

DESIGN SHEET (worth 8d.) FREE INSIDE!

VOL. 115

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Make this novelty

MAGNETIC GALLEON

Designed by R. C. F. Bartley (Author of 'Models in Bottles')

THE FIRST OF A SERIES OF MAGNETIC COMPASS MODELS

THIS miniature galleon was designed to operate in a similar manner to that of a compass needle, always pointing North when at rest. It is balanced on a pivot which also carries a circular revolving platform approximately 3ins. diameter.

Fig. 1 shows the plan view of this platform with the galleon in position. The general design is indicated in Fig. 2, and the details for the construction of the various units are given in Fig. 3.

Hull from Balsa

In order that the galleon may be kept at a minimum weight, the hull should be prepared from balsa wood. The spars, etc., may be cut from

matchsticks and glasspapered down to the required size. For the sails use an art paper or, if desired, some draughtsmen's tracing linen can be utilised instead. But if the latter is employed,

this should be given a coating of thin shellac mixture on each side to prevent the material from being affected by damp.

For the shrouds and other leads No. 70 cotton will be found suitable.

Building the Platform

After the galleon has been completed the circular platform is then built up in the following manner. Construct the wooden strip as shown in Fig. 3, and fit the magnets. These magnets are 1in. by 1/2in. by 1/16in. and were taken from two magnetic novelty dogs on sale in various shops. Other types of small magnets may be used and are obtainable from instrument makers, opticians, etc. The cup bearer may be drilled out of an odd piece of brass, or, alternatively, a small alloy cap from petrol fuel containers (not petrol lighters) on

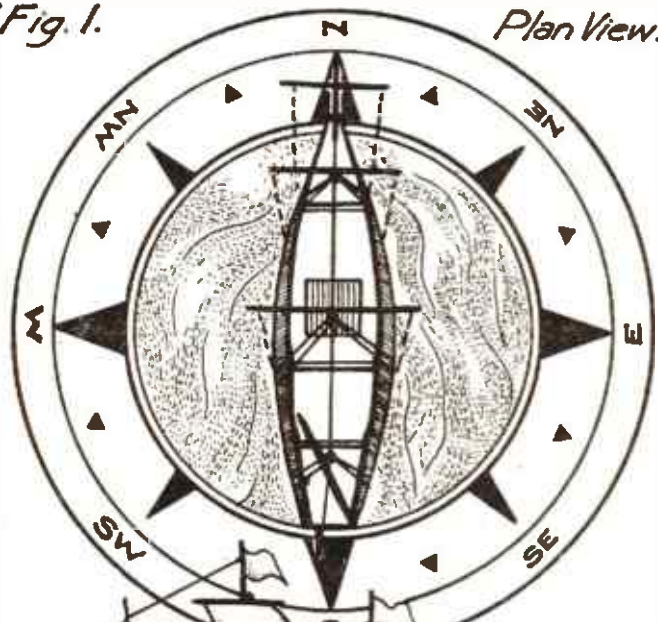
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All correspondence should be addressed to The Editor, Hobbies Weekly, Dereham, Norfolk.



*'Fig. 1. Plan View.'*



*A slight sea is formed using plaster. Colour & then shellac.*



*Fig. 2. The Design.*

sale in most tobacconists can be used. This cap, although not hard wearing, will be found suitable for the purpose required.

After fitting the cup to the wood strip cut a circular piece of thin card to form the platform. Make a hole in the centre and then glue the card to the strip. Now fix a narrow strip of thin card round the edge of the platform to act as a stiffener. This done, the galleon may now be glued to the platform, but when fixing make sure that the bow of the galleon is pointing in the same direction as the north seeking poles of the two magnets (see Fig. 3).

**The Sea**

Using a small amount of plaster, paint this on to the platform to form a slight sea. When dry, colour it a greenish

tinge with flecks of white here and there to represent small waves.

Next, prepare the base of the stand, using a stout piece of cardboard or fibre. Cut this to a circular shape as shown in the diagram.

**Old Clock Wheel**

At the centre, an old clock wheel complete with the spindle may be used. Cut the spindle down to the length required and sharpen off the end. Glue the end containing the wheel to the cardboard base; this will keep the spindle rigid and perfectly vertical. Now test the galleon by placing it on the spindle, and balance up the platform so that it is horizontal in all directions. This is done by gluing minute strips of lead underneath the platform, or, if not much out of balance, a little plaster

smeared underneath will answer the purpose.

Any final adjustment is made by pressing brass pins into the bow or stern of the galleon and then cutting them flush to the hull. Having balanced the platform it should now be gently revolved. If the magnets are operating correctly the galleon will slow down, finally oscillating to the right and left, decreasing its arc until it ultimately comes to rest with the bow end pointing due North.

**Completing the Stand**

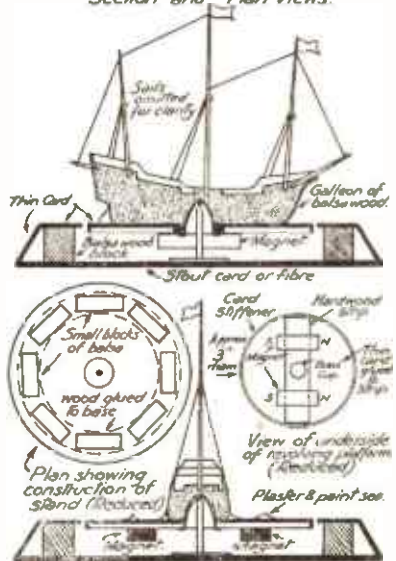
This being satisfactory, the stand may then be completed. To assist the hardening of the cardboard and to make the work more rigid, a cellulose mixture or an enamel paint will be found very effective. When this is dry fit the galleon on the spindle and see that the platform revolves without obstruction from the outside ring.

**Final Test**

For the final test wait until the galleon is steady, then turn the base round until the compass card reads North in a direct line with the bow. This should agree with any small compass used for checking purposes. It will be observed that any movement of air in the room or the opening of a door will immediately affect the sails and this will tend to keep the galleon on the move and oscillating slightly as though at sea.

**Next in the Series:**  
**'The Compass Ship'**

*Fig. 3. Showing Pivot & Balancing arrangement for 'Magnetic Galleon'. Section and Plan views.*





# KEEPING YOUR HANDS CLEAN

**N**OT many mechanics are faddy or sissy about dirty work but there is no sense, when doing a really mucky job, of letting the grime be driven too deeply into the skin. There are several Trade preparations made to overcome this trouble which are, perhaps, superior to what the amateur can make. But a quite workable preparation is easily made by taking some gum arabic (obtainable in brown lumps from an oilshop) and standing it for a day or two in a wide open-mouthed vessel (an old pudding basin, for example) with just enough water to cover it. Add more water only if needed to get a gummy solution. To this gum add about twice as much soap chips and fragments that have been saved. Mix well together. Apply this to the hands before starting a job. Afterwards it is easily washed off along with the grime.

## When You Handle Paper

Those who do lino-cut or silk-screen printing, etchings, home printing or some similar craft often find that they need to handle clean paper whilst the hands are still inky. It is a good plan to have a box full of whiting handy. When the hands are messy, rub some whiting

on and this will prevent dirty marks appearing on the paper, etc. (326)

## A HACKSAW HINT

**S**PECIAL saws—something after the style of a woodworker's tenon saw—are used for cutting large sheets of metal, but such special tools are rarely found in an amateur's kit, since their use is infrequently called for. Yet when a handyman is confronted with the problem of sawing along a large flat sheet of metal with an ordinary hacksaw, the difficulty is immediately obvious. After about 3ins. have been sawn, the back of the saw stops further progress.

### Solution

Here, however, is a simple way of overcoming that spot of bother. Two parallel sawcuts are made, one along the real cutting line and the other about 1in. to the waste side of it. Sawing is done along each line as far as one can go and then the narrow strip is rolled up, as in the illustration. This enables further cutting to be done, and so one continues to cut and to roll up

the narrow strip. When this strip becomes unwieldy, it is cut off.

### Waste is Worthwhile

True, one has to do double the amount of sawing and waste a narrow strip, but this is a small price to pay for accomplishing an otherwise almost-impossible job. (329)

*Drawing showing method of cutting a large flat sheet of metal with a hacksaw*



## Controls for your Marionette

(Continued from page 67)

The string marked 'NECK' in Fig. 2 is optional, its effect being to bend the head forward when the figure makes a bow.

Now you are ready to test your model and practise yourself in the art of manipulation. Hold the body control with one hand on the long beam, just behind the crossbar, so that the marionette's feet are on the ground. With the other hand remove the leg control from its peg and hold it forward of the body control. Both controls must be held horizontally.

Now practise the leg movement. Tilt the leg control so that the right end is raised. This will lift the right foot from the ground, with the knees bent. Tilt in the opposite direction, when the right foot will be lowered and the left one raised. To make this 'marking-time' into a walking movement, move both controls forward slightly each time a foot is raised, so that the foot returns to the ground forward of its neighbour. This will give the effect of a slow-walk, and to increase this to a normal or

quick pace, all that is necessary is to tilt the leg control from one side to the other in a continuous movement, while moving the controls forward continuously. A more natural action will result, if you tremble the hand holding the body control slightly, giving a little movement to head and body. Do not tilt the body control, however. A slight tremble will be sufficient.

When you wish to raise one hand, lift a little on one side of the continuous string, taking care not to tug. To keep one hand raised, pull down on the opposite side of the hand string, and hold down. To raise both hands at once, lift both sides of the string together. Arm movements must be carried out gently.

To make the figure bow or bend forward for any reason, it is only necessary to tilt the body control forward, so that the head and shoulder strings are lowered. The control must not be lifted or the puppet's feet will leave the ground.

Study of Fig. 2 will explain this and

the other movements just described. These instructions have been given as a guide and only by practise can you expect to perfect the action, and to develop the variety of movements that are possible.

A simple theatre can be devised in an open door-way. Hang a curtain over the door-way, leaving a space of the required height below it. Thus the bottom edge of the curtain, the two sides of the door-way, and the floor form a proscenium. Leaving behind this sufficient space for the stage, place a clothes horse or similar frame-work over which a curtain has been hung. This is the back-cloth behind which the operator stands. Lighting can be arranged as desired.

A cast for a variety show, sketch or play can be assembled by making various models as described in our previous article, but clothed and 'made-up' differently. Of course, for any character which is required to re-appear after a change of clothing, separate marionettes complete with controls must be made.

One last tip. To pack your model, bunch all strings together, and wind carefully round the control. (C.R.C.)

# A Doll's Wardrobe

**T**HE doll's wardrobe illustrated would make an acceptable gift for any small girl, who would delight in storing her doll's dresses in it.

The overall size is 12½ ins. high and 7 ins. wide—big enough to take the clothes of most medium sized dolls—and it is fitted with a small mirror on the inside of the door and has provision for a number of tiny coat hangers.

Begin by tracing the outline of the front (piece 1) on to the wood, also tracing the outline of the door space. Cut out the front, and then make a drill hole exactly in one corner of the door space, cutting this part out in such a manner that it can be put back later as the actual door itself.

The back (2) is, except for the projection at the top, an almost exact replica of the front, but in this case, of course, there is no door. There is, however, a small hole, as shown, which is not in the front.

The sides are not shown full length on the design sheet, and have to be extended to 11½ ins. high with the top edges rounded to the section shown. The top and

floor (4) are plain rectangles 6½ ins. long.

To assemble, fit the top and floor to the sides, and then add the back and front. Glue and fret pins should be used to get a firm finish. To the inside back is glued piece (5), into which in turn is glued a piece of ¼ in. round rod which goes right through into the back itself. This assembly forms the rail for the coat hangers, and details of this part and the remainder of the assembly can be seen in the constructional drawing Fig. 1.

## Completing the Door

To complete the door, first prepare the mirror holder by gluing pieces (7), (8), (9) and (10) in the positions as shown, making sure that the mirror will then slip into position easily.

Now turn the door over (after

temporarily removing the mirror) and glue the two overlays (11) and (12) to the door where shown. The remainder of piece (12) (numbered 13 on the design sheet) is glued to the bottom of the front so that when the door is closed it makes one complete overlay with piece (12).

The small knob supplied in the kit is fitted in the door as shown.

Round off the right-hand edge of the door and drill holes to take two pivot pins, one top and one bottom. These pins can be either ¼ in. fret pins or ordinary household pins, and their method of use can be clearly seen by reference to the design sheet and Fig. 1.

When the work has been properly cleaned up, a good finish can be obtained by going over it with a cloth pad dipped lightly in spirit or water stain, followed by a final light glasspapering to remove any signs of grain, and then two or three coats of good varnish. The interior needs only varnish for its finish. If desired, a little extra stain can be added to the overlays to make them stand out from the main woodwork, and, of course, there is nothing to prevent the worker painting the wardrobe instead of staining it if he so wishes. In this case, good enamels should be used.

The addition of a number of small coat hangers now completes the job. These are made from ¼ in. wood rounded to the section shown, and drilled to take a small piece of wire bent to form a suitable hook. Hooks can be made from odd pieces of wire, hair pins, or the larger type of household pins with the points removed. The hangers when complete can be stained or painted, and the wardrobe is then ready for use.

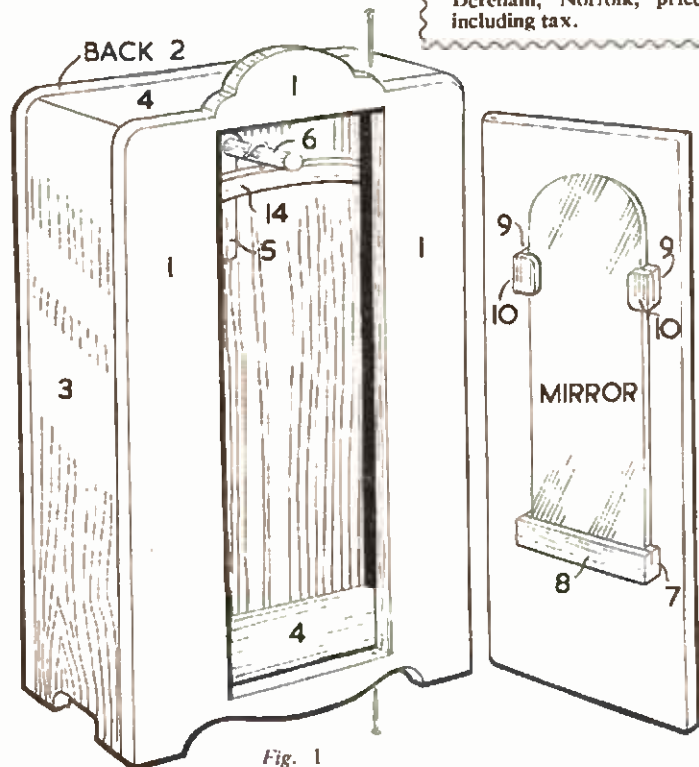
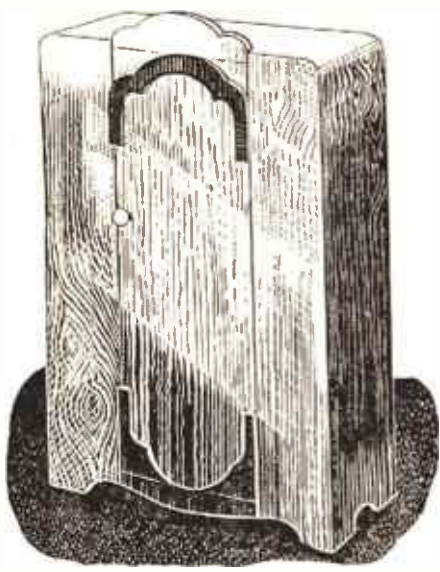


Fig. 1

# About Poor-Light Photography

**M**ANY amateur photographers do not appear to know that a special method exists whereby photographs may be taken under conditions of great difficulty, with success, and without extra equipment. Just how useful this method *can* be will become apparent, and it is particularly useful when taking shots in poor light, or when photographing moving objects where a very brief exposure is necessary to halt movement. Many amateurs do their own developing, usually in a daylight tank, and the method is then particularly straightforward.

An article on this subject was published during the summer, but as many readers may not have seen it, we think the facts are worth repeating.

## 'Finality' Development

When photographing in the usual way, the correct exposure is obtained from a table, calculator, or meter. Assuming that a film speeded at 30 degrees Scheiner (such as 'Selo-chrome') is used, normal exposures during bright summer sunshine would be  $\frac{1}{250}$ th second at  $f5.6$ , or  $\frac{1}{125}$ th at  $f8$ . In dull weather this would need to be increased to  $\frac{1}{50}$ th at  $f5.6$ , and  $\frac{1}{25}$ th at  $f8$ . During spring and autumn these exposure times would have to be doubled, to make up for the reduced light. It would also be necessary to double them again, during the later hours of the day, exposures of  $\frac{1}{10}$ th and  $\frac{1}{5}$ th at  $f5.6$  and  $f8$  becoming necessary. The photographer will at once see that the camera cannot be held in the hand with success, for such long exposures; nor can moving objects be photographed, since they would appear blurred.



*A charming picture taken by the methods explained in this article*

This can be overcome by the method generally known as finality development. An exposure of about  $\frac{1}{10}$ th the normal exposure would be given, and development continued for ten times as long. This means that the photographer can still snap at  $\frac{1}{10}$ th and  $\frac{1}{5}$ th of a second, under the conditions mentioned, instead of having to use a tripod and  $\frac{1}{10}$ th and  $\frac{1}{5}$ th second exposures.

## Development Times

Developers used in daylight tanks are normally mixed with water, the temperature read off against the film group, and the film kept in the developer according to the length of time shown on instruction leaflet. Assuming that the well-known developer 'Azo1' is used with a Selo-chrome film, one part of developer having been

mixed with twenty-four parts of water, the correct development time would be 8 minutes, at 70 degrees Fahrenheit. This would give normal negatives from shots of normal exposure. When developing to finality, the film is merely left in the developer for a much longer period say, five times (40 minutes), or ten times (making 80 minutes). This extra development compensates for the very short exposures which were given. As with normal development, the developer should be agitated occasionally by means of the stirring rod fitted to the tank.

After the required time has elapsed, the developer is poured out, the tank rinsed with clean water, and the fixer poured in, in the usual way.

## Special Advantages

The advantages of this system all arise from a smaller exposure than normal being sufficient. Snapshots may, therefore, be taken in poor light. High shutter speeds may be used, even when light is not very good. It is also possible to stop the lens down to  $f11$  or so, where a larger aperture would otherwise be required, thereby making

*(Continued on page 71)*



*This picture was taken in low cloud and mist on Verichrome film*



### Magnetic Attraction

**I** HAVE been trying to find a material which will effectively block the attraction of a magnet. I have tried placing a screw on an earthenware plate—holding the magnet underneath, but the magnet still manages to pull the screw around. The same happens if I use a sheet of rubber or glass. Perhaps there is some new plastic that will work—I do not wish to reduce the power of the magnet. (J.P.H.—Epsom).

**A**LL non-ferrous substances such as rubber, wood, glass, china, cardboard, etc., do not influence the attraction of a magnet; nor are the non-ferrous metals suitable (e.g.—brass, copper, aluminium, silver, etc.). The magnetic effect may, however, be halted by any ferrous sheet of sufficient thickness to provide a path for all the lines of force extending from the magnet pole or poles, without saturation. A suitable metal is thin sheet-iron. An opened canister or tin (which normally consists of tinned iron) would do for a small magnet; for larger magnets metal sheeting or stouter gauge will be necessary.

### Silent to Sound

**I**S it possible to convert a silent projector to a sound projector by means of a magnetic recording head and

the use of a radiogram amplifier? (S.J.W.—Wholley Range).

**T**HE sound section of talkie films is normally a narrow track down one edge, upon which lines appear. These lines pass by a narrow slit, interrupting a beam of light. The interrupted light falls upon a photo-electric cell, thereby providing a signal which is amplified and used to operate a loudspeaker. This type of reproduction is likely to present grave difficulties as regards the home-construction of a unit. It would, of course, be possible to make ordinary recordings, on tape or some other medium, and to play these with the individual films to which they provide sound effects. To ensure synchronisation of sound and action, it might be possible to drive the tape from the motor which is used to operate the projector. This is not a method normally used, but there appears to be no reason why it should not form the basis of experiment. The only alternative would be to use separate projector and recorder mechanisms, and control the speed carefully to keep them together.

### Table Tennis Trouble

**I** HAVE constructed a table tennis table of a wooden frame with a hardboard top. This at first was very successful, but then the hardboard lost its

## About Poor-Light Photography

(Continued from page 70)

focusing less critical, and increasing depth of field. (By 'depth of field' is meant the ability of the camera to render both near and distant objects sharply, on the same negative. The smaller the aperture used, the more sharply are such objects rendered).

Rapidly moving vehicles require an exposure of  $\frac{1}{1000}$ th or  $\frac{1}{2000}$ th second to prevent blurring. Such exposures are possible where  $\frac{1}{2}$ th or  $\frac{1}{1000}$ th would otherwise be required.

It is also possible for the user of the simple camera with a small lens to take photos during dull weather when he would otherwise be unable to do so.

As all the exposures on the spool of film will receive the additional development, all must be given the same

especially brief exposure. It is not satisfactory to give an exposure only a little more brief than usual—say, only one half of that which would be usual. Instead, the exposure must be cut down by at least four times. If the exposure is cut by this extent, four times the development is given (32 minutes in the case stated). Similarly films which are only given one-fifth normal exposure are developed for five times the usual period, and so on.

It is as well for the photographer to take some shots experimentally, when first using this method, to assure that he is carrying things out correctly.

During very sunny weather it may be impossible to give an exposure of sufficiently short duration—even  $\frac{1}{1000}$ th

life and now the ball bounces only slightly. Could you suggest a process to remedy this, please? (S.F.—Butley).

**S**OME considerable improvement will result if the surface of the table is treated as follows with Casco glue. Mix the glue (grade A) in thin proportions and apply a good coat over the surface. Cover this with unbleached muslin (dry), smooth out carefully and tack every 2ins. over the edges. When the glue is dry, apply a coat of thinned Casco and scrape it into the muslin. When this is dry, glasspaper lightly and apply two coats of enamel, glasspapering between coats.

### Enlarging a Map

**I** WISH to enlarge the contours of a map 10 times. Could you give me the necessary information to make an enlarger suitable for this work? (B.G.—Shrewsbury).

**M**APS can be enlarged with the aid of an instrument known as a pantograph, but for such a large increase in size as you mention, it would need to be made with scientific precision, and we do not recommend you to try to make one. The simplest way to get an enlargement is to place a transparent 'squared paper' sheet over the original, having, say, 10 divisions to the inch, each way and to divide the large drawing into the same number of squares, but each of them 10 times as large as the parent sheet. Then with dividers, take off the distances along the 'square' sides and set them off 10 times along the large squares. This will give a series of points through which the contour lines pass, and it is easy to join them up into a continuous curve.

second may be too long. This can be overcome by using a fairly dark filter, to cut down the light entering the lens.

Finally, the photographer should try to get his exposures fairly correct, since any over-exposing, for example, will be shown up by the lengthy development.

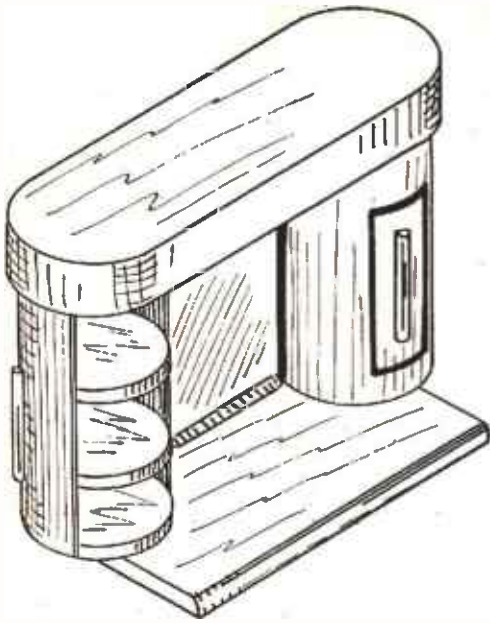
### Examples

Two examples of very different type are given to show the kind of results obtained. That of the racing car was an exposure of only  $\frac{1}{1000}$ th second at  $f5.6$ , on a dull day, with low cloud and mist. The brief exposure was necessary as the vehicle was travelling at high speed.

The second picture was also taken at  $\frac{1}{1000}$ th second. As there was strong sunshine it was possible to stop down to  $f8$  to get the negative sharp, while, in addition, a filter was used, improving the tonal rendering of the subject.

(F.G.R.)

# Rotating Column Dressing Table Top



**T**HIS unusual fitment comprises a unit suitable for the top of a small dressing table, with storage space for cosmetics, etc., provided by circular

$\frac{1}{2}$ in. stripwood, as shown, pinning and gluing the joints. Make sure that the formers are truly at right angles to the jigging strip. The two thicker formers

is involved. Probably the most difficult parts are the pillars themselves, and these can be tackled first, if desired.

Each pillar is built up from four circular formers mounted on a backbone or jigging strip of 1in. by  $\frac{1}{2}$ in. wood. Two of the formers are  $\frac{1}{2}$ in. thick and the other two  $\frac{1}{4}$ in. thick. They should be cut from ply. All are the same diameter — 4ins. — and all are cut with a 1in. by  $\frac{1}{2}$ in. slot as indicated in Fig. 2.

Assemble four formers on a 12in. length of 1in. by  $\frac{1}{2}$ in. stripwood, as shown, pinning and gluing the joints. Make sure that the formers are truly at right angles to the jigging strip. The two thicker formers

pinning in place or wrapping round with rubber strip or elastic bands until set. Each 'covered' column will then have a gap of roughly  $4\frac{1}{2}$ ins. width, giving access to the interior.

Base and top parts are cut from  $\frac{1}{2}$ in. thick material, as detailed in Fig. 3. The top is actually comprised of a rectangular piece 14ins. long and  $4\frac{1}{2}$ ins. wide with added semi-circular ends. A  $\frac{1}{2}$ in. wide slot 5ins. long in the centre of one edge takes the tongue of the back panel, when assembled later. Drill  $\frac{1}{2}$ in. diameter holes for positioning the stub dowels, which act as pivots for the columns.

The base is purely rectangular in shape, 9ins. wide and  $15\frac{1}{2}$ ins. long. This is also slotted for the back and drilled for the dowel pivots.

Dimensions of the back are given in Fig. 4. Cut accurately so that when the back, top and base are assembled, as in

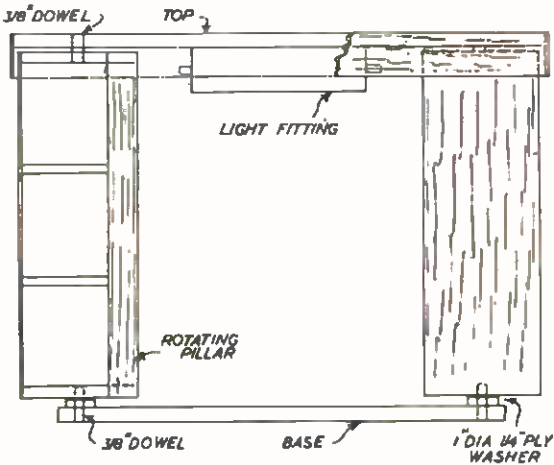


Fig. 1

columns instead of drawers. By rotating these columns in either direction interior shelves are exposed. In the 'closed' position the columns are, in appearance, 'solid'. The vertical space between the columns is filled with a mirror and the whole unit is capped with a pelmet-like top, to the inside of which is fitted a tubular lamp.

Fig. 1 shows a front view of the assembly. The two columns are pivoted on stub lengths of  $\frac{1}{2}$ in. diameter dowel secured in the main top and bottom members. No very tricky workmanship

are positioned at each end of the assembly (formers A). It will be an advantage if these are drilled with a  $\frac{1}{2}$ in. diameter hole through the centre before assembly.

When the formers have set properly, the assembly is wrapped round with an 8ins. wide strip of  $\frac{1}{4}$ in. ply, which in turn is pinned and glued in place. Cut a panel of ply 12ins. by 8ins., coat the edges of each former with glue and then pin the centre of the ply down the length of jigging strip. Complete by pulling the ply round the formers and

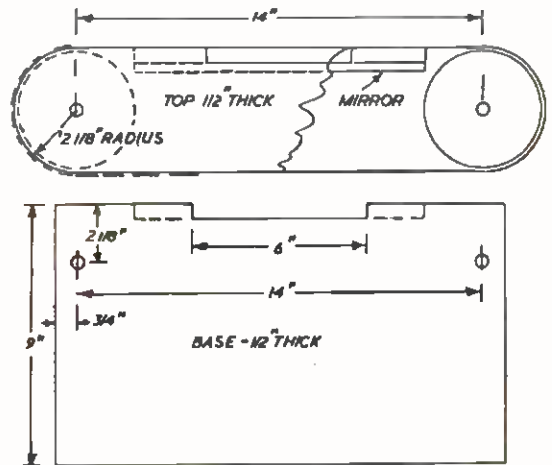
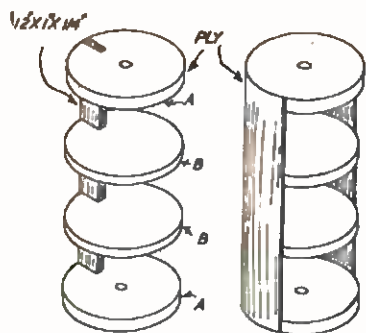


Fig. 2

Fig. 5, the assembly is reasonably rigid and quite true before gluing and pinning or screwing. Final assembly with pins and glue should not be made until the pillars themselves are in position.

Smooth the pillars, and glasspaper and finish the ply exterior before locating between the dowel pivots in the main assembly. The main assembly can then be completed with the top permanently secured in place. Between the bottom of each pillar and the base, circular washers, 1in. in diameter, should be slipped over the stub dowels to





act as spacers. This will make it easier to rotate the pillars.

If a mirror facing is used for the back, this should be cut to the exact size required and locked in place with small wood strips top and bottom. If possible, the mirror used should have bevelled vertical edges so that the mirror can terminate close up against the pillars. The tubular light, which is fitted to the underside of the top, should be added next with the leads taken out through the back to a suitable switch point. The 1 1/2 ins. wide cap strip of 1/4 in. ply can then be pinned and glued around the edge of the top to complete the unit.

After rounding off all rough edges and finishing the woodwork, as required, the 'solid' faces of the pillars can be

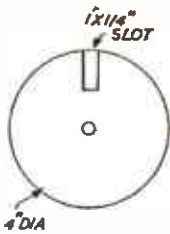


Fig. 3

decorated, if desired. A simple panel outline will suffice, drawn on with a ruling pen and coloured ink. A protective coating of varnish or clear lacquer is then added.

To make it easy to rotate the pillars, small grips or handles are glued to the centre of the 'solid' faces. These are simply lengths of stripwood or dowel cut to appropriate size. Finish in some contrasting colour before attaching.

The unit described is on the small side for maximum economy in material. It is adequate for a dressing table top where such a unit is placed on an ordinary chest or table. The same principles can, however, quite easily be extended to produce a similar fitment to

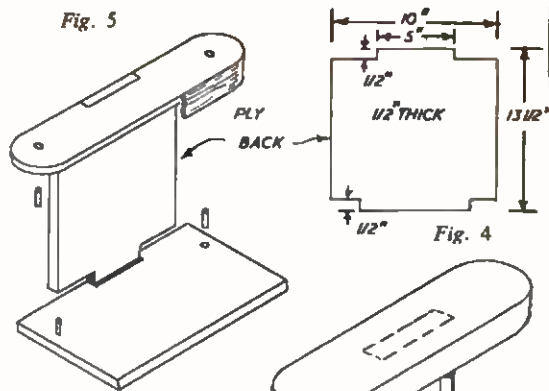


Fig. 4

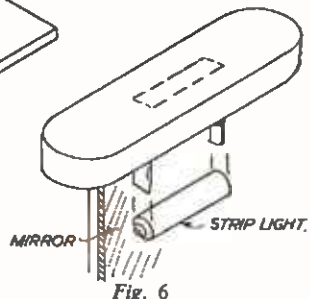


Fig. 6

match an existing piece of furniture which is to be transformed into a dressing table. In this case the existing table top can form the base of the assembly and top and back panels proportioned accordingly. The completed unit should be something quite out of the ordinary, and, if carefully made, both attractive and extremely useful.

(R.H.W.)

## NOTE FOR HOME HANDYMEN

# The Surgery of Teapot Spouts

ONE of the most common injuries among domestic-ware is the broken teapot spout. Usually, with teapots at their present high cost, the householder buys a rubber spout to stick on the broken end, but rarely is he satisfied with either the appearance or the function of this simple repair.

Here is a method whereby, with a little 'surgery', he can produce a perfect non-drip spout and dispense with the black-nosed ugliness of a rubber extension. The 'surgical instruments' required are a few keys and a rat-tail file.

### Usually Jagged

The break is usually jagged, and the first job is to remove the spiky pieces. This is done with a key that has a suitable groove on it.

Fit the groove over the spikes and gently lever the key handle backwards and forwards. If the spike is long, nibble at it bit by bit, grinding it down level with a rhythmic swinging motion. This caution prevents an even worse injury than the original one.

Work round the broken edge until all the spikes have been levelled. Now

comes the practical application of the theory of spout design. However even you have made the spout, it is certain to drip badly unless it has the right shape.

Fig. 2 shows how the top of the

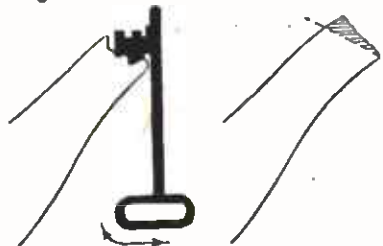


FIG 1

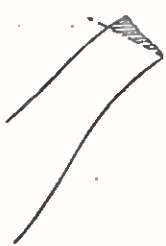


FIG 2



FIG 3



FIG 4

spout must be farther back than the bottom. Using the key again, nibble away carefully around the top of the spout, making a nice even sweep-back from the bottom. Take your time and keep the spout edges wet. Don't try to remove too large a piece all at once. The best angle can be found by trial—but not error.

Keep pouring water through the spout until it only just drip-drips; then stop. If you go too far, you'll have to start all over again—and the spout will end up 1/2 in. shorter. You should stop at a point very much like Fig. 3.

Now is the time to use the rat-tail file—to get rid of the last drip. Keep everything wet and, working from the inside of the spout (not from the glazed edge), take the sharp angle off the spout all round. Work harder on the top and bottom edges so that you grind the wall down to the shape shown in section in Fig. 4.

A final polishing up with fine glass-paper and a thorough rinsing out of the pot, and the job is finished. And you may, very likely, prefer the pot's new spout to the original one! (H.J.C.)

## Beautiful Model

FROM time to time readers send us pictures of some of the models they have made, and the picture of the model of Buckingham Palace on this page is an outstanding example of the sort of work they turn out. The modeller in this case was Mr. Tom Hill, of Treharris, Glam., and, of course, the model is made from *Hobbies* design.

The model is, unquestionably, well made, and Mr. Hill has every right to be proud of it. He has fitted it with electric light and one of the pictures he sent us shows a 'night' view of the Palace with every window lit. Unfortunately, this particular picture was not quite suitable for reproduction, or we would have liked readers to have seen it.

In his covering letter, Mr. Hill asked that we should give an opinion of the model. I think that what we have said here is sufficient to show him that we think he has done extremely well.

## Homeworkers' Problem

WE often have enquiries from people who do model making, toy making, etc., in their spare time as a means of adding to their bank balance, and many of them seem to be worried about the effect of purchase tax when they undertake to sell their goods to shops. For the benefit of any readers who are at present worrying over this particular point, it will be of interest to them to know that a small manufacturer, that is, one who does not produce more than £500 worth of goods normally subject to purchase tax in any one year, is outside the purchase tax scheme. In other words, he has no need to worry his head about purchase tax at all, and can go right ahead with his schemes. If his trade rises above £500 a year, however, it is a different story, and he should then contact the Customs and Excise authorities for details of purchase tax regulations.

These points about purchase tax should not be taken to apply to income tax. This, of course, is an entirely different thing, and profit on turnover



by the small manufacturer is subject to income tax as are any other earnings. This is a matter which the worker should discuss with the local Inland Revenue office.

## Ingenious Map Measurer

FROM John E. Buck & Co., of 47 Brewer Street, Piccadilly, London, W.1, comes a sample of a new map measuring device which they are marketing. A patented gadget, the measure is easy to use. It consists of a small plastic case which partially encloses two geared wheels. The smaller one is placed on the map at the starting point, and run over the desired route. When the finishing point is reached it is possible from the dial engraved on the large wheel to read off the distance in miles.

The device is geared for maps of a scale of 1 in. to one mile, but can be easily used with other scales. For instance, for 1 in. to a mile maps, simply multiply the reading by two, for four miles to 1 in., multiply by four, etc.

The gadget retails at 5/-, and Messrs. Buck would welcome private or trade enquiries. Readers who may want an individual sample, can obtain one post free by sending a 5/- postal order.

following way. Halve or quarter a sheet of glasspaper and glue the portions back to back. Only a little glue is needed—a touch here and there from a tube will do—but it will be found that the glasspaper can now be used until there is nothing left but a smooth sheet of untorn paper. There is, in fact, no waste. A further advantage is that one has a better and firmer grip on the glasspaper when polishing awkward surfaces, as there is always a rough surface against the palm of the hand.



*The Map Measurer*

Our reader tells us that he finds this tip both useful and economical in his daily work, when shuttles have to be smoothed and polished.

## Note for Bowls Players

FOLLOWING publication of a design for a photograph frame of interest to speedway fans, and later another for cricketers, we had a letter from Mr. W. D. Brookfield, of Stockport, Cheshire, appealing for something similar of interest to those who play the game of bowls. We have promised to try to do something in this direction, but it should be remembered by readers that designs are being worked out many weeks ahead of publication and that the likelihood of the appearance of the design in question before next summer is remote.

However, one cannot wait too long for something which, when it arrives, will be of lasting interest in its particular sphere.



*Mr. Hill's model of Buckingham Palace*

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# Making a Three-Fold Screen

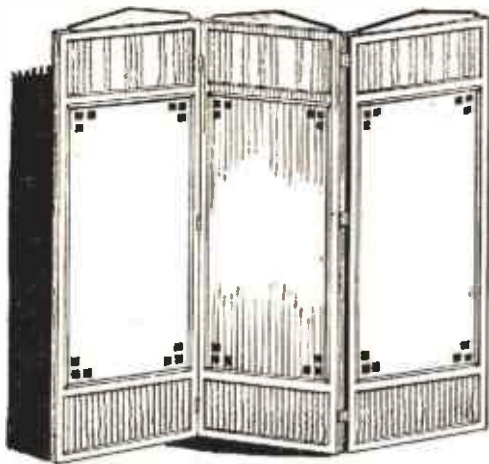


Fig. 1

three-fold screen from sheets of fibre-board or laminated board, and a few lengths of small section planed splines. Material known as 'Essex Board' is quite suitable for the purpose, and this can be bought in various sizes, and of suitable thickness for our purpose.

The smallest size panel made appears to be 3ft. wide by 6ft. long and it is from this size that we propose cutting the various pieces for the screen.

First, look at the sketch Fig. 1 to get a general idea of the finished job. Each leaf of the screen is 5ft. 3 1/2 ins. high, a height which has been found to be convenient for most

rooms, and the width of each leaf is 1ft. 9 1/2 ins., making a total width of screen of 5ft. 4 1/2 ins.

A simple wood frame is formed each side of the fibre or laminated board, with cross rails, etc., to stiffen it up. Thus three distinct panels are formed each side of the leaf, and may be filled with woven material or ordinary wall paper of good substance.

If desired, a simple decoration may be applied by the stencilling process, or by plain hand-painted work brushed on as shown.

The simple shaped rail shown at the top of each leaf is, of course, optional, and while, perhaps, lending a little character to the screen's appearance, may well be omitted.

On a complete panel of the fibre board, mark out in pencil the five parts (A) and (B) in Fig. 3, carefully to the measurements given, then saw through on the lines and clean up all edges. Now take the two other panels and proceed to use the cut-out pieces as templates for marking round, thus making fifteen pieces for making up the three leaves of the screen.

(Continued on page 78)

ANOTHER winter will soon be upon us with its cold and uncomfortable weather. In a large room—and sometimes even in a small one—where there are two or more doors, there is always the likelihood of being compelled to sit in a draught. A great deal of such draughts, however, can be overcome by making a simple light-weight screen, so that it can be moved about as required and folded to stand aside when not in use.

This article describes how to make a

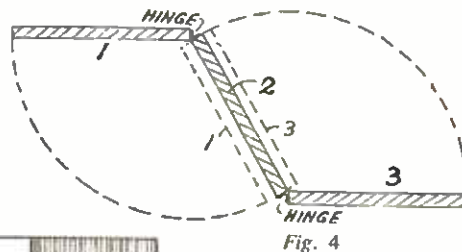


Fig. 4



Fig. 2

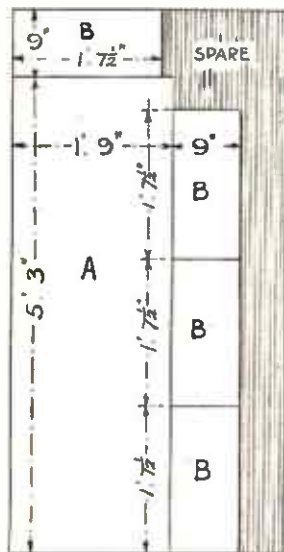


Fig. 3

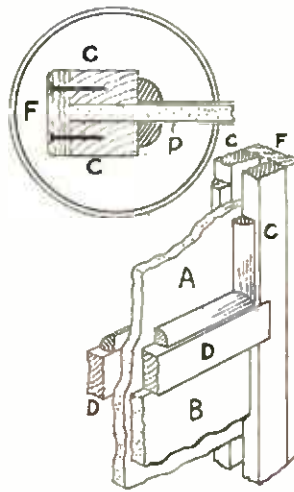


Fig. 6

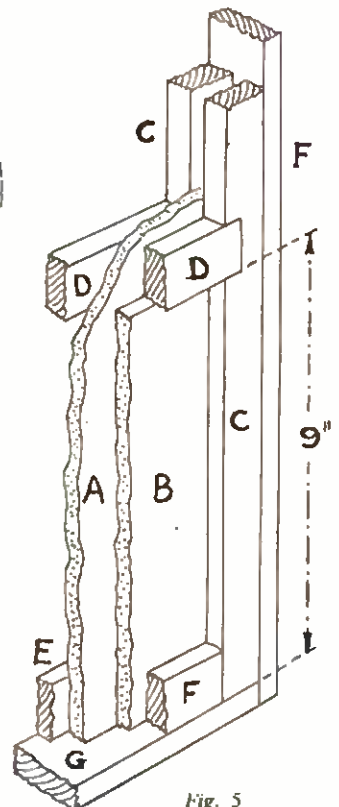






Fig. 5



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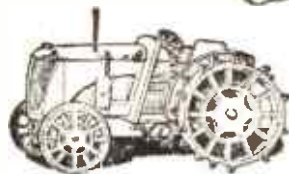
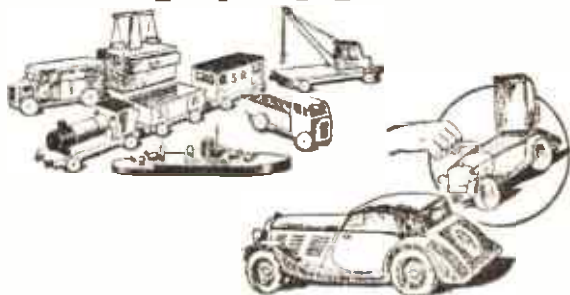
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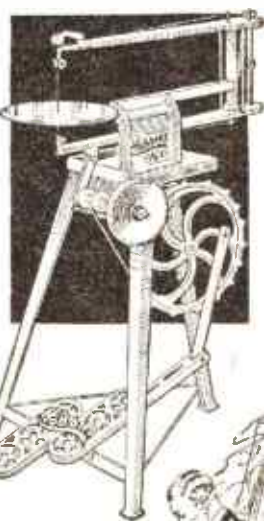
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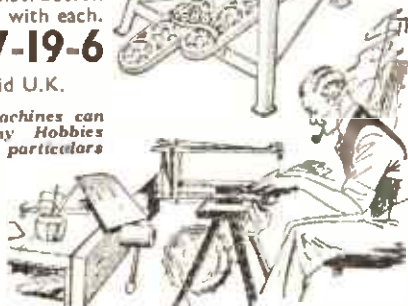
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# Protect Water Pipes this Winter

WITH winter upon us again the possible damage and inconvenience caused by burst pipes and frozen cistern comes to mind. So let us be prepared for whatever severe weather we may experience in the future by safeguarding our water pipes now, and the best protection we can give them is by lagging them, and this is how you proceed with the job.

## Outside Pipes

Our first consideration and attention should be, of course, to exposed pipes on outside walls, and then those which are exposed to draughts such as those in the roof, which are liable to freeze and burst as well. Take some old newspapers (double-sheets) and neatly wrap round the pipe, casing it carefully away from the wall if necessary. Then, with some lagging felt which can be obtained from your hardware store, in rolls of about 10yds. long by about 3ins. wide, proceed to wrap this over your paper wrapping in a spiral action, allowing each turn to overlay the previous turn by about ½ in.

Having completed your first section of pipes, your next consideration should be to secure this lagging into position. The

best method is with thin wire or strong string bound neatly round in this manner. Start with a loop round the pipe where you commenced your lagging, and repeat at intervals of about 6ins., forming a half hitch at each interval, and finally fastening off securely at the end. This ensures a neat looking job so necessary if the pipe or pipes are in sight. The lagging finished enables you to rest content knowing that you have greatly minimised the possibility of your pipes freezing even in the most severe frost.

## Cisterns and Tanks

The lagging of your pipes being complete you should next turn your attention to cisterns and tanks. First cover the sides and bottom of your tank with several thicknesses of newspapers. You will require assistance to hold it while you bind it into position with your lagging felt (incidentally, old carpet strips are ideal for this job). Follow this process till the sides and bottom are thoroughly wrapped; next thoroughly cover the lid. If by any chance it has no lid, it is advisable to make one, or find something which will serve the purpose. Without complete

cover on all sides your lagging will be pointless. It is a good idea to cover the lid with sacking. Give similar treatment to your hot water tank if it is in an exposed position, as in view of the threat of another fuel shortage it will serve the purpose of retaining heat which might otherwise be lost. If this job is carried out well it should be sufficient protection.

## Oil Lamp Hclps

It is also a good tip to keep a small oil lamp burning near your cold water tank, taking proper precautions against fire, of course, in extremely cold weather. (J.T.)

## INDEX READY

The index to Volume No. 114 is now ready, and can be obtained from the Editor, price 1/-, post free. Binding cases for the volume are also obtainable price 4/6, post free.

# Making a Three-Fold Screen

(Continued from page 76)

The upright edges of each piece (A) will have strips of planed wood ½ in. by ½ in. glued on each side as (C) in Fig. 2, and in the details Figs. 5 and 6. Before gluing them on, however, two notches must be cut in one edge of each upright ½ in. deep and ½ in. wide and 9ins. in from top and bottom to receive the cross rails (D). This is plainly seen in Fig. 5.

These cross rails are carefully fitted and glued in after the rails (A) are glued to the panels. The top and bottom edge rails (E) should next be carefully marked off and glued to the surface each side of the panels. The smaller panels (B) will be tested for size to fit in at top

and bottom and each side of the leaf (see Fig. 2, and the details). Coat the board thoroughly and evenly with the glue and add about four ½ in. counter-sunk screws in the corners. It is suggested that good Scotch cake glue prepared in a glue kettle, and of thin consistency, be used throughout for the making of the screen.

All the outside edges of each leaf must now be cleaned up with glass-paper before the edging strips (F) are put on. As will be seen in the circled section in Fig. 6 and in the other diagrams, these strips cover the edges of the fibre board and the junctions of this with the inner edging strips (C), (D) and (E), and make a very presentable finish all round each leaf. Some ½ in. fine wire nails may be added as shown.

It only remains now to decide on what finish is to be put on the screen, whether fabric, paint or paper. If the latter, and this seems to make an appropriate finish, each panel (A) may have paper cut to fit, with quarter-round wood beading added as shown in the diagrams. The beading must be carefully measured and mitred neatly at all corners. The paper is shown as (P) in

the circled diagram Fig. 6, with the quarter beading added.

The method of hinging the three leaves together is quite simple. Three hinges to each joint should be counter-sunk screwed and either 2in. plain butts may be used, or, more appropriate, perhaps, ½ in. square butts bearing three screws to each leaf of the hinge. Fig. 4 shows how the hinges are attached so as to allow leaves No. 1 and No. 3 to fold back on to the faces of No. 2.

The woodwork of the completed screen can be painted up or just stained and varnished. (S.W.C.)

## CUTTING LIST

Three panels of fibre board such as 'Essex Board' or any other suitable laminated material.

- 12 pieces ½ in. by ½ in. as (C) 5ft. 3ins. long.
- 12 pieces ½ in. by ½ in. as (D) 1ft. 8ins. long.
- 12 pieces ½ in. by ½ in. as (E) 1ft. 7½ ins. long.
- 6 pieces ½ in. by ½ in. as (F) 5ft. 3½ ins. long.
- 6 pieces ½ in. by ½ in. as (G) 1ft. 9ins. long.
- 12 pieces ½ in. quarter-round Beading 3ft. 9ins. long.
- 12 pieces ½ in. quarter-round Beading 1ft. 9ins. long.

Sufficient length is allowed in the Beading for mitring and trimming.

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