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THE ORIGINAL
'DO-IT-YOURSELF'
MAGAZINE

HOBBIES *weekly*

FOR ALL
HOME CRAFTSMEN

A WINTER PROJECT
FOR SUMMER PLEASURES



**GARDEN
TABLE**

**WITH
SEATS**

Also in this issue:

MAKING A 'WILLOW'
LOUDSPEAKER

STRONG TABLE
FOR THE TV SET

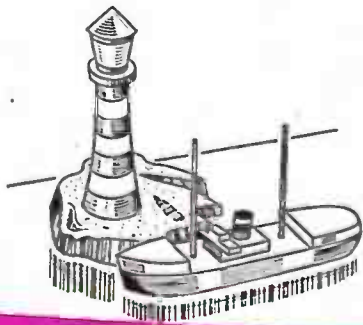
MAKING A FLY
FOR TIRE FISHING

COLLECTORS' CLUB

PATTERNS FOR
A ROMAN SHIP

MAKING CLOSE-UP
PHOTOGRAPHS

ETC. ETC.



**NOVEL
IDEAS
FOR THE
LATHE**



Up-to-the-minute ideas

Practical designs

Pleasant and profitable things to make

5^p

THE Ely Brewery Co. Ltd, Ely, Cardiff, South Wales, have sent me one of the finest label sets I have yet seen. My collection now numbers 32,000 different covers.

Mr E. G. Brooks is the artist of the company. The many fine paintings that can be seen in Ely houses bear witness to his ability. He is fond of brass bands, and has played for quite a few of them, including the famous Black Dyke band. He has also played with the B.B.C. Scottish Orchestra.

Mr R. T. Sadler, decorations manager, has been in the decorating trade all his life. A keen supporter of most sports, he is particularly interested in rugby and cricket.

ELY BREWERY PERSONALITIES

Mr Fred Baynam, manager of the Commercial Hotel, Ferndale, has been a footballer, referee, sprinter, athletics trainer, whippet fancier, and — when most sportsmen would retire on their laurels — took up bowls and became a Welsh International.

Mr Glen Moody is manager of the Criterion Hotel, Pontypridd. He was a noted boxer from 1932 to 1945. He retired from the middle-weight class in 1939 undefeated Champion of Wales, and was also champion later when he entered the light heavy-weight class.



Whilst serving with the Royal Engineers on Clydeside in 1941, he was recommended for bravery and honoured with the B.E.M. at Buckingham Palace, by the King.

More facts for your album.

China had its 'beer', called 'kiu', as early as 2,300 a.c., and beer in one form or another was known to nearly all peoples in ancient times.

Herodotus, Pliny, Tacitus, and other classical writers proved a rich source of information on cereal beverages and their methods of preparation. It was not surprising that the art of brewing spread from Egypt to Greece, on to Rome, and among the peoples of Northern Europe. Wherever beer was introduced it became increasingly popular, the old Germanic tribes making their 'bior' from mashed germinated barley, this being the drink, sourish in taste, described by Tacitus. Later a much stronger brew, known in High German as 'alo', was produced: it doubtless gave its name to our English 'ale'.

R. Stevenson, of 13 Ard Road, Kirklandneuk, Renfrew, Scotland, has a large collection of beer labels.



R. Stevenson

Readers who need Irish stamps and labels should write to Paul Mooney, 40 Mulgrave Street, Dun Laoghaire, Co. Dublin, Eire.



J. Burrell

Meadophologists requiring labels from London breweries should contact J. Burrell, 1 Stafford Road, Kilburn, London, N.W.6. Mr. Burrell will exchange on a label-for-label basis.

PEN FRIEND SERVICE

One of the many letters of thanks in appreciation of our pen friend service comes from 13-year-old Kenneth Christie of 8 Oakland Villas, Reynoldson St, Newland Ave., Hull. 'I had an accident and became disabled', writes Kenneth, 'and these pen friends have become something to look forward to as I get some very interesting news from them. Please thank Mr Cantwell for his help as he has been most kind.'

GARDEN TABLE AND SEATS

TAKE the opportunity of making the attractive garden furniture depicted on the front page during the winter months, when it is impossible to work outside. When summer comes, you will be able to enjoy your picnic meals in comfort. The combined table and seats should be placed in the garden where they are handy for children's games or homework, and at the same time convenient for week-end meals.

It is not important to adhere rigidly to the measurements shown in the diagrams, although the height of seats and table should not be altered. An easily obtained timber such as deal may be used throughout and will be found quite easy to work. When properly painted it will withstand the effect of rain and sunshine. Timber 1 in. thick will be sturdy enough for most requirements.

The side view in Fig. 1 and the end view in Fig. 2 give the main dimensions

and sufficient details for making up. The top (Fig. 3) consists of five pieces of 1 in. thick wood A, 6 in. wide and 4½ ft. long. They are kept in position by nailing to the cross battens B which are shaped at the ends as shown in the end view Fig. 2 and in Fig. 3. These battens are set in 3 in. from the end.

SEE ILLUSTRATION OF FINISHED JOB ON FRONT PAGE

Next make up the seats by nailing or screwing two pieces A, 4½ ft. long by 6 in. wide, to the seat supports C, which are 16 in. by 12 in. You will see from Fig. 4 that the supports are set in 3 in. from each end.

Next make up the legs D of the table, which are halved together (Fig. 5), and screwed to pieces C of the seats and B

of the table as indicated in the end view (Fig. 2). The legs are 1 in. thick, approximately 4 ft. 3 in. long, and 4 in. wide. Lay them out flat on the floor to get the correct angle and mark off ready for cutting. Screw together all the parts, countersinking the heads and filling with plastic wood. Sand down flush when dry. If glue is used in the construction it should be a waterproof type.

Metal stays E, consisting of ½ in. diameter rod, are flattened and drilled for fixing with screws as shown in Fig. 1, to give added strength to the seats and table.

After cleaning up with glasspaper, give one coat of clear wood preservative and one undercoat. Two top coats of high gloss paint will give good protection against the weather. (M.h.)

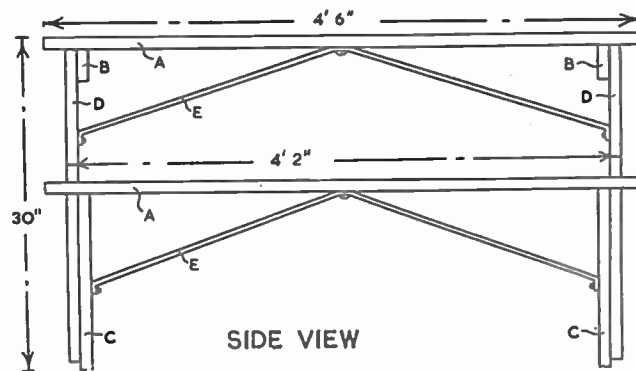


Fig. 1

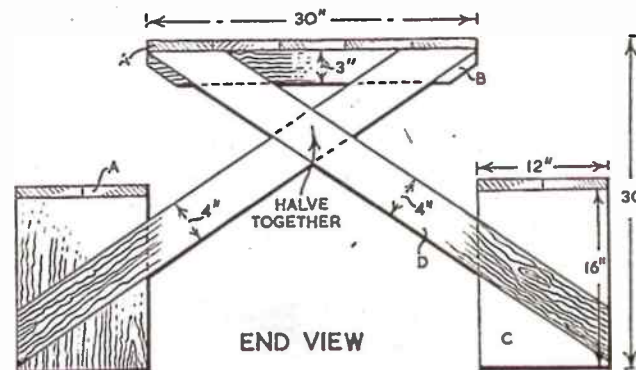


Fig. 2

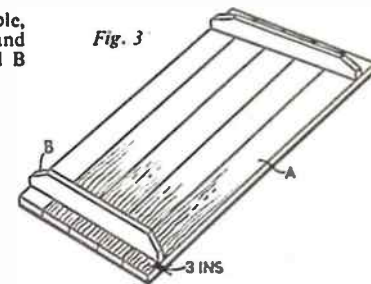


Fig. 3

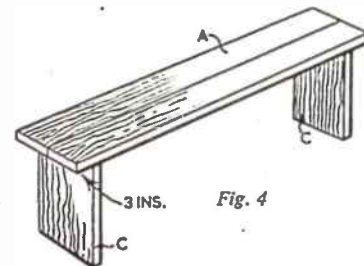


Fig. 4

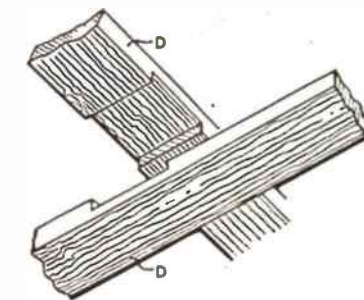
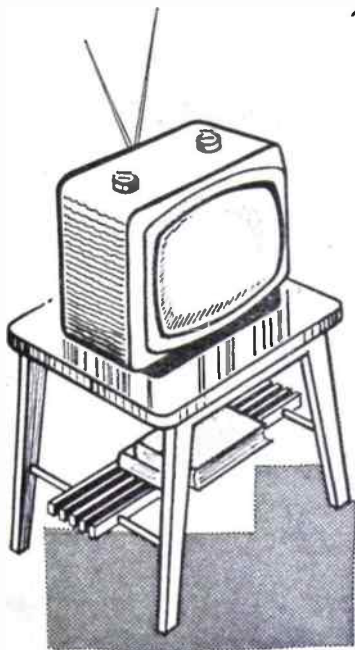


Fig. 5



A TABLE FOR THE TELEVISION



same material and tapered to the sizes shown in Fig. 2. How the legs can be economically cut from a 6 in. by 1 in. board is shown in Fig. 5. Sixteen 1/2 in. lengths of 1/2 in. dowel rod are used to assemble the framework.

In order to make sure that the joints fit neatly the procedure shown in Fig. 2 should be employed. Mark a letter (A, B, C, etc) at each end of each top rail then similarly mark the top of each leg. It is important that rail A goes with leg A and so on.

Mark the dowel positions at the end of each top rail and knock in a small (say 3/8 in.) panel pin on each mark. Allow the head to protrude slightly. Nip off the heads of these nails with pliers so that they still protrude sufficiently to allow them to be pulled out later.

Press the end of each top rail on to its corresponding leg and two small dents will be made on the legs. These indicate the centre of the holes for the dowels. When the pins are removed from the top rails the pinholes give the centres of the top rail dowels. Drill all the holes 1/2 in. diameter and slightly more than 3/4 in. deep. Fig. 3 shows how to ensure drilling to the correct depth.

The front and rear frames of the table

Drill holes in the top rails for the screws which secure the table top from underneath. These screws should protrude 1/2 in. above the top rails. Note that Fig. 2 shows these holes counter-drilled so that a 1 1/2 in. by 8 screw may be used. These holes may be plugged with 1/2 in. diameter dowel when the table is assembled.

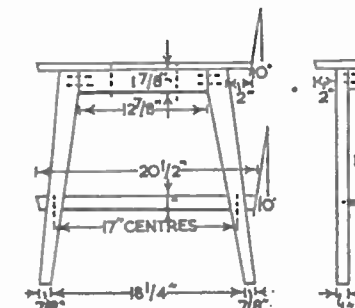
By D. McGhee

Next drill the holes in the legs to accommodate the 1/2 in. dowel rails. Note that these holes are 'blind'; that is, they do not pass right through the wood. They are in fact 3/4 in. deep (Fig. 2).

The five lower rails are cut to size (Fig. 1), and the holes carefully drilled, so that the distance between their centres is identical in every one and also identical with the distance between the two 1/2 in. holes in the frames.

ALTHOUGH this table was designed specifically for a television set, it would be ideal as an occasional table about the house.

Dowel joints have been used instead of haunched mortise and tenon joints, as most households have a carpenter's

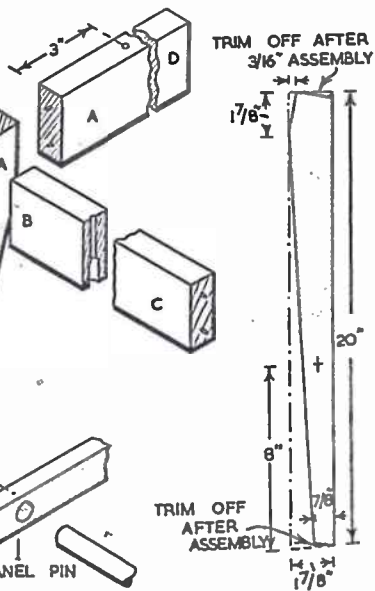


brace or mechanic's drill, and a mortise gauge and mortise chisels may not be available.

The main framework consists of four legs and four top rails. These are all made from 1 1/2 in. by 1 in. material, and if this can be obtained dressed to these sizes, so much the better. The top rails are cut to the sizes indicated in Fig. 1 (two at 12 1/2 in. and two at 14 in.). Care should be taken to ensure that the ends of these rails are quite square.

The legs are 20 in. lengths of the

may be glued and assembled. When the glue is dry the top and bottom of each leg may be angled; that is the bottom is level with the floor and the top of the frame is straight.



The lower rails are now 'threaded' on to two 1 1/2 in. lengths of 1/2 in. dowel. They are secured to the dowels by fine panel pins on the underside (see Figs. 1 and 2).

The complete framework may now be put together, taking care that everything is 'square' before allowing the glue to set. Four fine beheaded panel pins secure the 1/2 in. dowels in their sockets.

The original table was constructed in mahogany (with the exception of the birch dowels), so a piece of 3/4 in. thick mahogany-faced ply was used for the top. The edges are bevelled to 10° and the corners slightly rounded, taking care to maintain a constant bevel all the way round. Do not fix on the top until all the polishing is finished.

Glasspaper all surfaces thoroughly. Lightly dampen the whole structure and top and allow to dry out completely. This allows the fibres of the wood to swell, and they may be cut down with glasspaper. Dust the wood with a dry cloth and apply four or five coats of white french polish, allowing each coat

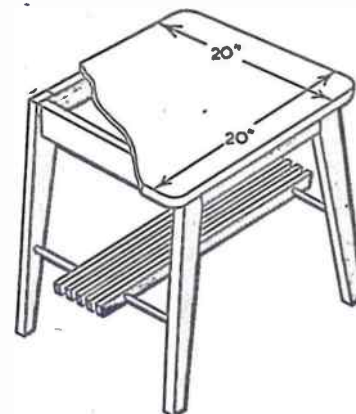


Fig. 4

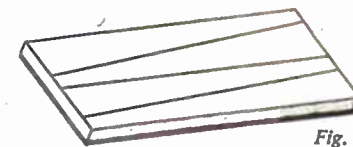


Fig. 5

to dry. Glasspaper lightly and dust between each coat.

Carefully paint the edge of the plywood top black or some neutral colour. Do not use a cellulose paint or dope, as this will attack the french polish.

Finally go over all the surfaces with clean, rust-free steel wool dipped in furniture wax. Burnish the wood with a hard material, such as nylon or silk, until a smooth, hard finish is obtained.

The table will not have a high-gloss finish, but the satin smooth durable surface may be easily maintained.

Make this Fly for Pike and Perch

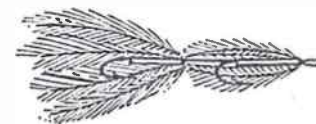
GENERALLY speaking, most anglers are aware that the largest pike ever to be taken on rod and line fell to a fly.

In this article I propose to explain to you how to make a fly which will, and often has, taken pike and perch.

The plastic tubing you will need should be of the smallest possible diameter so that it fits closely to the shank of the hook. This material is available in handicraft stores and is in many colours. You will need trace wire, and I recommend the smaller sizes so that you can twist it up without being too bulky. The finer sizes also lend themselves to twisting and make a very neat job. You will require a reel of silk for whipping, and here I suggest the same colour as your plastic tube and which can be whatever your fancy dictates, although I do not recommend black. White, blue, yellow or red are ideal colours, attractive to these fish. I also suggest sea hooks, which have long shanks.

The first job is to take a strand of wire, say about 8 lb. breaking strain, and about twelve inches in length. Double this and pass through the eye of the hook so that you now have four strands of wire which should be tightly twisted (Fig. 1). Next take a piece of plastic tube and pass this over the wire so that it fits nicely. When satisfied on this point, slide it off and smear the wire liberally with waterproof cement, then slide the tube back again, this time taking it over the eye and stopping when the end of the tube is in line with the point of the hook (Fig. 2).

You will have two hooks on this fly. The bend of the second hook should be about 1 1/2 in. from the eye of the first, and the plastic tubing should come up the



wire almost to the bend of your second hook (Fig. 3). The wire is passed through the eye of the second hook and back along the shank, where it should be cut off about halfway along the hook shank. This wire should be bound to the hook with whipping silk. A short length of tube should be slipped over, leaving the eye clear, and this tube should also be cemented in place.

Your next need is for feathers, and these should be in similar colours to your tube. They can be bought from tackleshops dealing in fly-tying materials or you can dye your own by getting long white tail hackles, say three to four inches, and using the dyes sold for nylon, which are fast and very bright. Follow out the instructions on the tube or packet.



FIG. 1



FIG. 2

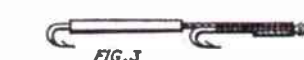


FIG. 3

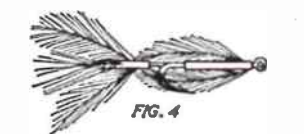


FIG. 4

Now that you have your feathers ready, whip in about four, the colours of which contrast with your plastic tube. These are tied in near the eye of the top hook. Use your silk for the purpose, putting a touch of cement on the binding to make it secure.

By 'Kingfisher'

You will now have a fly with feathers extending just beyond the bend of the bottom or tail hook. The next step is to bind these feathers on to the tubing about halfway between the bend of the head hook and the eye of the tail hook. Give a couple of turns of silk, not too tightly, and then insert a bodkin under the quill of each feather and pull gently outwards for a little way so that you form a sort of cone all around the shank of the head hook. This gives some appearance of 'body' to your fly (Fig. 4). Now take a few turns of silk tightly round the feathers at the same point and this, in drawing the feathers tightly down, will make the tips of them, which are over the bend of the tail hook, stand out clear of the latter and will give a semblance of 'body' at the tail end also. This 'body', of course, will sit much closer to the feather when it is in running water.

The finished 'fly' can be used on float tackle, and there being no spin you do not require swivels. A little lead about a foot or so above the fly will get it down in the water, and you keep drawing it back against the current.

If you wish to use the fly in still water, add a spinning cane to the head and use it in the same manner as you would a Devon minnow.

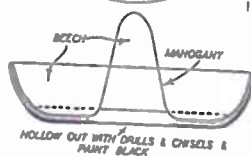


TWO NOVEL PROJECTS FOR TURNING ON THE LATHE

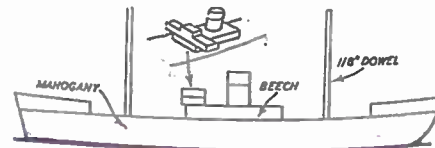
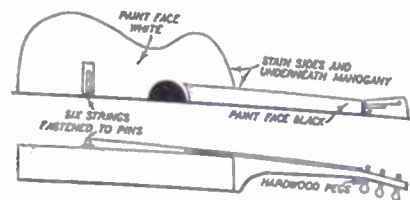
Remove the work from the lathe, and chisel away the wart flush with the floor of the brim. Glue in discs for the hatband and crown, clamping the hat to the headstock with the screw feed of the tailstock. Use a piece of scrap wood to prevent the tailstock point from cutting

NO woodwork combination is nicer than light yellow beech worked together with a dark, mellow mahogany, and the designs given here are splendid examples of this. They are the Sombrero and Guitar, and the Lighthouse and Ship.

By R. N. T. Burke



HOLLOW OUT WITH DRILLS & CHISELS & PAINT BLACK

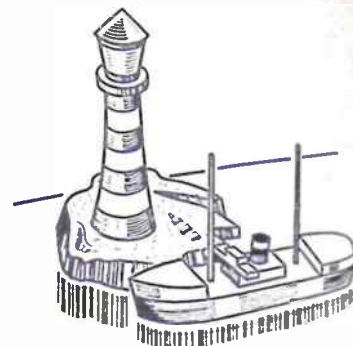


Their construction demonstrates how the lathe may be used as a gluing clamp.

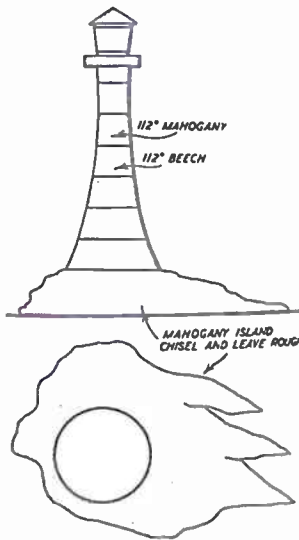
Sombrero and guitar

Cut the beechwood brim of the sombrero to size from 1 in. wood and mount upon the headstock, using the egg-cup attachment. First turn the outside of the brim and then the inside, leaving a floor of about $\frac{1}{4}$ in. thick and a cylinder or wart of about $\frac{1}{4}$ in. diameter in the middle for the egg-cup screw.

ornaments for a sideboard or television top. The lighthouse is more straightforward than the sombrero, consisting simply of discs of mahogany and beech glued together and turned. Before cutting out the discs, however, number them and use the numbers when gluing up to keep the grain pointing all the same way. Use the lathe as a clamp, gripping the work between the stocks. The island is cut to an irregular outline and chiselled to a rocky appearance.



Glue on the lighthouse and cover both with clear varnish. The ship should be quite a simple



into the crown. Make sure that the grain of the wooden discs is in line and leave clamped up overnight.

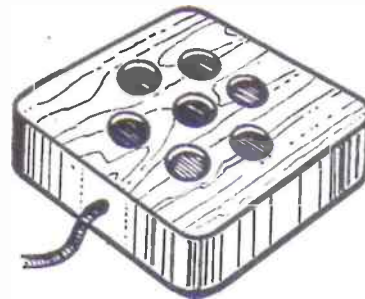
When the glue has set, screw the egg-cup attachment in again and finish turning. Cover with clear varnish, and use a silky cord for the chin rope.

Construction of the guitar is obvious; it needs no comment other than to say that if the pegs are made a good fit and the strings are tightened, a very guitar-like strumming sound can be made with a piece of balsa wood. The completed design makes an attractive embellishment to Hobbies Design No. 3316, a Cacti Bracket.

Lighthouse and ship
These make a most effective pair of

affair as shown in the diagram. Glue parts together as indicated and finish with clear varnish.

SEE BACK PAGE FOR DETAILS OF HOBBIES LATHES



A LOUDSPEAKER of this kind is designed to be placed under the pillow so that a person resting in bed can listen to programmes without disturbing other people. When listening in this way quite low volume is sufficient, because the loudspeaker is near the ear. The speaker can also be used as a small extension speaker in the usual way, the cabinet being of such a shape that it will stand on one side on a table or shelf.

A speaker with a cone 3 in. or $3\frac{1}{2}$ in. in diameter will be most generally suitable, but speaker units of other

LISTEN-IN WITH A PILLOW SPEAKER

These pieces are then cut out with a fretsaw, or with a $\frac{3}{4}$ in. auger, if available. The latter should be used carefully from each side in turn, to prevent the wood splitting.

The average 3 in. to $3\frac{1}{2}$ in. speaker will need a case about $1\frac{1}{2}$ in. deep inside. The inside depth should be a little more

A small hole is drilled in one side of the cabinet, and a length of twin flex is threaded through. It is tied or bound with glued string, as shown, to prevent tension on the actual connections if the flex is pulled. A little slack is left, and the leads are soldered to the two speech coil tags of the unit, as in Fig. 2.

The back is $4\frac{1}{2}$ in. \times $4\frac{1}{2}$ in., cut from 3-ply, and is held with small screws. It is a good plan to pack the cabinet with cotton wool, to prevent resonance. Another piece of silk or similar material should be placed over the speaker unit, so that the packing cannot reach the cone. The cabinet is then filled, the cotton wool being pressed down only lightly. The back is then screwed on.

With the usual 3 ohm speaker, the flex leads can be fitted with plugs to insert in the extension speaker sockets of a receiver. With home-constructed or battery receivers having no extension sockets, connections are taken to the

By 'Radio Mech'

than that of the speaker unit so that the back will not press on the unit magnet. Using $\frac{1}{4}$ in. wood, two side pieces will be $4\frac{1}{2}$ in. \times $1\frac{1}{2}$ in., and two 4 in. \times $1\frac{1}{2}$ in. All edges should be true and level. Glue is smeared on the meeting surfaces and the parts are fixed together with small panel pins. When

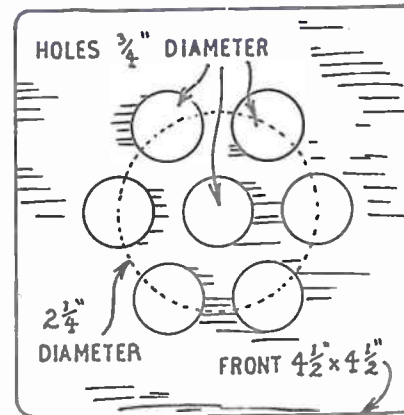


Fig. 1—Front of speaker

sizes can easily be used if the dimensions of the case are changed to suit. For the cabinet to slip easily under the end of a pillow it needs to be reasonably small and slender, and this means that the smaller type of speaker is best.

For a 3 in. cone speaker, which will measure about $3\frac{1}{2}$ in. \times $3\frac{1}{2}$ in. overall, the front can be $4\frac{1}{2}$ in. \times $4\frac{1}{2}$ in. This is cut from 3-ply, and the centre is marked. A pencil circle $2\frac{1}{4}$ in. in diameter is then drawn, as shown by the dotted line in Fig. 1. The compasses are then used, at the same radius, to divide this circle into six. Seven circles each about $\frac{3}{4}$ in. in diameter are then drawn, as shown.

dry, the whole should be glasspapered and varnished or stained.

Speaker and connections

A small square of silk or similar material is cut to fit inside the case, as shown in Fig. 2, and is held with a trace of glue round the edges. This is to keep dust out and improve the appearance of the speaker.

The unit is then placed on the silk, and fixed with small wood screws, which should not be so long that they penetrate the cabinet front outside. If the screws are a little too long, washers can be placed under their heads.

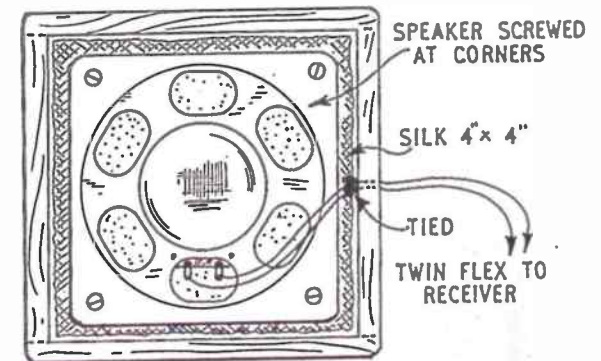


Fig. 2—Speaker with back removed

secondary of the loudspeaker coupling transformer in the set. If the set has an internal speaker, this can be disconnected by inserting a switch in one lead going from internal speaker to transformer.

Connecting up when necessary will be simplified if a twin socket strip is fixed at a handy point in the receiver, and the pillow speaker leads have plugs to suit. Home-constructed sets often have the loudspeaker separate, and it is then easy to connect the pillow speaker to the output transformer secondary, and stand the speaker cabinet on the receiver for ordinary listening.

With a simple camera

CLOSE-UP PHOTOGRAPHY

HAVING spent a lot of time and trouble making a model, you may want to be able to show it to your friends. However, this is not always possible, but it is comparatively easy to take a good close-up photograph. Photographs can be slipped into envelopes and sent anywhere you wish.

It is not only models that can be successfully photographed in close-up; small flat objects such as stamps, match-box covers, and coins can be reproduced using really powerful close-up lenses. This is useful, for, should you wish an expert to identify one of your coins, it is very helpful to be able to send him a really first-class photograph.

By P. R. Chapman

Also you may be interested in growing or collecting flowers. These are very transient, but make delightful photographs which will give you great pleasure as well as being a useful record. The methods to be described are equally suitable for taking the now popular colour photographs, although it is advisable to wait until you can take a really good black and white photograph first, since the colour film is more expensive.

Most of the photographs of small objects you see in magazines are taken by means of a plate camera, fitted with a focusing screen. While this is the easiest way, it is certainly not the only way. With care it is possible to take excellent photographs using an ordinary box camera.

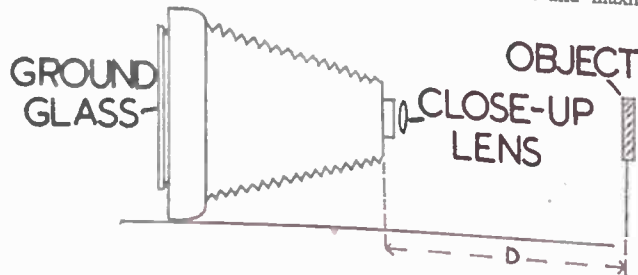
For objects such as models and plants, which have considerable thickness, a two diopter close-up lens is necessary. The more powerful the lens, the smaller the depth of focus. However, for flat objects such as coins and stamps depth of focus is of no importance, and you may experiment with more powerful lenses. When purchasing a close-up lens from your photographic shop, buy a small piece of ground glass to put in the back



An *Epiphyllum ackermannii* in flower. *Epiphyllums* or 'Orchid Cacti' are the floral beauties of the Cactus family. This flower is brilliant scarlet and nearly 4" across.

of your camera in place of the film.

Although lenses are sold with a table giving the focal distance of the combination of the close-up lens and the camera lens for definite settings of the focusing adjustment, it is advisable to check this result by focusing on a small, brightly illuminated object, and carefully examining the inverted image on the ground glass screen with a magnifier. The ground side of the glass must face towards the lens and be in exactly the same position that the film would be. It should rest on the film rollers, and may usually be held in place by means of rubber bands or Sellotape. The position of maximum sharpness (D) should then be measured from the object to the camera lens for the minimum and maximum



paint you happen to have in your shed. Obviously dark objects are better against a light background and vice versa.

Stamps can be temporarily mounted on a sheet of black paper, which can be pinned to a vertical board or even a wall. Coins can be similarly mounted, using a small piece of Plasticine.

It is essential that the camera should be rock firm. This means that it must not be hand-held; a pile of books makes a good camera stand, although wooden boxes, if available, are firmer. If your camera has a socket for a cable release, this is a help because the shutter can be released without touching the camera, and there will be no tendency for the camera to move due to a stiffish shutter.

If using a very simple camera with no B or T setting, the object to be photographed must be placed outside in a good light as for an ordinary snapshot. With a variable focus camera, such as a folding Kodak, there is more scope. This type of camera usually has an adjustable aperture with a B and sometimes a T setting. It is advisable to use the smallest aperture available to give the maximum depth of focus. This means that it is necessary to give a lengthy exposure. Since the slowest speed on many cameras is 1/25th second, when using outside lighting, and an aperture of, say, f/16, the camera may be set to B and the shutter simply snapped on-off, using, if possible, a cable release.

Often it is better to photograph stamps, etc. indoors at your leisure in the evening. About ten seconds at f/11 in ordinary room lighting is usually adequate, but this can only be found out

focusing distance of the camera. For fixed-focus cameras it is essential to measure these distances yourself, since the distance at which the camera is focused is rather indefinite.

Some box cameras have curved backs, and this makes it difficult to fit a piece of ground glass in place of the film. In this case, a piece of really taut grease-proof paper may be used instead. To keep the shutter open whilst examining the image, the camera is set on B or T.

It is useful to know how much of the object your camera will cover with its close-up lens. This can be checked while you have the ground glass in place. It is important to remember that the lens will certainly give poor definition at the edges of the negative space, so always arrange that the object to be photographed fills the central portion, which is the position of maximum sharpness.

Before actually starting to photograph your model there are one or two other things that are necessary. The first is the question of background; it is a pity to spoil a good photograph by a confused background, but this is a common fault. For large objects such as models or plants, a piece of hardboard finished with matt paint is very good. It can be painted either black or white, depending on your personal taste and the



Stamps of King Edward VIII

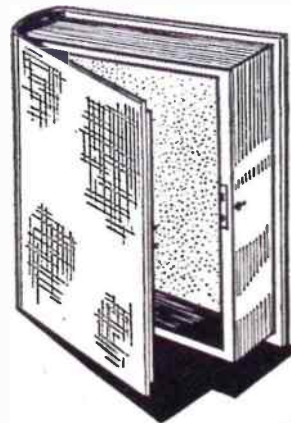
by trial and error. The advantage of artificial light is that once you have found the right conditions, you can be certain of getting good photographs every time.

If you are really ambitious, you may wish to experiment with something a little more elaborate in the way of lighting. It is comparatively simple to make a couple of photographic lamps using large tins and a 100 watt bulb. This gives more scope when photographing models,



A Kruger shilling and a Roman coin.

A handy Book Safe



It is often useful to have a hiding place for private papers, money, etc. The book safe described here is

simple to make, and when placed in a bookcase or shelf of books will pass unnoticed.

First you will need an old book. Obtain one about 2 in. thick and having a rather dull title which will not tempt the average person to pick it for reading. A rummage through the oddments box at a secondhand bookshop will usually yield an old volume of the required size and having a strong binding.

Measure the exact size of a page, and with the book closed, the thickness of the total pages. This will give you the measurements of the box. Then carefully remove all the pages, so that you are left with the covers and spine only.

Now make a simple box. Use $\frac{1}{2}$ in. wood for the sides and ends, and $\frac{1}{4}$ in. plywood for the lid and bottom. Hinge the lid with two small hinges, and fit a small box lock.

Give the top and bottom of the box a good coat of glue, then place carefully

enabling detail to be shown up by side and back lighting.

When working at short distances, the greatest care must be taken to avoid errors due to parallax. This is because the view finder and the lens of the camera look at the object from slightly different positions, and is of importance only at close-up distances. Under these conditions the view finder is not reliable, and the object to be photographed must be placed on the axis of the lens, i.e. exactly in line with it. A ruler will ensure this.

If the negative is to be enlarged to any extent, a reasonably fine-grained film is advisable. A medium speed film such as Ilford F.P.3 will be found to be satisfactory.

Close-up photography is a large subject, and it has only been possible to give brief details here, but experiments on the lines suggested will soon show you the best procedure for your particular conditions and equipment.

within the book covers, and leave aside under a weight until dry. Do not glue the spine to the box. Leave this loose as is usual in large books.

The top end of the box will give the game away if the dummy book is kept on an open bookshelf. This may be disguised by gluing a piece of paper or thin card over it, and drawing fine lines to represent leaves.

Rust-Removing Paste

NOW on sale through garages and motor accessory stores, etc., is a new rust-remover paste introduced by Holts Products Ltd. Clean and easy to use, this paste form has obvious advantages when vertical or horizontal surfaces have to be treated. Not only does it remove rust, it etches and rust-proofs the treated metal, thus providing the best possible conditions for paint adhesion and long life of the paint film. For the motorist, gardener, and handyman, it has many uses. In polythene bottles, price 3/- and 6/6.

MODES OF TRANSPORT

- PIECES A CUT TWO 1/4 IN.
- PIECES B CUT TWO 1/2 IN.

GLUE TOGETHER SHAPE AS SHOWN



PIECE C CUT ONE 1/4 IN.

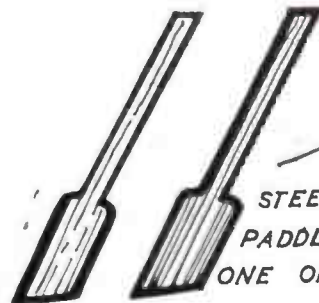


PIECE D CUT ONE 1/4 IN.

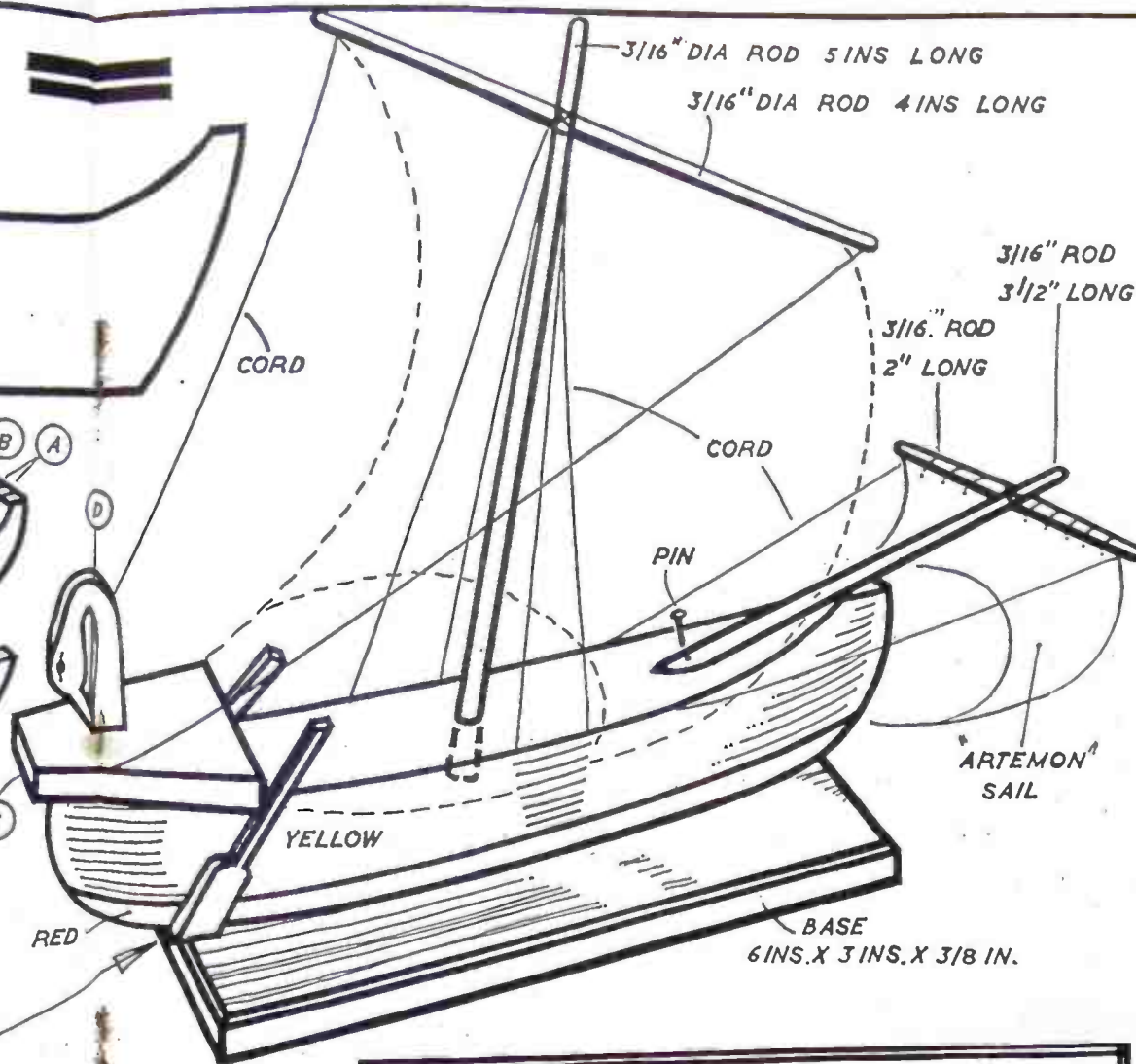
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"ARTEMON" SAIL CUT FROM THIN CARD OR PARCHMENT



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PAPER AND BOARD MODELS

PAPER and board should be considered as a medium of producing models, display units in dimension, toys and forms of decoration and not as a substitute for other materials such as metal and wood. Many ideas may be worked out in coloured paper, for example, and to-day, window displays and backgrounds for exhibiting work of all kinds owe their success to the productive skill of nimble fingers which can mould, fashion, cut, score, bend and curl paper and board into shapes and motifs with ease and at little cost.

Lettering

The practical worker in most fields of home occupation will find a use and purpose for lettering as may be applied to club and institute notices, posters for special announcements relative to flower shows, sports events and other features which need quick and effective publicity and often at little cost. Coloured strips of paper, suitably arranged, can assist in the design and production of notices, posters and other similar work. Lettering is most useful in many ways and letters may be used to mark components of work and fittings which need coding before assembly. Lettering may be used, in suitable sizes, in books, boxes, tins, jars and other containers used in the kitchen for household items.

Bold and clean cut letters may be obtained after an initial study of lettering. Those able to obtain a book of type faces may use them as copy. Ornamental styles may be produced by studying the newspapers. Stencils are obtainable which assist in obtaining standard shape and style of letters and numerals.

By F. T. Day

Good letters may be obtained by ruling two horizontal lines in a suitable width to suit the ultimate height of the capitals and an additional line for small letters. Compasses may be used for S., O. and Q. Lettering may also be obtained by using drawn squares. Having decided upon the height of the letter, six horizontal lines equal distance apart are drawn with the aid of a ruler. Vertical lines are then drawn the same distance apart so that a pattern of squares is formed. Letters based on half-inch squares will make a first class bold letter one and a half inches in width by two and a half inches in height. The letters are then drawn out on the principle of five squares in height and three squares in width. Letters may be drawn free-hand or with the aid of a ruler. Letters are cut out after the drawn outlines have been completed.



Poster work based on 1 in. strips of coloured paper cut to suitable lengths.

For simple, quick poster work, much may be achieved from one inch strips of coloured paper. All letters may be obtained this way and when gummed paper is used, they may be easily affixed to a background card or piece of thick paper ready for display.

Border work

Border work, panelling, frieze patterns and general masking work may be carried out with coloured strips of paper, either gummed or of the self-adhesive type. Plain distemper walls may be in need of some touches of colour, if only temporary until the wall is ready for papering. Such material as passe partout binding, normally used for picture framing, is made in many colours, in embossed patterns and is in a width ideally suitable for border and wall panel work. When this material is thoroughly moistened, it is mouldable and may be shaped in all kinds of artistic patterns, corner motifs and moulds to suit the wall background and area.

There can be no doubt that much more could be carried out in the field of interior decoration by the use of coloured binding strips which contrast or harmonise with existing wall schemes. One, two or more colours, overlapped, superimposed in from narrow to wide widths, corners, curves, designs and patterns all being possible with this

material and indeed, coloured paper of most kinds, for very little outlay.

The hall and the stairway are places in the average household which often stand in need of some brightening effects. Border may be made up in any width by placing strips of tape side by side, or in the case of colours, overlapped in colour gradation, which is often very effective. Woodgrain patterns are now available which give very attractive results on stairways and other places in the home. The lighter and brighter shades should be used in the dark places while the more subdued patterns and colours are best for the brighter rooms.

Corner motifs based upon pattern weaving, where more than one colour is used, are often effective. Panels on walls made up from gold adhesive binding look most effective and often sprays of floral motifs may be cut from old stocks of wall-papers and used for a corner piece. Panels made up from horizontal and vertical strips of tape with a suitable corner shape can form a wall pattern in many cases. Folded strips of binding, when cut, will produce some really decorative patterns and this kind of work is known as the repeat pattern from folded strips.

All of this work, while being quite permanent as long as desired, may be removed with warm water when the ultimate interior decoration is planned.

Toy making and modelling

Good thick weight cardboard is always useful to the home worker and many kinds of models may be drawn and cut out of this material with the aid of some suitable adhesive or sticky tape. Illustrated is a design for a baby's pram which may be made in any size and from wood of some kind if desired. The plan is simple to follow; good scoring at the point of fold and accurate cutting of material is essential. All parts are glued together and held firmly with a clip of some kind until the bond is made. The model may be painted, or otherwise treated and if separate wheels are cut out, the pram becomes mobile. This is comparatively simple work but gives considerable pleasure where gifts are wanted for special occasions.

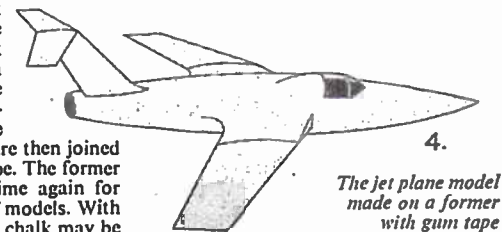
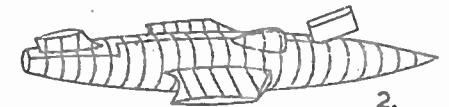
Using a former

A former fashioned or carved from wood may be used to serve the purpose of a former on which to make up models from paper strips. From a piece of wood a shape is carved representing a jet plane. The former is finished off with glass-paper to a smooth finish. In order to provide the former with a non-porous surface, it should be painted. When the model maker is ready to commence, a supply of gummed tape should be handy, cut up into strips. The former should

then be covered with wet tissue paper and this will prevent the strips of tape from sticking to it. The moistened strips are laid one by one in an overlapping fashion by about half the width of the tape, one inch tape being used. Wet tape should be laid down and bound round firmly and neatly. Wet tape should be overlapped in both directions by two applications to give strength to the finished model.

Our illustration shows the wood former before tape application (1) and the commencement of the work with strips of wet tape overlapped (2). The work is then cut carefully with a sharp knife or razor blade along the centre line, as indicated, into two separate parts and the two halves are then joined together with a strip of tape. The former may be used time and time again for making up any number of models. With very smooth wood, french chalk may be used as a dusting medium to prevent wet gummed tape from sticking to the wood.

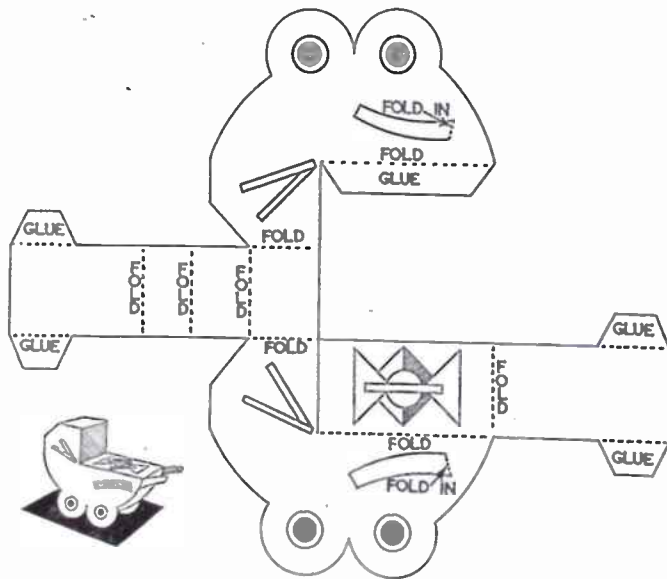
The wings and tail are made up from thick paper or thin card suitably cut and stuck in the appropriate places of the model. A final painting in a suitable colouring and some copal varnish will



The jet plane model made on a former with gum tape

add the finishing touches to the model. Models may be used for gliding and other experimental work. Seaplanes may also be made up to float on water as treatment with varnish will render them waterproof.

PLAN FOR A MODEL PRAM



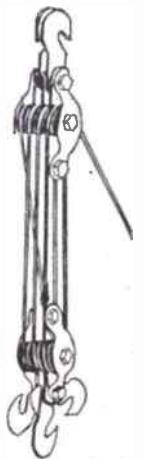
A DIVERSITY of uses is claimed for the Haltrac Midget Hoist, and one on which we experimented most successfully was in lifting an engine from a car.

Given a suitable fixed point to use as an anchor, (in the instance quoted it was a tree branch), this versatile block and tackle unit, which weighs only one pound, has a breaking strain of 1,000 pounds. The pulling strain is well taken over the self-lubricating nylon pulleys by a nylon cord, which, however, tended to cut into the hands on a particularly heavy pull. An obvious remedy here is the use of gloves, although on lighter operations the lift is smooth and easy.

Apart from its obvious uses to the home handyman and car owner and in industry, the hoist has exciting potentialities for those engaged in outdoor activities such as camping, yachting and Scouting. Boys, in fact, will thoroughly enjoy using the apparatus in tests of lifting strength.

Costing 57/6, (plus 1/6 post and packing) the hoist is obtainable from the manufacturers, Haltrac Ltd., Bourne Works, Weimar Street, London, S.W.15.

The Haltrac Midget Hoist



PLYWOOD IN PRACTICE

THE manufacture of plywood has improved tremendously in recent years and it is now widely used for commercial furniture production, so the amateur woodworker can use it with every confidence for many different projects.

It has long been established that the strength of wood along the grain is many times greater than across, and that there is neither expansion nor contraction along the grain even when subjected to moisture. The method of bonding plies of wood together with the grain of each running in opposite directions alternately ensures greater strength in itself but modern hot-pressed synthetic resins produce nearly perfect material. Admitted, the thicker the wood the stronger, but for equal thickness it will be found

that plywood is the superior, and there is little fear of warping as experienced with some immature material.

By H. Mann

There are many gauges of plywood ranging from $\frac{1}{8}$ in. to 1 in. and with as many as nine plies, and it is perhaps true to say that the handicraft worker is more apt to think in terms of the thinner material. At the same time we cannot afford to overlook the advantages of being able to use large, single pieces without the necessity of preparing glued butt joints. Plywood sheets are available up to 7 ft. by 5 ft. with the face grain running in the long direction. This facing

We need saws for cutting, the main being a tenon saw, a fretsaw, a padsaw and, of course, a medium crosscut, while a straight chisel and a cutting gauge are handy for joints. Straight cutting down or across the grain can be achieved with the tenon saw if held at a low angle so that the brass spine does not contact the wood, and the face side must always be uppermost when sawing. Chipping at the corners at the end of the sawcut can be avoided if normal working pressure on the tool is relaxed when nearing the end and the cut completed by mere weight of the saw. Chattering at the cut end can be stopped by placing a piece of waste wood on both sides and holding together with a small clamp.

When confronted with a curve we have the alternative of using either a

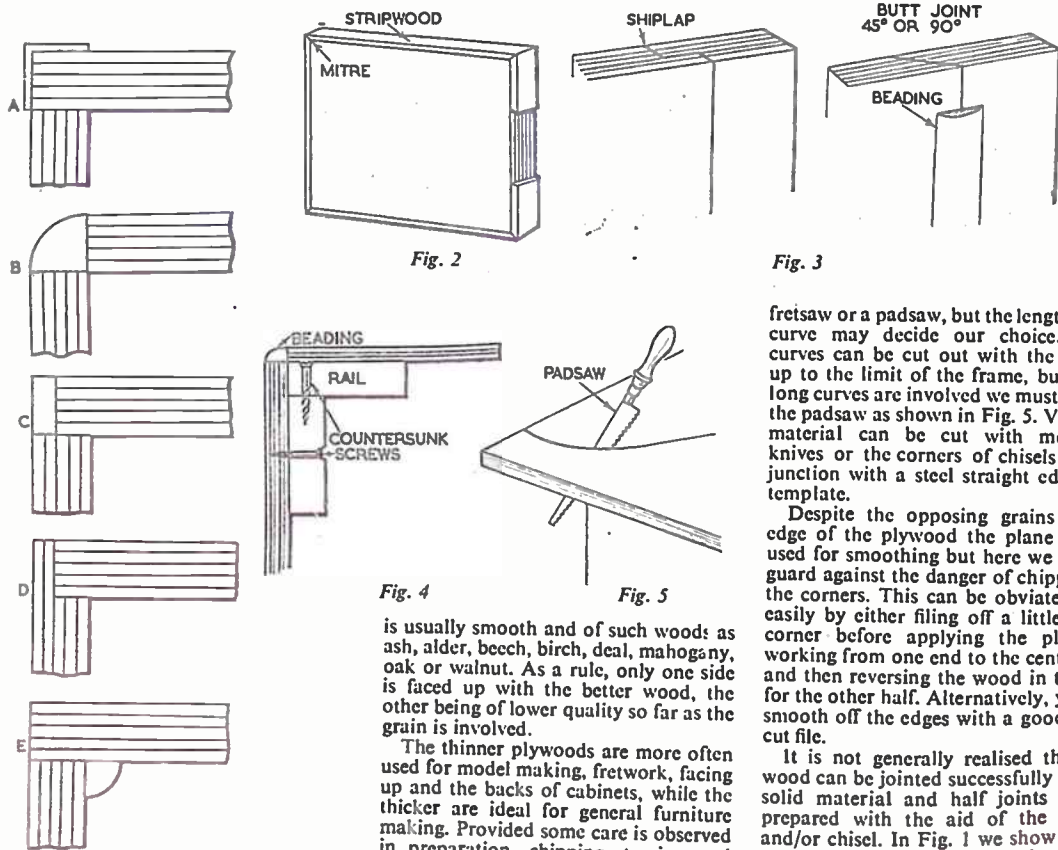


Fig. 2

Fig. 3

Fig. 4

Fig. 5

is usually smooth and of such woods as ash, alder, beech, birch, deal, mahogany, oak or walnut. As a rule, only one side is faced up with the better wood, the other being of lower quality so far as the grain is involved.

The thinner plywoods are more often used for model making, fretwork, facing up and the backs of cabinets, while the thicker are ideal for general furniture making. Provided some care is observed in preparation, chipping, tearing and fraying can be avoided, so some hints on practical usage will not be amiss.

fretsaw or a padsaw, but the length of the curve may decide our choice. Small curves can be cut out with the fretsaw up to the limit of the frame, but where long curves are involved we must look to the padsaw as shown in Fig. 5. Very thin material can be cut with modelling knives or the corners of chisels in conjunction with a steel straight edge or a template.

Despite the opposing grains at the edge of the plywood the plane can be used for smoothing but here we have to guard against the danger of chipping off the corners. This can be obviated quite easily by either filing off a little of the corner before applying the plane or working from one end to the centre only and then reversing the wood in the vice for the other half. Alternatively, you can smooth off the edges with a good crosscut file.

It is not generally realised that plywood can be jointed successfully like the solid material and half joints can be prepared with the aid of the fretsaw and/or chisel. In Fig. 1 we show several treatments for corners and perhaps some explanation will be helpful. Fig. 1A shows a simple treatment where the

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joint is glued, the end grain of the side-piece being hidden by angle beading — either wood or aluminium. Fig. 1B shows how a piece of quarter round section can be glued and pinned to the two panels, while Fig. 1C indicates the method of gluing a piece of thin stripwood to the edge of the side panel. Fig. 1D indicates another treatment, that is, where three plies have been stripped from one piece and the adjoining member fitted into the rebate; and lastly Fig. 1E shows how quarter round section has been fitted inside the corner. In all cases it is advisable to incorporate an additional strengthener of quarter round or triangular section as shown in Fig. 1E, and, of course, careful marking out and cutting are essential. In Fig. 1D the cutting gauge is a handy tool for removing the plies in conjunction with the chisel. The stock of the gauge must be held firm against the edge while drawn towards you, the material overhanging the bench edge for easy working but held secure. Successive strokes of the gauge will penetrate the plies very quickly and the chisel will remove the waste. This gauge is also very useful for making small grooves.

Other methods of cabinet construction with plywood involve the use of a basic framework, often made from 2in. by 1in. material, and there is little doubt that a really strong unit results. Reference to

Fig. 4 will reveal how the panels are attached to the frame by means of countersunk screws. You should also note that the side corner rail is screwed to the front corner rail, and the side panel, of thinner material, glued on top so that the screw does not penetrate. Beading fills in the corner, but treatment as shown in Fig. 1 could be used.

Stripwood edging

Doors are best framed with stripwood on all edges as shown in Fig. 2 and this is glued and pinned if necessary, and mitred at the corners for a neat finish. This not only disguises the edges of the plywood but is a sure method of preventing any chipping when the furniture is in use. This method of adding a piece of stripwood is also useful when dealing with a curved edge, as for example a kidney-shaped dressing table top. Moreover, a set of bookshelves made wholly from plywood can be similarly treated and the plies would not be visible.

On occasion it becomes necessary to join plywood panels, as for example in the making of the backs of cabinets, and modern high-strength glue will permit butt jointing of the thicker varieties. Two methods are shown in Fig. 3 where a shiplap is suggested, made by removing two — or more if necessary — plies; and a butt joint which may be prepared at

Next week's free design will be for making an extending jewel or workbox. Make sure of your copy.

either 45° or 90°. The former demands careful preparation and the edges must be smoothed before gluing with an impact adhesive, but in both cases it is advisable to disguise and reinforce the joint with a strip of half round beading.

Holes should be drilled with a twist bit in a hand brace and it is a good tip to stick a small piece of paper gumstrip over the area to prevent any tearing. Sometimes the brace and bit used for larger holes may tear into the facing grain, so another tip is to use the fretsaw when possible. You may also punch holes in thinner material by means of a metal 'jumper'. The latter is made from a tube of metal piping, preferably steel, to the dimension required and ground to a sharp edge at one end. When using the jumper for punching holes in plywood it is advisable first to drill a small central hole to relieve pressure, placing the plywood on a firm, hard surface and applying the hammer to the tool.

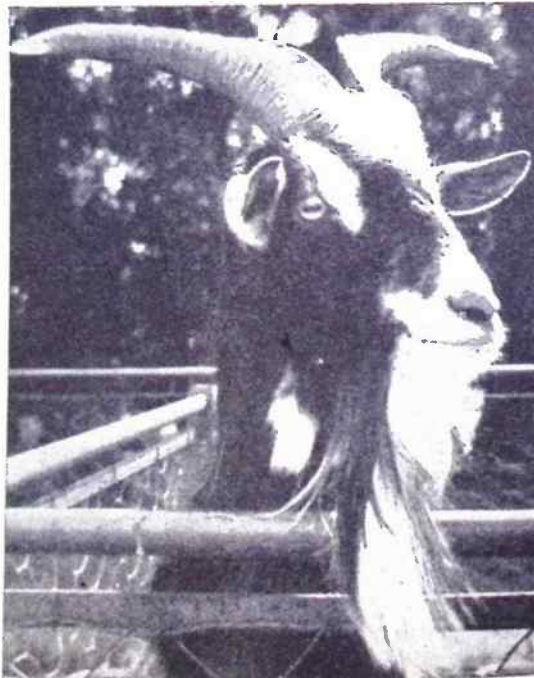
PEEPS AT NATURE

THE DOMESTIC GOAT

THE domestic goat originated from wild forms found in the East. The goat is an ungulate, that is, it walks upon hooves. The first, second and fifth digits have disappeared and to compensate the third and fourth digits have been greatly developed; the goat has cloven-hooves. There are various forms of the goat, many of which have been developed in Switzerland.

The goat is a popular animal in parts of the world where there is insufficient pasture for cattle. Herds of goats may be seen in Malta and parts of Spain. There, the young goats are eaten, very much as we eat mutton. The goats are mainly kept for milk, which has a higher solid content than cow's milk and is said to be more easily digested.

There are many species of wild goat, including the Oryx and Chamois of Alpine fame. Many of the wild forms of goat are difficult to distinguish from wild sheep. In fact, the experts do not always agree over some of the borderline cases. (F.Z.S.)



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Sharper Tuning for Transistors

I HAVE just made your two transistor receiver (8.10.58) and find the tuning is flat; the Home Service is present all over the dial. I used a PA2 coil. Could you please tell me how to remedy this? (S.O.—Bradford.)

TUNING may be sharpened by taking the aerial to a tapping on the coil, or by using such a tapping for the detector. The nearer to the earthed end of the coil the tapping is placed, the more selective will tuning become. Another method is to employ an aerial coupling winding, situated near the tuned winding, with one end connected to aerial, and the other to earth. Or a pre-set, variable or fixed condenser of about .0002μF maximum capacity may be joined in series with the aerial lead. As all such methods reduce volume to some extent, a compromise is usually necessary. In bad cases a wavetrap can be used to cut out the local station. This consists of a coil and variable condenser which can be tuned to this station, and it is wired between aerial and receiver.

Bakelite Adhesive

I HAVE a bakelite photographic developing tank with a small leaky crack in it. Please could you suggest a method of sealing it which will stand against the photographic chemicals? (R.C.—Crewe.)

THE only adhesive likely to fill the cracks in your developing tank is Araldite — supplied in two tubes. You mix a little from each and press it into the cracks. It must be left about three days in a warm room to set. It may help, if the cracks are narrow, to scrape them wider so that the adhesive gets a good penetration. Araldite is made by CIBA Ltd. — the same people who make Aerolite glue. A pair of tubes costs 6/-.

Re-magnetising a Dynamo

I SHOULD like to know how to re-magnetise a cycle dynamo — the sort that turns on the tyre. (O.J.—Anglesey.)

COMMERCIALLY, such magnets are made by being placed in contact with the poles of an extremely powerful electro-magnet. It would be difficult to obtain enough current for such an

electro-magnet, even if it were wound. Direct current is required. The circuit is only made momentarily. The magnetic polarity of the magnets, and electro-magnet, would need checking, so that re-magnetisation was not in opposite polarity to any magnetism remaining. This could be done with a magnetised needle. The only possible source of current would appear to be vehicle type accumulators, which could deliver momentary currents of a few hundred amperes. The magnet winding would usually be of brass strip, to have a sufficiently low resistance. A magnetising power approaching that of a commercial plant could not be expected.

Painting a Back-cloth

THE OPERA we are producing requires scenes painted both sides of the back-cloth. Could you recommend what strength of canvas we need and how to prepare it so that the paint will not seep through the reverse side? Could you tell us how to prevent flaking when the scenes are rolled up? (J.D.—Navan.)

THERE is no cheap way of making scenery which will stand rolling without the paint eventually flaking, or

where the paint from one side does not penetrate the other side. Size is the usual cheap base, but this becomes hard and cracks. We suggest you use a close-weave canvas of about 10oz. grade (this is the weight per sq. yd.) This should be painted both sides with some neutral base colour. Ideally, this would be an oil paint, but for economy you might try emulsion paint. When this is dry, your scenes can be painted on each side with any cheap colours, but size should be kept to a minimum and folding and unfolding or rolling should be done as infrequently as possible. If it is possible to store the back-cloth unrolled, the paintwork will last longer.

Plaster Casts

CAN you please advise me as to the correct type or grade of plaster to use for casting plaques, ornaments, etc.? My casts when dry are too soft or powdery and very easily break. (C.G.—Slough.)

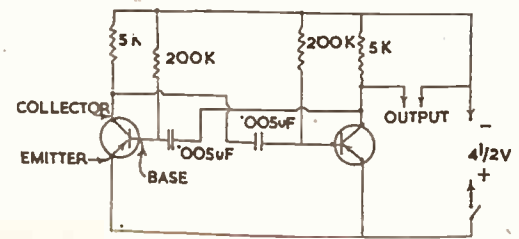
STALE powder will set rather soft and spongy. Your fault seems to be using too much water. Try mixing so that the result is only just sufficiently fluid to flow and pour it almost as soon as it is mixed. Keep stirring while you mix. Several firms sell their own special plasters containing hardeners, and you can get hardeners separately. We suggest you write to these firms for details of their products:—Dohm Ltd., 167 Victoria St., S.W.1; Vinatex Ltd., Devonshire Rd., Carshalton, Surrey; Quality Plastics Ltd., Brentwood, Essex; Seamer Products, Eastbourne St., Hull.

Circuit for a Model Railway Signal Whistle

I WISH to construct a radio which would be capable of producing either in a headphone earpiece or a tiny speaker, a single continuous note similar in sound to the tuning note used by the BBC. This is somewhat lower in pitch than the whistle produced by a wireless oscillating. The note would be switched on or off by a simple switch, and I should like a circuit capable of a fairly loud note similar to a train whistle in miniature, and using transistors in place of valves, as I understand it is possible then to use a small

battery to work the set. Obviously, the smaller the set the better, as it might even be possible to mount the whole unit on a special track, with a pick-up rail to supply the current when required. (J.W.—Haverordwest.)

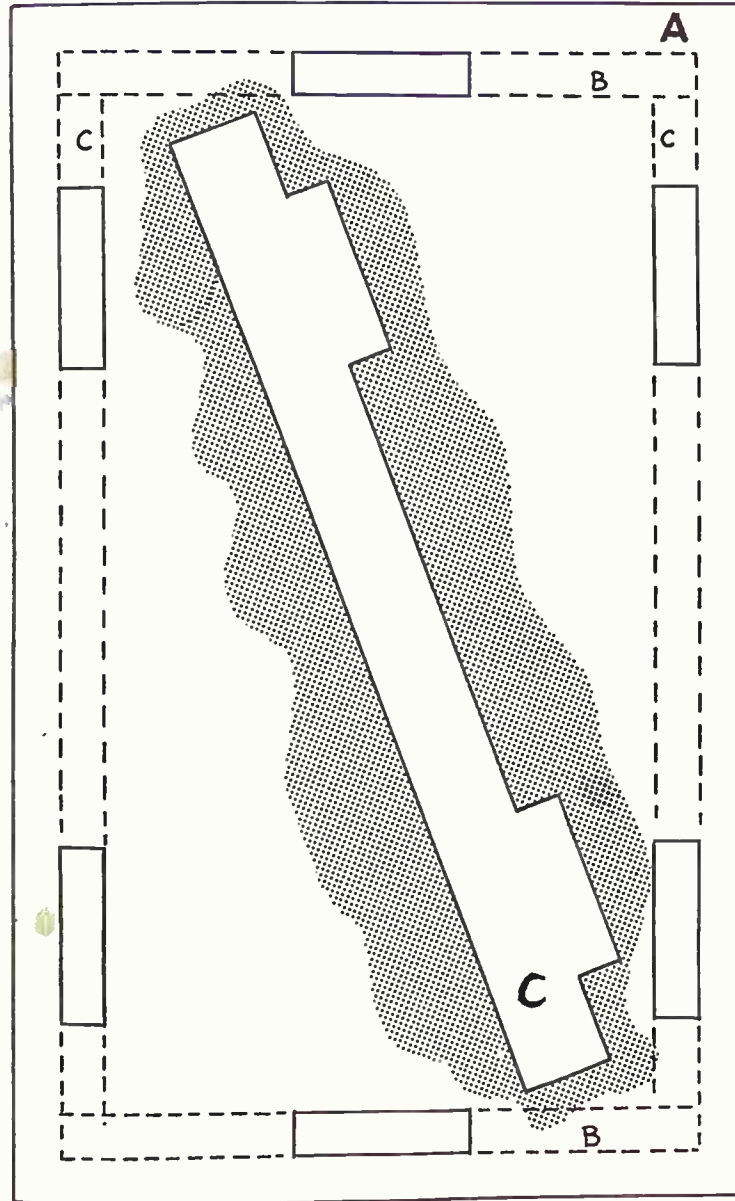
HERE is a circuit for a transistor audio oscillator. The pitch of the note can be modified by-varying the capacity of the condensers, or the value of the resistors, or both, the pitch increasing as resistor values are reduced.



290

Full-size patterns

A DECORATIVE PIN TRAY

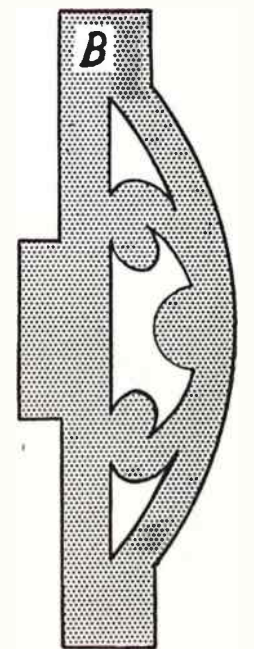


A WORTHWHILE GIFT TO BE CUT WITH THE FRETSAW

THIS decorative pin tray consists of a base (A), two fancy ends (B), and two plain sides (C). They are all cut from 1/4 in. thick wood with a fret-saw.

Clean them up with glasspaper and glue them in the positions shown by the dotted lines.

To finish off, the tray should be stained and varnished, or painted with enamel paint. If you are giving this as a small present it would be a good idea to include a packet of pins. (M.p.)



291



WOODWORKING LATHES FOR THE KEEN AMATEUR



The 'Companion'

The 'Companion' Treadle Lathe. A marvellous combination for the amateur. Obtainable with or without fretsaw attachment shown. The larger driving wheel has two grooves of varying depths to give a change of speed. The headstock is provided with a 2 in. faceplate, a spur centre, and a screw centre for turning cups. It has also a solid emery wheel. The tailstock has a screw feed centre. The lathe is 14 in. between centres and is provided with two rests, designs, saws, etc. The fretsawing attachment is secured to the lathe bed by one bolt, and can be put on or taken off as desired. It is fitted with 19 in. arms and an 8 in. diameter tilting table. A well illustrated book on Wood Turning is included with each lathe.

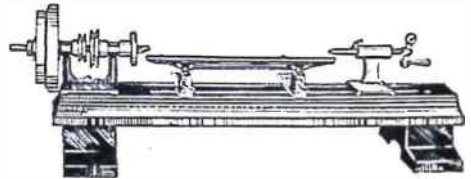
Cash Price: £13 10s. 0d. (as illustrated) or without fretsaw £10 0s. 0d.
Easy Payments: £2 15s. 0d. down, and ten monthly payments of £1 14s. 11d.
Without fretsaw, £2 down and 8 monthly payments of £1 2s. 6d.

The 'Hobbies' Lathe. This lathe has similar features to the 'Companion' but is built for larger work. It stands 6 in. higher, and the distance between centres is 20 in.

Cash Price: £15 10s. 0d. complete. Without fretsaw £12 0s. 0d.
Easy Payments: £3 5s. 0d. down and 10 monthly payments of £1 8s. 5d.
Without fretsaw £2 10s. 0d. down and 9 monthly payments of £1 4s. 1d.

Handy Bench Lathe. This machine is similar to the 'Companion' Treadle Lathe but without the legs, treadle, etc. The headstock spindle has two small 'V' groove pulleys for drive by $\frac{1}{2}$ in. diameter round leather belt. The balance wheel is similarly grooved, so that three speeds are thus provided. An emery wheel, a spur centre and a screw centre are also included. Two centres obtainable.

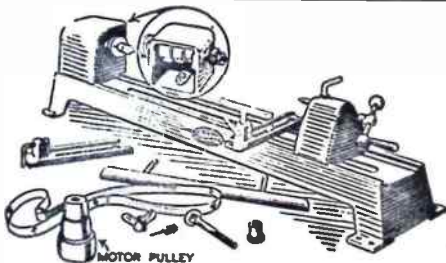
Cash Price: (14 in. between centres) £5 10s. 0d.
Easy Payments: £1 down and 6 monthly payments of 16s. 5d.
20 in. between centres model, Cash Price: £5 17s. 6d. Or easy payments: £1 5s. 0d. down and 6 monthly payments of 16s. 11d.



Handy Bench Lathe

On the Mark II Bench-Lathe the keen handyman can turn his own stool legs, table lamps, wheels, and 101 things in wood. Unlike some 'cheap' lathes with bed made from steel rods or angle iron, the Mark II is built as a lathe should be built. It has a solid cast bed 32 in. long, machined its entire length. Specification: 22 in. between centres. Height of centres $2\frac{1}{2}$ in. A three-step pulley in conjunction with a similar three-step motor pulley gives speeds of 1,065, 1,420, and 1,890 R.P.M. Drive from motor (*motor not included*) is by $\frac{3}{4}$ in. flat belt provided.

Cash Price: £11 11s. 0d. Easy Payments: £2 5s. 0d. down and 9 monthly payments of £1 3s. 7d.



Mark II Bench Lathe

EASY PAYMENTS. A machine can be dispatched carriage paid after the initial down payment, and subject to the completion of a simple form of agreement. It is impossible for us to allow this system to apply in any part of Ireland, or anywhere outside Great Britain. Agreement forms are obtainable at any Hobbies branch, or you can do the business through the post with Head Office at Dereham, sending your instalments there.

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