like a fairy tree in full summer splendour. Some of the zinc has changed places with the tin in the stannous chloride leaving zinc chloride, $ZnCl_2$, in solution:



There is no need to waste this tin. It may be used for the preparation of stannic chloride solution. Leave the zinc in the liquid until no more tin grows upon it. Rinse it off by means of a jet of water from your wash bottle, filter it off, wash it well on the filter and then let it dry.

In an evaporating basin on a sand bath warm gently 5 ml. of strong hydrochloric acid containing 2 drops of strong nitric acid, HNO_3 , (caution, both these acids are skin corrosives; any on the fingers should be flushed off with

water and wet sodium bicarbonate applied). Turn out the flame under the sand bath. Little by little add 1 gram of tin. When, but for a little black powder, it has all dissolved and effervescence has stopped, add 1 ml. of strong nitric acid and evaporate the liquid in the open air. During the evaporation a sudden brisk gas evolution takes place lasting a second or two. Continue the evaporation to about half the original volume. Then dilute to 30 ml. with water.

The nitric acid oxidises the tin to the stannic state and the sudden gas evolution is due to release of nitric oxide, NO :
 $3Sn + 4HNO_3 + 12HCl$
 $= 3SnCl_4 + 4NO + 8H_2O$.

The nitric oxide combines with atmospheric oxygen forming nitrogen peroxide, NO_2 : $2NO + O_2 = 2NO_2$. Nitrogen peroxide is harmful if breathed; hence the advisability of conducting the evaporation in the open air.

Miscellaneous Advertisements

A. I. Treadle Fretwork Machine. Perfect condition £6. Hutchins, 79 Westfield Road, Horbury, Yorkshire.

INDIA's largest hobby club provides congenial penfriends in all countries. Send self details to: **FRIENDS' WORLD**, postbox 708, Calcutta, India.

PENFRIENDS home and abroad, all ages: s.a.e. for details — European Friendship Society, Burnley, Lancs.

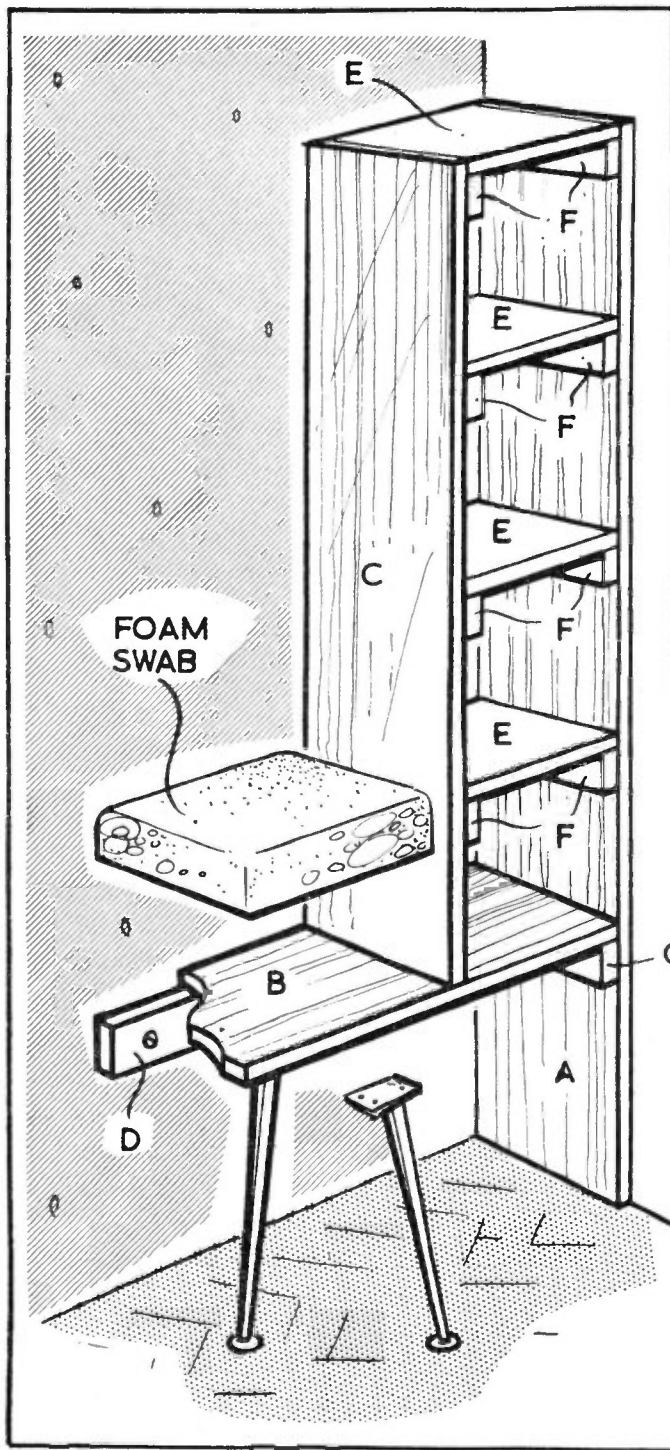
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UNDER 21? Penfriends anywhere — details free. — Teenage Club, Falcon House, Burnley.

ATTRACTIVE STAMPS from approvals, 3/6d. per 100. Satisfaction assured! "Brooklyn". Shore Road, Gronant, Prestatyn, Flint.

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Hall telephone seat/fitment



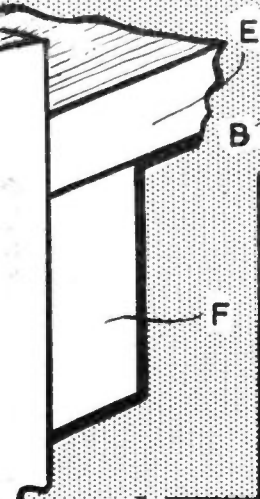
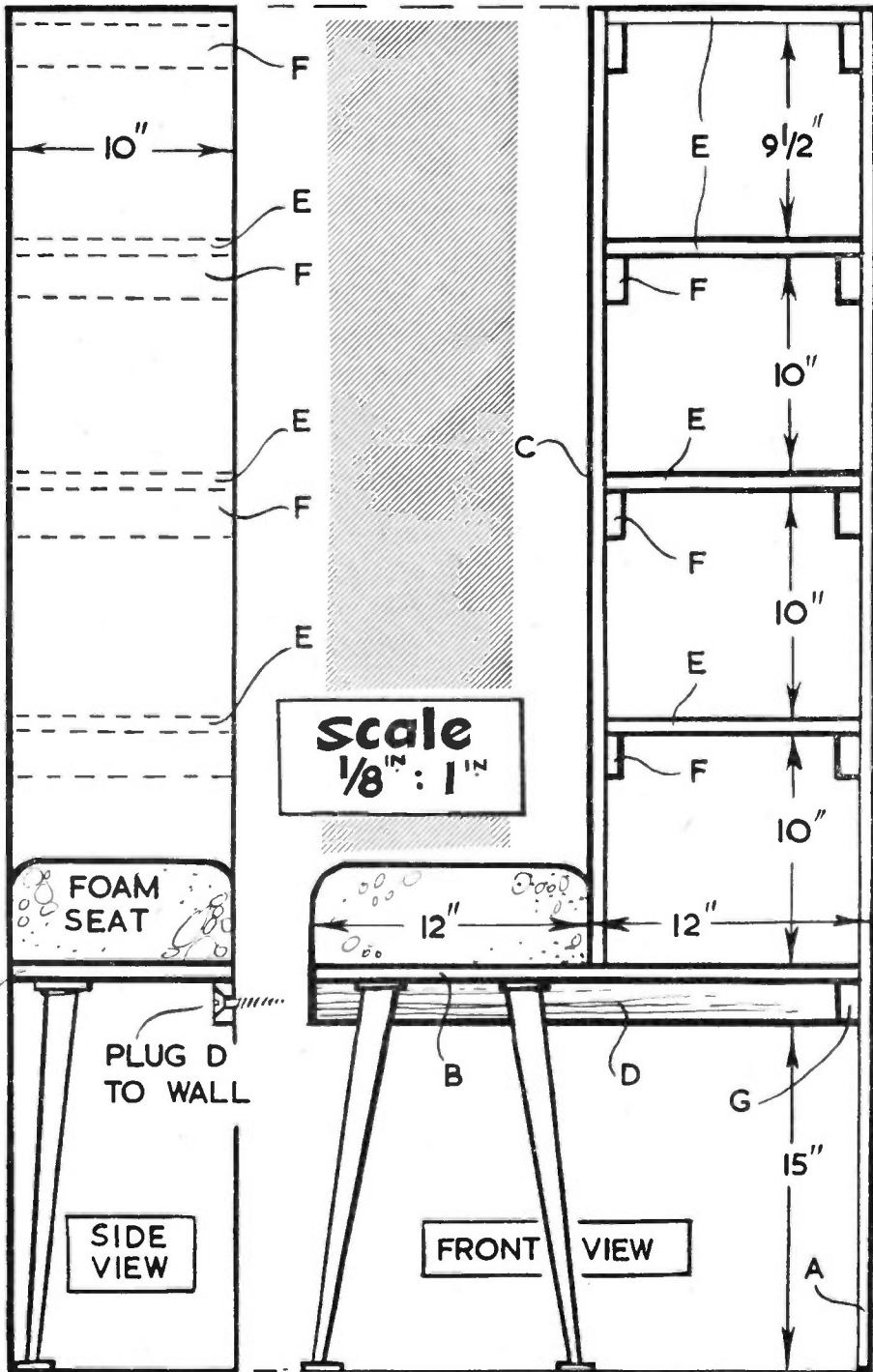
CUTTING LIST

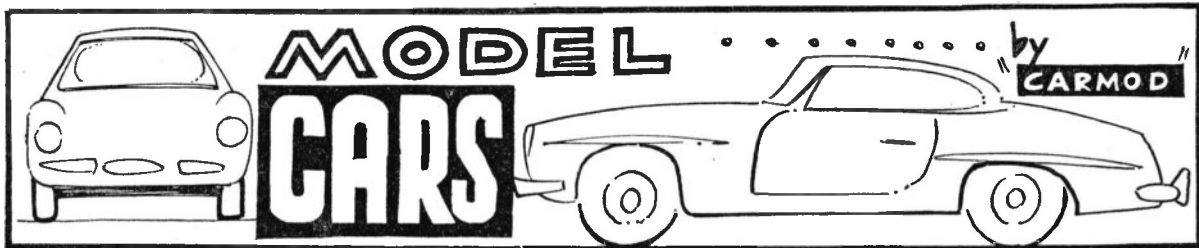
A	CUT ONE	59" X 10" X
B	CUT ONE	23 1/2" X 10"
C	CUT ONE	41 1/2" X 10"
D	CUT ONE	23 1/2" X 2"
E	CUT FOUR	11" X 10" X
F	CUT EIGHT	10" X 2" X
G	CUT ONE	9" X 2" X
		TWO 16" CONTEMPORARY L
		ONE PIECE FOAM 12" X 10"

COUNTERSINK SCREWS
AND FILL HOLES WITH
WOOD FILLER

hone ent

- X 1/2"
- 5" X 1/2"
- 5" X 1/2"
- 2" X 1"
- X 1/2"
- X 1"
- X 1"
- LEGS
- OX 4"





NEW TRANSFERS FOR CHOPPERS
I have been trying the first racing number transfers to be produced for collectors of die-cast miniatures.

These Marc Europa transfers are at present available in four sets:

Set A. 50 blank discs in white.

Set B. 80 black numerals for use with Set A. With this set it is possible to make up any two figure combination.

Set C. 88 white numerals and letters 'T' (for test cars).

Set D. Twelve 'PROVA MO 53' for use on model Ferrari cars.

Marc Europe transfers are available from most model shops. If any difficulty is experienced I shall be glad to pass on the address of the nearest stockist.

ONE of motoring's most illustrious marques — Mercers — were first made in 1911 at the factory of John A. Boebling, of Trenton, New Jersey. At once American sportsmen saw these cars as exceptionally well built, reliable machines, full of racing promise.

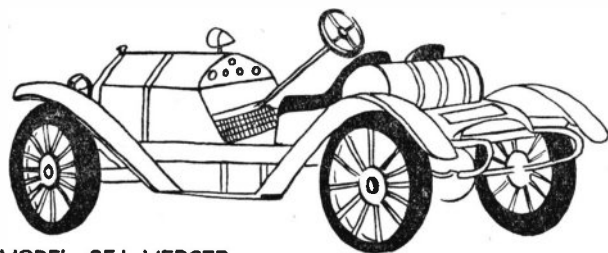
1911 was also the year in which the first Indianapolis 500 was held and it would be nice to think of a Mercer winning that event — unfortunately one came last. But the dishonour was soon vindicated in the hands of such drivers as the great Barney Oldfield and Spencer

Wishart.

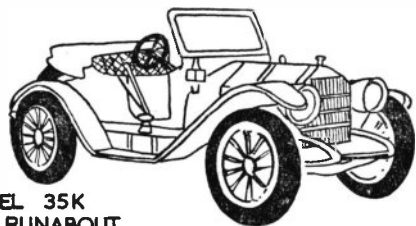
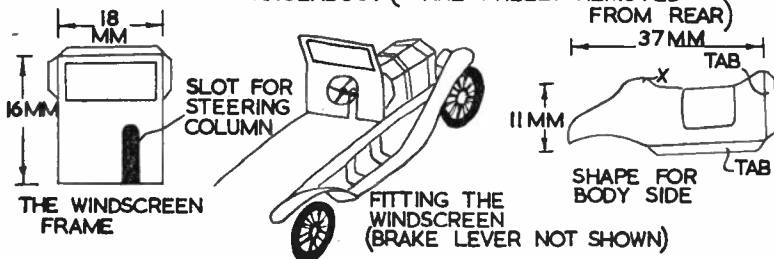
The most famous and remembered Mercer is undoubtedly the Raceabout which has been the subject of a number of American-made model kits and the fine little die-cast Model of Yesteryear by Lesney. But Mercer made other cars and it is well worth mentioning these, as listed by David Scott-Moncrieff in his book 'Veteran and Edwardian Motor Cars'.

- | | | | |
|--------------|------------------|------------------|--|
| 1911 | R Runabout. | 1913 | E Limousine. |
| R Raceabout. | G 4-seat Tourer. | H 5-seat Tourer. | J Raceabout |
| 1912 | A 4-seat Tourer. | B 5-seat Tourer. | C Raceabout. |
| D Runabout. | E Limousine. | F Racing Special | (First fitted detachable wire wheels). |
| K Runabout. | 1914 | H 4-seat Tourer. | M 5-seat Tourer. |
| J Raceabout | (Lesney Model). | J Raceabout. | O Runabout. |

THE MERCER RUNABOUT



1913 MODEL 35J MERCER RACEABOUT (SPARE WHEELS REMOVED FROM REAR)



1913 MODEL 35K MERCER RUNABOUT

For the subject of this chopping I have chosen the 1913 Type 35 K Runabout because of the relationship with the Lesney model of the Raceabout. It is a fairly easy conversion, although involving the building of a new body, as will be seen from the illustrations.

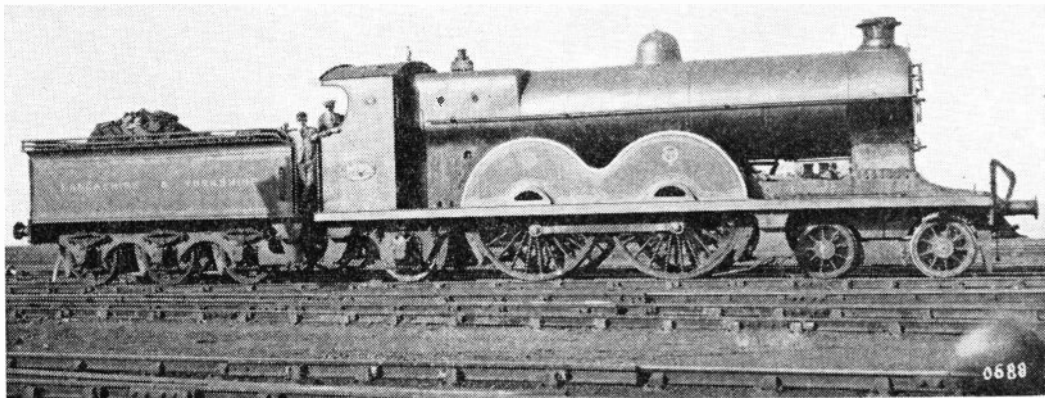
Stage 1. Remove the seat pedestal/petrol tank/tool box from the Lesney model of the Raceabout by drilling out the button ended peg on the underside of the car. Remove spot-light from the top of the bonnet by working it out with a pair of pliers.

Stage 2. Cut out from thin aluminium sheet the windscreen frame. Small tabs should be left on this frame to bend over and retain the windscreen which should be cut from clear plastic sheet, just large enough to cover the aperture. Place the frame in an upright position over the steering column and fill in the gap between the frame and the original dashboard with Plastone (first smearing the metal with Durafix). Fair in the filling to give a smooth line from the bonnet to the screen. Rake back the window part of the screen.

Stage 3. Cut from thin card two body sides to the shape shown. Bend in the

● Continued on page 235

THE L. & Y. R. 'HIGHFLIERS'



L. & Y. Railway. Sir John Aspinall's 7 ft. 3 in. 4-4-2 express locomotive No. 1398. Built 1899, Horwich

THE year 1899 was a memorable one for the Horwich works of the Lancashire & Yorkshire Railway. In May of that year Sir John Aspinall brought out his big 4-4-2 express engine No. 1400 which at the time carried the largest boiler of any locomotive in the country. No. 1400 was followed by a further 19 sisters in the same year, and in 1902 another 20 came out from Horwich, making a total of 40 engines in the class.

Although of the 4-4-2 wheel arrangement they could hardly be called true *Atlantic's*, as this type originated with outside cylinders and wide firebox. The 1400's are however noteworthy in being the only British 4-4-2 tender engines with inside cylinders.

A remarkable speed run was attained by No. 1392 when on 15th July 1899 this engine hauling a Liverpool-Southport express passed the seventeenth milepost from the start in 12½ mins., an average speed of 80 m.p.h. and was reported to have reached a maximum speed of 100 m.p.h. The class soon became colloquially known as the *Highfliers*, their high 7 ft. 3 in. diameter coupled wheels, neat and sleek outlines, and the unusual height of the boiler giving them a very fast running impression.

For the period they carried very generous dimensions. The cylinders were 19 in. diameter by 26 in. stroke with balanced slide valves above actuated by Joy's gear, the cylinders of the 20 engines of 1899 being steam jacketed. As first built the trailing wheels under the footplate had inside bearings with spiral springs on each side of the axle-boxes connected by a yoke above. In 1915-16

however, George Hughes who had succeeded Mr Aspinall as C.M.E., modified the trailing axle providing outside bearings as shown in the illustration.

The carrying wheel diameters were bogie 3 ft. 0¾ in. and trailing 3 ft. 7⅞ in., the throw of the coupling rods being only 10 in. The wheelbase was 5 ft. 6 in. + 7 ft. 5½ in. + 7 ft. 6 in. + 7 ft. 3½ in., total 27 ft. 9 in., the overhang being 2 ft. 1¼ in. at the front and 4 ft. 10½ in. at the back. Boiler diameter was 4 ft. 9 in. inside the front ring and 5 ft. 4⅞ in. outside the lagging plates. Length between tube-plates was 15 ft., the front plate being recessed 3 ft. 9½ in. behind the centre line of the chimney in order to provide a deep internal smokebox. The Belpaire

firebox had a narrow 7 ft. long grate the area being 26.05 sq. ft. The pressure was originally 175 lb. per sq. in. later increased to 180 lb. The boiler contained 239 tubes of 2 in. diameter giving a heating surface of 1,877 sq. ft., the direct stayed firebox provided 175.5 sq. ft. making the total 2,052.8 sq. ft.: its centre line was 8 ft. 11 in. above rails. Engine weight in working order was, on bogie 12.25 tons, on coupled wheels 35 tons and on trailing wheels 11.5 tons, total 58.75 tons. The bogies were originally of the swing link type but were later altered to the Adams sliding type. The engines were taken over by the L.M. & S.R. in 1923, but all were withdrawn by 1934. (A.J.R.)

● Continued from page 234

The Mercer Runabout

tabs and cement in place against the screen and to the floor. When hard, fill in the rear of the body with Plastone from the point marked 'X'. This filling should follow the lines of the body sides. Keeping this filling damp to prevent it from hardening, take off the two spare tyres from the rejected seat pedestal unit and saw off the spare tyre mounting. This can now be pressed into position with *one* spare tyre into the Plastone at the

rear of the car.

Stage 4. Remove the seats from the pedestal unit and cement into place against the Plastone. Finally, a representation of a folded hood can be made from Plastone and put into place behind the seats.

Optional colours are: Blue with white wings, yellow with black wings, dark grey with light grey wings, red with vermilion wings.

AGNES NESBIT of 327E. Victoria, No. 5 Santa Barbara, California 93101, U.S.A. collects bells. 'I have a Munchi Bell and am told that in India this bell is of importance; is this correct?' she asks.

In India it is the bell of the scholarly man, who writes letters for those who for some reason or another cannot write or those who have not had the good fortune to learn to read or write. He sits in the street on his stool, cross-legged, and with a bamboo pen over his right ear, under a protective umbrella or canopy. He has a small wooden desk containing writing paper, envelopes, stamps and India ink.

People from nearby villages and towns bring letters often bearing long awaited news. The Munshi translates them. After having read their letters, he listens carefully and writes the answers.

The Munshi also writes and interprets legal documents and acts as a change maker. For all this he charges a nominal fee. From time to time, when he is not busy, he puffs at his hooa (Oriental bubble pipe) and rings his musical little bell to let people know he is ready to do their work. The Munshi is a highly respected man in the community and loved by all children.

BORIS KHUN of Sadova 15/100, Liberec 5, Czechoslovakia, would like friends from all parts of the world. 'I collect match labels,' he says. But I also save postcards that illustrate crafts similar to the card I am sending which show glassware. Many of these cards are produced by factories to advertise their goods and can be obtained free. I have a large collection of them now and find this an interesting hobby.

TOPICS FOR COLLECTORS

WORLD-WIDE INTERESTS OF READERS

ALFRED B. M. SMITH of 2168 Round Top, Honolulu 14, Hawaii, collects match labels and would like friends with similar interests throughout the world.

KURT GOTTBRAH of 21b. Geseki W, Kapellenweg, West Germany, collects stamps and labels and has many for exchange.

HANS JOACHIM WINKELMANN of 14 Emserstr, Berlin-Neukolln, West Germany, also has many stamps, labels and cards for exchange.

J. SANCHEZ of Teresita Gonzalez Quevedo 15, Madrid, Spain, collects cigar bands and would like friends from any country.

Those who wish to exchange hotel labels should write to **PEDRO DE**

USSIA MUNOZ, Seca Velazquez 57, Madrid, Spain.

ROY CHAPPEL of 94 Cameron Road, Moreton, Cheshire, is another keen hotel label collector who would like to hear from fellow readers the world over.

'I'd like to tell you about our pencil and pen hobby we started two years ago,' writes **Mrs Dale** of Orpha, Moris, Stratton, Nebraska, U.S.A.

'We have over 300 now and enjoy the hobby more all the time. I have a good friend who helped me to start and keeps writing to me about the pencils. She has over 5,000. Our oldest boy has a collection of key chains and likes the ones that have a name and address on them. I prefer the pencils and pens with complete name and address. But I like novelty types. The pens need not be in working order as we want them for the name and address to see how many different ones we can collect.'

'Our middle boy collects marbles and is having a lot of fun. I'd be happy to exchange hobbies with anyone but right now I am running out of pencils to trade — can anyone help me here? We would like to get some key chains that look like a little book on the outside and have a row of views folded accordion style.'

MRS CAROL JONES of 3 River Road, Binghamton, New York 13745, U.S.A. collects patterns, pieced quilts and books, and would like to exchange such items with readers.

MRS MERRICK KJELDGAARD of 805 Fairview Avenue, Canon City, Colorado, U.S.A. collects stamps, crafts and antiques and would like friends from anywhere with similar interests.

For those readers who would like friends in Peru here are three contacts.

ROLLIN THORNE VALEGA, 14 Estudiante, Parque Dammert 140, San Isidro, Lima, Peru — Stamps, labels, records.

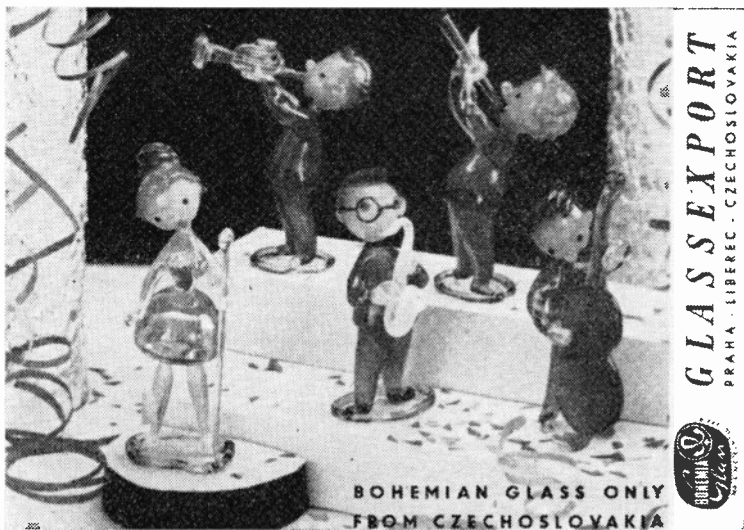
NICOLAS OSSIPPOFF, 14 Estudiante, Dalias 205, Miraflores, Lima, Peru — Stamps, labels and cards.

ALBERTO VELARDO GRAU, Francia 367, Miraflores, Lima, Peru — Stamps, beer labels.

MR W. H. BORDER of 59 Mill Road, North Hykeham, Near Lincoln, collects miniature wine bottles, dressed dolls in costumes, glassware and china. He has stamps and match labels for exchange.

BISHNU LAL SHRESTA of 113 Maru Pyaphal Tole, Bhuchhenkun, Kathmandu 14, Nepal, would like stamp exchanges from the world. Will send first day covers for stamps.

And a note for doll collectors — Remember that **MRS MAY DAVIES** of P.O. Box 711, Limbe Nyasaland, Central Africa, is Secretary of The Nyasaland Doll Club and will be pleased to hear from readers who collect dolls.



Advertising Postcard from Boris Khun illustrating glass craft



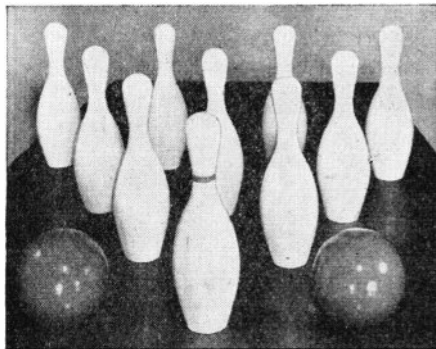
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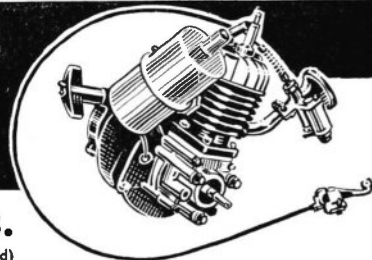
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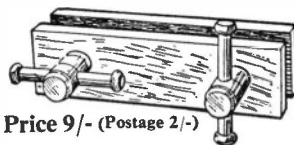
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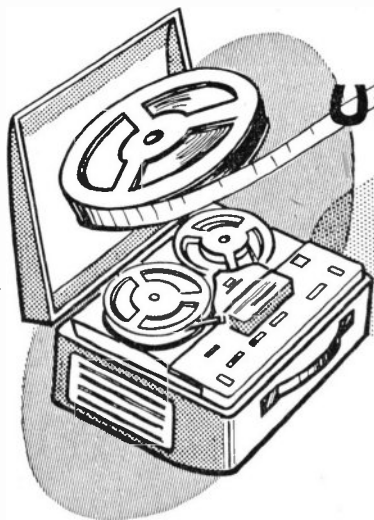
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'ON LOCATION' ROUND LONDON

THE new owner of a portable tape recorder will be eager to try the performance of his new possession by location recording. The Londoner, or the visitor to London, has various spots to attract him and his portable machine. None more so than the London Zoo at Regent's Park.

There are snags, however. The authorities may frown on tape recorders, but I have not been interfered with. Although the recordist might go to the zoo to 'tape' the lions, tigers and elephants, according to my experience they have not a hope at Regent's Park. These animals have children all round all the time, and there is no way to get rid of their kind of noise. Besides, the elephants are all too contented and too well fed to raise a penny tin whistle let alone a trumpet!

By far the most useful sound to be had at the London Zoo comes from the large water fowl cage. The predominant noise here comes from the many varieties of gulls. The place is not so popular with the children and on my visit I got quite a good length of unspoilt recording.

I was successful, too, with sea lions, but perhaps more lucky than otherwise, because these animals are generally very popular and attract noisy audiences. The sound of sea lions is, however, not very useful!

Monkeys, too, I was successful at recording. The crowd were taunting them, but when the finished results came out on my mains, it was impossible to tell the difference. Honest!

The Shetland pony trap was my greatest success. The little occupants were too tensed to make any unwanted noise. I was able to keep apace with it

while recording.

In order to get recordings as quickly as possible when the occasion requires it, I keep the microphone lead attached to the machine, and the microphone itself nestling in my canvas haversack. When I come to a likely sound source (in this case animal) I turn to record, and hold it with the temporary stop until the exact moment.

A good finish to a day at the zoo is to make a recording by taking a water bus from the zoo to Paddington, through Little Venice on the Regent Canal.



BOWING in on the disc scene is 24-year-old Bolton-born Michael Haslam who owes his break to the persistence of a Bolton housewife, Mrs. Joan Simpson. After hearing Michael singing in local pubs she decided that he was worthy of better things and wrote to writer-broadcaster Godfrey Winn. He arrived to hear Michael and with him was Brian Epstein. Brian was impressed and signed Michael up. "Gotta Get a Hold of Myself", the first disc by Michael Haslam, was released on Parlophone R5179.

A general background effect of a large station is often needed. When a holiday recording is made up, this type of sequence is useful for chronological purposes, because at the time you actually caught your holiday train you were too busy with your luggage, etc, to make any recordings.

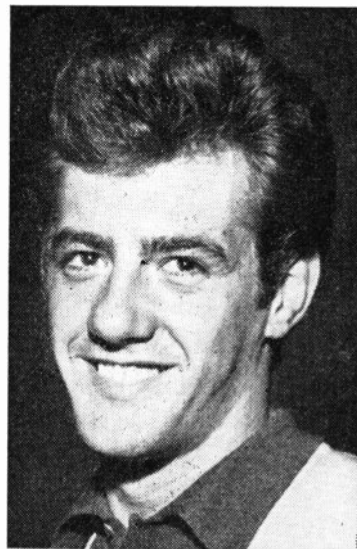
The real secret of recording this effect is the time and place. For any large London terminus, Victoria is as good as any.

Saturday morning is the best, especially in the summer time, when the 'big puffers' are about to add interest to the general sounds of a large busy station. Any place or comfortable seat is good enough. Just let those spools turn at record.

When finished, retire to a quiet place to hear the results. But not a station booth — unless you want to be lynched! There are some telephone kiosks that are not in great demand, particularly on a Saturday, at nearby Grosvenor Gardens.

Laurence Mallory, in his book 'The Right Way to Tape Record', Pub. Elliot 7s. 6d., tells how he recorded Big Ben at twelve noon.

Ben cut down on the traffic noise by recording at the bottom of Westminster Steps. His advice is good, for I have followed it with excellent results. In order to ensure you get all the chimes in, one has to let the spools run a bit. However, controlled traffic noises like these are useful, even without the chimes. The chimes, incidentally, are a favourite with overseas tapespondents.



MICHAEL HASLAM

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ABOUT $\frac{1}{4}$ IN.

USE OAK OR

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Cut out the circle from the centre and then cut round the outline. Mark out the pattern in pencil and carve away, with modelling knife or carving tools, the portion shown heavily dotted. The circles remaining should then be nicely rounded. The background of the carved portion can be 'matted' by using a blunted nail and a hammer and tapping lightly all over to make small indentations.

The barometer can be obtained from Hobbies Ltd, Dereham, Norfolk, price 39s. 6d. postage 1s. 3d. It is a press fit and is pushed in the opening provided. Hang by means of a wall hanger. Finish off the woodwork by polishing or varnishing. (M.p)

MAHOGANY

CUT
OUT WITH
A FRETSAW

ROUND
OFF

239

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