HOBBIES weekly

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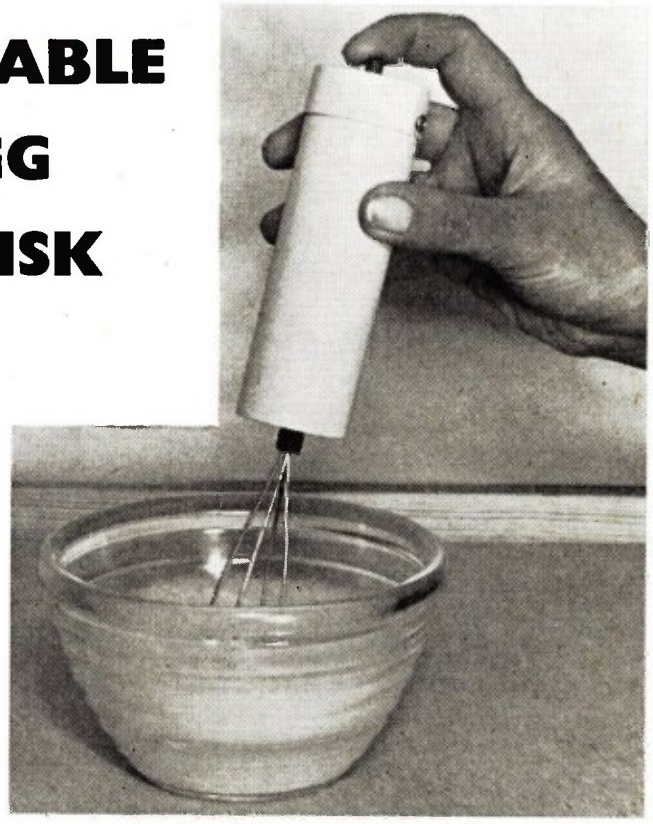
PORTABLE EGG WHISK



This handy piece of kitchen equipment can be made for a few shillings

Hobbies

FOR CRAFTSMEN OF ALL AGES

6D

THE longer that one has been collecting stamps the more one realises the importance of the condition of the specimens. No longer does one see torn or mutilated stamps and each collector knows that any stamp that has been defaced by having a firm's initials perforated in it is worth less than a specimen that has not been so defaced.

CONDITION IS ALL-IMPORTANT

By L. P. V. Veale

The post office regulations concerning these perforations state that the stamps may be perforated with initials — but that does not include the firm's name nor their trade mark as that would be advertising. Also, the holes must not be larger than the holes dividing one stamp from another. The post office will not undertake this perforating which must be done by a private firm.

There are, however, certain stamps that do have letters perforated in them and these perforations are official. One such country is Australia and the first illustration is of the Australian kangaroo in the map type with the letters 'O.S.' perforated in. Sometimes you see this and also the letters 'N.S.W.' which denote that this Australian stamp has been used by the New South Wales Government for official correspondence.

You will also find that some of the stamps of the Sudan have the letters S.G. (Sudan Government) perforated in them and sometimes the letters A.S. are found (this for Army Service).

In 1937 Canada perforated the letters O.H.M.S. in her stamps and there are some rather curious points about the perforating. For instance, in some cases the letter 'H' is made up of four perforations to the side and in other cases there are five holes. Sometimes the letters are sideways and even backwards. So there are some interesting varieties to be looked for.

The next set (the 1942 issue) was also perforated, but Canada started the overprinting of the stamps with the letters O.H.M.S. instead of perforating them, and now of course the stamps are overprinted with the letter 'G' to denote her official stamps.

Some collectors will not accept the stamps with the letters perforated, they will only mount the overprinted ones. This seems to me to be rather a pity because the official stamps were indicated in that way. They were actually used for postage for quite a long time.

1. Australia. On Service
2. Sudan. Military telegraph
3. Portugal. Telegraph stamps
4. Guatemala. Diagonal division

The second illustration shows a stamp from the Sudan. It is one of the 1896 issue of the Sudan Military Telegraphs and is perforated down the middle so that the stamp may easily be divided into two parts. The stamp was stuck onto the telegraph form so that the line of perforations came just where the form divided and when a telegram was sent one half remained with the telegram and the other half was attached to the receipt that was handed back to the sender.

In England we use ordinary postage stamps for telegrams and we do not get a receipt. We can always obtain a receipt for sending a parcel simply by filling up a small slip and having it checked by the counter clerk. A receipt for a letter, however, costs us a penny, and the ordinary postage stamp is stuck down on the receipt slip.

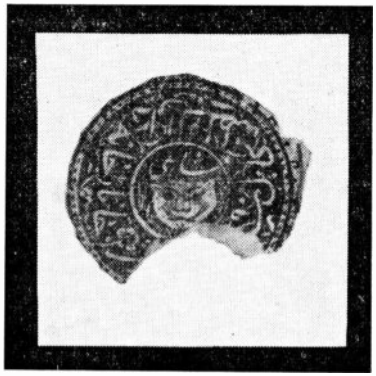
When speaking of telegraph forms and the stamps attached one is reminded of the Portuguese stamp which was issued for telegraph purposes. The third illustration shows the five pointed star which is punched out of the main part of the stamp — as a means of cancelling. Spain uses the same method but has a round hole. A few lines up I suggested that one might well put into one's collection those stamps which had holes perforated in them. That remark does not apply in this case. The letters O.H.M.S. are used on a letter but the five pointed star and the round hole are used on telegrams not letters — and we collect Postage stamps.

Another example of half a stamp being used as a receipt comes to us from Italy. This is the 1927 issue of Parcel Post stamps. Naturally one can only obtain a complete stamp unused as when it is used one half is stuck on the parcel and the other on the receipt. One could of course get the two halves of a stamp but if it had been used then the two halves would be separated.

Although no doubt most readers of Hobbies Weekly already know of the Belgian stamps, yet we must remind you of the 1893 issue on which was a small tablet at the bottom. This was perforated so that the tablet could be torn off if desired. The tablet had instructions to the postman 'Do not deliver on Sunday' so that if you wanted the letter to be delivered on Sunday you tore off the label. If the letter was not important or if you had compassion on the postman then you left the tablet on and in that way you told the postman not to worry about delivery. Those Belgian stamps issued between 1893 and 1914 would have had the tablets on and you should try to obtain such examples for your

collection. They are worth more than those without, and furthermore they do show the complete stamp as purchased at the post office.

A rather curious example (shown in the illustrations) comes to us from Guatemala which in 1938 issued a 1c stamp already perforated diagonally, so that all one had to do if one wanted a ½c stamp was to tear the stamp in half. There have been quite a number of examples of a country experiencing a shortage of certain values and to overcome this they have taken the stamp of twice the value and cut it in half, but it is a very different matter to cut a stamp in half when there is a half value stamp available at the post office.



Now look at the Afghanistan illustration. One could easily say 'Fancy putting a torn stamp like that in a collection'. Well this is one of the very few occasions when you are quite justified in doing so. In Afghanistan where this stamp comes from that was the early method of cancelling, so that a used stamp will always be cut or torn. This one would be much nicer if it had not been cut to shape so that instead of being a circle it would have been square with the tear all the same.

Afghanistan. Used specimen piece torn out

BRYAN DAVIES

IMAGINE the scene — a vast hall, a stage, a microphone, a piano and a long queue of hopeful young Australians, all auditioning for a spot in a television show. At the end of the line 16-year-old Bryan Davies, still a schoolboy, scared out of his wits at the prospect of having to sing before 200 people. Five times he nears the end of the line and five times his courage fails. He slinks back to the rear, to the mounting anger of his mother.

But three hours later, at the sixth attempt he keeps going, performs his number and is surprised to find himself offered a booking. One leads to another and soon he is appearing regularly on two TV shows.

Within two years of that shaky start, buoyant Bryan was starring in his own weekly TV show, was hitting the Australian charts with every record release and had become the country's most popular young entertainer.

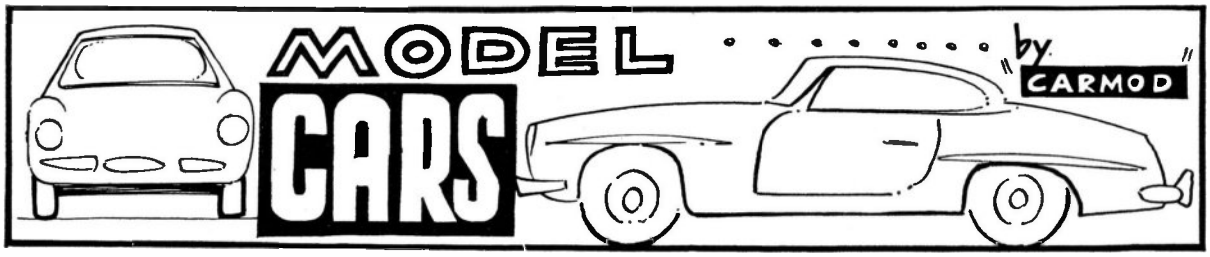
But Australia, for all its size is small when it comes to entertainment opportunities. So like fellow Aussies Frank Ifield, Rolf Harris, Patsy Ann Noble and Frankie Davidson, Bryan packed his bags and headed for England this February.

Bryan has two things in common with Frank. Like him he was born in England — in Manchester on 4th July 1944 — and has the same recording manager Norrie Paramor. It was Norrie who first inspired Bryan to take his chance in England. He met Bryan during a visit Down Under in 1962, directed one of his recording sessions and guested on his TV show, 'If ever you come to London, look me up — I'd like to record you,' said Norrie.

Which is how Bryan's first British disc *Raincoat in the river/In Your Shoes* (Columbia DB7284) came to be released.

PATSY ANN NOBLE

This glamorous young lady is keeping her fingers crossed that plans for her to star in a film musical work out successfully. Meanwhile she waits her break on record, hoping that it may come with 'I did nothing wrong'/'Better late than never' (Columbia DB7258).



1939-45 MORRIS COMMERCIAL

THERE were two types of vehicles in service with the British Army in World War II which could rightly be described as 'maids of all-work', although 'maid' is hardly the appropriate word. One was the 3-tonner truck and the other the 15-cwt.

Using Bedford, Ford, Guy, Morris-Commercial, Dodge and Chevrolet engines, 15-cwt trucks were made to similar specifications although they varied in appearance from make to make. These little trucks — as sturdy as bull terriers — saw service in all theatres of war, carrying stores and personnel through jungle, across desert and along Flanders *laanen*, and on these chassis were built radio vans, air-compressors, generators, and water tanks.

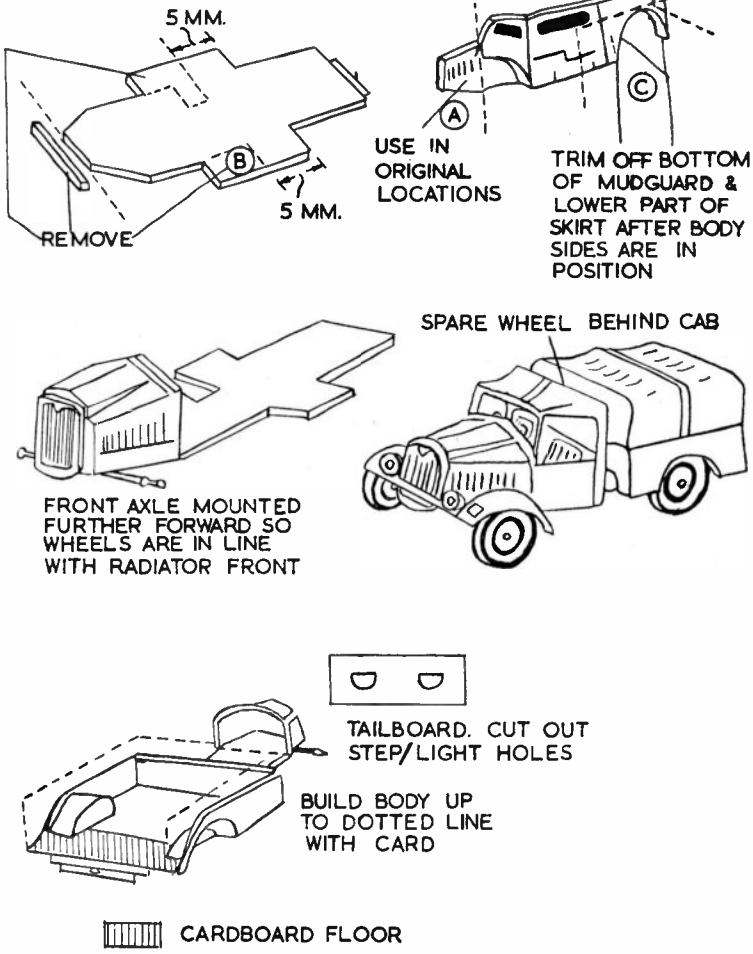
Generally, war-time service vehicles have been neglected subjects for die-cast miniatures and kits and it is gratifying for collectors of model motor transport that Airfix sometimes introduce a 'thin-skinned' vehicle in their excellent series of kits of war-time tanks. It is on a part of such a 1/72nd scale Airfix kit — the 25-pounder field gun set — that this chopping has been based.

The 'Quad', the medium artillery tractor in the kit, is a Morris-Commercial built vehicle with a similar front to the 15-cwt truck of the same make. In all, 23 parts of the kit are used: viz: 1, 2, 3, 9, 10, 11, 12, 13, 17, 18, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, and 34.

Take first the two body sides (parts 9 and 10) and cut off the engine cover sides ('A' on the diagram). Cut off and reject bumper bar from chassis (part 3). Assemble and cement engine cover parts (9a, 10a, 12 and 13) in their places. Cement in steering wheel (11), making sure a gap is left between the wheel and the engine cover for the windscreen.

Next the chassis (3) must be modified to form the foundation of the truck. On the near side cut off the plastic marked 'B' on the diagram and take off an identical piece on the off side, but this time continue the cut through the floor plate up to the chassis member on the underside. Widen this cut to 5 mm. with a flat file so the slot can later accommodate the spare wheel.

Go back to kit parts 9 and 10 and cut from these the sections marked 'C'. Cement these in position on the chassis and when the cement is hard trim off the underparts flush with the floor and the front edges up to the cuts in the floor. Build up the sides and front of the truck body with thin card to a depth of 9 mm. Cement seats (1 and 2) in place and build 'up to the waist' cab with thin card, 9 mm. in depth; the back of the cab should be 25 mm. across, which means there are wedge-shaped gaps left on both sides of the floor plate. These should be filled with Plastone.



Cement petrol tank (17 and 18) together and cement in position behind the cab on the near side. Spare wheel (34) can now be cemented behind the cab on the off side, utilizing the slot cut in the floor.

Build up the back of the cab with thin card to the height of 19 mm. and make a windscreen from clear sheet 8 mm. high. Cut three thin card strips and cement in place from the base of the windscreen, bend over at the top and cement to the top of the cab back. Make the top of the cab from tissue paper cemented at the edges to the windscreen, cab back and card strips. The hood for the truck body can be made in the same way, using card strip and tissue paper.

File down the underside of the springs so they are level with the chassis members. Assemble and cement together axles and wheels using parts 23, 24, 25, 26, 27, 28, 29, 30, 31, and 32. Locate and cement the front axle so the wheels are level with the radiator front. The rear axle is cemented in its original location so the wheels are appropriately centred in the wheel-arches.

A piece of wire or thin plastic strip 22 mm. long can support the front mudguards and this should be cemented to the radiator front. The mudguards are then attached to this support and by the edges to the sides of the engine cover. For headlamps I used hub-caps from an Airfix Rolls Royce kit but any suitably sized and shaped parts can be used.

Finally, the tailboard should be cut and fixed in position. This should have steps cut in it and these serve a further purpose of allowing the tail lamps to show through when the tailboard is in the down position, so the locations of these steps should be judged by an examination of the model.

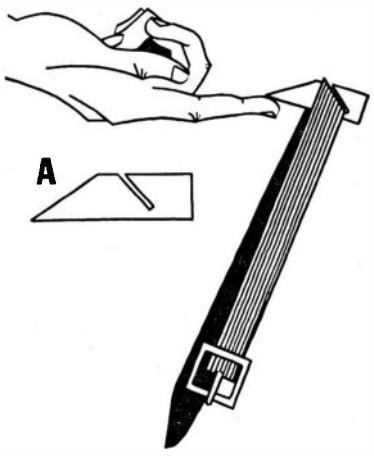
A coat of olive drab paint completes the model of a Morris-Commercial 15-cwt. Alternative models can be made of radio vans, compressors etc, all using the same basic components.

It's Unbelievable! - The Tipsy Peg

A TRICK with a quaint little peg and a stiff belt looks impossible. You bend the belt into a U shape, then you insert the belt's middle into a sloping slot cut in the peg. Next you rest the narrow end of the peg on your fingertip — and the whole arrangement remains there, suspended in mid air. Logically, the weight of the belt should make the peg fall — so, apparently the law of gravity is defeated.

Fig. A is the side view of a round, hollow object cut out of plastic tubing. This is the peg. The device is approximately 2½ in. long, and has an external diameter of ⅜ in. However, these dimensions are not critical. One end of the tube is cut at a sharp angle and there is a deep slot cut sloping inwards and downwards from the middle.

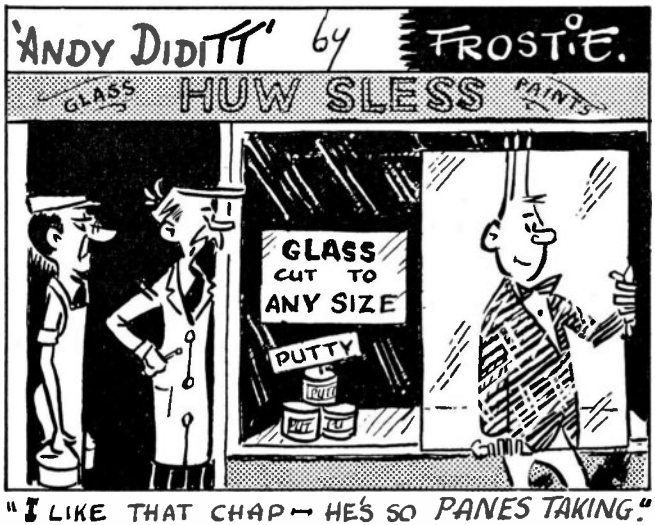
Strong coloured plastic from an old hula hoop is an ideal material — although any similar plastic tubing will do. You can also use the transparent plastic protective tube in which a new toothbrush is packed. or make a solid peg from a wooden rod. Fashion the material you choose with a sharp knife.



Test your peg, with a leather or plastic belt attached — as already described (see illustration). If you examine the arrangement casually, and you forget to apply simple scientific reasoning, the effect — though obviously happening — seems unbelievable. Explain to an audience that this is a 'tipsy peg' which a wizard has hypnotized.

Here is the real explanation. The peg and belt have a common centre of gravity which is actually a point in space low down between the arms of the inverted U. As you balance the peg, the belt swings inwards until the centre of gravity is directly below the point where the peg rests on your finger.

If the belt is very stiff, and its ends spread out widely, like wings, on either side of the peg; and if the belt is fairly long, the fact that the belt swings inwards, under your finger, is hard to detect — unless you look very closely. In our illustration the position of the belt is exaggerated. (A.E.W.)



CHEMISTRY AT HOME

SEVERAL HUNDRED years ago chemists obtained from the modest wood-sorrel, *Oxalis Acetosella*, a white crystalline substance. They named it salt of sorrel. Later this was found to be potassium hydrogen oxalate, KHC_2O_4. From this oxalic acid, $(COOH)_2.H_2O$, was obtained. Both the acid and the potassium salt were found to be useful for removing ink and iron mould stains from linen and to this day are used for the same purpose.

To remove iron mould simply apply a strong solution in water of the acid and then rinse well. Modern blue-black writing inks, having been improved by the addition of synthetic dyes to the old iron-based formula, required a slight modification of the stain removing procedure. First wet the stain with hydrogen peroxide, H_2O_2, and hold it in the steam issuing from a kettle until it turns yellowish. Repeat the operation if necessary and then apply oxalic acid solution. Finally rinse well with water.

A warm solution of oxalic acid containing sulphuric acid, H_2SO_4. decolourizes a solution of potassium permanganate, $KMn0_4$, producing potassium sulphate, K_2SO_4, manganese sulphate, $MnSO_4$, water, H_2O, and carbon dioxide, CO_2. As the latter gas causes brisk effervescence the reaction can be used to show an interesting chemical trick (Fig. 1) — no less than turning warm 'water' into 'health salts' by pouring 'wine' into it! Needless to say, none of these 'beverages' should be drunk.

To arrange the trick put about 2 ml. of 5 per cent sulphuric acid in a 100 ml. beaker, boil it and dissolve therein 2 to 3 grams of oxalic acid. Pour in a few ml. of a solution of potassium permanganate diluted to the shade of red wine. The 'wine' disappears and the 'water' foams like 'health salts'.

The reaction follows the course:

$$5(COOH)_2 + 2KMnO_4 + 3H_2SO_4 = 10CO_2 + K_2SO_4 + 2MnSO_4 + 8H_2O,$$

and upon it are based important methods in volumetric analysis for the estimation of either potassium permanganate or oxalic acid.

OXALIC ACID EXPERIMENTS

By L. A. Fantozzi

Cobalt, Co, is a metal rarely seen in the home laboratory, yet is easy to prepare from cobalt oxalate, $(COO)_2Co.2H_2O$. To prepare cobalt oxalate some potassium oxalate, $(COOK)_2.H_2O$, will be needed and this can be prepared by adding a solution of 4·2 grams of oxalic acid in 25 ml. of hot water to 37·4 ml. of a 10 per cent solution of potassium hydroxide, KOH:

$$2KOH + (COOH)_2 = (COOK)_2.H_2O + H_2O.$$

Stir the resultant solution of potassium oxalate into a solution of 7·93 grams of cobalt chloride, $CoCl_2.6H_2O$, in 100 ml. of water. A pink precipitate of cobalt oxalate appears:

$$CoCl_2 + (COOK)_2 = (COO)_2Co + 2KCl$$

(potassium chloride).

Filter it off and wash it free of potassium chloride, which is indicated by one wash water giving no precipitate of silver chloride, AgCl, with silver nitrate solution, $AgNO_3$:

$KCl + AgNO_3 = AgCl + KNO_3$ (potassium nitrate).

Let the cobalt oxalate dry and then heat it in a crucible. First it turns lavender coloured owing to loss of water and formation of the anhydrous salt:

$$(COO)_2Co.2H_2O = (COO)_2Co + 2H_2O,$$

and then begins to blacken. At this point close the crucible with its lid and continue heating for about half an hour. Let the crucible cool with its lid on, otherwise the finely divided hot cobalt will oxidize. When the crucible is quite cold remove the lid. The metal is found as a black powder and has been formed by the oxalate splitting up into the metal and carbon dioxide, CO_2:

$(COO)_2Co = Co + 2CO_2$.

Bring a magnet close to it. The metal jumps on to the magnet just like iron, Fe. Cobalt, in fact, is one of the very few magnetic metals.

Ferrous oxalate, $(COO)_2Fe.2H_2O$, also decomposes to the metal (in this case iron) in heating:

$$(COO)_2Fe.2H_2O = Fe + 2CO_2 + 2H_2O,$$

but the metal is left in a more sensitive state than is cobalt.

Make up a similar quantity of potassium oxalate solution as was used for the preparation of cobalt oxalate. Reserve half of the solution for a later experiment. To the remainder add a solution of ferrous sulphate, $FeSO_4.7H_20$, in small portions. A yellow precipitate of ferrous oxalate forms:

$$(COOK)_2 + FeSO_4 = (COO)_2Fe + K_2SO_4.$$

Continue adding ferrous sulphate solution until no more precipitate forms. Filter off the precipitate, wash it on the filter until one wash water is shown to be free from potassium sulphate by its giving no white precipitate of strontium sulphate, $SrSO_4$, with strontium nitrate solution, $Sr(NO_3)_2$: $K_2SO_4 + Sr(NO_3)_2 = SrSO_4 + 2KNO_3$ (potassium nitrate), and then let the ferrous oxalate dry.

Close the end of a short length of glass tubing in a gas or spirit lamp flame and draw out the other end, as shown in Fig. 2 (A). Put some ferrous oxalate into the tube, heat it until it is wholly blackened and then seal the tube by softening the narrow part in a flame and drawing off (B). When the tube and contents are

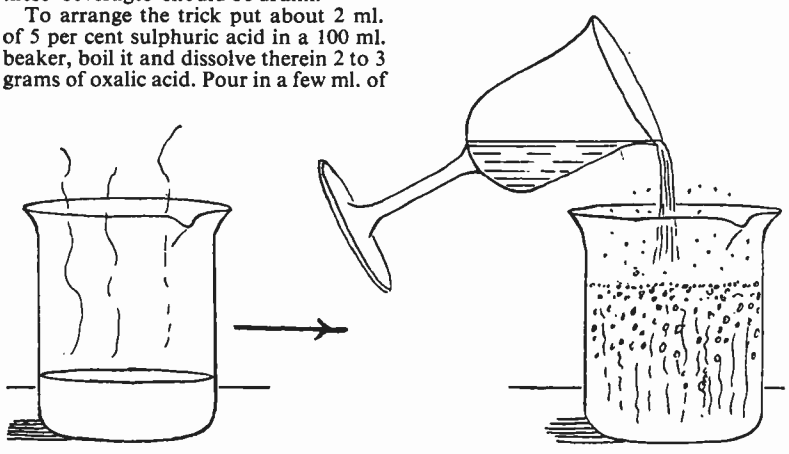


Fig. 1—Warm water + wine = health salts

cold break the sealed point and scatter the iron powder above a metal tray. A brilliant firework display occurs (C), for the iron produces a shower of sparks. The metal is in so finely divided a state that it at once burns in the air.

Silver oxalate, $(COOAg)_2$, is an interesting salt by reason of the effect of heat upon it. As it is insoluble in water it may be prepared easily by adding some of the remaining potassium oxalate solution to a few ml. of silver nitrate solution until no more white precipitate of silver oxalate forms: $(COOK)_2 + 2AgNO_3 = (COOAg)_2 + 2KNO_3$. Filter off the silver oxalate, wash it well on the filter and then let it dry at room temperature.

Now heat a tin lid on a tripod. Take up a small amount of the silver oxalate on a knife point and drop it on to the heated lid. A small but harmless explosion occurs. Although the salt is stable at ordinary temperatures quick heating brings about this violent decomposition.

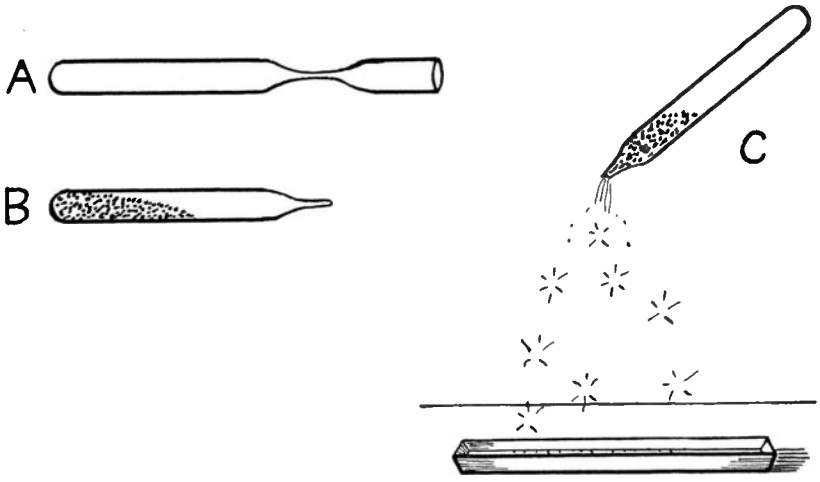


Fig. 2—Spontaneous combustion of iron powder

Easy-to-make Rabbits

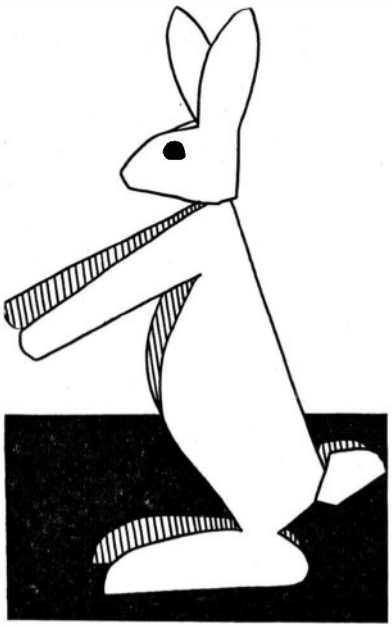
By A. E. Ward

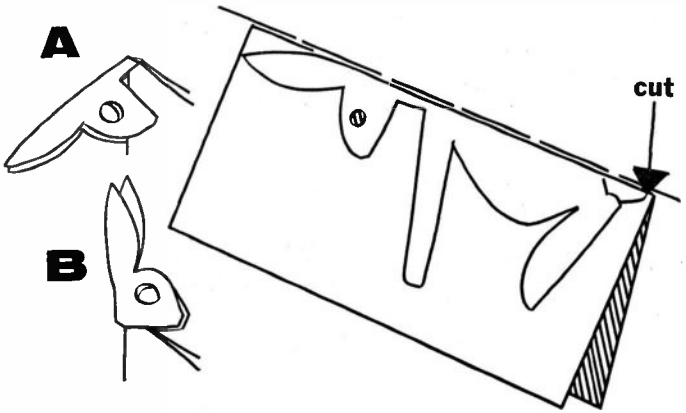
EASY-TO-MAKE paper rabbits are fun, whether you use them decoratively, present them as toys — or merely cut them out for sheer enjoyment.

Make the models with very stiff pink or white paper, and use a large pair of sharp scissors. Big scissors enable you to work boldly and to cut nice sweeping curves. To make a rabbit, begin by folding a paper rectangle in half down the middle.

The drawing shows how to cut out half a rabbit, to one side of the crease. Fold the head in half when you cut out the eye holes. Afterwards, bend up the tail and press the paper flat. See the tail on the picture of a completed rabbit.

Diagrams A and B show how the head must be bent, first back — and turned inside out — then bent forward and the folds pressed flat, so that it 'sits back' directly on the shoulders. Paste together both sides of the face. Bend out the ears. Stand up the finished model.





Youngsters and adults alike are intrigued by a skilful paper-cutter at work, so practise making these rabbits with speed and confidence — then you will also score as an entertainer.

Made for a few shillings

Portable Egg Whisk

THIS handy item of kitchen equipment costs only a few shillings to make, requires the slightest knowledge of metalwork, and has no counterpart among commercially produced machines. It will handle all light mixtures, and can be moved about the mixing bowl to ensure thorough whisking as shown in the main illustration.

The unit is based on a miniature 1½ volt electric motor of the type available from Hobbies Ltd., and shown on page 301. The current consumption is negligible and the capacity of a leakproof LPU2 battery (U2 in non-leakproof form) will be found adequate. The small size of this motor can be seen from Fig. 1 where it is compared with the battery which powers it.

Fig. 1—The 1½ volt miniature motor compared for size with the battery which powers it

Fig. 2 gives dimensions and constructional details of the whisk unit body. This is made from 1½ in. diameter aluminium tube, but a slightly larger size could be used provided that the diameter of the battery compartment is reduced with layers of cardboard.

By A. E. Bensusan

The tube is cut to length and the ends squared off. Two discs of aluminium are cut to fit closely inside the tube; one of these is the wall between the motor and battery compartments and the other is for mounting the motor. Since it is unlikely that the motor would require any servicing if the wiring connections are properly made, no access is required to the motor compartment and it is best sealed up.

Drill the centre of the separator between the compartments to take a 2BA bolt (⅜ in. diameter) and assemble this with a nut so that a loop of insulated wire is caught around it. The other end of this wire goes to either terminal of the motor. The second motor terminal is also wired but the other end of this lead is left long and unconnected,

Because aluminium is a difficult metal to join by soldering, all joints are made with Araldite, an adhesive of exceptional strength, which is available from Hobbies Ltd and branches. This adhesive is also waterproof and resistant to moderate heat. All surfaces must be slightly roughed and cleaned with petrol or carbon tetrachloride before being coated with adhesive.

Prepare one end of the motor, and the inside of the motor mounting plate which has been previously drilled to permit the motor spindle to pass through with adequate clearance. Bond the motor to the plate, taking care that none of the adhesive penetrates to the motor bearings. When this joint is hard, similarly prepare the partition between the motor and battery compartments and insert this in its correct position within the tube.

Simultaneously, fix the motor mounting plate in position after threading the free lead through a small hole into the battery compartment. Allow these joints to dry. The end cap can be made from a second piece of tube, but as it is rarely possible to find one to fit closely on the main body, this may need to be rolled from a strip of thin sheet aluminium. A suitably sized end plate is also cut, but from heavier gauge aluminium, and bonded in position. The end cap is held on the body by a bayonet catch and it is advisable to cut the slots in the end cap before locating the 4BA screws in the body.

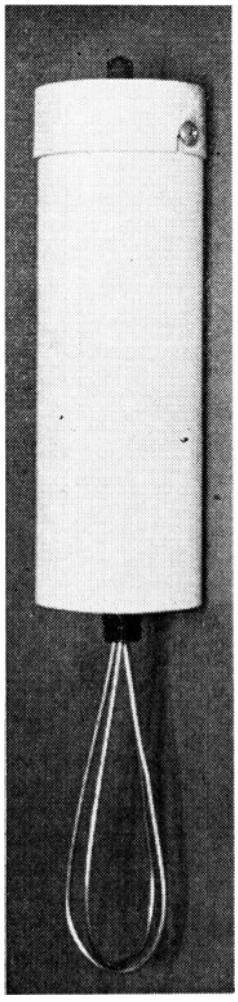


Fig. 3—The whisk blade fitted to the body

Two opposed slots are required, with their tails facing in the same direction; either clockwise or anti-clockwise. Having cut these slots, offer the end cap up to the main body and mark through the position for the screws. Drill and tap the body 4BA, insert screws of the correct length and secure with Araldite. Allow the heads of the screws to be slightly more than the thickness of the end cap away from the body.

Drill the end of the cap to accept a standard press-type switch, and fit this in position after connecting up the end

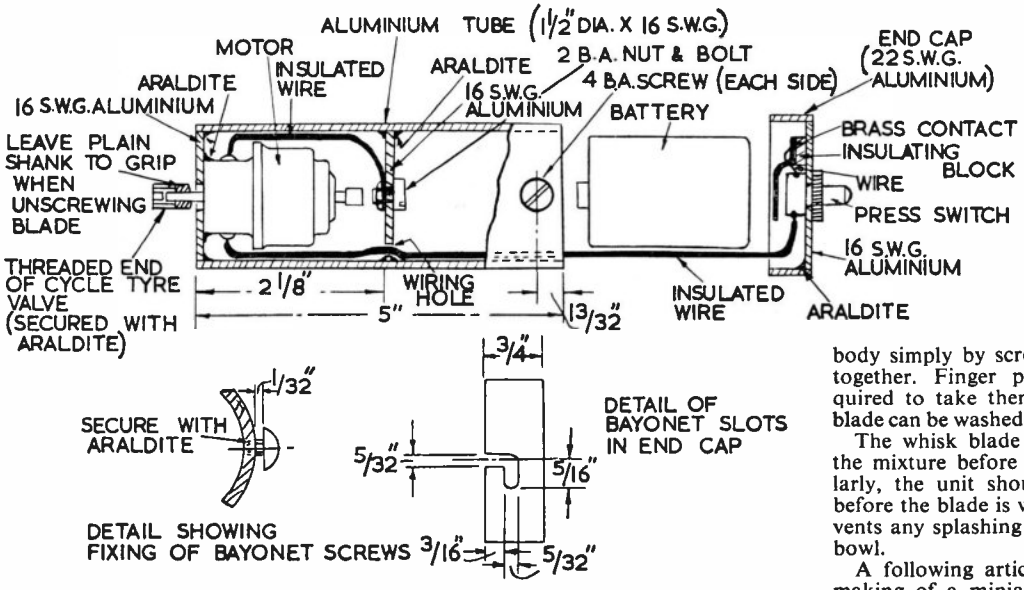


Fig. 2—Construction of whisk unit body

of the free lead. When the cap is assembled on to the body, the surplus wire can be made to concertina down beside the battery,

The second connection to the battery is made by a springy brass strip about ½ in. wide, bent as shown in Fig. 2 and attached to a small piece of plastic of any kind with Araldite. The plastic is

SEE MOTORS ON PAGE 301

similarly fixed to the cap. Before cementing, solder a short length of wire to the brass and connect the other end to the second terminal of the press switch.

A screw arrangement enables the whisk to be removed from the body for washing. The parts can be bought from any cycle dealer for a few coppers and consists of the stem and retaining collar for a bicycle tyre valve. The stem is sawn off so that only a short plain length and the threaded portion remain. This is drilled through the same size as the motor spindle, using the existing hole in the valve as a guide. Bond it on the motor spindle with Araldite.

Apart from finishing with at least two coats of glossy paint, or polishing if a bright effect is preferred, this completes the construction of the main unit.

Fig. 3 shows the whisk blade attached to the body, while Fig. 4 gives constructional details of the blade. The principle sections are made from two lengths of, say, 20 s.w.g. stainless steel wire. These two parts of the blade are identically shaped and secured in the unthreaded end of the cycle tyre valve retainer with a liberal quantity of Araldite. The two loops should be set so that they are at right angles to each other, with one inside the other, and as true as possible with the retainer. Penetration of the end of the wires to the threaded section of the retainer should be avoided.

The blade is assembled to the main body simply by screwing the two parts together. Finger pressure only is required to take them apart so that the blade can be washed in warm water.

The whisk blade should be put into the mixture before switching on. Similarly, the unit should be switched off before the blade is withdrawn. This prevents any splashing over the side of the bowl.

A following article will describe the making of a miniature electric fan by using a model motor.

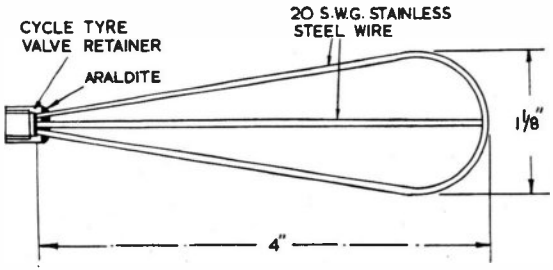


Fig. 4—Details of blade

Photographing Coins

SINCE coins are small and do not usually exceed 1½ in. in diameter they may be considered as being in the range of subjects for close-up photography. By this we mean approximately one foot between the subject and camera, necessitating the use of a supplementary lens. There are, however, two methods of producing a picture and these will be mentioned later.

By S. H. Longbottom

We recommend a 3 diopter supplementary lens which allows the camera to be between 9⅜ in. and 13 in. from the subject. To be precise the following scale will give you some idea of the various distances with different focusing distances:

Distance scale on camera	*Distance from lens to subject*
3 ft.	9⅜ in.
5 ft.	10¾ in.
6 ft.	11⅛ in.
8 ft.	11¼ in.
10 ft.	11⅞ in.
15 ft.	12¼ in.
25 ft.	12½ in.
Infinity	13 in.

At such close distances your measurements must be accurate and we should emphasise that the distances shown above are from the objects to the front of the supplementary lens when fitted to your camera. Measure with a ruler or steel tape.

This is important otherwise your pictures will be blurred. We also recommend stopping down the aperture to *f*/16 or *f*/22 to ensure perfect definition.

It should also be noted that when the focusing scale is set at infinity and the coins are 13 in. from the lens the area covered will only be 7½ in. by 10¾ in. for a 120 size film; approximately 10 in. square for a 2¼ in. square negative and 6¼ in. by 9⅜ in. for a 35 mm. negative. It is therefore advisable to make allowances for any small margin of error.

When taking photographs at such a close range we cannot rely on our viewfinders since these are set in a different plane from the camera lens itself. We therefore have to literally aim the camera lens at the subjects. A better way is to determine the centre of the subject — say a rectangle of cardboard holding the coins — standing a short rod at this point so that the centre of the lens is over the top of the rod. Incidentally, I find it better to lay the card on a stool and arrange the camera over same.

If we wish to capture the relief work on the coins we must direct a light across their faces at an acute angle. This puts one side of the relief in the shade and a little experiment will soon reveal the necessary angle. To clarify this we refer you to Fig. 1 where you will appreciate that the shadows on the left of the coins were produced by an artificial light directed from the right at a low angle.

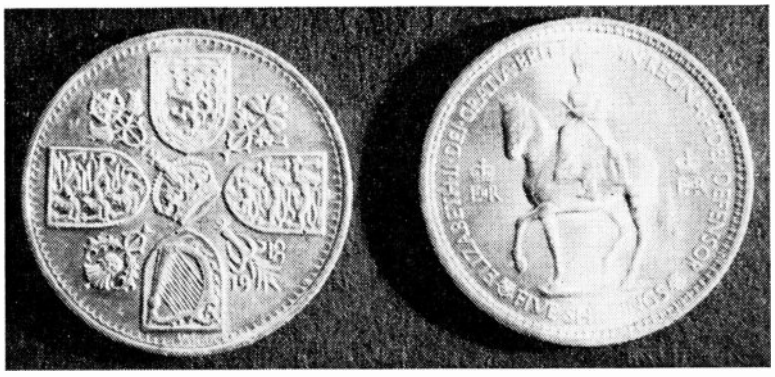


Fig. 1—Printed from the original negative

From the aforegoing you will now realise that the main points to observe are careful measurement of the distance of the coins from the lens with appropriate adjustment of the focusing, a small stop, the coins are reasonably centred below the lens, and an artificial light directed across the coins from the right.

There is no need to polish the coins until they shine for this would cause undesirable reflections. In fact they are better if dulled by a rub with petroleum jelly. Darker coins may be dusted with white chalk if this will help to bring up the lettering. But now observe a modification of methods.

In Fig. 1 you see a print made from the original negative produced as described, two five shilling pieces minted for the Coronation and laid on a sheet of black paper. The photograph was taken in daylight but an artificial light supplied the necessary sidelighting.

Fig. 2 is a print made from a positive transparency, so actually what you see is a negative printed in reverse to correct the lettering. In order to make this a small 2 in. square lantern plate was used, the emulsion side of the original negative being placed in contact with the emulsion side of the lantern plate and both placed in a printing frame for exposure to artificial light. For your information we would mention that the 'speed' of lantern plates is similar to that of bromide paper and a test exposure for the transparency can be made on bromide paper.

After exposure the transparency is developed, fixed and washed in the usual manner then given a rinse in a

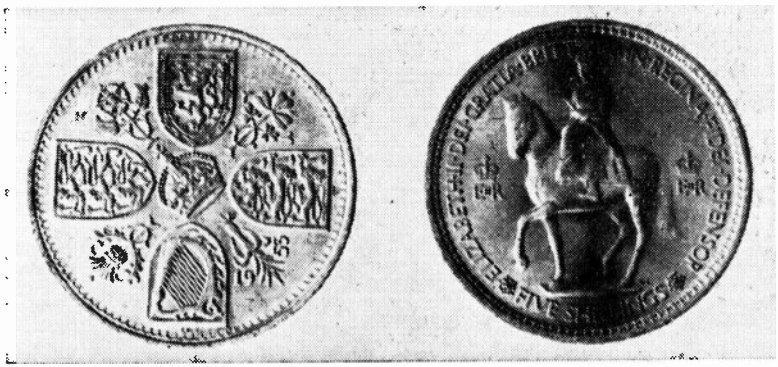


Fig. 2—Printed from a positive transparency

● Continued on page 299

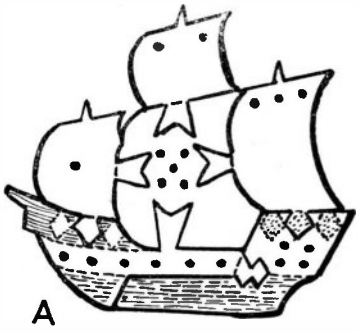
For wet-day amusement

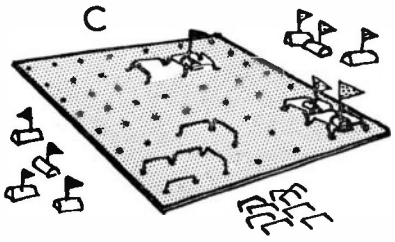
Make these simple Indoor Games

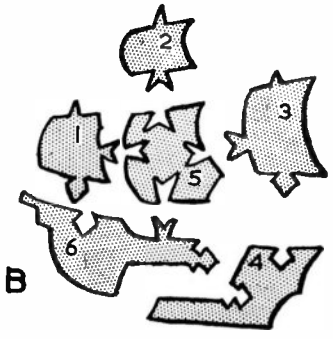
By A. Liston

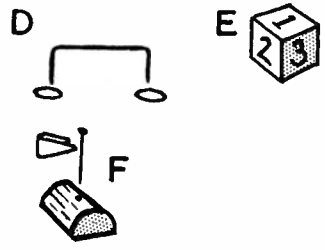
MAKING your own indoor games can be a welcome entertainment on a wet day. The ones shown here need a minimum of material, and variations on them can readily be devised.

'Armada,' for example, is a simple dice game for two or more players, who throw dice to collect pieces to make up complete galleons. All that is needed are a few pieces of thin plywood, or even hardboard, about 9 in. square. The galleon design A is drawn in outline on one of the pieces. It will be seen that the galleon is made up of six interlocking parts, each of which bears a different number of spots, ranging from one to six. Fig. B. shows the shape of each part. The galleon outline is cut out with a fretsaw and traced on to the other pieces of plywood, which are also cut out.









These shapes are then clamped together, the outlines of the six pieces being drawn on the top shape, then sawn into six parts. After being smoothed and painted in bright colours, each section has the appropriate number of coloured spots added to it, using the end of a matchstick dipped in paint for this purpose.

All the sections of galleons are placed in a pile between the players. The die is thrown by each player in turn, the number thrown indicating the number of the piece he must pick up. The winner can be the first player to complete a ship, or the player who has the largest number of completed ships in a given time.

Another easily-made game might be called 'Gold-rush.' C. In this game, for two or more players, a numbered cube is thrown, the numbers on it ranging from one to three. According to the number thrown, the appropriate number of wire 'fences' is picked up and inserted in holes in the board to rail off a 'claim'. When four fences enclose a square to make a claim, a tiny wooden shack with a coloured flag is placed on it to denote ownership. The winner is, of course, the player with the largest number of completed claims.

All the parts needed are simple to make. The board is a piece of pegboard about 12 in. square, and looks better painted in a bright colour; it can also be given an edging of wood beading if desired. The several dozen wire fences needed are shaped as shown D. Made from paper clips, they should slip easily into the holes in the pegboard; white enamelled fences look well and are not so easily lost.

The die E is a ½ in. wooden cube, and each of the numbers 1, 2 and 3 appear twice on its six faces. The shacks are made as shown at F, by using a ½ in. length of half round rod and sticking a pin flag-pole in it. The triangular paper flags are best made in six colours, and gummed in place. This colour arrangement allows up to six players to have their own colours.

Each of these two basic games can be elaborated on and altered according to personal taste. In the first, tanks, planes or rockets can be made instead of galleons, and in the second, animals can be used instead of a shack; the board might also be coloured in different shades, one colour representing better land which is worth two points per square as opposed to the other's one point.

● **Continued from page 298**

PHOTOGRAPHING COINS

mixture of methylated spirit and water to facilitate quick drying.

If you make a solution containing 70% methylated spirit and 30% water you will have a bath to produce rapid drying of the emulsion and consequently permit immediate processing.

You may judge for yourself which gives the better result but you should note that in Fig. 2 the black background has become white and the lettering is much clearer.

While we have used this method for the main purpose of photographing small coins it may be used for other small objects.

HOW TO MATCH VENEERS

IF a sheet of veneer is looked at it will be seen that the 'figure' (caused by the grain) on the upper face is almost identical with that on the lower face, and if two pieces of veneer of the same timber are examined (especially if they are bought at the same time) it will also be seen that there is remarkably little difference between the appearance of either sheet,

Because of this it is possible to decorate any flat piece of woodwork with 'matched veneer' which gives a much more handsome appearance than does ordinary plain veneer.

Although the process has been described as 'veneer matching' it can also be done with panels of very thin wood, if the grain is sufficiently well marked to make it worth while. For working with solid wood a finely set tenon saw would have to be used instead of a knife, which is quite adequate for veneer.

'Matching' means to cut the veneer in such a way that the grain forms a symmetrical pattern round the centre of the panel. An easy way of matching the veneer on a square panel is shown on drawings A, B, and C.

Two pieces of veneer, each slightly larger than the panel to be decorated, are taken and arranged so that their grains run at right-angles, as shown at A. The veneer can be held firmly to the bench top by panel pins through the single thicknesses of waste wood round the edges. The diagonals and edges (shown in dotted lines on the drawing) are marked on the top sheet of veneer, and with the help of a straightedge and a really sharp knife (or stout razor blade) the veneer is cut across the marked lines. The knife should penetrate both sheets of veneer as the cut is made.

This cutting will produce eight small triangles of veneer and these can be rearranged into either of the patterns shown at B or C.

To fasten the veneer to its panel two pieces are laid edge to edge, and a narrow piece of gummed brown paper tape is pressed over the edges to hold the pieces together. The remaining pair are similarly treated. Then the two pairs are joined into one matching with another strip of brown paper tape. The tape should be put on that face of the veneer that will be visible when it has been laid.

The untaped face of the matching is glued, and the assembly is laid into place and pressed flat. The veneer must be smoothed out well, and put under a weight until the glue has set. If the finger is then slightly moistened and rubbed over the tape, the latter will be found to peel off quite easily, enabling the veneer to be lightly sanded before it is polished.

The transparent adhesive tape used on parcels, etc., should never be used for taping veneer assemblies, as it sticks too strongly and when pulled off will take some of the wood fibres with it.

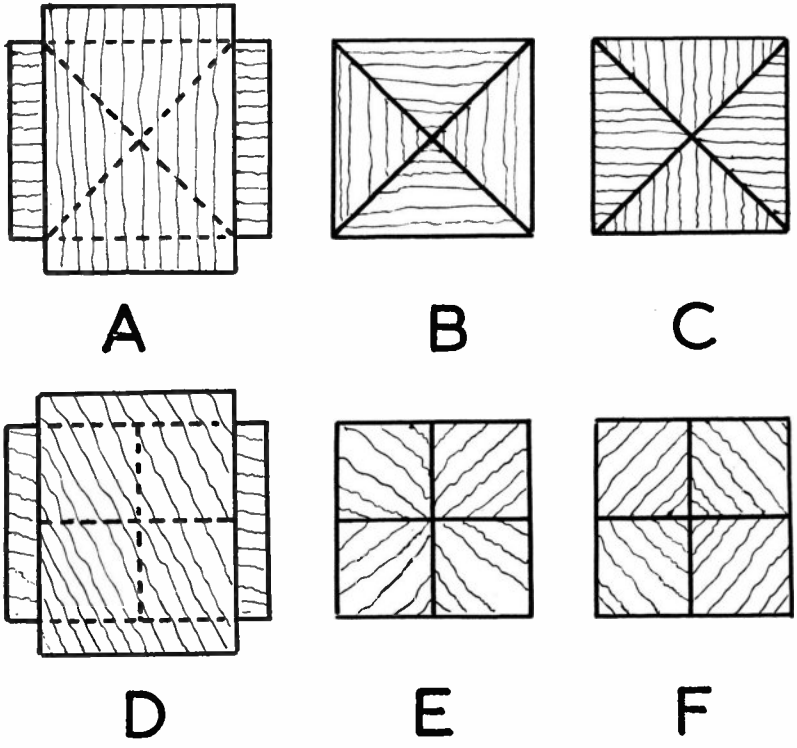
If thin, solid wood is being used instead of veneer, gummed tape will not be strong enough to hold the parts together.

The triangles should be glued along their meeting edges and then down to a sheet of newspaper. The assembly is completed by similarly gluing the pairs on to newspaper. When the glue has set and the newspaper has been glass-papered off, the solid wood can be treated for laying in the same way as a veneer assembly.

When the grain of the veneer is slightly more inclined than was the case with the first system described above, there is an alternative method of matching. This is illustrated on drawings D, E and F.

As can be seen the two veneer sheets are laid across each other in the usual way. In this case it is the centre lines of the panel that are marked and cut, as indicated by the dotted lines at D. This arrangement produces eight small squares, which can be re-arranged into either of the two patterns shown at E and F. The assembling of the matching and gluing it to its background follows the same lines as for the previous matching.

Veneer is so thin that as long as a really sharp craftwork knife is used matchings can be made on a mass production basis. Several sheets of veneer are laid on top of each other, with the grain of alternate sheets running at right-angles. The only points to watch are that the sheets are held really firmly before cutting starts, and that the cutting knife is held perfectly upright. Each matching can then be taped together as a separate unit before it is glued on to its background. (N.W.)



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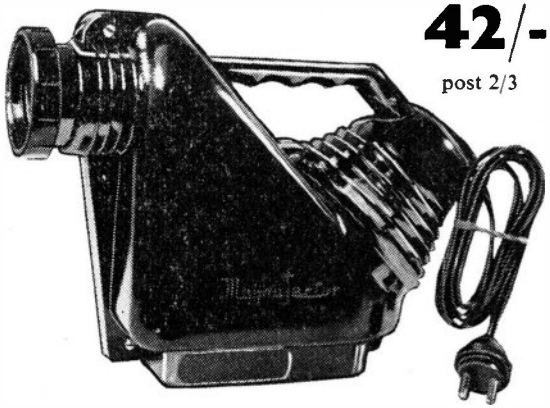

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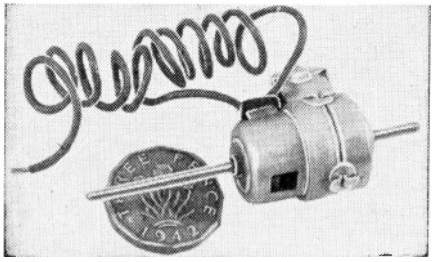

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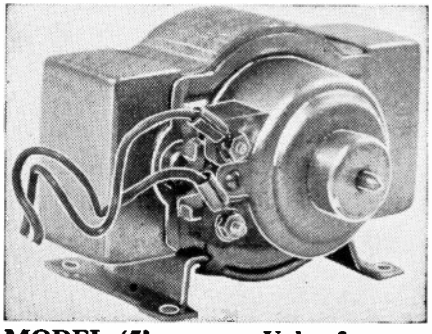

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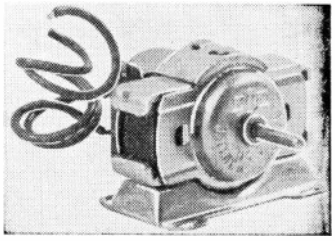

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1	1½–3	1⅝ oz.	6/3	4½d.
2	1½–4½	2½ oz.	7/7	6d.
3	1½–4½	2⅞ oz.	9/–	6d.
4	3–6	5 oz.	16/10	9d.
5	4½–10	11 oz.	33/11	1/–

YEAST IN WINE-MAKING

AMONG the thousands of enthusiastic producers of home-made wine there are many who are doubtful about the use of yeast. Some believe that good wine cannot be made without adding it to the brew, while others consider it absolutely unnecessary and get their wines to ferment perfectly without its use.

Actually there is no difference between the two methods, and wine made with yeast is just as good as that made without it. Added yeast will speed up the process, but the wine often tends to become clearer and of a better colour when the recipe does not contain yeast.

The bloom which we admire so much on the surface of grapes, plums, sloes, and damsons contain a certain amount of natural yeast, and these fruits will ferment much more readily than those less endowed with these properties.

Wine made from roots, herbs, and some flowers which do not contain this natural yeast must have it added in order to produce a suitable fermentation.

Temperature is very important for the proper fermentation of wine, and the ideal to aim at is 70°F. Provided this can be maintained, fairly speedy, natural fermentation will start in a few days.

When it is dry and also cold, yeast is inactive, and can be kept for some considerable time in this state. On the other hand, the yeast cells are killed by a high temperature, and this happens at about 140°F. and upwards.

From this we can see that in order to obtain the utmost from the natural yeast on the skins of the fruit, we must prepare the juice by the cold water method. We can, however, use warm water for soaking the fruit provided it never exceeds blood heat (98°F).

Hot or boiling water extracts the goodness from fruit much quicker than soaking in cold water, but this latter method is much to be preferred, because you get a more delicate flavour and scent to your wine.

It will, however, take much longer to produce wine by this method, and fermentation may perhaps continue for several months. The amount of spirit in the wine will be very low to start with, but increases quite appreciably, and when fermentation ceases, and the wine matures, it may contain anything up to 20 per cent.

The addition of yeast is made to some solutions to increase the amount of spirit in the wine, and not just to help it ferment, and in some cases this initial fermentation is very vigorous, causing a lot of froth. It does not last for long, and in most cases has slowed down considerably by the end of the first week, after which a much slower or secondary fermentation takes place.

The amount of pectin in the juice of the fruit appears to have a certain action in the production of froth, and fruits which have a high pectin content cause a large quantity to be made.

There are many different kinds of yeast now available for the production of home-made wine, but there are a lot of people who still favour the old bakers' yeast. It is important however that it is used while still fresh. Otherwise use a dried form obtainable as small granules in 1 oz. packets.

In recipes when yeast is added the usual amount is 1 oz. to the gallon of liquid, but this quantity is halved if you are using the dried type. Yeast is best added to the brew while it is at blood heat (98°F.) Put the yeast into half a cupful of the wine, let it stand about 15 minutes, stirring occasionally, and when it has frothed up, add it to the brew.

It can also be added by crumbling and sprinkling it over the wine or spreading on toast and floating on the top. This applies to bakers' yeast, but the drier type can be used in the same way after it has been dissolved in a little of the liquid.

While the wine is fermenting it should not come in contact with any kind of metal or enamel ware. Glass bottles and earthenware jars are the ideal containers for wine in the fermenting stage.

A good way to understand the two methods of wine making is to brew samples of both, and here are some recipes:

RAISIN WINE (with yeast)
2½ lb. raisins (chopped up)
1 oz. tea
1 lb. wheat
3 lemons (thinly sliced)
3½ lb. sugar
1 gallon water
1 oz. yeast

First make the tea by putting it in a muslin bag, placing in boiling water, and leaving it until nearly cold. Now remove the bag, and add the wheat, sugar, raisins, and lemon slices, with yeast.

Allow to ferment for about three weeks, stirring each day, after which it may be strained and bottled.

An alternative method using the same recipe is to allow the ingredients to soak for about a week, then the liquid is strained and the yeast added.

RAISIN WINE (without yeast)

This is a very simple recipe requiring few ingredients.

8 lb. large raisins
1 gallon water

Pick over the raisins, removing any stalks, and then chop them up. Add cold water, and place in a jar. Keep covered, and stir daily for two weeks, after which strain off the liquid and put in jar or bottles to work until all fermentation ceases. Rack off frequently until clear, then bottle off and cork tightly.

LEMON WINE (with yeast)
10 lemons
1 gallon water
4 lb. sugar
1 oz. yeast

Take five of the lemons, and remove the rind very thinly without any of the white pith. Dissolve the sugar in hot water, and pour over the rind. Allow to cool a little before adding the strained juice of the ten lemons and then the yeast, and let this stand in a covered jar for about two days. Strain this, and put in jar or bottles to ferment, until it ceases; then cork down and decant after a few months.

LEMON WINE (without yeast)
10 lemons
1 gallon water
3 lb. lump sugar

Peel five of the lemons very thinly, again without any pith, as this is very bitter and some people dislike it. Cut all the lemons in half, scoop out all the pulp, put this together with the rind into cold water, and allow to stand for five days. Stir and squeeze each day. Strain and add the sugar, and stir until dissolved. Place this into bottles, and allow to ferment until it ceases, when it can be corked up. This wine is fit to drink in from six to nine months.

Both raisin and lemon wine can be made at any time during the year when the fruit is available. Orange wine also can be made at any time, using the same recipes as for the lemon.

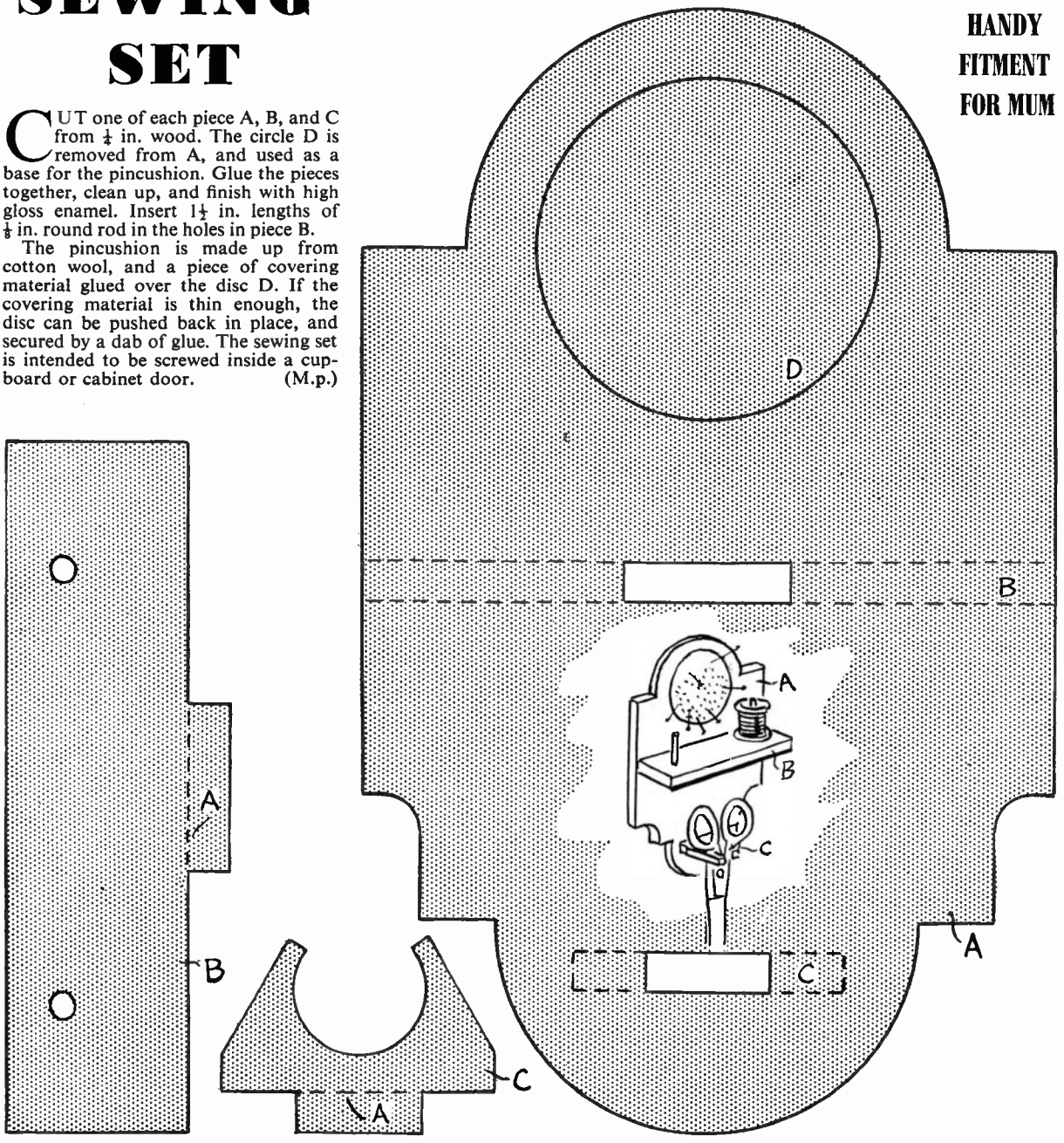
(E.)

SEWING SET

MAKE THIS HANDY FITMENT FOR MUM

CUT one of each piece A, B, and C from ¼ in. wood. The circle D is removed from A, and used as a base for the pincushion. Glue the pieces together, clean up, and finish with high gloss enamel. Insert 1½ in. lengths of ⅛ in. round rod in the holes in piece B.

The pincushion is made up from cotton wool, and a piece of covering material glued over the disc D. If the covering material is thin enough, the disc can be pushed back in place, and secured by a dab of glue. The sewing set is intended to be screwed inside a cupboard or cabinet door. (M.p.)



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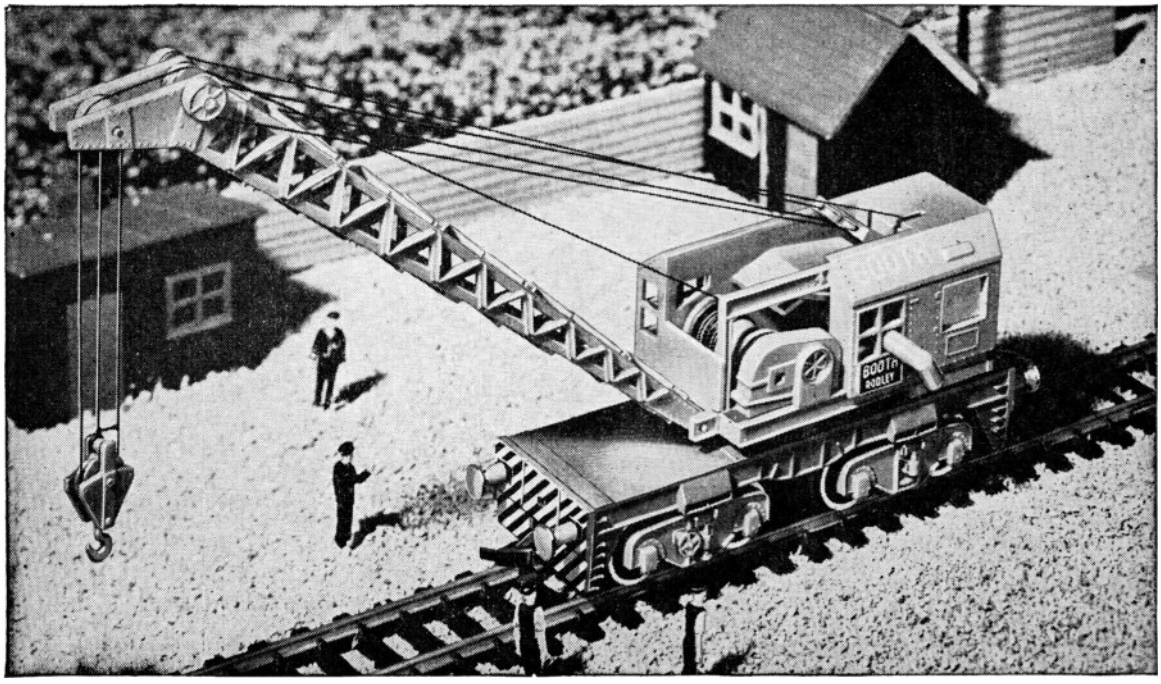

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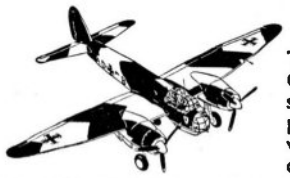

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