

HOBBIES WEEKLY

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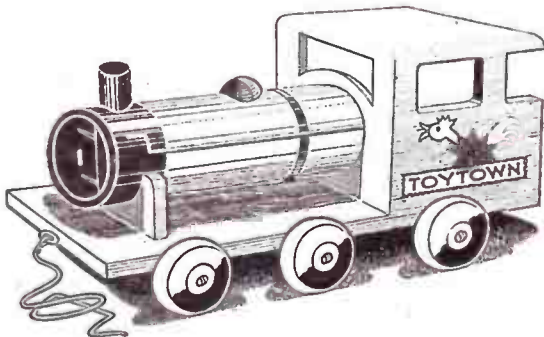
NUMBER 3182

Delight the kiddies with this great favourite

★FREE Design

inside for making —

TOYTOWN PULL-ALONG ENGINE



THERE is no doubt that from a very early age trains hold a great fascination for children. As soon as they begin to toddle, whether it be boy or girl, they love to play with their own engine just like the one which took them on their seaside holiday.

Our design is for a six-wheeled model which can easily be made up to provide hours of pleasure for the youngsters. The ready-turned boiler and wheels are provided in the kit, and the rest of the cutting is quite simple, construction being by pinning and gluing.

This engine can be pulled along on a string and can form the basis for a complete unit with the addition of other rolling stock such as carriages and trucks.

Trace off the pieces detailed on the design sheet on to their appropriate thicknesses of wood, and cut them out with a fretsaw. Then clean up all the parts together with the six wheels and the boiler, which is 6ins. long and of 1½ins. diameter.

The first step is to glue together two pieces 6 and three pieces 7, from which

the funnel and dome to go on the top of the engine will later be shaped. Leave these to dry thoroughly while carrying on with the construction of the platform and cabin.

For this, glue and pin the boiler support (piece 2) to piece 1 in the position shown on the design sheet. Next add pieces 3 and 4 which form the front and sides of the cabin, and then add the top (piece 5).

The three axles (pieces 8) consisting of 3in. lengths of ¼in. by ¼in. stripwood, are

● Continued on page 66

All correspondence should be addressed to The Editor, Hobbies Weekly, Dereham, Norfolk

For Modellers, Fretworkers
and Home Craftsmen

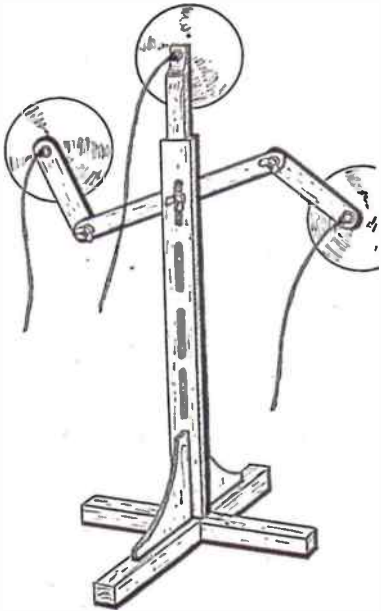
World Radio History

4 1/2^D

PAGE 65

For the photographer

INDOOR LIGHTING EQUIPMENT



should be suitable for most purposes. Fix the upright very firmly to the base using angle pieces to strengthen it as shown. A good length for this is 6ft., but it may be made longer or shorter to suit your needs. Do not use wood less than 2ins. wide and 1in. thick.

The slots in the upright will tend to weaken it somewhat and that is why several have been included instead of having one long one. The width of the slot should be just sufficient for the crossbar bolt to slide up and down easily.

By A. F. Taylor

The crossbar is not slotted like the upright, but each arm is jointed midway so that it is easily adjusted to any position. Make the main piece 16ins. long, 2ins. wide and 3/4in. thick, and drill a hole in the centre and one at each end to take the adjusting bolts. The outside arms are made of similar wood about 9ins. long and with holes in each end. To fit the lampholder a fairly large hole will be needed, while for the bolt hole 3/4in. will be sufficient.

Continued from page 65

Toytown Engine

now glued and pinned in the positions shown.

Pieces 6 and 7 can now be shaped as shown in the details on the design sheet, and then glued in position on the top of the boiler. This assembly should now be painted before fixing, and similarly the wheels can be painted at this stage.

Now paint the platform and cabin, and when dry the boiler and wheels can be added to complete the construction. The front of the boiler is glued to the

Obtain a Kit

Kit No. 3182 for making the Pull-along Engine costs only 7/6 and contains the necessary panels of wood, stripwood, round boller, wheels, etc. Obtainable from branches or post free from Hobbies Ltd., Dereham, Norfolk.

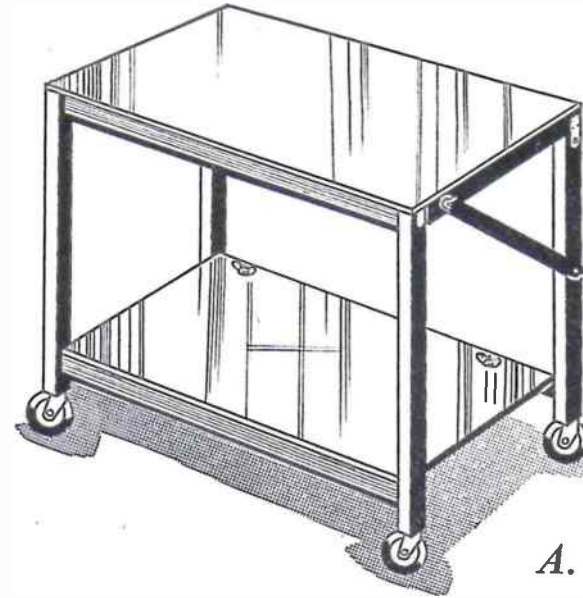
The top lampholder is screwed into a block of wood about 8ins. long, 1 1/2ins. wide and 1in. thick, which must be thinned down to about 3/4in. where the holder is fixed to it as shown. The other end has a length of dowel rod glued in and projecting about 2ins., so that it will drop into the hole drilled for it in the top of the upright.

Swivelling top light

Its swivelling action makes it a very useful source of light, and this can be improved by having two holes in the upright, one being perfectly straight while the other is drilled on the slant, so that the lamp points downwards slightly.

For general work the most useful lamps will be 100 watt, but these can easily be altered for special purposes. White card reflectors are probably the best for our purpose, as they are light, and are easily made up to direct the light where wanted.

Make a neat job of the woodwork and remove any roughness with glasspaper. If you used a good hardwood such as oak it may be finished off with varnish, but it would probably be best to give a coat or two of paint to any of the softwoods.



A FOLDING TEA WAGGON

Easily stored when not in use

Described by

A. Fraser

centre, and a hole drilled up to take the spigot of the waggon wheels or casters. The fit should be tight, but don't fix the wheels yet.

Chamfer edges

The bottom of each leg can now be finished as in Fig. 3. Chamfer off the four edges with a chisel, take off the corners, then finish with glasspaper to make the rounded-off end as in the figure.

The rails may now be made. These are 1 1/4in. by 3/4in. in section and 23ins. from shoulder to shoulder. With 3/4in. tenons at each end, the total length will be 1 1/2ins. longer to give 24 1/2ins.

The shoulders cut off will be 3/4in. by 3/4in. on each side. Fig. 4 shows the rails, with tenons, entering the legs.

Note that the top rails will have to be rounded off to accord with the round on the legs. This can easily be done with the plane and glasspaper.

When satisfied with a test assembly of the legs and rails, these can be fixed permanently with glue. Before leaving

A TEA trolley or waggon is of great service to the housewife, for it saves much labour. One can quickly produce the meal to hand and even more quickly dispose of it to the kitchen out of the way.

However, although some people use the tea waggon constantly every day, there are some who only need to use one on special occasions only. In this case, the waggon (if it is the ordinary type) can become an encumbrance when not in use. If the house is small, the waggon takes up too much space and gets in the way. For people in these circumstances, the waggon described here will be just the thing, for when not wanted, it can be folded up flat and placed against the wall out of the way, either in the kitchen or in the cupboard.

Make frames first

The waggon is quite simple to make, and in starting upon it, it is best to tackle first the front and back frames. Preparatory to this, make the legs. These should be 1 1/4ins. by 1 1/4ins. in section. The choice of wood is left to the reader. If the waggon is to be of polished wood, then some good quality wood is indicated. A waggon to be painted modernistically does not need wood of quality. In either case, some hard wearing wood is recommended.

The legs of what we will call the front are longer than those of the back. The reason for this is to enable the structure to fold flat. (The mechanics of this will become clear later on.)

The front legs should be 27ins. long, and the back ones 25 1/2ins. Fig. 1 shows

how these should be cut. The mortices in the legs (which will take the rails) are shown facing us, so the curves on the tops of the legs will be on opposite sides in each set. Note this. This curve is

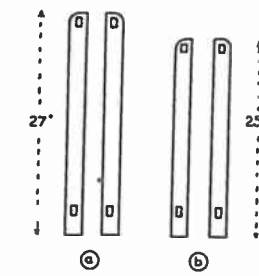


Fig. 1

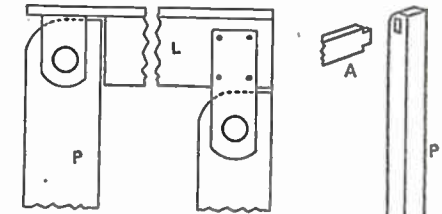


Fig. 2

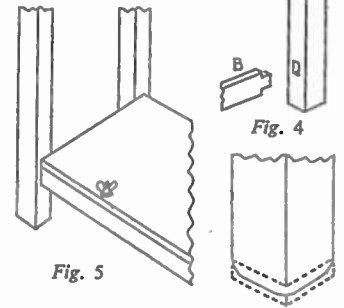


Fig. 3

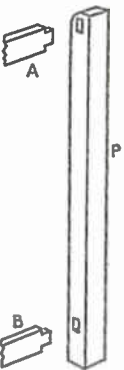


Fig. 4

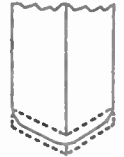


Fig. 5

necessary to allow the top of the tea waggon to swivel round and come upright in line with the legs. The actual measurements are seen in Fig. 2. Mark the curve with a compass, centring 3/4in. down from the top of the leg.

The mortices should be 3/4in. or 3/8in. deep, down the centre of the leg, and should be 3/4in. wide and 1in. in length. The top of the mortice at the head of the leg comes only 3/4in. from the end, so be careful when cutting it. Alternatively, make the distance 3/4in. and reduce the length of the mortice to 3/4in.

The mortices occurring at the lower extremities of the legs come 2ins. from the bottom.

The base of each leg is next crossed with diagonal pencil lines to find the



TO PLEASE ALL YOUNGSTERS

support (piece 2), and to secure the back a screw is driven through from the inside of the cabin (piece 3). Incidentally to prevent splitting the wood, drill the axles to take the screws when adding the wheels.

It is suggested that red and black should be used for colouring the platform, etc., with markings on the engine as indicated on the finished drawing. Other colours for the 'Toytown' motif, which could be added to the sides of the cabin, are suggested on the design sheet and will give a colourful attractiveness to the toy. A screweye is inserted in the front of the platform through which to tie the string for pulling along the model engine.

made from plyboard about $\frac{1}{4}$ in. thick. Cut out a true rectangle 26ins. by 15ins. This size is convenient, but the reader can make it bigger or smaller as desired, provided the waggon rails are the appropriate length.

A fine finish

A refinement to the top consists of surfacing the plywood with 'Formica' or similar plastic sheeting. This is more expensive, but has obvious advantages to recommend it. In this case, the plywood can be slightly thinner, say, $\frac{1}{8}$ in. thick. The 'Formica' pattern and colour can be chosen to match the rest of the waggon. There is a yellow 'Formica' which goes beautifully with a red painted waggon. While a cream or pale mottled green would be attractive to some. The 'Formica' is easily fixed with the special adhesive obtainable.

Having sawn out the rectangle of the top, it is necessary to fix some batten at each short end. (This is L in the illustrations.) This should be flush with the edge of the plywood, but does not

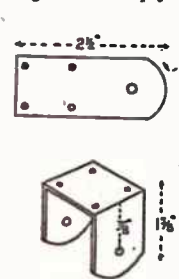


Fig. 6

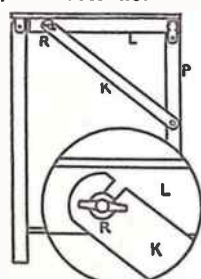


Fig. 7

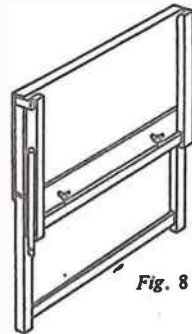


Fig. 8

the tray at the bottom of the waggon. This can be sawn out of plywood similar to the top, and again it can be surfaced with the 'Formica' sheeting if desired. If the top has been covered, then it is only consistent to cover the bottom tray as well.

The size of the bottom tray is smaller than the top — to be precise, 23ins. long by 14 $\frac{1}{2}$ ins. wide. (This is with $\frac{1}{2}$ in. thick bottom rail. With $\frac{3}{4}$ in. thick rail the width would have to be 14 $\frac{1}{2}$ ins.)

The back edge of the bottom tray has two slots sawn out. These should be $\frac{1}{2}$ in. wide and $\frac{1}{2}$ in. in. They should each occur about 3ins. from each end.

Place the tray so that its edge is flush with the back rail of the waggon, and mark on the rail the positions of the slots. At these points, drill a hole through the centre of the rail to accommodate the bolts which will hold the tray secure to the rail.

Square-necked bolts are necessary to prevent movement, and could be $\frac{1}{4}$ in.

screws and leg and attach the metal piece to the waggon top. Then add the leg again.

The back legs are easily fixed. Attach the metal piece to the leg, then fix to the top batten (L). All screws attaching the metal pieces to the top should be countersunk.

Fig. 2 makes the above clear.

Next, make the stay (K) seen in Fig. 7. This is necessary to keep the waggon firm. There should be one at each end. They should be made of $\frac{1}{2}$ in. by $\frac{1}{2}$ in. wood, or thereabouts, and rounded at the ends.

A hole should be bored at (P) to take the round-headed screw on which the stay pivots. (Washers will be needed.)

The top end of the stay (R) is fashioned as in the inset, Fig. 7, and is held firmly by bolt and wing nut and washer. The pivot at (R) is 12 $\frac{1}{2}$ ins. along from the back, and that at (P) is 12 $\frac{1}{2}$ ins. down from the top. The stay is 17 $\frac{1}{2}$ ins. long, and the positions of the holes in it should be found by placing it in position.

In assembling the waggon, fix the bottom tray first by means of the wing nuts and bolts. Then swing up the stays (K) and secure with the wing nuts and bolts.

When folding up the waggon, release all wing nuts, fold up the bottom tray, then swing up the top in line with the front legs, at the same time letting down the stay. Fig. 8 shows the waggon folded up.

Wheels of 2in. diameter are adequate and are obtainable from any Hobbies branch or direct from Hobbies Ltd., Dereham, Norfolk.

extend right along the end. It comes short of the front (so called) of the waggon by 1 $\frac{1}{2}$ ins., to leave room for the front leg.

This end batten need only be $\frac{1}{2}$ in. or $\frac{3}{4}$ in. thick and 1 $\frac{1}{2}$ ins. deep. The length will be 13 $\frac{1}{2}$ ins. (That is, if the 15ins. by 26ins. size top is adhered to, as suggested.)

Fixing the batten consists of gluing and screwing through the plywood top. The screws should be countersunk and the holes hidden with plastic wood.

A similar batten may be fixed along the back edge of the waggon top if desired, although it is not really necessary. The appearance of the waggon may be improved, however, in consequence. If this is decided upon, the battens at each corner may be morticed and tenoned together, or simply but-jointed with glue and a fixing nail.

After the battens are fixed, then is the time to stick on the 'Formica' top, if this form of surfacing has been determined upon.

Putting aside the top, one can turn to

thick preferably, with holes to make a tight fit. The nuts should be winged or butterfly type. A washer to each bolt is also necessary. Fig. 5 shows the idea of the above arrangement.

The front edge of the bottom tray is fastened to the front rail by means of three brass hinges about 1 $\frac{1}{2}$ ins. or 2-3, long. These should be sunk, in the rail, at any rate.

The top of the waggon is attached to the legs by means of metal pieces on which the legs turn. These can be of brass or iron, or even duralumin. Details are given in Fig. 6. The metal can be about $\frac{1}{4}$ in. thick. Two of the angle pieces will be needed, and two of the flat ones.

It may be pointed out that instead of the angle pieces above, one could use a hinge screwed into the top of the leg (this being sawn off straight, omitting the curve).

The angle pieces are fixed to the leg top with screws and washers. The turning movement should be tight rather than loose. If it moves truly, remove the

MOTH DETERRENTS

IF a carpet has become infested with moths the following method of treatment should destroy all their eggs and discourage future attacks.

Dissolve a quarter pound of rock ammonia in a pail of boiling water (about half a gallon). Immerse the centre of a large house-cloth in the liquid, keeping the edges dry by hanging them over the sides of the pail. Wring out the cloth by the dry ends, lay it flat on the carpet and iron with a very hot iron until dry. Go over the entire carpet in this manner.

To keep moths from clothes, place camphor balls or formalin balls, or some aromatic herbs in the wardrobe or drawers, among linen or woollen clothes. Another deterrent is to sprinkle the clothes with allspice or musk seeds. No insect will go near material thus treated. (R.L.C.)

Add a Tuning Unit

Radio With Your Amplifier

QUITE frequently an amplifier is used for one purpose only, such as playing gramophone records, tape recording, or with a microphone. It is not always realised that radio reception is possible if a Tuning Unit is added, and this enables the amplifier to have an increased field of utility. As the cost of making a suitable tuner is small, this will often be worth while. In addition, some amplifiers are capable of giving powerful results, with excellent quality of reproduction, and very satisfactory results will then be obtained.

Tuning units are of various types, some very simple, and able to receive only the local stations, while others may employ several valves, and require separate power supplies. The former

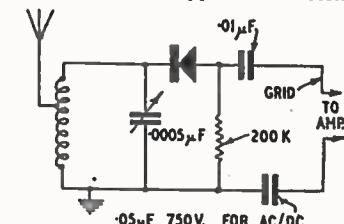


Fig. 1—Crystal set tuner

connections. But with A.C./D.C. equipment with a live H.T. negative line, a reliable condenser of about 0.05 μ F, 750 V working, must be included between amplifier and crystal set, as shown.

To fit the unit, it will only be necessary to plug in the two leads from the crystal set, when the radio programme tuned in will be reproduced through the amplifier. If the layout of equipment makes long leads necessary, the grid side of the circuit should be screened to avoid hum. A few feet of screened cable will accomplish this, the screened braiding being earthed.

Very good results will be obtained where a crystal set will operate well — e.g., give good headphone signals by itself. Other than local stations should

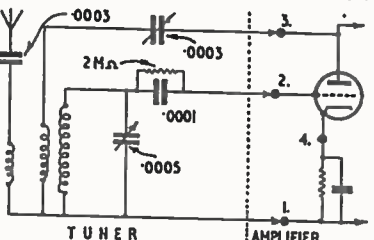


Fig. 2—A tuner with reaction

will be described here, because of their simplicity, and because most listening time is usually spent tuned to local stations.

Crystal Set

When a reasonably effective aerial and earth are available, an efficient crystal set forms an excellent source of radio programmes for the amplifier. The clarity and quality of reproduction from a crystal set is normally so excellent that it is difficult to improve. Indeed, a valve tuner will usually introduce some distortion absent from the crystal set signal. Very satisfactory results will thus be had if the amplifier has good characteristics and does not cause distortion itself.

Fig. 1 shows the method of connecting the crystal set to the amplifier. If no crystal set is available, then a tuning coil, tuning condenser, and crystal diode (or crystal detector) can easily be wired up for this purpose.

A resistor of about 100K to 250K is wired across the phone terminals on the crystal set, with a 0.01 μ F condenser from the detector to the grid input socket of the amplifier. If the amplifier is an A.C. model, with mains transformer, a lead from earth on the crystal set to the earthed input socket completes con-

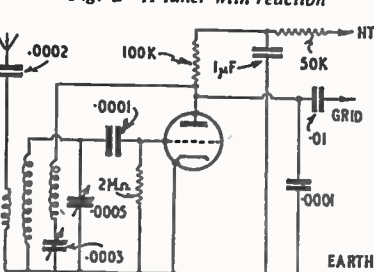


Fig. 3—A one-valve tuner

not be expected from this arrangement, however. Despite this, it is very useful, as it can be made up at low cost, occupies little space, and is trouble-free. It can be used with any type of gram., mike or tape recorder amplifier.

Introducing Reaction

The circuit shown in Fig. 2 is particularly suitable for home-built amplifiers of both mains and battery type, where access is possible to wiring. It uses a tuned circuit only, the first valve in the amplifier acting as detector. As reaction can now be provided, the circuit is more sensitive than the crystal

detector, so that an earth is not necessary. A limited number of more distant stations can also be received. Quality of musical reproduction will not be quite so good as with the crystal circuit.

For tuning, an ordinary medium-wave (or dual-wave) coil, with reaction, is required. This, with the tuning condenser and dial, may be mounted in a small cabinet, the reaction condenser, with knob, being included. The earth

By F. G. Rayer

line of the tuner is wired to the earth line of the amplifier, point 1 in Fig. 2. A lead is taken from point 2 to the grid of the first valve, and a further lead from point 3 to the valve anode. All these leads should be quite short with this circuit.

In use, stations are tuned in in the normal way, reaction being employed to build up the volume of weak signals. In some amplifiers results will be improved if the lead at point 1 is taken directly to the valve cathode at 4. This depends upon the bias circuit in the amplifier. With a home-built amplifier it will usually be easy to provide a 3-pin plug and socket, so that the tuner can be plugged in at once when wanted.

A 1-Valve Tuner

Fig. 3 shows an arrangement which is virtually a 1-valver, feeding its output into the amplifier. This will give much more sensitivity than the circuits so far described, and most radio constructors who have built up a few receivers will be able to make this unit up easily.

The required current is drawn from the amplifier, as the demands by the single valve are small. The valve should be of the same filament or heater rating as those in the amplifier. For example, 1.4 or 2 V for battery amplifiers, and 4 V or 6.3 V for most A.C. amplifiers. A twin-flex lead is brought from the filament circuit of the amplifier, to the valve filament in the tuner.

With A.C./D.C. amplifiers, the additional valve heater will need to be in series with the existing heaters. This means cutting the lead from chassis to heater chain, and taking the two points thus obtained to the additional valve. The valve must be chosen to suit the current rating of the amplifier heater chain, in this case — usually 0.3 amp.

H.T. is drawn by taking a lead from the positive H.T. circuit in the amplifier, and the tuner-earth lead is taken to the amplifier chassis. A 4-pin plug and

socket will allow ready connecting-up of heater, H.T. positive, and earth circuits. The remaining lead, from 0.01μF condenser to grid circuit of the amplifier, is best kept separate, to avoid hum, and can be fitted with a plug to insert in the appropriate 'PU' socket on the amplifier.

This circuit is more sensitive than that in Fig. 2, because an extra valve has been added. It is thus most suitable for small amplifiers which do not provide much volume unless provided with a powerful input signal.

Precautions

No danger whatever exists with battery equipment, but care is necessary with mains equipment, where high voltages may be present. With an A.C.

amplifier (with transformer) the circuits will be isolated from the mains, and thus relatively harmless. However, proper insulation should be used, and the equipment so built that H.T. and other circuits cannot be touched.

With A.C./D.C. equipment, one mains lead will be wired to the amplifier direct, so that the chances of shocks are increased. It is very desirable the mains plug be so wired that the neutral (or 'earthed') main is that going to chassis, as the other main will be 200-250 V above earth. When making a tuner such as that in Fig. 2 or Fig. 3 for an A.C./D.C. amplifier, the whole should be in an insulated cabinet, with no exposed metal parts.

It will be seen that the circuits in

Figs. 2 and 3 are particularly suitable for battery equipment, and for adding to an amplifier which has been constructed at home. It is not recommended that they be used with an existing commercially-manufactured amplifier except when the person making connections has gained sufficient experience from home-construction, to make the addition in a proper manner.

However, the circuit in Fig. 1 can be employed with confidence in all cases, and can give very satisfying results, when a fairly good aerial and earth are available. For this reason it may well be employed at first, though the circuits in Figs. 2 and 3 will offer more scope for the experimenter or more advanced constructor.

BOOKS TO READ

Lampshade and Parchment Craft

by Frederick T. Day
PEOPLE who love making things with their own hands, especially the ladies, will find this volume of absorbing interest. It is copiously illustrated, is easy to follow, and should prove not only a fascinating but a money-saving introduction to this most attractive hobby. Every aspect of lampshade and parchment craft is dealt with by the author, from materials and tools to the most ambitious contemporary designs. Published by C. Arthur Pearson Ltd., Tower House, Southampton Street, London, W.C.2—Price 8/6.

Craftwork

by N. P. Donnison
WRITTEN primarily for the classroom, this most interesting book contains much that will appeal to the hobbyist of all ages. It is somewhat unique in its adoption of the visual method of instruction, and stage by stage development of the various models is shown in line sketch. Many crafts, from simple papercraft to wood toy model making, are dealt with and room is found for the making of Christmas decorations. Published by Angus and Robertson, 105 Great Russell Street, London, W.C.1—Price 7/6.

Close Range Photography

by C. H. Adams
LARGE scale photography of small subjects, once a specialist branch of camera work, has now become a delightful hobby for all, and this fascinating volume shows how the job can be done with home-made and inexpensive tools. Every aspect of close-up photography is fully dealt with from technique and equipment to a wide range of subjects—human, animal, insect and vegetable.

Numerous half-tone illustrations depict the amazing possibilities of C. H. Adams' close-range world. Published by Focal Press Ltd., 31 Fitzroy Square, London, W.1—Price 21/-.

Military Aircraft of the World

by the Associate Editor of *Flight*
ALTHOUGH the bulk of this book is a reprint from *Flight*, additional material and an arresting art supplement make this critical review of modern service aircraft an engrossing even exciting volume. At almost negligible cost it brings to the reader the complete range of short-based and ship-borne aircraft demanded by modern war, and many of the numerous illustrations make their first public appearance. A 'must' for every air cadet, of equal importance to any member of the Observer Corps, and a book for the air-minded. Published by Iliffe & Sons Ltd., Dorset House, Stamford Street, London, S.E.1—Price 3/6.

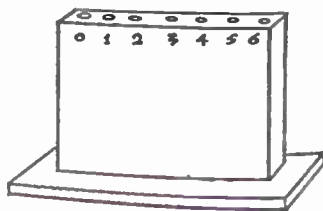
Correcting TV Picture Faults
by John Cura and Leonard Stanley
THIS little book will not only prove of the greatest value to the service engineer and dealer, it will improve viewing in nine homes out of ten. It contains over 150 'Tele-Snaps' showing at a glance the result of almost every conceivable type of fault, and, more important still, it gives the cure after the diagnosis—in great detail in technical language for the technician, and in simple language (in different type) for the average home viewer. A fascinating modestly priced *vade mecum* for everyone who appreciates better viewing. Published for Wireless World by Iliffe & Sons Ltd., Dorset House, Stamford Street, London, S.E.1—Price 3/6.

How to Draw Pond Life

by Vere Temple
VERE Temple tells us quite a lot about the life and surroundings of the inhabitants of her pond in the field and she does it with simplicity and charm of style matched only by the fascinating pencil and brush drawings of her illustrations. Here is much to interest all who have not yet forgotten their 'collecting tadpole' days, a surprising display of pictorial and literary wealth contained in a so modestly priced volume. Published by The Studio Publications, 66 Chandos Place, London, W.C.2—Price 5/-.

HANDY RACK FOR FRETSAW BLADES

THE keen fretworker likes to have a good variety of saws at his command, and a rack in which to hold the various sizes will be found very useful.



In a piece of wood 4½ins. by 4ins. by ½in. drill ½in. holes 3ins. deep. Make a platform from a piece of plywood 6ins. by 1½ins. and screw it underneath into the rack. Clearly mark the holes which will hold the various grades of fretsaw, as shown in the illustration. It will be found that each ½in. hole will hold about two dozen blades.

Odd jobs around the house

An Attractive Switch Cover



WITH imagination and a little careful handiwork it is surprising how some commonplace household fittings can be made attractive and even elegant.

Take for instance the ordinary electric light switch. If it is a modern flush-fitting type the cover for it is usually small and made from some drab brown composition. Either this or it is pressed from thin sheet metal which is painted and therefore easily scratches.

Here is how a new cover can be made and fitted which will be much more tasteful and more in keeping with the decoration of an up-to-date room.

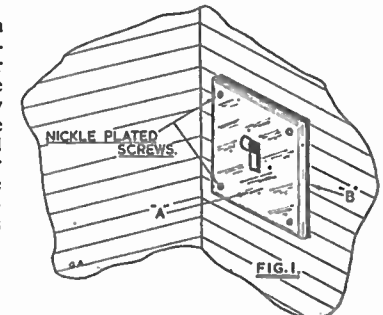
Fig. 1 gives an indication of how it is made. The cover consists of a Perspex plate (item A) to which is cemented a beading of different coloured Perspex (item B). These two colours can be chosen to blend with the colour scheme of the room.

Item (A) is cut about 5ins. square from a piece of ½in. thick Perspex. The corners can be rounded off but the angular appearance of such a fitting if the corners are left as they are can be very attractive. A clearance slot is cut in the centre of the plate sufficiently wide and deep enough to take the switch lever and its movement quite easily. These dimensions should be measured accurately. The shape of the slot is marked with a scriber on the face of the plate. A ½in. diameter hole is drilled within the area marked, the fretsaw blade threaded through, and the rectangle carefully cut out. It is then filed smooth with a warding (toolmaker's) file.

After this the beading is fixed in place with Perspex cement. This is made from strips of ½in. thick Perspex ½in. wide. Four pieces of this are cemented to the edges of the plate and filed flush when

dry. The front edges of the plate are then rounded off with a fairly coarse file after which they are filed and glass-papered smooth and then polished with metal polish. Finally holes are drilled in the corners to take No. 6 woodscrews.

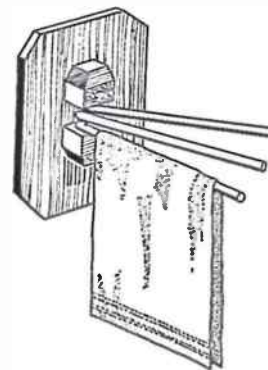
After the old switch cover is removed (it will be held by two tiny screws going into the switch itself) the new cover is put in place and the new hole positions



marked on the wall with a pencil. The holes are then drilled and plugged. The cover is held in place by four nickel plated screws. Nickel plated screws are preferable to chrome since they are not as harsh in appearance.

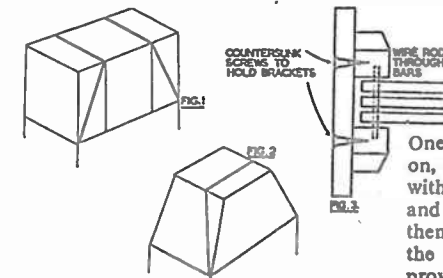
Switch the current off when doing this job. (G.A.)

A Towel Rack or Clothes Airer



a pair of brackets are fashioned from two pieces of 1½in. square wood. The brackets are prepared as shown in Figs. 1 and 2. First mark out the material, allowing for ½in. bevels as in Fig. 1, cutting on the thickened lines. When these bevels have been made, the final one is removed as shown in Fig. 2. Smooth off with plane and glasspaper.

Three dowel rods ½in. in diameter and 18ins. long are rounded at both ends and



LITTLE material is required in making this efficient towel rack or clothes airer.

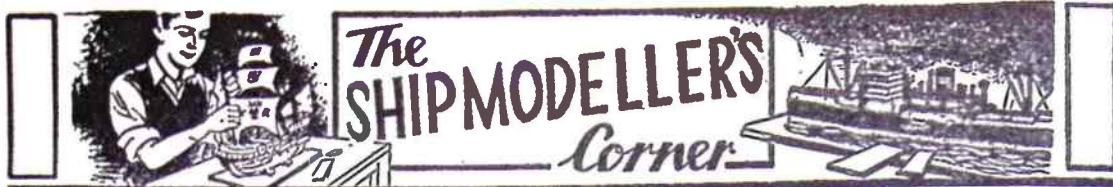
The back portion is shaped from a piece of ½in. material 3½in. by 7½in., trimmed or rounded at the corners. Three ½in. dowel rods form the arms and

a hole drilled ½in. from one end to take a stiff ½in. wire spindle. This provides for ½in. play, allowing the arms to turn in any desired position, the spindle being centred in the brackets, and holes drilled ½in. deep. The wire spindle is 2½ins. in length, allowing for the thickness of the rods, a small washer between each, and sinking into the bottom and top brackets.

The spindle can be made from any piece of stiff wire or steel rod, an ideal one being obtained from a length of Meccano rod.

The assembly of the rack is shown quite clearly in Fig. 3, two holes being drilled centrally through the back of the board and countersunk for the screws.

One of the brackets is glued and screwed on, the rods threaded on to the spindle with a small washer in between each rod and the brackets. The other bracket is then positioned, glued and screwed from the back. Two screw holes should be provided for fitting to the wall. (S.H.L.)



IN our ship model-making, one of the most conspicuous items on our model will be the steering mechanism and we want to be sure we have the right type for the model and the period.

I have seen a galleon model more than once, with a ship's wheel fitted, indeed, ship modeller's are not alone in erring in this manner. Some years ago I saw a film that was based around Cortes' voyage to conquer Peru. In the film a sequence was shown taking place around the ship's wheel, which at that time had not been invented. It was, in fact, over a century later before it made its appearance. We do not know the exact date, but we do know that it was early in the 18th century, around 1710-1715, so that both the instances mentioned above were out of period.

The first method of steering was, undoubtedly, the steering oar or oars placed at the stern. One example appeared in a Hobbies kit some years ago, namely the model Egyptian Galleon.

Later, in Egypt, we come to one large steering oar, abaft the cabin and lashed to a post. This type is still in use today in native craft in Asia.

The practice of having two steering oars was introduced in the near East and Mediterranean and we still have survivals of the type in the native craft of the Malayan islands.

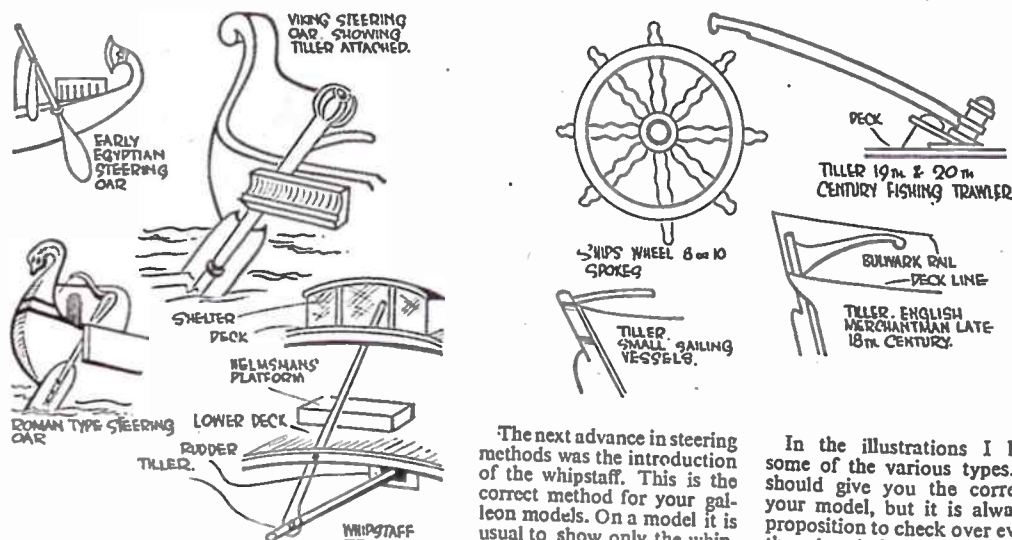
In the Nydam Viking boat we have one steering oar on the starboard side fitted in a socket on the gunwale and lashed to the quarter. In the later Viking boat discovered at Gokstad we find a single steering oar on the starboard side, but in this case representing a definite advance in the steering arrangements, being controlled in this case by a tiller athwart the ship. This tiller is stepped into the upper end of the oar, the oar being passed through a lashing on the gunwale and bearing against a boss projecting from the side planking, a rope being passed through the oar and the boss.

starboard. It was a clumsy method, but was not replaced by the ship's wheel until the beginning of the 18th Century, as near as we know about 1710.

STEERING GEAR

By 'Whipstaff'

For the smaller ships the tiller itself was the usual method of steering and is still in use on many types of small sailing vessels. There is some record of small vessels having a ship's wheel attached to the tiller, although the tiller was on deck, during the latter part of the 18th Century.



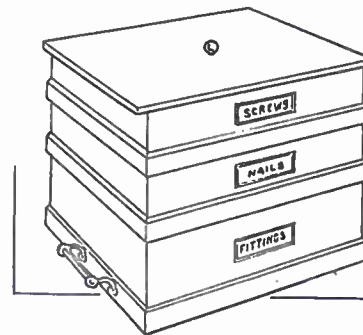
The next advance in steering methods was the introduction of the whipstaff. This is the correct method for your galleon models. On a model it is usual to show only the whipstaff shelter, but on larger models we can show more details, if only the head and shoulders of the helmsman and the top of the whipstaff. The whipstaff was a large vertical lever, pivoted in the deck and attached to the after end of the tiller. If the helmsman wanted to turn the ship to the starboard he pulled over the lever to the

In the illustrations I have shown some of the various types. Your plan should give you the correct type for your model, but it is always a paying proposition to check over every detail of the plan before actually commencing work. Errors can creep in and nothing is more annoying than to get halfway through the construction and then find you are wrong in some detail or another, perhaps, through a printing error, but more probably still, because later research has produced more authentic and accurate information than was available when the plans were drawn up.

Handy for the handyman

A WORKSHOP NAIL BOX

THE design of nail box illustrated, provides adequate space, not only for nails, but for screws and fittings. As every handyman should own a supply of such necessities ready for emergency, it is worth while constructing. It comprises three compartments, two of which are partitioned off into divisions for nails and screws, and one of deeper dimensions for small fittings. These compartments fit one on another, and being easily lifted off, provide free access to the contents.



1/2 in. wood

Make the whole as one box, seen in Fig. 1. Wood of 1/2 in. thickness would serve for the job, a clean deal free of knots and shakes being chosen, or any hardwood available. Nail the sides together with 1 1/2 in. oval nails, and position these nails with due regard to the line of cut, denoting where the box will subsequently be sawn through, to provide the three compartments. The distances apart of these lines are indicated in Fig. 1. Cut a bottom for the box of 1/2 in. plywood, and make it a correct rectangle by carefully squaring the sides to ensure a shapely box and subsequent easy fitting of the compartments on each other.

By W. J. Ellson

upper compartments, then true the edges of the plywood with the compartment sides. These upper compartments should then be partitioned off to provide space for the screws and nails. A suggested arrangement of such division is shown in plan, Fig. 2, which allows extra space for the longer nails.

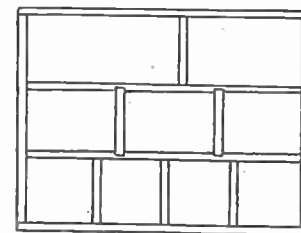
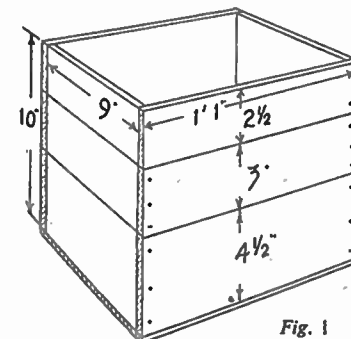


Fig. 2

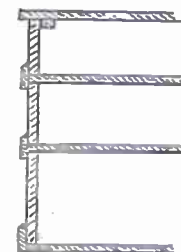


Fig. 3

Divide into three

Now, after nailing the bottom on, with a handsaw cut along the lines and divide the box into three. The best method of cutting is to saw across each end first, and then lengthwise to finish, the blade having to pass through the end cuts acting as a guide to accurate sawing. Smooth the cut ends by vigorous rubbing on a sheet of glasspaper, the latter being held down on a flat table top during the process, to avoid a rounded and possibly uneven edge to the compartments.

Nail a plywood bottom to the two

strips is to cut the long ones to correct length to fit across the box, then the short ones for the front and back cross pieces, and to nail all these to the long ones first. To ensure accurate fitting, cut all the cross-pieces to exactly the same length. Where the two middle cross-pieces will come, cut 1/2 in. deep grooves. Now fit in the box and cut the middle division accurately to length. Fit these in their grooves with a touch of glue and finally nail with panel pins through the compartment sides into all the divisional pieces.

Extra partitions

The bottom compartment, intended for small household fittings is, perhaps, best left undivided, but could have a part partitioned off for such items as cupboard hooks, staples, etc., for which room cannot be found elsewhere. Now prepare a few feet of planed deal 1/2 in. thick, and 1 1/2 in. wide and nail this material round the sides of each compartment, in such a position that the lower edges overhang the compartment beneath, as in detail section, Fig. 3. That nailed to the bottom compartment will be level with the plywood base of the bottom compartment.

For a lid, a rectangle of plywood, cut large enough to extend over the compartment 1/2 in. each way will serve. A small strip of wood glued each side, underneath the lid, will keep the latter in position, and a wood knob or metal handle in the centre will be an aid to removing the lid. A pair of handles would also be helpful when shifting the whole article and these should be fitted either to the sides of the bottom compartment, or to the wood strips nailed to it. A pair of cheap tray handles would be quite good enough for this.

To complete the article a card with 'Nails' or whatever else is housed in the compartment, inscribed thereon might be considered. Small cards, fitted behind fretwood frames, as in the illustration would serve for this.

CUTTING LIST

- Long sides. (2) 1ft. 1in. by 10ins. by 1/2 in.
- Short sides. (2) 9ins. by 10ins. by 1/2 in.
- Bottoms. (3) 1ft. 1in. by 10ins. by 1/2 in. plywood.
- Lid. 1ft. 1 1/2ins. by 10 1/2ins. by 1/2 in. plywood.
- Edging strips. 1in. by 1 1/2ins. 12ft. run.
- Divisional strips. 1/2 in. by 2 1/2ins. 3 1/2ft. run.
- Divisional strips. 1/2 in. by 2 1/2ins. 3 1/2ft. run.
- Fittings.
- 1 knob for lid and 1 pair tray handles.

Fretwood, 3/16in. thick, and 1/2 in. less than the depth of the compartment would do for the divisional pieces and a good system to adopt when fixing the

Make your own delicious drink

MORE WINE RECIPES

BESIDES making a wholesome and most appetising drink, many home-made wines possess valuable medicinal properties and are extremely beneficial. Dandelion, elderberry, parsnip and orange are excellent tonics, and when taken in moderation are perfectly harmless.

Blackcurrant and Elderberry

Both blackcurrant and elderberry wines are well tested old-fashioned remedies for a cold. 'Mulled' elderberry, which is made by adding a wineglassful to a tumbler of hot water with spice and sugar to taste, and taken when in bed is especially good for sweating out a cold. Blackcurrant is also prescribed for a sore throat.

Ginger

Ginger wine made up in the same way, either with or without sugar is a splendid warming drink for a cold winter's day. A wineglassful of ginger wine taken after meals aids the digestion, while orange wine taken before meals is an excellent appetiser.

Orange

The orange is, undoubtedly, one of the most pleasant and health giving fruits, and when made into wine its many virtues are available in an easily assimilated form. There are very many recipes for this pleasant drink and the following is quite the easiest to make.

About 16 Oranges (or 4 lbs.)

3½ lbs. Granulated Sugar
1 gallon Water
1 oz. Yeast

Cut the oranges in half and squeeze out all the juice and pulp, taking care to remove all the pips and place into an earthenware jar or pan. The peel which contains much essential oil should be grated and added to the juice, but if you do not like the slightly bitter taste, this may be omitted, although the quality of the wine is improved by its use.

Some people like a really bitter orange wine and they therefore, use the entire orange cut up into small pieces, but without the pips. In this form it is an excellent appetiser and tonic. Pour a gallon of boiling water over the juice and pulp, cover with a cloth and leave for three days, stirring each day.

Strain through butter muslin and to every gallon of liquid add 3½ lbs. granulated sugar, stir until dissolved and then add the yeast. It is generally best to thoroughly dissolve the yeast in a little warm water before adding it to the bulk.

You may let this work or ferment in a stone jar, but many people now like to watch the process by pouring it into dry

glass wine bottles. Fill to within about 1 in. of the top and insert the fermentation lock or a very loose fitting cork as mentioned in *Hobbies Weekly* of May 9th, 1956, which also gives much general information about wine making.

Fermentation will go on for about two or three weeks, by which time the rate will have slowed down until only a few bubbles rise in the bottles. It will, however, take somewhat longer when the temperature is lower, and it is an advantage to stand the bottles near a stove during a cool spell, so that the wine works at about 60° to 65°.

In response to many requests, A. F. Taylor here gives more recipes for making delicious wines.

When fermentation has ceased, the wine is ready to decant, and information about this will be found in *Hobbies Weekly* of April 4th. Be sure to use clean dry bottles and on no account should the wine be shaken to disturb the sediment in the bottom of the bottle. The juice and pulp of one lemon added to each gallon of orange liquid is sometimes an improvement, but that is a matter of personal choice.

Mint

A rather unusual but very tasty wine can be made with mint leaves, and this will aid the digestion and allay flatulence. There are many varieties of mint, including sage, rosemary, spearmint, pennyroyal and peppermint, all of which may be used for wine making, but the ordinary garden mint will be found best for the purpose. Almost all the herbs in fact that are used in the kitchen may be made into wines that are both pleasant to drink and which possess beneficial properties.

The following recipe was devised originally for mint, but may be used equally well for all the others which use the leaves of the herbs.

4 ozs. Mint Leaves
1½ lbs. Sugar
4 pints Water
1 Lemon
½ oz. Yeast

Well wash the leaves in cold water and then put to boil with water and grated rind of the lemon. When boiling, turn down the heat and simmer for about ½ to ¾ hour, and allow to cool. Strain through butter muslin and before it is cold add the sugar, juice of the lemon and yeast, and stir until dissolved. Pour into bottles and allow to work for two to three weeks as explained for orange wine.

Mead

A really good old-fashioned wine is mead, and very strong it can be when properly made. Mead which is known in certain country districts as 'Metheglin' or 'Hydromel' is prepared from honey, and there are countless recipes available, but the following is about one of the easiest.

3 lbs. Honey
1 gallon Water
Rind of 2 Lemons
1 oz. Yeast

Boil the honey and water for half an hour and when lukewarm add the grated rind of the lemons and the yeast. Put into bottles and allow to work until fermentation ceases, probably in about two to three weeks time, then decant and bottle up.

The alcoholic strength of the mead is governed by the quantity of honey used. The above recipe is for a medium strength, 2 lbs. to the gallon of water produces a lighter wine, while 4 lbs. to the gallon makes a really strong drink.

The recipe may be amended to suit individual tastes by the addition of a variety of spices either singly or in various combinations. A little ginger, nutmeg, a few bay leaves, cloves or rosemary may be put to boil with the honey and water, but do not overdo the quantity used. It is best to use only a small amount of each, especially the stronger spices.

Nettle

Nettle beer which is much used by country folk is worth making, although it is more trouble to prepare than the previous recipes.

2 quarts Malt
1 gallon Water
¾ oz. Whole Ginger bruised
¾ lb. Demerara Sugar
1 oz. Hops
2 gallons Nettles
½ oz. Yeast

Put the malt in an earthenware jar, pour over the water which must be boiling, and allow to stand until cold or until next day, stirring occasionally. Strain and put the liquor into a saucepan with the bruised ginger, Demerara sugar, hops and nettles. Well wash the hops and nettles and cut into small pieces with scissors. Bring this to the boil and simmer for about half an hour, then allow to cool and strain through butter muslin. Add the yeast and put into a stone jar or bottles and allow to ferment as described for the other wines, but from three days to one week is usually sufficient time for this process. It may be used at once.



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Cine Screen

COULD you please tell me how to convert a white sheet (2ft. x 1½ft.) into a good projection screen? I thought of soaking it in white paint, then coating this with gloss — is this any good? I need this screen for my home-made 35 mm. strip film projector. I would also like advice on what wattage household lamp to use in projector, and whether it should be plain or pearl. (C.S.—Northampton.)

THE more reflective the screen, the brighter will the picture be. Glossy white paint is quite good. However, almost any white surface will do quite well, materials such as white cloth being avoided. The wattage of the lamp will depend upon how hot the projector gets, which will be governed by ventilation, whether you have a metal top to

The Editor welcomes letters from readers concerning their particular hobbies. Correspondents should, however, confine queries to one subject and to those dealt with in this magazine and should enclose 2½d. stamp for reply.

dispel heat, etc. You should use the largest lamp which does not cause overheating. Something around 100 W should do, unless the projector is all wood, when a smaller bulb may be necessary, unless a good flow of air through the lamphouse is provided. A pearl bulb is usual. If you employ one of the Philips high intensity lamps made for photographic enlargers, and available from photo stores, this will give maximum illumination. It is suggested that at first you try any ordinary household lamps to see if heating is serious.

Damp in Bricks

COULD you tell me how to get rid of dry rot on bricks? (P.J.—Bridlington.)

IF the dampness is present at the base of the exterior walls it would be best to remove the earth down to the foundations and render the brickwork with a ½in. thick coat of concrete to about 12ins. above the earth level. A mixture of 1 cement to 2 of sand would be correct. If damp appears elsewhere you could paint the brickwork with petrifying liquid (obtainable from the iron-

☆☆☆ WORTH KNOWING ☆☆☆

☆☆ When door painting ☆☆☆
☆☆ **A** JOB which often gets over-looked when painting a door, is the underside. This is probably because taking the door off its hinges involves so much trouble. It can, however, be done quite successfully with a tooth brush. It is also advisable to paint the top of the door, another part which is invariably missed, as this facilitates cleaning and prevents the accumulation of dust. ☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆

monger), or if a coloured effect would be preferred, with Duresco, thinned down with the petrifying liquid mentioned. There are also waterproof concrete paints now obtainable, which are excellent for repelling damp, but are a little more expensive.

small brush — an old toothbrush would be excellent. To polish, soak a pad of cotton wool in french polish and cover with a clean rag. Rub this well over the butt and leave for a few hours. Apply a second coat and leave that for a day. Finish with the pad, charged this time with polish and methylated spirit. If the pad tends to stick, dab the surface with a little raw linseed oil. Should the wood lose colour after cleaning and glass-papery, tint the polish with a little spirit walnut stain. You can avoid polishing if you apply a coat of the following special varnish. Take 2 ozs. orange shellac, 2 ozs. gum sandarach, ½ oz. venice turpentine, a very little camphor and dissolve by agitation in ½ pint methylated spirit. Strain through muslin and apply with a camel-hair brush in a warm room.

Wadding proofing

I HAVE a feather-filled sleeping bag and although I have put dry soap down the seams, the feathers come out through the material as well. Can you tell me of a way to prevent this? (D.H.—Stone.)

FEATHERS working through their covering are a great nuisance and hard to cure. You do not say if your bag is quilted, or if it is possible to get at the inner surfaces, but an application of soap or beeswax over the whole of the inner surface is the only real palliative. For soaping, the area is well dampened and then rubbed uniformly with any ordinary cake soap. It is not hard to cover a good sized area once you can get at it. Soap applied on the outside of material is always visible and not desirable, but a certain amount of 'wadding proofness' can be secured by applying soap lightly to the outside and continuing rubbing with, say, a cloth pad till it has almost passed through the fibres. The thorough rubbing makes the dressing less obvious. Soaping the outside would be excellent if it were possible to fit the bag with an extra cover which need only be of the thinnest and lightest fabric. Even so, any additional covering would add in some degree to the bulk and weight of the article. When buying a sleeping bag, make sure the material is 'wadding proof' — the salesman will know exactly what you mean by this term.

Cementing Marble

COULD you advise me as to the composition of a compound suitable for cementing marble? (S.J.—Hammer-smith.)

FOR cementing white marble, superfine plaster of Paris is suitable. Another excellent cement is made by beating up the white of egg with flour to the consistency of thin cream. These cements can be employed on coloured or black marble, but when set, the joint should be raked out and a coloured stopping run in with a hot iron. To make the stopping, melt orange shellac with suitable colouring matter and for convenience in application, roll into sticks like sealing wax.

Repolishing a Gun Stock

I WISH to clean and repolish the stock of a shot gun which has become dirty and dull through gripping by hand to fire. The dirt seems to have gone into the wood. Please advise me how to set about the matter of polish and cleaning. (W.W.—Ystradgynlais.)

YOU should clean the gun butt thoroughly with warm soap and soda water and when dry, glasspaper to smoothness. Any dirt in the chequering can be removed by scrubbing with a

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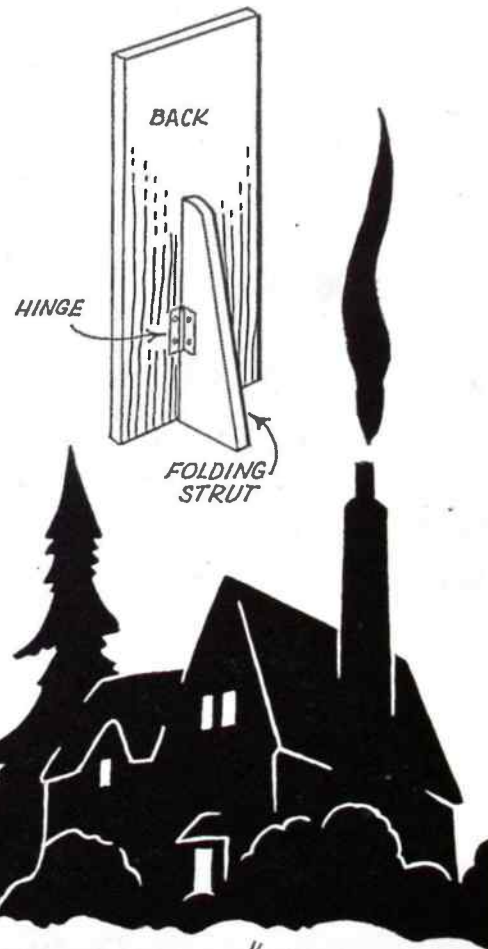
BACK - CUT ONE 1/8 IN.

OVERLAY - CUT ONE 1/16 IN.

YOUR friends will be delighted to receive this card at Christmas. Using contrasting woods or stained oddments it looks both attractive and expensive when finished.

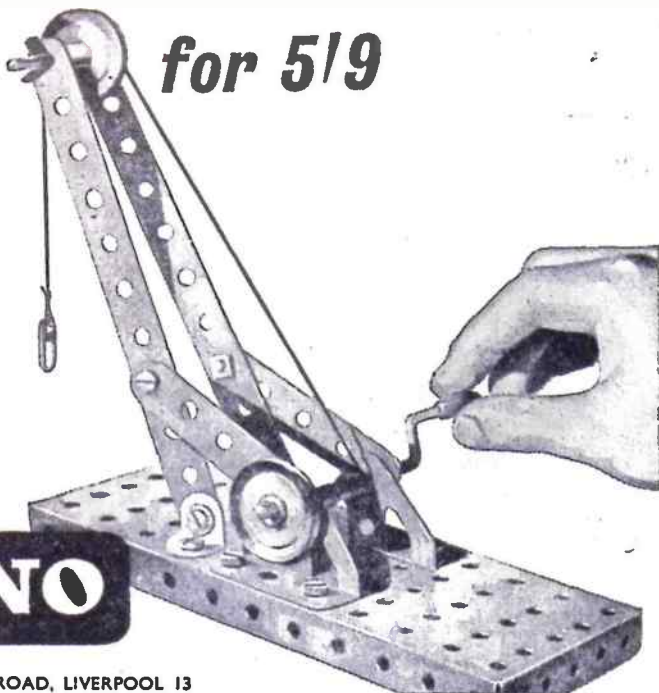
To save time it is possible to cut at least four to six overlays at a time. Pin the pieces together in the spare wood and cut the interior frets first. Alternatively the markings and windows may be 'poker worked'.

Glue the overlay to the back and paint in the words 'A MERRY XMAS'. Finish off by adding the folding strut at the back and by giving the whole 'card' several coats of wax polish. (M.p.)



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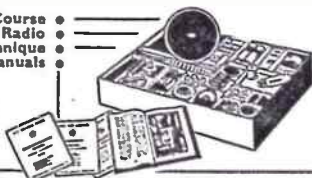
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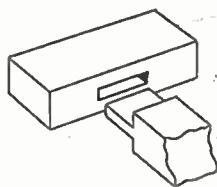
ADDRESS

Oct 24 1974

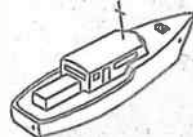
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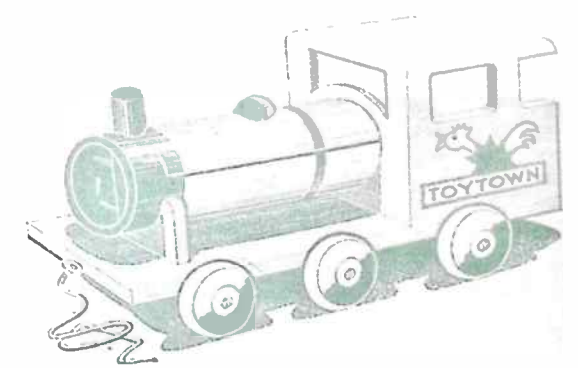
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"TOYTOWN" PULL ALONG ENGINE

SIZE LENGTH 10 ins.

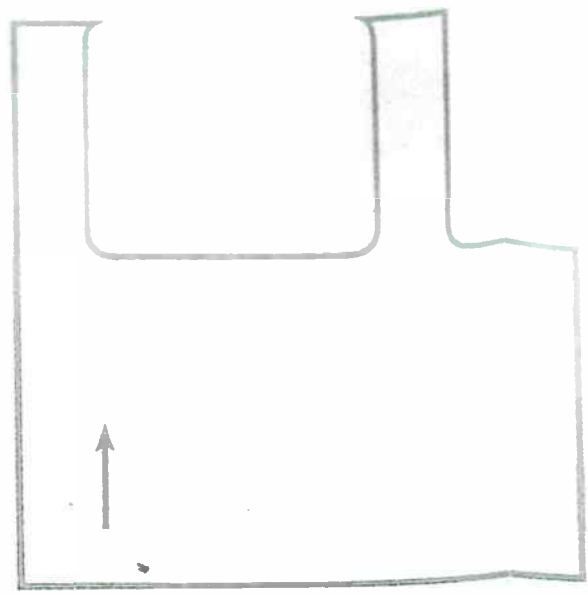


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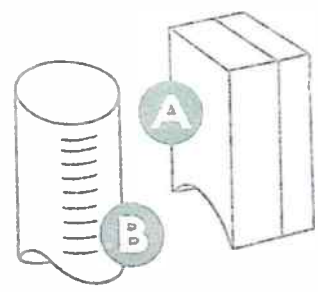
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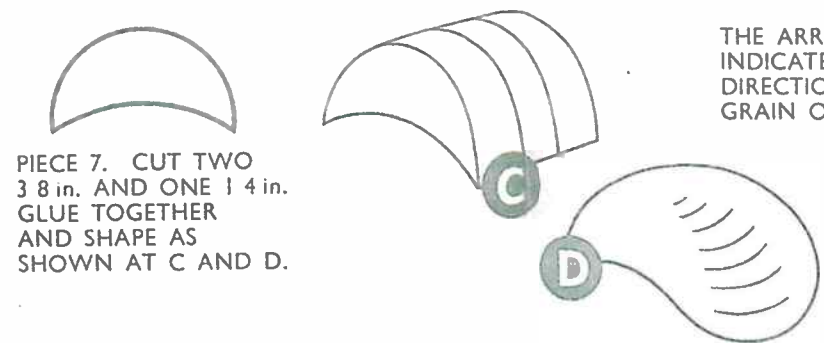


PIECES 4. CUT TWO 1 4 in.

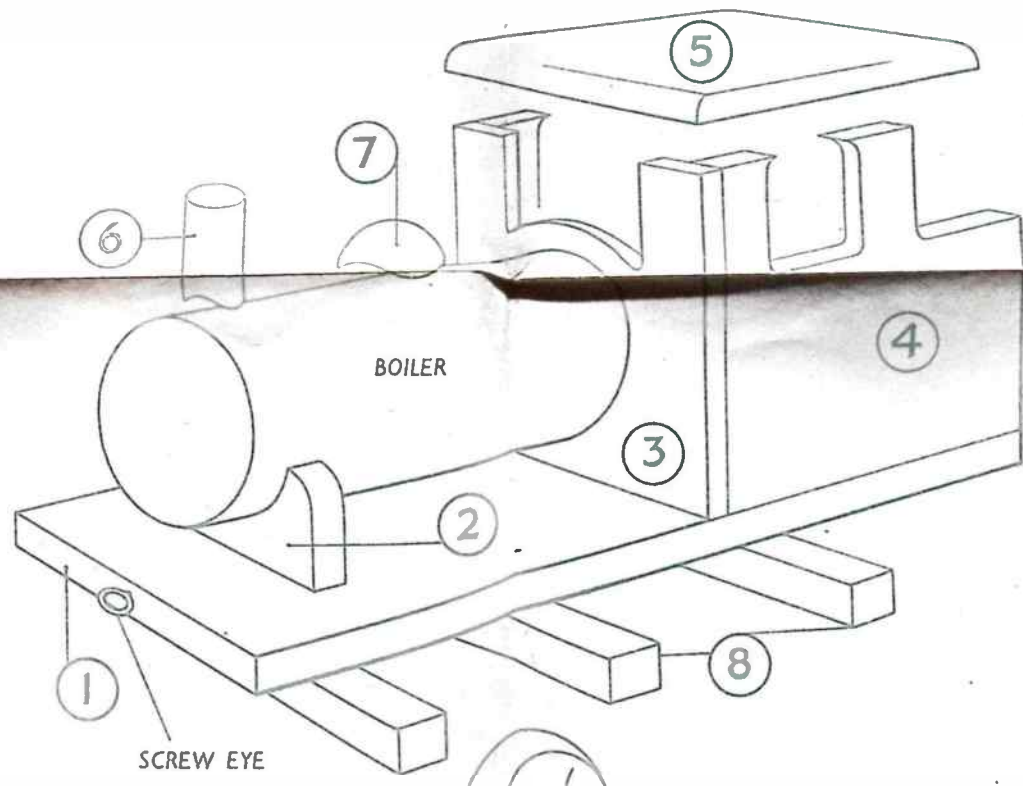
PIECES 6. CUT ONE 3 8 in. AND ONE 1 4 in. GLUE TOGETHER AND SHAPE AS BELOW.



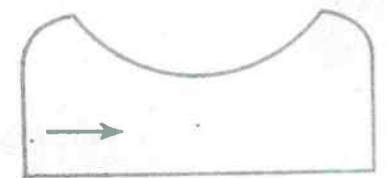
THE ARROWS INDICATE DIRECTION OF GRAIN OF WOOD.



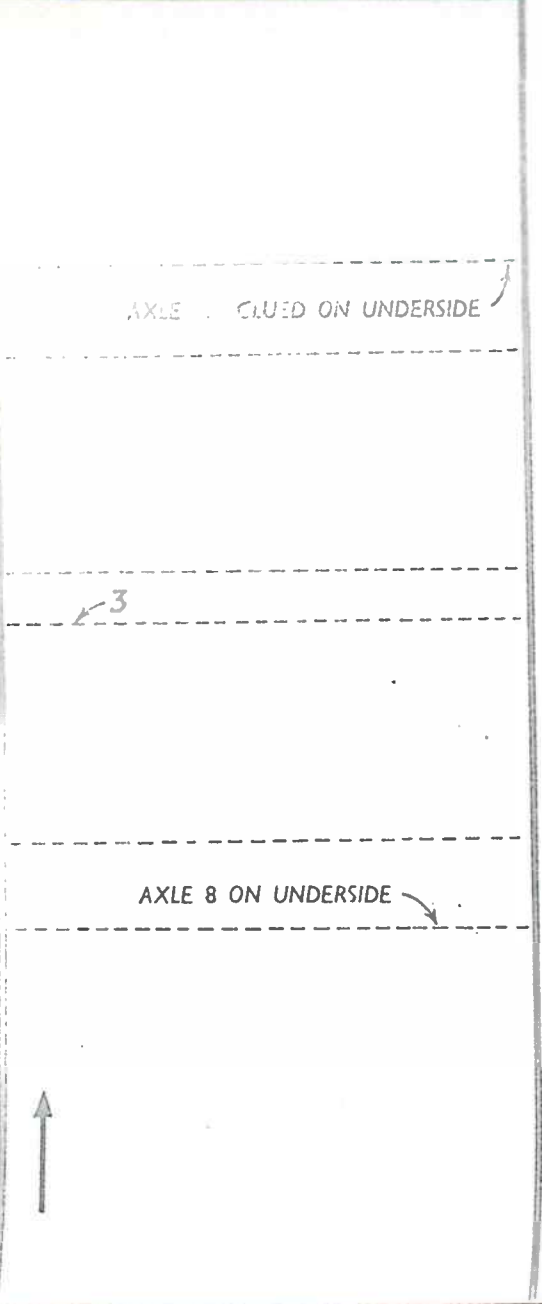
PIECE 7. CUT TWO 3 8 in. AND ONE 1 4 in. GLUE TOGETHER AND SHAPE AS SHOWN AT C AND D.



1 SCREW EYE

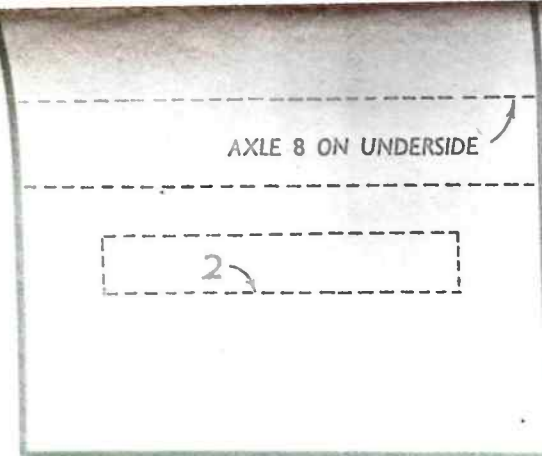


PIECE 2. CUT ONE 3 8 in.



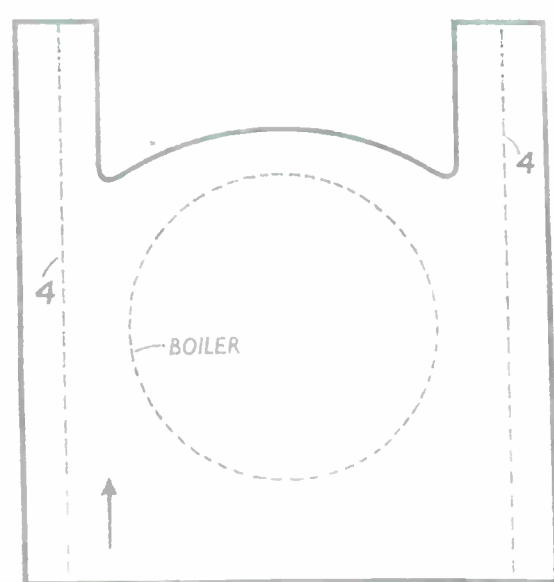
AXLE 1. GLUED ON UNDERSIDE

AXLE 8 ON UNDERSIDE

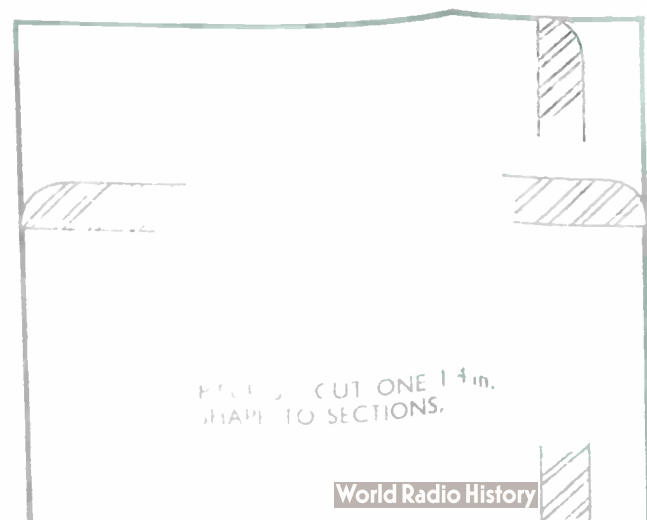


AXLE 8 ON UNDERSIDE

PIECE 1. CUT ONE 3 8 in.



PIECE 3. CUT ONE 1 4 in.



PIECE 5. CUT ONE 1 4 in. SHAPE TO SECTIONS.



PIECES 8. CUT THREE FROM 1 2 in. BY 1 2 in. STRIP WOOD



TOYTOWN

DESIGN TO BE PAINTED ON SIDES OF CAB

BLACK LETTERS ON WHITE