

Hobbies

WEEKLY

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For holding miniature toy cars you should make this

TWO-CAR GARAGE

THE attractive little garage shown in our illustration, Fig. 1, is of very simple construction and can be made up from a few pieces of wood and cardboard. To add to its attractiveness we have arranged double sliding doors to the front. The depth of the model is sufficient to accommodate two cars standing side by side.

There is a window on each of the sides, which may be either painted direct on to the wood or may be made more realistic by cutting them out, as we shall see from the details given. In the latter case some thin celluloid or even Cellophane may be glued at the back of the opening to represent the glass.

The garage will take two cars each measuring about 5ins. long and 2½ins. wide, but it is more convenient, of

course, to have toys rather smaller than this, so they can be handled better and manoeuvred about inside. Some pieces of ¼in. and 3/16in. wood is wanted for base, sides, end and gable, and a sheet of stout card for the roof slopes.

The Base

Commence with the base, which is a plain square of ¼in. wood measuring 8ins. square. At the front end of the piece, where the doors are, there must be cut two slots ½in. in from the edge and 3/16in. apart, each slot being nearly ¼in. wide. The two slots are seen in the constructional diagram, Fig. 2. If a good flat piece of wood cannot be obtained for the base, then a piece of fibreboard or other composite board should be used.

One complete side is given at Fig. 3 with all dimensions for marking out and

setting out the window. Only that spaced of 3ins. by 1½ins. should be cut out for the window opening, the interior bars being painted on the "glass". Two little strips of thin wood or card will form the window sills and window heads.

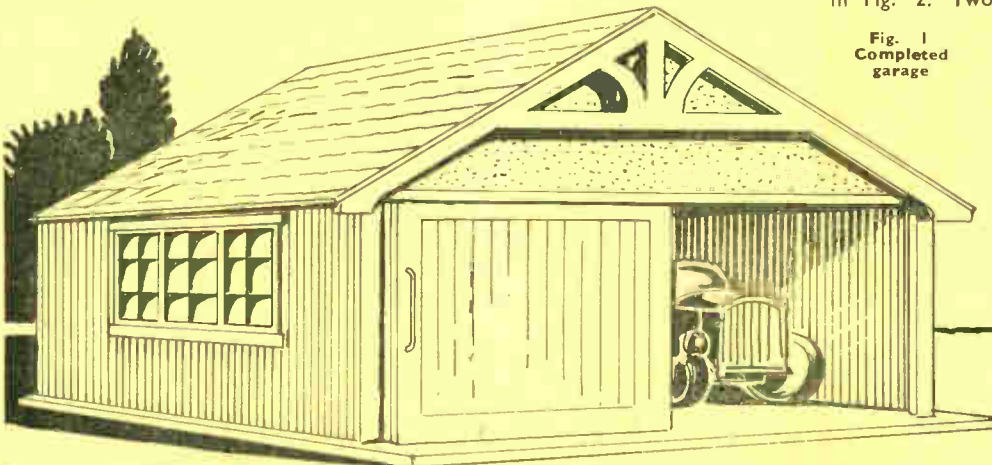
After cutting the two sides, next make the end gable, the solid one at the rear end of the garage. At A, in Fig. 4, the outline of this is given. Cut it from ¼in. wood and then nail the two sides to it, as the sectional part shows in Fig. 2. Next mark out and cut the front gable as, B, in Fig. 4; this should also be of ¼in. wood.

Support Piers

Before this gable can be fixed to the walls it will be necessary to mark and cut the two uprights marked as "piers" in Fig. 2. Two of them are wanted

and they measure 3¼ins. by ½in. by ¼in. thick. When cleaned up they are nailed to the side walls (Fig. 2) and the front gable then must rest on the top of them. To strengthen and support the front gable until the roof is put on and fixed, a ridge piece should run from one gable to the other as seen at, C, in Fig. 4. Just a plain strip of wood will answer for this, measuring 6ins. long and about ¾in. wide and ¼in. thick.

Fig. 1
Completed
garage



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Sides and ends are now fairly rigid and may be glued to the base, a few fretpins or screws being run up through the base to stiffen up the parts. If it is desired to paint the interior walls of the garage, this should be done before the roof is put on. A piece of card $7\frac{1}{2}$ ins. by $9\frac{1}{2}$ ins. is cut and creased down its centre to form the two roof slopes, as seen in

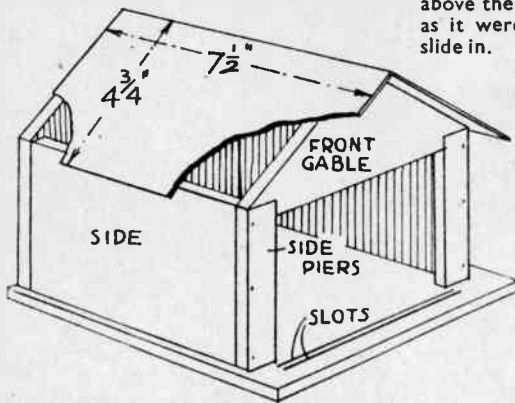


Fig. 2—Cut-away showing construction

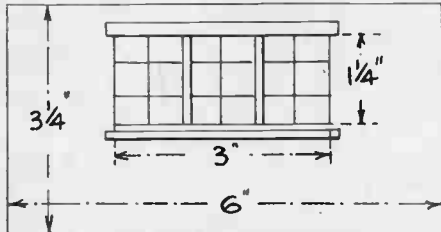


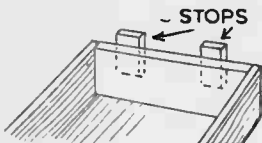
Fig. 3—Side and window

Fig. 2. Apply glue to the sloping edges of the gables and put the roof on. The back edges of the slopes are flush with the edges of the back gable, as seen in Fig. 2.

Our next concern will be the making of the doors and their sliding parts—A and B, in the sectional diagram, Fig. 5. First cut the doors, each measuring $3\frac{3}{4}$ ins. by 3 ins. from $3/16$ in. wood.

Drawer Pull Tip

OBTAIN two pieces of plywood $2\frac{1}{2}$ ins. long and 1 in. wide. Screw them on to the back of the drawer just sufficiently to catch on the front end of the chest when pulled forward. Fix each



piece with one screw only, in order to get the drawer back into the chest. You can thus turn the pieces of wood down, and turn them up again when the drawer is in place.

Prevents Marking

TO save marking the polish round the knobs on a wireless set when tuning in, fit a round piece of clean

Paint them the desired colour, probably green, and mark in either with hard pencil or in ink, the framing and battening, as indicated in the sketch, Fig. 1.

Now note from Fig. 5 how the doors slide one in front of the other. They just clear at the top the horizontal rail, B, which is a piece $\frac{1}{2}$ in. wide by $3/16$ in. thick glued to the front gable just above the actual opening and thus form, as it were, a groove for the doors to slide in.

In the bottom edges of each door run in two screws, allowing a good length of them to project, as seen in the detail. The heads of the screws should be filed away. The projecting ends of the screws are intended to fit loosely into the grooves of

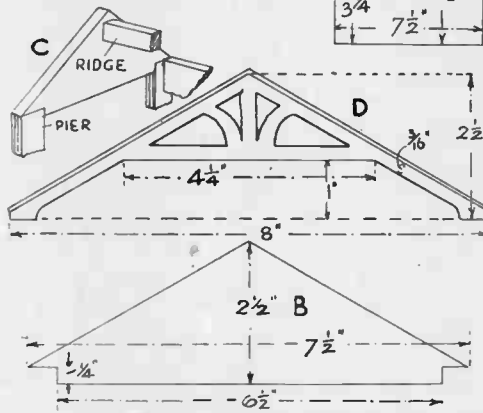


Fig. 4—Shape and detail of gable ends

the base. The doors are thus held in place but at the same time allow the doors to slide smoothly along.

When all have been fitted and tested, the outer strip, A, consisting of a narrow piece of thin wood or stout card, is glued on to hold the tops of the doors from falling forward. This completes the grooved channel for the smooth working of the doors backward and forward.

celluloid under each knob with a little tack. If two knobs come close together, make one piece do under both. Mark out size and shape first with a piece of paper, cutting celluloid or similar composition with fretsaw.

A Sticky Valve

IF you have a valve in your cycle tyre which has stuck, do not pull it out roughly or you will split it. Hold a lighted match near enough to warm it, and you will find the valve comes out quite willingly. Do not, of course, heat the valve too much or let the flame get near the rubber. Pull the valve away gently and repair.

Clean Boring

WHEN boring a hole with a brace and bit, keep boring until the point of the bit shows through the opposite side of the wood, and then reverse the wood. Start boring where

The finish to the gable ends of the roof slopes is made by cutting out and gluing on the fretted gable board, D, in Fig. 4. Use a piece of $3/16$ in. wood for this and set out its shape from the measurements given. The double line up the angle of the slopes as shown indicate the card roof. Glasspaper the edges of the piece before attaching it to the card, and add one or two little blocks of wood on the underside to strengthen the fixing.

Quite a pleasing colour scheme for the garage would be red paint for the side and back walls. Or these could be covered over with red brick paper pasted on. The front gable should be covered with yellow paper to represent roughcast. Then, if the front gable board is painted dark brown or green,

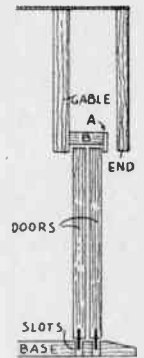


Fig. 5—Sliding door section

quite good relief is obtained to provide an attractive front. It would be best either to round off or chamfer the front edge of the base to allow the cars to run smoothly into the garage. The base should be painted light brown.

For opening and closing the doors a handle of wire should be made, as seen in Fig. 1. It is bent up at the ends and driven into holes bored to suit.

the point of the bit protruded, and you will find that the waste wood will come out without breaking the edge of the hole.

Railway Fencing

A CHEAP method of adding to the realistic appearance of your model railway is to use this miniature fence. This is made of hairpins which can be



purchased in sizes to suit your model. The rails of the fence are thin strips of soft wood, through which the pins are inserted. After this, the strips may be glued to posts.

Readers are always interested in the mystery of a SHIP IN A BOTTLE

EVEN when one knows how a ship model is "bottled", one is still highly appreciative of the skill displayed in the making and the fine decorative effect of the whole thing. But not many people know how the trick is done. There are those who tell you that it is their belief that the model is first made and then the bottle is blown round it!

Consider how a fully rigged ship could sail through a very narrow opening. Most people overlook the fact that the masts can be lowered. Figs. 1 and 2 partly explain the mystery. The ship is inserted in the bottle with all masts down, and these are re-erected inside the bottle by pulling on appropriate threads left for the purpose.

It is impossible to give full-size patterns for the ship, as no two bottles will be quite the same. The best for the purpose are those of a flattish oval section. One roughly 1ft. high and 4½ ins. across would be suitable.

A Scale Drawing

The ship, when made, must fit the bottle pretty closely. Much of the mystery is lost if a tiny ship is put in a big bottle. On the other hand it is maddening to find that, after inserting the ship and hauling up the masts, too little headroom has been left. Therefore, one should make a scale drawing of the ship and the bottle. Fig. 6 shows about the most complicated model you are likely to make. For a start, a much simpler model can be made. Consult pictures of old ships in Public Library books.

The hull is carved from soft wood. The deck-houses are not

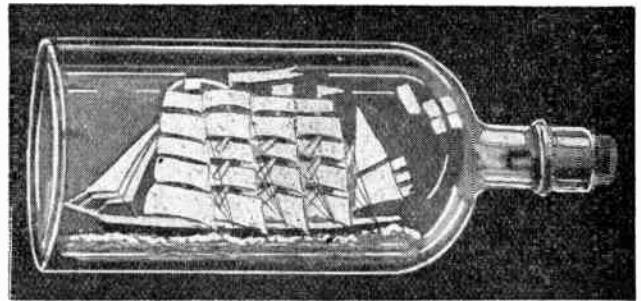
added yet, however. Note, from Fig. 1 that the hull, in section, occupies about half the bottle opening. This hull is mounted on a working base, easily made from any odd piece of wood which has two nails driven in from beneath so that they stick up a little. The hull is pressed on these.

The masts are best made from bone or plastic knitting needles, as these are not likely to snap as thin wooden masts may do. There are various ways of fitting the masts. The method now described is one successfully practised by the writer.

The masts must be hinged to the deck. A small groove is made in the end of the mast and a thin piece of twine glued in. The ends of the twine are glued into a shallow slot cut across the deck (Fig. 3). At the point where the foot of the mast revolves, a shallow hole is made. The mast can now be raised and lowered, but as the hinge is rather weak, this should not be done too many times.

Fig. 4 shows, more clearly than any words, how the masts are raised. The thread (white cotton) is fixed to one end of the bowsprit and to the tops of the masts. This is first done whilst the model is on its temporary base. The masts are arranged so that they lie on the deck at a slight slant so that they clear each other.

The "sea" is made of soft



putty, coloured with washing blue. Do not have too much sea. The putty is made into neat rolls and inserted in the bottle. Take great care not to let any get on the sides as it will be almost impossible to get it off neatly. A mess just inside the neck can, of course, be easily cleaned. The sea is pressed down with a strip of iron or cane suitably bent. This, like most of the tools used, will be of the owner's devising.

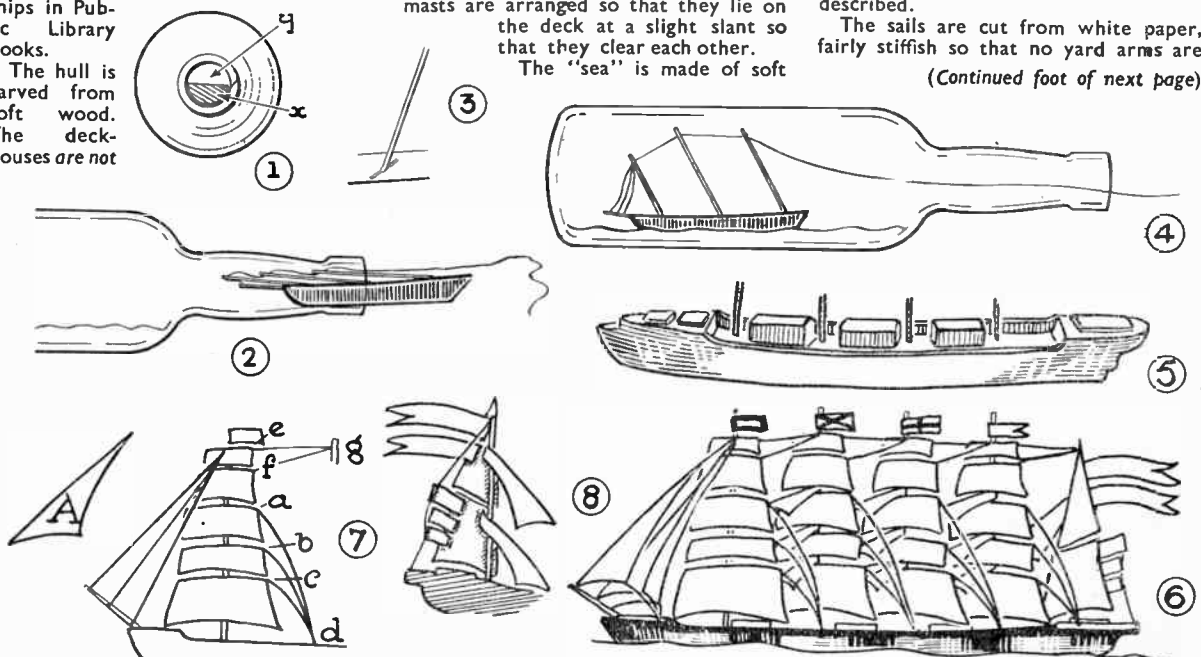
Inserting the Ship

The ship is carefully inserted, as in Fig. 2, and coaxed in position with pieces of wire, etc. When the putty has set, the masts may be very cautiously raised by pulling at the thread (which, of course, has been left projecting).

As already hinted, there are other methods of raising the masts. These depend on several holes with a large number of threads. The beginner will have all his work cut out, however, in employing the simpler method just described.

The sails are cut from white paper, fairly stiffish so that no yard arms are

(Continued foot of next page)



The first of a short practical series on the pastime of BASKETRY

BASKETRY has for many centuries been a craft much practised in England. The Ancient Britons were noted for their skill in it. It has been used for many purposes. The coracle, still in use in a slightly altered form for salmon fishing, was made of a willow frame, over which skins were stretched, and the earliest pots were made by pressing wet clay and sand inside round baskets.

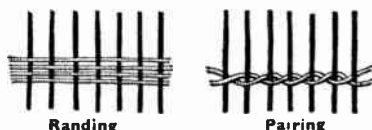
English basketry in the olden days was made entirely from willows or osiers, but, as willows are rather more difficult to manipulate, it is advisable for beginners to use one of the materials which are easier to handle.

Pulp cane is the easiest. This comes from a creeper palm, which grows in forests in India, Ceylon and China. The shiny surface is used for chain caning and the inside is sold as pulp cane.

All canes must be damp when used, or they will easily snap. The pulp cane simple needs passing through the water, and leaving for a few minutes for the water to soak in. Palembang cane,

ready bored in many shapes and sizes, from a circle large enough to just hold a tumbler to bases for trays and baskets.

In order to make any article one must learn a few simple processes, and these will be explained first. The Stakes are the thick canes that carry the randing or weaving. Randing is done with a single cane woven in front of one stake and behind the next, and can be used wherever the stakes are uneven in



number. The styles are shown in the diagrams, where the solid lines are the stakes.

Pairing can be used both when the stakes are uneven and when even in number. Two long canes are used, and

front of two and behind one stake, as at B. Repeat this (as seen at C, Fig. 1), always using the left hand stake, until the article is encircled. Tuck the last two in beside the starting canes. This can be worked by putting in front of one and behind two if you wish.

Upsetting, simply means setting up the stakes, and is done by using a three-rod or four-rod wale, usually with cane slightly thicker than the one you have used for weaving. It is best for a beginner to use stakes about three sizes larger than his weavers.

For this procedure you take eight or ten stakes about 4ins. longer than the size of the base you wish. If you are using a fairly thick cane, split half of them for about 1in. in the middle, and put the others through this split. If the cane is fine, it will be all right if you place one half across the other half at right angles (see A, Fig. 2).

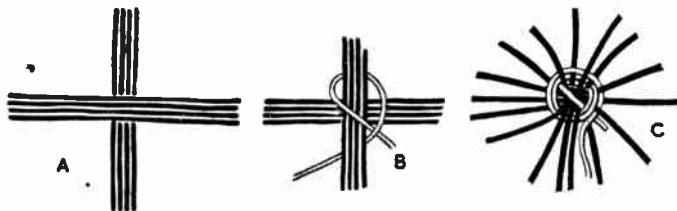


Fig. 2—The Stages of making a base for a basket



Fig. 1—Illustrating the 3-rod Wale

which is cheaper than the pulp cane, needs to be soaked for an hour before use, and the willow requires 15 minutes to 60 minutes according to its thickness.

Willows are very strong, and really large things, like hampers and dog baskets, are often made from these. This series of articles, however, is chiefly for beginners, so all canes mentioned will be pulp.

Something Simple

Basketry is not a difficult craft, but it is better to begin by making some small article, and gain skill in forming that, before attempting any large thing. Articles can be made entirely from cane or—and this is easier—from cane using a wooden base, which may be of oak or birch. These bases can be bought

one is placed behind and one in front of each stake, the cane going behind the stake always being placed on top of the one coming to the front, so forming a kind of twist. This makes a decoration if used in conjunction with randing.

Waling

This can be done with three or more weavers, and is called three-rod wale, or four-rod wale according to the number of rods or weavers used. It is used to cover a joint or a bend in a basket, and to fix the stakes firmly, especially where a wooden base is used.

The following are the instructions for working the three-rod wale. Take three weavers which will reach round the article being made. Insert them behind consecutive stakes, as shown in A, Fig. 1. Take the left hand stake, put it in

Now take a finer weaver and weave in front of four (where eight canes are used) and behind four, taking care to trap the end of the weaver (as at B). Do this twice round before opening out the spokes.

Now open out the spokes evenly, and weave in and out of each spoke (as C, Fig. 2), until you come to the last two, which must be treated as one, so bringing the number uneven. The extra spoke may be cut off as soon as the base is firm. Continue weaving until the base is the size required.

Sharpen the ends of the stakes and push each one down by the next but one to it, and you have a mat useful for a tea-pot or flower stand, and have started on your journey towards making a shopping basket.

To be Continued)

Ship in Bottle—(Continued from page 279)

needed. They have a line of thin glue run down the middle. The tacky glue will enable them to be carried, on the end of a bent piece of wire, to the masts and here they are manipulated so that they stick on the mast.

Another way is to glue them there, first, before assembly, and to roll them up as they pass through the neck of the bottle. Once inside, they will spring open flat again. Threads may be glued to spots, a, b, c (Fig. 7), and these glued to point, d. Other threads can be glued to points, e, f, and taken to g. Points, a, b, c, d, are repeated on the other side of

the mast.

In Fig. 7 note that sail, A, is merely glued to the rigging along one edge. Fig. 8 shows the back view of some sails at the stern end. These, together with the pennants, are just glued to the mast.

Blobs of glue are disguised by painting over with chinese white. Spray on the sea is easily represented by little tufts of cotton wool. The hull is nicely painted before insertion, of course. Gaily painted flags and pennants give a colourful touch. The bottle is ostentatiously sealed with an imposing amount of sealing wax.

In such a simple model and diagrams, it is not intended to represent a ship that will, in detail, pass the criticism of nautical experts. In fact, the aim has been to show general principles only.

Naturally, extreme care and patience are needed, and the prospective maker must not expect to get his first few models perfect. It can, indeed, be a life-time's hobby. There will be no difficulty in disposing of well-made models. For a start, a simple three-master is recommended, or even a single master. A suitable stand or cradle is needed and can soon be devised.

Simple home-made tools are all you need for BURNT-WOOD ENGRAVING

THE art of "burnt-wood engraving", "scorch painting", or "poker work", as it is usually known, can be both inexpensive and everlasting, although, of course, the high-cost tools of pre-war days are now unobtainable. The method, roughly speaking, is to burn designs upon the surface of the woodwork by means of an iron "poker".

This may seem a rough-and-ready style of decoration, but the effect very often exceeds that given by more elaborate workmanship. Poker-work may be executed upon leather as well as wood, the method being the same. Almost any wooden article may be decorated in this way, provided it is well made, and thoroughly seasoned.

Boxes, brackets, stools, wall mottoes and small cabinets are likely articles with which to start, and striking results may be obtained. You can see examples in most crafts shop and the seaside gift shops.

Tools

The pokers, which are the only tools needed, may consist of such homely tools as a small screw-driver, knitting-needles, and iron skewers of various kinds, but it is easy enough to shape a set of pokers yourself from iron rods.

You will need about four iron rods, roughly any length between 8ins. and 12ins., although about 10ins. is best. They should vary in thickness from about $\frac{3}{16}$ in. diameter to something approaching a knitting needle, perhaps, even thinner.

File the points to graduating degrees of sharpness, as shown in Fig. 1. The thickest are used to burn bold outlines, the finest for the most delicate work and the others for corresponding lines between.

Of course, if more irons are available, so much the better, since a greater range of depth and thickness of lines may be used in the engraving. When you have shaped these irons attach wooden handles about 5ins. long. Bore holes into one end of the handles, and drive the

irons tightly down, about 2ins. deep (see Fig. 2).

The first consideration is the design to be used. When working upon large articles it is best to use a bold design with bold lines. Often a plain outline may be best suited, but with such small articles as jewel trays, paper knives, small boxes, etc., burnt-wood engraving should be so finely executed as to resemble a fine etching, using the sharpest iron as if it were a pen. For these articles a more elaborate design should be used.

Whichever type of design is used, however, it is best to start with simple conventional subjects first, such as a floral design. Remember, it is exceedingly difficult to correct a faulty line once it has been burnt in upon the material used, hence the work must always be set about with care and deliberation.

When you have decided which type of design to use, draw it clearly upon a sheet of moderately stout white paper. Some of the parts of a fretwork design may be found applicable or the figure features of birds, galleons, Dutchmen, etc., could be used. The pattern may be easily transferred on to the woodwork by means of carbon paper.

To heat the poker, it will be most effective to use a gas-jet. Wrap a wet flannel around the handle, and around the iron near the handle, to stop the heat spreading along.

Correct Heat

Beware of using the poker when it is too hot. It should have to be necessary to use pressure on the poker in order to engrave the wood, because if the iron is too hot and burns deep marks into the wood at the slightest touch, it will be extremely difficult to control the depth of the engravings. It is wise, therefore, to keep a scrap of wood at hand, on

which the heat of the poker may be tested.

It is also a good idea to make a stand, upon which the poker can rest to cool between work. This may consist simply of a wooden base with two upright end-pieces, also of wood, each with a small groove cut from the top edge, as in Fig. 3. These grooves are then lined with strips of tin, so that when the poker lies across the stand, resting in these grooves, the hot iron will not burn into the woodwork. The size of the stand will, of course, have to be made to suit the size of your pokers.

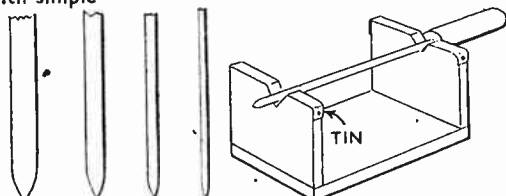


Fig. 1—Pointed needles Fig. 3—A suitable stand

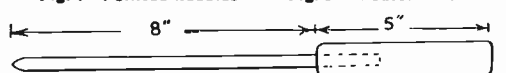


Fig. 2—Fixing the needle in a handle

The wood must be absolutely smooth and well-planed. Work with the wood resting in a sloping direction, or the fumes will rise directly in the worker's face. Start by burning in the outline, using the thickest poker. Then work on the finer lines of the design with a correspondingly finer iron.

Different degrees of brown may be produced by burning the design in varying depths of lines—burn deeply for black and more finely for the lighter shades. If a background is needed, a good effect may be managed by "stippling". This can be done if you use a medium poker, and burn dots into the background, making them all the same size.

Stain and Polish

When the burning is completed the whole engraving may be stained and polished. Do not use a dark stain, since the burnt-wood engraving may become too obscure, and thus lose its effect. A light shade of brown or oak will, however, answer the purpose well.

When quite dry give the whole engraving a coat of brush varnish. Finally, give it several coats of french polish with a pad, smoothing down each layer, when it is quite hard, with fine glasspaper.

The result is that the grain of the wood is visible to give a great richness to the whole engraving. Of course, if the wood possesses a colour of its own, it is best not to use stain, just french polish it to a high finish, and the natural beauty of the wood will add greatly to the effect of the burnt-wood engraving.

Simple Fire Lighter

SOAK cinders overnight in paraffin. In the morning place on top of a piece of paper in the grate, cover cinders with small lumps of coal and light the paper. The coal will light without any difficulty.

Pictures from Designs

LOVELY art pictures can be made from Hobbies designs, such as birds, dogs or vases of flowers. Place the design under glass and paint white parts black, thus leaving design exposed. When paint is tacky, stick pieces of

coloured tinfoil on painted side of glass (this will be held in position by paint) giving a beautiful art panel which can be bound with passe-partout framing and hung in a prominent place in the home.

Storage of Fretsaw Blades

A TEST tube rack complete with tubes is useful for the storage of fretsaw blades. The test tubes should be shorter than the saws and should all be marked with the size of saws they contain. A few drops of thin oil in the tubes will prevent rust, for the oil will creep up the blades.

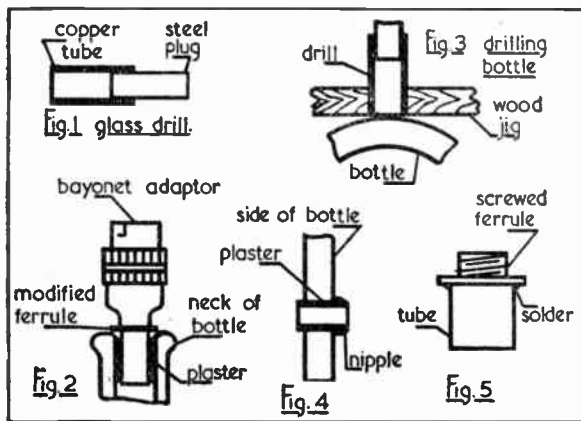
How one of those odd-shaped bottles can be made into A NOVEL TABLE LAMP

A LOOK round the house or the local junk shops, is sure to produce an attractive shaped bottle which will be just right for making into an inexpensive but charming table lamp. The picture above shows such a lamp made from a "dimple" whisky bottle. The bottle cost a modest sum at the off-licence, and the complete lamp just over 5/-. It will be seen that the flex passes through a hole drilled in the side, but do not be frightened of this; it is easy to drill, and makes a very neat job.

Drilling the Hole

The drill is nothing like an ordinary metal drill, but simply a piece of copper tube (about $\frac{3}{16}$ in. outside diameter) with the end plugged with a piece of steel rod. A piece of silver steel is ideal. The drill is shown in Fig. 1.

In use the steel plug is gripped in the chuck of a hand brace, and the cutting of the glass done by an abrasive applied to the copper tube. For the abrasive use a medium valve-grinding paste well thinned with plenty of turpentine or paraffin.



Dip the copper end of the drill into the abrasive mixture and cut the glass with a light pressure and high speed. Keep the end of the drill well wetted with the abrasive, and frequently lift out of the hole to keep the cutting mixture up to the glass.

A Starting Jig

To start the hole, the only part of the process that may give difficulty, make a jig from a piece of wood by boring a hole in which the drill will turn freely. Then clamp this piece of wood to the bottle so the hole is over the spot where the glass has to be drilled (see Fig. 3).

The jig will stop the drill sliding over the surface of the glass at the start. Once the surface of the glass has been cut the jig can be removed as the cut will hold the drill in place. When almost through go slowly to stop the

inside of the hole from splintering. A hole through a bottle about $\frac{1}{8}$ in. thick should take about 15 minutes.

Finishing the Hole

To prevent the sharp edges of the hole from cutting the flex a metal bush must be cemented in (see Fig. 4). A brass nipple (as used for the end of a copper petrol pipe, and obtained for a few pence from any motor cycle store) is just right. For fixing the nipple in the hole any suitable cement can be used, but one of the best is dental plaster of paris. It costs about 4d. a pound at the chemists.

Apply the cement to the nipple, and holding the bottle with the hole downwards, push it into the hole and hold until set. This will keep the cement in the right place and stop it from falling into the inside of the bottle.

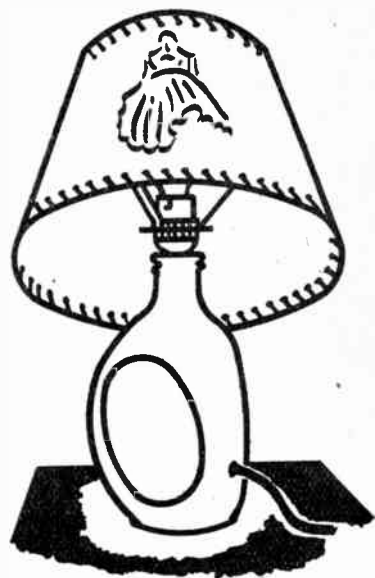
Fixing the Lamp Socket

Buy a lamp socket with a screwed back and the screwed brass ferrule made for fixing this socket to a wooden standard lamp. The ferrule has to be modified by soldering on a short piece of copper or brass tube, as shown in Fig. 5.

Make sure that the piece of tube is a nice sliding fit in the neck of the bottle. Put cement round the tube, and holding the bottle with the neck down, fix in the ferrule (see Fig. 2).

Finishing

Before assembling the lamp the bottle should be finished in the required colour. For an ordinary bottle a rough cast finish is best. Coat the bottle with a layer of varnish and shake all over it any dry earth pigment. Then set aside, without touching, until dry. Suitable pigments are venetian red, lime blue, etc., which can be had from any paint merchant at about 1/- a pound;



$\frac{1}{8}$ in. will be ample for several lamps. When dry the excess pigment is brushed off.

Interior Colouring

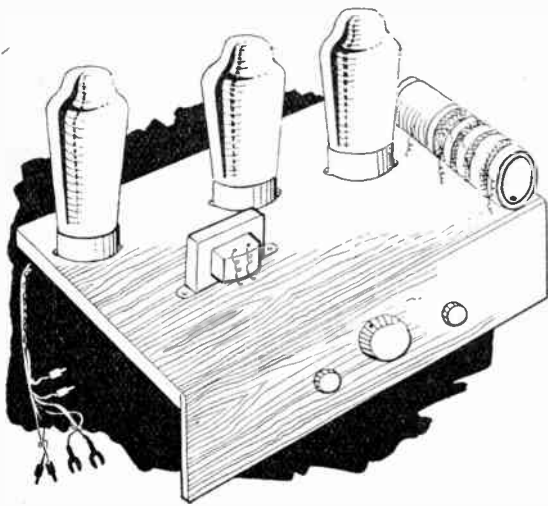
A very attractive finish, especially suitable for a cut glass bottle or decanter, can be given by colouring the inside with a transparent coating. Use an ordinary household dye, and dissolve sufficient in about 6ozs. of hot water to give the required colour. Then stir in $\frac{1}{2}$ oz. of powdered gelatine. Warm the bottle in hot water (take care to get no water inside) and then pour in the coloured gelatine solution. Twist the bottle about to cover the whole of the inside and then drain off the excess. The coating will quickly set. It must then be left until properly dried out.

When the finish is dry, thread a length of matching colour flex through the lamp, and complete the assembly. A piece of wire with a hook on the end will be a great help in getting the flex through. A support and shade completes a table lamp which will look well anywhere.

Goods News for Readers

Until the last month or two supplies of paper have been controlled and restricted with a consequence we could have only a certain number of pages each issue and quite insufficient numbers printed to meet the demand. Newsagents were rationed and we were daily unable to accept the many would-be subscribers. Now, however the paper situation has become easier and we are happy to tell you there will be more pages added to each issue, in a week or two. In addition a number of exciting and interesting articles and designs are in course of preparation. There will be a model of the famous H.M.S. 'Bounty', and another of St. Paul's Cathedral. Articles will deal with a wide range of subjects, including a Model Cab, Home Cinema Projector, an Epidiascope and all kinds of novelties and practical things for the home.

How to build an efficient set as a 3-VALVE CAR RADIO SET



ACTUALLY, this receiver could equally well be made for ordinary domestic use, and a few details regarding this will follow. Used in a vehicle, it has been found to give satisfactory speaker results, and should provide at least two or three programmes in most parts of the country.

A lot depends upon the aerial, because a car offers little chance of erecting a system which will give a really good signal pick-up. Because of this, the three valves used can be regarded as the minimum, for speaker results.

Fitting the Receiver

Made up as illustrated, it was found to fit nicely at the driver's side of the

dashboard. The control panel comes flush with the dash, projecting down about 2½ ins. so leg room is not interfered with, and the valves project upwards behind the speedometer.

With some vehicles (the car mentioned was a Ford 8) it may prove more convenient to fit the receiver elsewhere. It may be accommodated in the dashboard hole in front of the front passenger's seat, which can also house a small moving coil speaker on a suitable plywood fret. In the case mentioned, this cubbyhole was only large enough to hold

the speaker. By examining the vehicle the best spot will be found and the shape of panel or baseboard can be adjusted accordingly.

For Home Use

For ordinary household use, the panel should be made about 7 ins. high so that about 5 ins. project above the level of the baseboard. The two small controls can then be mounted below the base, and the tuning condenser above, with connections passing down through holes. It will also be necessary to fit a strip the length of the baseboard and about 2 ins. deep along the back, and the set can then fit in a cabinet in the usual way.

Do not overlook the fact that the speaker must be secured to a baffle in

the usual way (or fitted in a cabinet) for best results.

The set is meant to give the loudest reception it can with a short aerial, and if it is used with a long aerial a condenser of .0001 mfd. maximum capacity should be connected in series with the aerial lead in. With car aerials or indoor aerials of up to 10ft. or so in length this is not required.

Results suggest the best car aerial is that which is supported on three cone insulators 2 ins. or 3 ins. above the roof, from the front of the vehicle to the back. Some manufacturers can supply suction-type stick-on insulators to avoid drilling metal bodies. It is easy to make such an aerial from three insulators and a length of 14 S.W.G. wire. Arrange for the greatest length of wire possible and take an insulated lead-in down inside to connect to the receiver.

Keep as much space between receiver, aerial and ignition wiring as possible, otherwise loud interference will arise when the engine is running. With some care in this direction interference should be kept quite low even if ignition suppressors are not fitted. If the set is primarily used for amusement when the vehicle is not running (on picnics, etc.) this trouble will in any case not arise.

The Components

Examination of the diagrams will show what is necessary. The tuning condenser should have a small reduction drive to facilitate operation. The switch is a two-way type with central "Off" position. This provides long waves when turned to the left, and medium waves when turned to the right. For reaction, a small .0003 or .0005 mfd. condenser is used.

None of the parts is really critical,

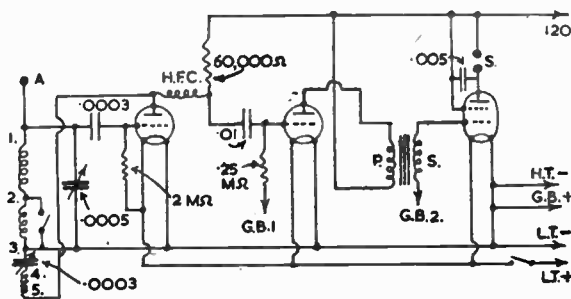


Fig. 1—The theoretical circuit of a three-valve

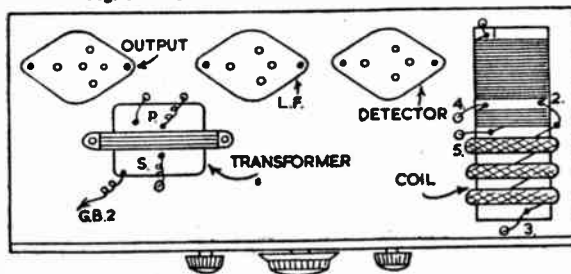


Fig. 2—Plan view showing layout of components

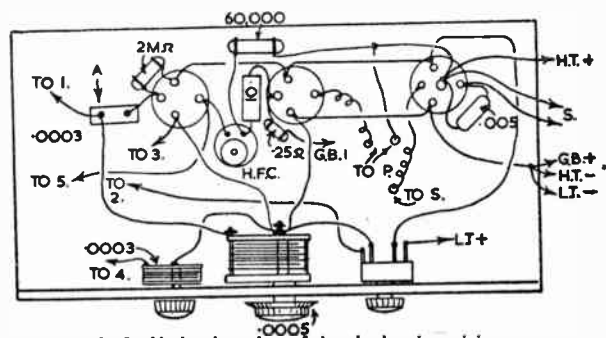


Fig. 3—Underview view of chassis showing wiring

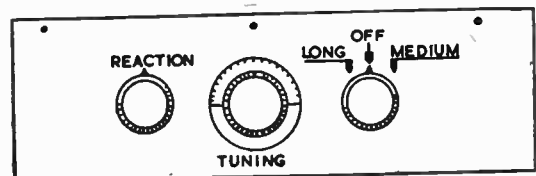


Fig. 4—Knobs on the control panel

though it is worth while using a good make of transformer, as this will give more amplification and not cause howling, as can be the case with bad transformers. The .01 mfd. condenser should be mica, if possible, as no leakage can be allowed here.

Fig. 2 will help to show how the tuning coil is wound; a $1\frac{1}{2}$ in. diameter tube is used. Anchor some 32 S.W.G. enamelled wire at point 1 and wind on 80 turns side by side. Finish off at point 2. Leave $\frac{1}{2}$ in. clear and wind on 60 turns of 36 S.W.G. enamelled wire, turns side by side. The beginning of this winding is point 4; the ending is point 5.

Now anchor another length of the 36 S.W.G. wire near to the winding just put on and wind on 240 turns, splitting this total up into three piles each of 80 turns. Leave a slight space between each pile and finish off the wire at point 3. The beginning of the 240 turn winding is connected to the end of the first winding (see Fig. 2). All turns throughout must be in the same direction.

Constructional Details

After cutting a panel and baseboard of the size required, mount the valve-

holders in 1 in. diameter holes. Position the sockets, as shown in Figs. 2 and 3.

The tuning coil is fixed by means of two small screws. Washers or small blocks of wood are used to hold the coil a little off the baseboard so that the pile windings are not displaced. If the ends of the windings are left long enough it will be possible to pass these through small holes in the base and take them directly to their respective points. The numbers in Figs. 2 and 3 show how the coil is connected.

Insulated sleeving should be slipped over all the leads and the battery leads should be anchored firmly so that they cannot be pulled free. If they are twisted together a single clip will do this. Take care to connect all wires as shown. A wrong connection will prevent reception, or may even damage some of the parts.

Using the Receiver

For speaker connections, join on a few feet of twin flex. The aerial is taken to point A (Figs. 1 and 3). If the .0003 mfd. condenser has terminals one can be used; if not, an aerial terminal should be fitted near by. If the set is used where an

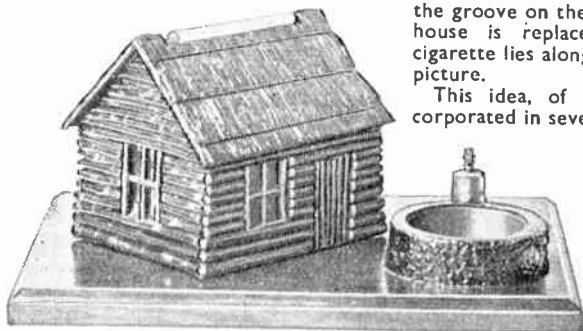
earth is available, this may be connected to L.T. Negative.

The position of the valves is shown in Fig. 2. For the detector, use a valve such as the Osram HL2 or any of its equivalents produced by other manufacturers. A similar valve, or a L.F. type, is used in the central holder. In the output holder a pentode such as the Cosor 220HPT (or its equivalents) gives best results, but a small-power triode valve also functions well and can be used.

For the valves mentioned G.B.1 should be about 1.5 volts and G.B.2 4.5 volts, but these voltages should be modified to see if better results can thus be obtained as valves differ slightly in the best bias figures.

When tuning, the reaction control should be used carefully so as to maintain the detector in a sensitive condition, and this is particularly necessary when using a small aerial, if best volume is to be obtained. Should there be any tendency towards excessive howling this can generally be cured by reversing the connections to the secondary of the coupling transformer. The results should then be satisfactory.

Cigarette delivery and lighter are combined in this LOG CABIN NOVELTY



THE picture is of a model sent in by Mr. Fraser of Haddington Place, Edinburgh, and shows the type of novelty which can be made up with a little ingenuity and ability. This and other similar types have been made in useful numbers by our reader, and he has had no trouble in disposing of them readily.

The article shown is a cigarette holder, with ash tray and lighter all on a base. The miniature log cabin is fitted with a centre partition fitting into a cutaway portion of the roof. This centre partition is slightly hollowed to hold a cigarette. Inside the model two floors are fitted to slope towards the centre partition.

Thus, when the cigarettes are filled into the box, they lie on each side of this centre partition. The house is loose from the base, and when lifted, one of the cigarettes on the sloping floor rolls into

the groove on the top so that when the house is replaced, in position, the cigarette lies along as can be seen in the picture.

This idea, of course, has been incorporated in several of our designs, but the novel effect is here in a different type. Instead of being of wood, the house is built of tiny twigs giving a realistic imitation of a log cabin.

The roof is a piece of thin wood on which raffia is laid down, and then fitted across with thin wire and varnished to keep quite flat. Imitation windows are added with photo film, and the whole thing is varnished over. The piece of string fitted is just long enough to prevent the whole thing being lifted right off the centre partition.

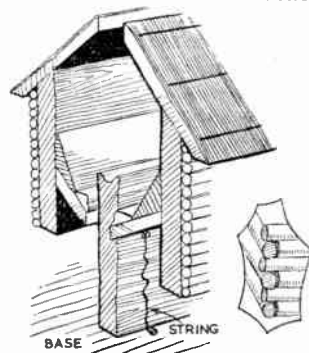
Lighter and Ashtray

By the side of the house, as you see in the picture, is a 1 in. wide strip, cut from a $2\frac{3}{4}$ in. diameter branch of tree, with the centre portion hollowed out to take a 2 in. metal ash tray. Immediately behind it stands a further piece of hollowed-out wood which contains the lighter. The lower portion of wood which is glued to the base is $\frac{1}{2}$ in. wide and in this the base of the lighter fits tightly.

The capping piece of wood is a further $1\frac{1}{2}$ ins. tall. Here again, these parts also are varnished, as is the whole base. The baseboard should be of fairly thick wood,

and the one in the picture is just 10 ins. long and $7\frac{1}{2}$ ins. wide. The actual measurements need not, of course, be as definite as those shown, and depend largely on the twigs and parts you can get. The one made up by Mr. Fraser was $4\frac{1}{2}$ ins. long, $3\frac{3}{4}$ ins. wide and 4 ins. high.

The twigs, of course, are glued to a framework of wood which in the present case was $\frac{1}{4}$ in. thick. The floor can be supported by two further inside strips cut to the V formation and the centre slot needed. The detail drawing should give a sufficient idea of construction to



Cut-away view showing the box raised, the retaining string, and detail of corner fitting

enable other readers to complete their own model.

The other novelties made by Mr. Fraser include book ends, in which tree wood has been used to form a bird perch, and the actual bird itself with its large bead eyes, quaint and attractive.

Folding legs are provided for this practical BED TABLE

TO some people, a bed table might appear a real luxury—for an occasional breakfast in bed, but to many unfortunate invalids, such a table is a virtual necessity. It is always handy to have about the house in any case, as it can, in its folded condition, act as an extra tray when needed.

The present model has been based on one well tested in actual hospital use. It would make a fine gift for an invalid.

Fig. 1 shows the completed model, whilst Fig. 2 shows the underside. It will be seen that there is a strip of wood going down the centre, underneath. The middle part is screwed down, but the ends are bent up a bit, and engage in notches cut in the legs.

Spring Holder

There is always a certain amount of springiness in a strip of wood, and as the legs are opened, this "spring" snaps into place in the notches and keeps the legs open. By raising the "spring" slightly at each end, the legs may be closed. The table is thus perfectly stable, and premature collapse is impossible.

The only snag about making such a table is that, for choice, a piece of $\frac{3}{4}$ in. plywood, 24 ins. by 12 ins. is required. At a pinch, $\frac{3}{8}$ in. solid wood could be used, two strips being battened together. A piece of plain lino (new) could be glued, under pressure, to this solid wood, hiding the joint and making a smooth surface. It is not convenient to use thinner plywood, as there must be some thickness to take the screws for the hinges, etc.

Top and Edges

As just stated, the size of the top piece is 24 ins. by 12 ins. It looks better if a curved piece is taken out of the front. This need not be set back more than 1 in.

The rails around the sides and back can be of any convenient stripwood one happens to have. About 1 in. by $\frac{3}{4}$ in. with rounded top would be right. This

is nailed and glued on. The front edges are rounded over, as shown, and the corners rounded off the other way.

It is a great advantage if metal corners are added. They do not take much extra time to fix, and add only a few pence to the cost. But they save a very great deal of wear and tear, as the tray, when stored, is practically always stood on end, and the corners come in for hard knocks.

The legs are simply made as in Fig. 3. The wood is $1\frac{1}{2}$ ins. wide, but the top bar is $\frac{3}{4}$ in. thick, whilst the legs proper are only $\frac{3}{4}$ in. thick. Obviously there can be no bottom bar in a bed table, so the joint at the top should be strongly made. The top bar is simply laid over the legs, and glued and screwed with two screws at each corner. Note the notch which is shown in the separate detail.

Hinged Legs

The legs are hinged to the underside of the main board, the notches facing inwards, as shown in Fig. 2. There is about $\frac{1}{2}$ in. clearance at the ends. It will be observed that, at this stage, the legs will open until they are upright. A slight bevel might well be given to the top edge so that the legs, when opened, have a slight outward slant.

The "spring" is, for preference, of ash, but other woods will do. It is about $\frac{1}{2}$ in. thick and $1\frac{1}{2}$ ins. wide. The length must be ascertained by experiment, but will be, roughly, about 24 ins. long. In the centre of the underside is fixed a block of wood about 2 ins. square and about $\frac{1}{2}$ in. thick and the spring is fastened to this. This thickness is a matter for experiment, depending on the springiness of the wood.

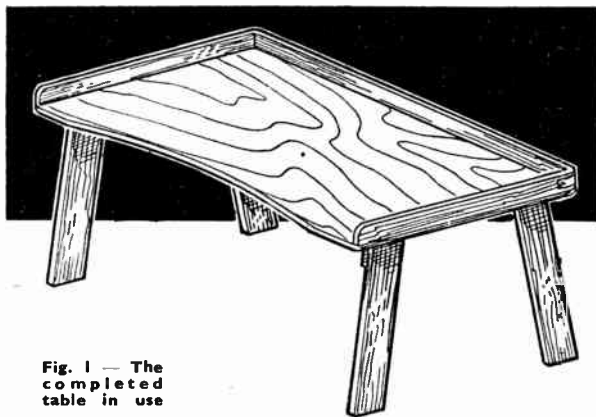


Fig. 1 — The completed table in use

The spring should press down firmly on the notches, but be easily lifted when it is desired to close the legs. As the legs are opened, the spring will automatically snap into place. Screw the spring firmly into place.

Whilst not absolutely necessary, it is a great advantage to fix a brass plate (obtainable from an ironmonger) to strengthen to rear of the notch. It is by no means uncommon for a sudden strain to be imposed on the legs.

For example, the table may be accidentally buried under a pile of blankets during bed-making, and then someone sits on the pile of clothes, and incidentally the table. There is the chance that the spring will push out the rear of the notch, but the metal plate here will minimise the danger.

Articles of this kind are best left in a more or less natural finish, or with just a light coat of, say, oak stain. Shellac varnish is useful, and, especially when plywood has been used, plenty of this varnish should be allowed to sink into the edges of the wood.

It must not be forgotten that such articles as these have, in certain cases, to be well scrubbed, so any "fancy" finish is out of place. Use, however, might be made of those bakelite or other paints and enamels which are stated to be highly resistant to heat marks, fruit juice stains, etc.

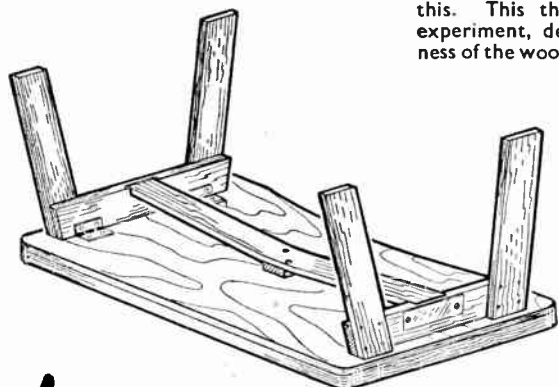


Fig. 2—Underneath view showing hinged legs and holding strap

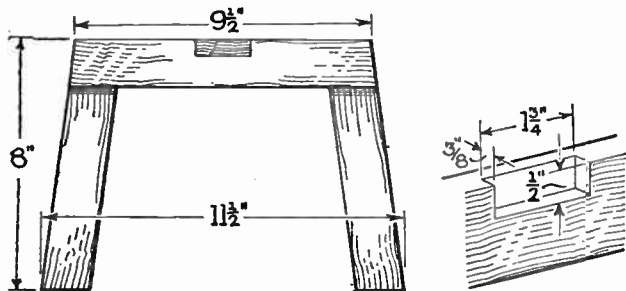


Fig. 3—End view of leg and detail of the strap recess



REPLIES OF INTEREST



Saw Sharpening

COULD you tell me the correct way to sharpen a saw, as when I did mine I filed straight across the teeth. (R.M.—Penrhwiwceiber).

THE correct method of sharpening a saw is not straight across the teeth, but at a slight angle. If you study a sharpened saw you will observe that the edges of the teeth are cut at a bevel. With the saw firmly in the vice, hold the file with the right hand and the fingers of the left hand pressing on the tip of the file. Another point—keep the wrist down so the tip of the file tilts upwards a little. File each alternate tooth, then reverse the saw and do the remainder. After sharpening, set the teeth, using a saw set for the purpose, by bending them in opposite directions. It is as well to use one of the automatic saw sets, then no danger will arise of breaking any of the teeth through bending them too much.

Drilling Glass

IWONDER if you can tell me of a simple way to drill or make a hole in glass suitable for taking small bolts. Also if it is possible to take the sharp edges off after glass has been cut. (F.H.—Rayleigh).

HOLES can be drilled through glass by means of a "glass hard" diamond shaped drill used in a hand drilling machine, but it is desirable to have a fixed guide or jig fixed above the glass to guide the drill. Another plan is to use a flat ended piece of copper or brass in the hand drill, and grind out the hole with coarse carborundum powder and water or, if obtainable, with diamond dust. The edges of the glass can be bevelled or rounded by grinding or by rubbing with a block of wood charged with carborundum and water. Finish by fine grinding with flour emery, followed by rottenstone.

Revolving Lamp Shade

COULD you tell me how to make a revolving lamp such as in a fireplace, as I saw one a long time ago? (W.H.—Guildford).

REVOLVING lamps of the type you have in mind, usually operate from the rising stream of hot air. A drum (such as an inverted tin) is pivoted on a fine point so it can rotate very easily. Near the top of the drum four or more slanting blades are made by cutting and bending the material (so as to make a propeller or fan) and as the air heats up, it rises and turns the drum. The latter has slots covered with coloured material. A lamp is arranged inside the drum, and the whole is so placed that rotation of the drum causes a flickering effect on semi-transparent material near the front

of the fire. With a 100 watt lamp this may itself provide sufficient heat to rotate the drum, but it is necessary the latter turn very easily, and sometimes a little glass bearing is placed on a fine steel point to reduce friction, in the same way as a magnetic compass is pivoted. The drum will not begin to turn immediately.

Embroidery Transfer

COULD you let me know how to make the ink or paint which is used on the transfers for embroidery purposes? (J.H.—Doagh).

A SIMPLE transfer ink can be made by mixing finely powdered resin with blue, or other colour, aniline dye; melt

under gentle heat and then add a small amount of methylated spirit; stir well and allow to cool. The result should be a rather thick, slightly sticky paste-like ink. A few experiments with more or less spirit, will speedily show the best proportions. Sufficient spirit is needed to cause the ink to be fluid enough for printing or stencilling, so that it will evaporate or dry reasonably quickly. The transfer is effected as usual by use of a warm iron.

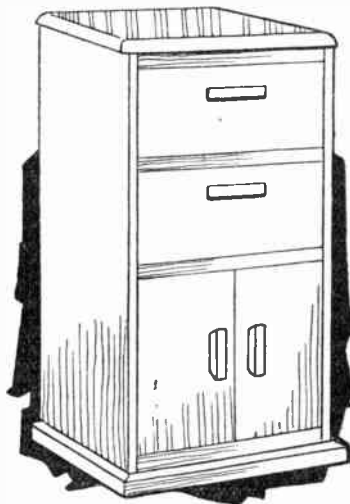
A Scratched Lens

I HAVE a double convex reading glass which has been scratched in the centre. Can you suggest a means of removing these scratches? (J.H.F.—Hasingden).

THE only way to remove the scratches from the surface of a reading glass is to repolish it. This can be done by hand, but it is a long and tedious job. Start by using rottenstone and water on a linen pad, follow this by using rouge powder and water. Most opticians would arrange to have the lens repolished by one of the specialist firms.

Two fruit boxes can be converted into

A CHILD'S TALLBOY

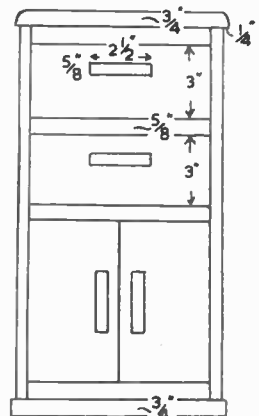


The drawer supports, of $\frac{3}{4}$ in. by $\frac{3}{4}$ in. stuff, were glued and pinned in position, and the fronts and doors fitted. The doors were rounded on the outside edges and pivoted on $1\frac{1}{2}$ in. nails.

In making the drawers construction was kept as simple as possible by cutting rebates in the front to take the sides and bottom. The back was butt-jointed to the sides, being raised to allow for the bottom, which, for added strength, was pinned from the sides as well as to front and back. For easy running the bottom rebate was made deep enough to give $\frac{1}{4}$ in. clearance. It is important, however, to fit the sides flush.

A top was cut from one of the divisions to project about $\frac{1}{4}$ in. except at the back, which was flush. The plinth, with mitred joints, was from 2 in. wide stuff nailed to the bottom.

After fixing the handles (tapering on sides and ends) and making good with plastic wood, the chest was given three coats of cream paint and finished with some simple decoration in blue, red and green.



A READER has sent us details of a child's Tallboy, which he made from a prune box and an orange box. Others may find the idea useful in these days of shortage of material. The overall size of the cabinet shown is approximately 1ft. 5ins. by 9 $\frac{3}{4}$ ins. by 6ins.

The prune box was carefully taken apart, planed and reassembled to form the carcase, the nails being punched below the surface. The thick divisions of the orange box supplied material for the drawer fronts and supports, doors, top, plinth and handles, while the thin sides were used for the drawer sides and bottoms.

MISCELLANEOUS ADVERTISEMENTS

The advertisements are inserted at the rate of 3d. per word prepaid. Name and address are counted, but initials or groups, such as E.P.S. or £11/11/6 are accepted as one word. Postal Order and Stamps must accompany the order and advertisements will be inserted in the earliest issue. Announcements of fretwork goods or those shown in Hobbies Handbook are not accepted. Orders can be sent either to Hobbies Weekly, Advert. Dept., Dereham, Norfolk, or Temple House, Temple Avenue, London, E.C.4

PRODUCTION wanted from home-workers to make fancy leather and felt goods. Write for rates of pay, etc.—Dept. 39, Wearwell Products Co., 2 Tarleton Street, Liverpool.

SETS cigarette cards, clean, charming, cheap. Lists free.—116 Whoberley Avenue, Coventry.

100 DIFFERENT stamps free (including triangular and pictorials), to approval applicants enclosing postage.—N. Johnson (Dept. H.), 19 Hillside, Slough, Bucks.

LONELY? Join Friendship Circle, 34 Honeywell Rd., London, S.W.11. 11,000 genuine members.

PLAY as you earn, with our waxcraft and Perspex construction kits, compendiums. Cement, polish, brooch bases, pins, wax, tools, Perspex, etc., available. Catalogue, 6d.—Plastics Home Products, 18 St. Mary's Road, London, N.9.

CORONATION and Silver Jubilee stamps free. Enclose postage and request halfpenny approvals.—Laughlin and King (HW 2), 8 Purplett Street, Ipswich.

SUPERB Stamp depicting 1d. black, catalogued 3/-. Free to all approval applicants enclosing 2½d. stamp.—Rainbow Stamps, Dept. H., Cradley Heath.

STAMPS Free!! Twenty unused (2½d.).—G. H. Barnett, Limington, Somerset.

STAMP approvals three a penny.—Jeffreys, 2 Bay View, Craigavon, Port Talbot.

PLYWOOD offcuts. Birch and Gaboon in various thicknesses. Handy sized parcels for the cabinet, toy, model maker, and all handicrafts. Parcels made up in £1 and 10/- lots. Carriage paid. Send P.O. to Reeves, Plywood and Timber Merchant, 33 Front Street, Monkseaton, Whitley Bay. Tel. W.B. 4677.

SMASHING Pictorial Sets free! Request approvals. Enclose 3d. postage.—Belfields, Stour Hill, Quarry Bank, Staffs.

STAMP approvals applicants receive 20 stamps, including Gold Coast, Falkland Is., British Honduras, St. Vincent. Without approvals, 9d.—Fleming, Newhaven, Glyn Av., Colwyn Bay.

40 different stamps free. Includes Silver Wedding, Peace, Coronation, Silver Jubilee, Pictorial, Ship, etc. Request approvals (Dept. H.).—J. F. Smith, 39 Manor Park, London, S.E.13.

WANTED. Hobbies Nos. 2742-2736 inclusive, Vol. 107; also No. 2771, Vol. 108.—Phethean, 272 Gladstone St., Nottingham.

20 Hitler heads free. Request approvals.—Pomroy, Callington, Cornwall.

FREE! Stamps catalogued 5/- to applicants for ½d. approvals.—Cox, 17 Stoneleigh Park Road, Ewell.

NIMBLE fingers earn £4-£9 weekly with 'Mailitt' Lampshade Assembly Sets. Prices from 5/9 complete. Decorative transfers, 3/6 pkt. Catalogue, 6d. post free.—'Mailitt', 67 Whitegate Road, Chadderton, Lancs.

FOR driving models or handcraft machines—Brook 'CUB' motors. ½ h.p. single phase split phase electric motor. Obtainable from your electrical contractor.—Brook Motors Ltd., Empress Works, Huddersfield.

WHEELS for toys, and other accessories. Full lists will be sent on application to The Joyden Toy Co., 193 Chase Side, London, N.14.

YOUR winter hobby. Build a fleet of Wilson's Lorries. Photographically illustrated lists, 6d.—Wilson's Lorries, Dept. H, 1 Gt. Winchester St., London, E.C.2.

ALUMINIUM rivets (approx. six gross assorted), 2/6, post 6d. Strong elastic cord, ¾in. dia., suit variety of purposes, 10 yards for 7/6, post 6d. Flexible drives, approx. 4ft., very strong, 2/6, post 6d. Special Model Makers parcel, comprising one electric motor 24v. AC/DC, 4 amp., complete with 5-stage epicyclic gear, (625-1 reduction), ball bearings and specially selected articles useful to Model Makers—the lot for 27/6, post 2/6. Send 3d. stamp and S.A.E. for 16-page illustrated catalogue of these and other Government surplus bargains.—Milligan's, 24 Harford Street, Liverpool, 3.

PERSONS required make fancy goods at home. Write for details.—Melton Manufacturing Co., Southgate Street, Leicester.

120 different instruction books for the Toy and Model maker. Full list, 6d.—Sutton Models, Billericay.

NOVELTY Calendar designs painted Non plywood for cutting out. Date cards supplied. Excellent Xmas gifts, profitable to sell. 1/9 each, half-dozen 9/-.—Cleaver, 50 Windsor Road, London, N.W.2.

BE Taller. Quickly! Safely! Privately! No appliances—no tablets—no dieting. Details, 6d. stamp.—Malcolm Ross, Height Specialist, BCM/HYTE, London, W.C.1.

MODELS. You can make lasting stone-hard models with Sankey's Pyrama Plastic Cement. Supplied in tins by Ironmongers, Hardwaremen and Builders Merchants. Ask for instruction leaflet.

£5 to £20 weekly earned at home running your own Mail Order business. Details, 1d.—Stebbing Publications Ltd. (HB), Naphill, High Wycombe.

TRANSFERS for decorating toys, trays, furniture, fancy goods. List and samples free. Flowers, pixies, dogs, nursery rhymes.—H. Axon Harrison, Jersey.

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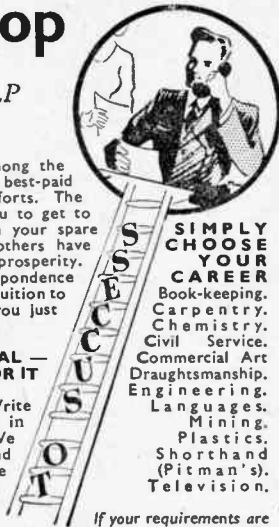
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