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IN THIS ISSUE

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CHRISTMAS DECORATIONS

Excellent ideas to add gaiety to the coming festivities

CHRISTMAS is one time of the year when we can really launch out into festive decorations. The trimmings and set pieces can be as lavish or modest as the purse will permit.

Apart from new ways of displaying your Christmas cards and decorating the table for meals, there are many little novelties that you can make easily and inexpensively.

The diagram in Fig. 1 shows an attractive cut-out for candles. The squares are enlarged to ½in. or larger and the shape drawn out square by square on a piece of paper. The shape is then transferred to ¼in. wood by means of carbon paper. Cut out with a fretsaw and clean up with glasspaper. The candles are fitted into a piece of ¼in. wood which is glued at the back as shown in the detail.

To fill the grain give two coats of brush polish and allow to dry. Lightly glasspaper and paint with plastic enamel. The colours are indicated, but these could be changed to suit any particular colour scheme.

The 'mobile' shown in Fig. 2 is cut from card. The figures of angels and the smaller stars are suspended with thin thread. No sizes are given in the illustration, but about 1ft. wide will be quite large enough. The card should not be too thick, the lighter the material the more movement will be obtained from the figures.

Mobiles of other subjects can easily be made if you remember that each design must balance. Many interesting shapes can be incorporated into larger designs.

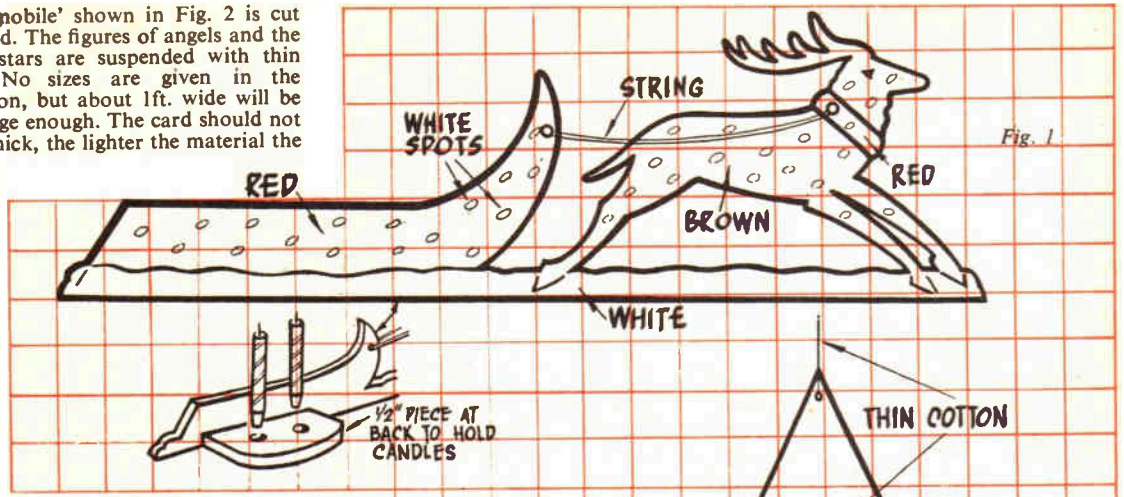


Fig. 1

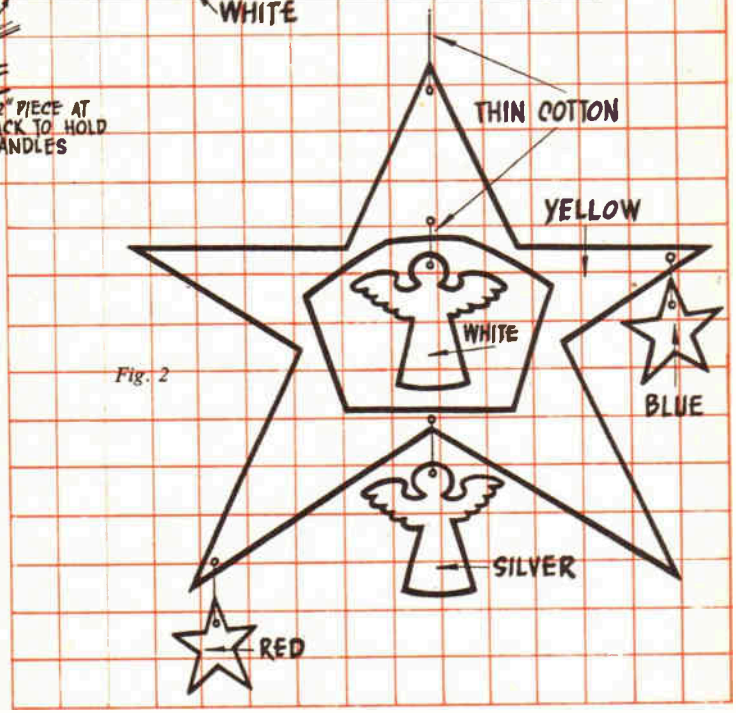


Fig. 2

Card Display

The suggestion in Fig. 3 is for displaying your Christmas cards. Obtain a large sheet of cardboard, hardboard or plasterboard and cover with plain wallpaper or paint black. Outline the holly leaf motif with green wool and glue cotton wool round the border to represent snow. The cards are simply pinned inside the holly leaf as indicated.

If you cannot obtain cardboard large enough it might be more convenient to make up two or three smaller boards. These could, of course, be framed with contemporary moulding and hung on the walls like pictures. (M.h.)

Fig. 3

WITH only a fortnight to Christmas, many readers will, no doubt, be thinking of having a Christmas tree to help to bring the festive atmosphere into their homes. Here are a few tips to enable you to get the most from your tree.

When buying a Christmas tree, do ensure that you get one which is fresh. This is most important because the trees dry out very quickly and if one has been standing in the shop for some time the chances are that your carpet may soon be strewn with a host of dead needles. Once you get your tree home mount it in its pot or barrel and keep it moist. This can be done by surrounding the base with damp earth. Alternatively, use wet sacking. In addition to being more attractive, a moist tree is less inflammable than a dry one.

The traditional shape of a Christmas tree is conical but if your tree is not very uniform then don't be afraid to trim it to suit. Cut branches can be spliced to the main stem with some fine wire to fill in thin parts.

Christmas trees decorated with lighted candles look very attractive in photographs and pictures but don't do this in your home — it's too dangerous. It is much better, and safer, to use a chain of coloured fairy lights, but do make sure that they are fitted up by someone who is experienced with electricity. If you do not wish to go to the expense of having a chain of coloured lights then why not insert a coloured bulb into the light holder in the room? This will cast a colourful light on to your tree.

There are plenty of proprietary articles on sale in the shops for decorating your Christmas tree but unfortunately they are rather expensive. However, items like cotton wool, coloured tissue paper, fir cones, silver paper, tinsel, etc. are old favourites and can often be obtained quite easily. Small presents wrapped in gaily coloured paper should be tied to the branches, if possible, but for large parcels it is advisable to stack them neatly around the base. On Christmas day remember to have a pair of scissors handy for cutting down the presents; tugging may spoil the tree's decorations.

The fire hazard of a Christmas tree may be greatly reduced by treating it with a solution made by dissolving 2oz. of powdered alum in a pint of warm water. Trees, rugs and garments treated in this way although not fireproof if subjected to a naked flame will however merely smoulder without any fierce burning.

Finally, if you are lucky enough to get a Christmas tree with a good root why not keep it for next year? Plant it in your garden and have fun watching it grow. The roots of Christmas trees are usually shallow so it will not be able to stand up to strong winds. For this reason, therefore, try and choose a sheltered position in your garden. If this is not possible then you may have to stake the tree.

WHEN shovelling snow away from doorways and garden paths it often happens that the snow clings to the shovel and makes the job more arduous. This, however, can be prevented simply by rubbing a little soap or beeswax on the shovel.

AFTER walking through snow don't attempt to dry your shoes by placing them near a blazing fire. This will ruin the leather. Instead, fill them with dry newspaper to absorb the water and store in an airy position.

TO make ice covered paths safe to walk upon, sprinkle some sawdust on top. Sand and fine gravel are often used for this purpose but these materials ultimately find their way indoors and cause havoc with polished floors, lino and other floor coverings. Sawdust, however, is just as good for making a non-slip surface and will not damage any of your floor coverings.

WHEN we speak of Christmas we automatically think of gaily decorated greetings cards, brightly coloured Christmas trees, presents and crackers. Have you ever wondered, how ever, how these customs originated and how long they have been is existance?

The man who started sending Christmas cards was an Englishman, J. H. Horsely. He first wrote greetings on decorated notepaper and sent them to his .friends. In 1862, however, Christmas cards were produced commercially and since then the custom has become increasingly popular.

The origin of the Christmas tree comes from Germany where it is immensely popular. In 1844 when Queen Victoria's Consort, Prince Albert, was returning from Germany he brought one home with him. He took it to Windsor Castle and decorated it for the Queen. She was delighted with it and the custom has since become nationally popular.

Around 1848, the children of Germany made simple gifts which they gave to their parents at Christmas. This custom developed and soon the giving of presents extended to close family relations and friends. Thus, the giving of Christmas presents also originated in Germany.

The Christmas cracker was the next 'invention' to be introduced. In the 1850's the French improved on the custom of giving a gift to each guest at a party. A small packet was given containing a sweet and a 'kiss motto'. Later, a cracker was inserted which gave a 'bang' when pulled apart. So, when you and your friends are pulling your crackers this Christmas you will be following a custom which is more than a century old.

CHRISTMAS crackers should always be stored in a dry, warm place away from any dampness. Crackers which have been affected by dampness will not 'bang' properly when required.

CALENDARS AS GIFTS

By S.H.L.

CALENDARS always make acceptable gifts, are easy to produce though quite inexpensive and here is an idea you may like to adopt for cut out calendars which enables you to introduce a personal touch.

Perhaps you will be able to find some recent photograph among your collection that will be suitable for producing an ordinary statuette type of calendar, but if you prefer to make a new picture perhaps the following will help.

An open umbrella as shown not only forms a nice background for your subject but produces an interesting and novel cut out shape, but take care that the umbrella is not tilted too far forward or it will throw the subject into deep shade. Alternatively, you may be able to devise other interesting poses as found when a tennis racket is held at the ready; or with a football held for throwing in; or a cricket bat held in driving position. All these can be posed for good pictures, yet having a look of realism when the background has been cut away.

Mount on plywood

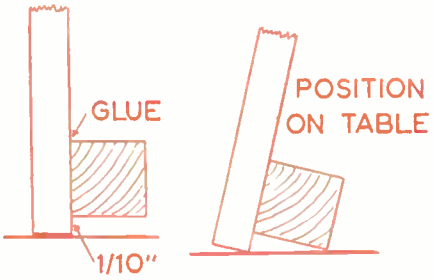
For those who do not wish to use their own photographs any type of picture may be cut out and animals are firm favourites for this type of work, but you must remember to allow sufficient space at the base for the calendar tab.

Thin plywood is admirable material for mounting, while the fret saw is the tool for shaping. But a word of warning here. Do not be too impatient to proceed with the cutting out, but allow the adhesive to dry out thoroughly after mounting.

It is unlikely that the picture will 'buckle' if mounted on wood although it is advisable to apply only a minimum of strong glue. Apply to the wood with a brush, smoothing out with a piece of flat celluloid to remove any lumps or undissolved particles of glue that would reveal their presence like pimples on the face of the finished picture. Lower the print or picture carefully on to the board from one end, squeegee on to the mount, or press with a clean duster while lowering, then allow to remain under pressure for at least 24 hours or more until dry.

A half inch square block of wood glued to the back is a simple means of providing a leg, but make this block rather narrower in width so that the ends are not observed. Moreover, it is a good plan to fix this block about $\frac{1}{10}$ in. above the base of the mount, allowing the calendar to tilt backwards when stood on a table. Reference to the diagram should make this perfectly clear.

A calendar tab stuck on the front completes the job. These tabs are supplied in many sizes and colours from 1d each, and you should have no difficulty in obtaining something suitable. To make a perfect match however, note that a white tab is preferable with white based printing paper and ivory tabs with an ivory tinted base.



Very attractive

The conventional type of calendar is quite easy to make being merely a picture stuck on a card, a suitable calendar tab provided, with a ribbon or cord hanger attached. There are many different methods of making this type of calendar but have you ever thought of mounting a picture on to a nicely grained piece of plywood, stained and polished?

Such calendars are extremely substantial, looking very attractive if care is taken in the finishing, rounding off all edges. Pictures may be either horizontal or vertical, and if the former the tab may be attached to the lower portion of the border. If the picture is mounted vertically, making the border much narrower, it will be found better to attach the tab pendant fashion, hingeing by means of a piece of paper gumstrip. Holes may be drilled at the top for a piece of fancy cord for hanging or you may attach a piece of ribbon by means of gumstrip.

If you do not wish to go to the trouble of staining wood, you can always use the normal type of mounting boards obtainable at almost any photographic dealers. These are sold in a variety of sizes to suit different sizes of pictures, and all that is required is the mounting of the picture plus the tab and cord.

Whatever method you adopt, make every endeavour to keep the work clean, for there is nothing worse than a calendar bearing gluey fingerprints of the maker!

CHRISTMAS would not be complete without a few decorations in the home, especially where there are children. When hanging up the decorations, however, it is advisable to use Sellotape. This will enable them to be removed without any damage being done to the woodwork or plaster. Drawing pins, always leave unsightly holes after the festive season.

The festive spirit

MAKING YOUR TRIMMINGS

SO you want to add the real Christmas atmosphere to your home with a few decorations this year? That's a splendid idea. And what fun you can have in making your own original trimmings. The youngsters love to help, and perhaps they can be kept busy making some of these simple, but effective, decorations for walls, trees and table. Made from surplus wallpaper and cardboard, using scissors for tools, they cost almost next to nothing. For a few extra pence you may buy attractive silvered paper in many festive colours, or flocking to provide a glitter. Most important in the Christmas story is the Star of Bethlehem, so we will start with this. The simple directions will help you make a star of any size.

First of all cut out the pattern and stick on a piece of cardboard. This done, rule a line three inches long on a piece of stiff, white paper, place the pattern on this line so that the point A co-

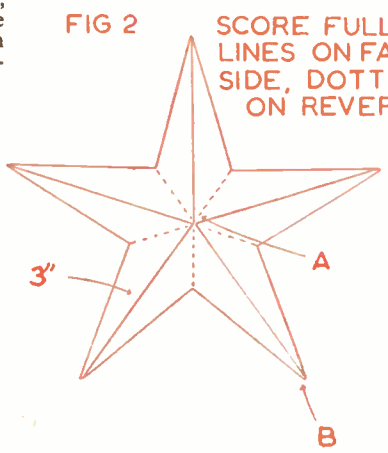
By

S. H. Longbottom

centre with a blunt tool, then score on the reverse side as shown by the dotted lines. Using both hands to fold, the ridge lines fold upwards and the short scores down. You should have no difficulty in doing this, but if you have, try using a knife blade to produce sharp folds at the centre

The measurements given make a nice star for hanging on trees, but you may make smaller or bigger by modifying the length of the first line. Moreover, white

FIG 1
STAR OF BETHLEHEM



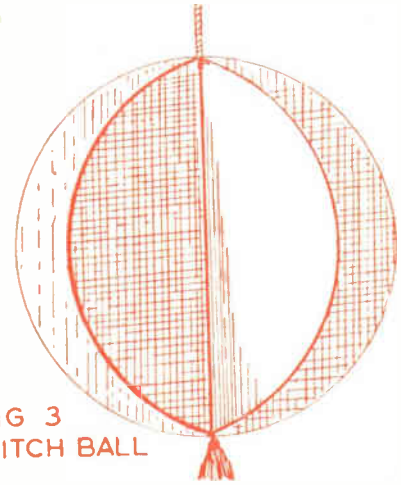
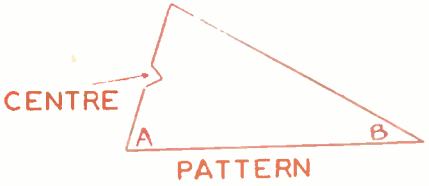
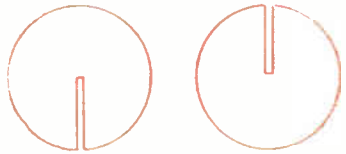


FIG 3
WITCH BALL

incides with the left end of the line. Now draw in the angle on the left side of your pattern. This new line is extended to three inches and the point A of the pattern again placed in the same position on the new line. By repeating this process you will quickly have drawn the five arms of the star. We now place point B at the tip of one arm, with the notch used for centre. Take your pencil round the outsides of the triangle to give the shape, repeating until the star is completed.

Our star however is not just a mere shape, it has depth. Refer now to figure 2, where you will see the veins of the star in unbroken and dotted lines. On the face side of the paper, score to the





SLOTTED PARTS

paper was specified, but you may prefer to use silver paper. Flock powder for adding a glitter may be bought at all handicraft stores and all that is required is a little glue painted on, followed by a dusting of powder. A hole should be pierced in the star for hanging.

A witch ball is made from two discs of cardboard, previously covered with suitably coloured silver paper. All you need to do with these is cut a slot halfway, pushing together. The slot depends on the thickness of the card, and often a scissor cut will be sufficient. When the card has been prepared, take a tumbler, or jar, scribe round the rim with a pencil and you have your circle of card. Cut out, fit together and the ball is nearly complete. The added touch of colour is given by a tassel of multi-coloured wool, silk or what you can find in the remnant bag.

You may make a bell in a similar fashion to the ball first of all preparing two shapes, slotting and fitting together. By using different colours of paper, charming effects are produced, and of course you may use surplus wallpaper if you prefer.

Tiny Christmas trees for table decoration are made on the same principles as the witch ball and bell, but here silver paper is out of the question. You may use white paper, tinted with green water colour paint for the foliage, and brown for the trunk, or green and brown paper. Here, a little 'snow' looks most effective on the tips of the branches, produced by painting with glue and a dusting of the glittering flock powder. The size of the trees is a matter for your own decision, but if for the table, you

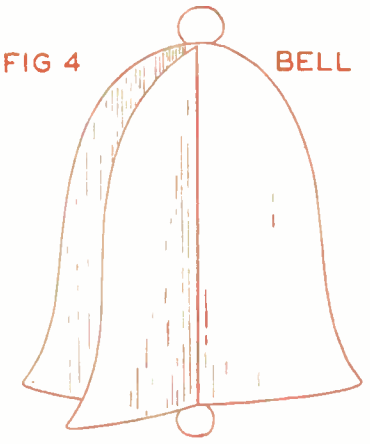
may find six inches a reasonable height. With plenty of cardboard available, you may be really ambitious and make larger ones on which to hang presents.

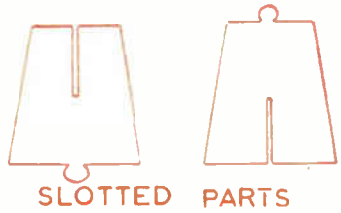
When making a tree, the best plan is to take a piece of folded paper and draw one half of the shape. On opening, you have a correctly balanced pattern for transfer to your prepared cardboard. The sketch shows quite clearly how the two parts are slotted for fitting. And you may make a tiny star for the top.

If you are fortunate enough to live in a district where milk is delivered with coloured, metal caps on the bottles, save them for decorative purposes. Cleaned, washed, smoothed out with the back of the scissors, they can be made into all kinds of tiny shapes for adorning the Christmas tree. Pierce two holes for the eyes, snip a bit out for the mouth, and you have a little face. Crescent shapes will represent the moon, or you may roll a ball of cotton wool for padding and mould to any shape. Take a peep at some of the children's painting books where you find patterns for elephants, dogs, cats and what you will.

Another good idea is to go into the garden for some shrub clippings. These should be washed, allowed to dry and then given a coating of silver paint. Mixed with holly, they look sparkling and bright. On their own, touches of colour may be given with glitter-wax formed into flowers, fastened on at odd

FIG 5





points. For a change, you may care to experiment with some other colours of paint to give a gay finish. Some clippings will sprout naturally if placed in water and kept in the warmth, but they must be brought indoors fairly early if you want the leaves to show.

You'll enjoy making these trimmings, but remember, they have to be taken down on the twelfth night.

● Continued from page 183

Experiments with Proteins

It is interesting to confirm which parts of the animal body are made up of protein. We tested wool for nitrogen by heating it with powered calcium oxide. By carrying out the same test with very short hair clippings, shreds of untanned animal skin, nail clippings, shredded lean meat and chopped up tendon you will find ammonia is given off in each case.

Soak a thin chicken bone in several changes of dilute hydrochloric acid until the bone becomes very flexible. This removes mineral matter. Soak the bone in several changes of water and finally in dilute ammonia. Dry it in the oven, crush some of it and repeat the calcium oxide heating method. Once again ammonia is given off. We see that such diverse parts of the body as hair, skin, nails, flesh and tendons are all protein. Even bones which are commonly thought to consist only of mineral matter contain protein — needed here as a binding material for the mineral matter.

To show the presence of protein in various foods the calcium oxide test may again be used. Test white of egg, the casein which you prepared from milk, cheese, crushed beans and peas. In all cases ammonia turns up, indicating the presence of protein. Knead some flour in a small cloth bag under a slow stream of water from a tap. The starch flows away and you are left with a dark sticky mass in the bag. This is gluten. Dry it in the oven and repeat the calcium oxide test. Its protein nature is shown by ammonia being formed. This is rather surprising when bread is labelled as a starchy or carbohydrate food. Bread, especially wholemeal bread, is an excellent food because it in fact contains the two main essentials of life. (L.A.F.)

Making Artificial Snow

HERE is a simple way of making 'snow' for decorating your Christmas tree at a fraction of the cost of the artificial snow sold in the shops. Place about a handful of ordinary soap flakes into a bowl and whisk up briskly with a little hot water until an almost solid lather is obtained. Keep adding more soap flakes and water until the desired amount of 'snow' is obtained. Make sure, however, that it is thoroughly whisked up to a thick consistency.

After this, smear the 'snow' over the branches of your tree with a table knife but don't overdo it — only a thin application is necessary. Now, before the 'snow' dries, sprinkle a few dry flakes over the branches to give them a brighter sparkle. Alternatively, use coloured sequins.

Another use for this home-made material is as follows. Cut a few cardboard shapes resemble large footmarks. These should then be dusted over with some 'snow' and placed around children's beds. Watch their faces on Christmas morning when they awake and discover 'Santa's footprints'. (F.K.)

CHEMISTRY IN THE HOME

EXPERIMENTS WITH PROTEINS

IN common with the carbohydrates, proteins are essentials of life. Carbohydrates give us energy and warmth, proteins rebuild broken down tissue. The muscular movements of the body burn up tissue and so constant replacement is necessary through our food. There is a definite danger level for this intake. Below this, malnutrition ensues. In the under developed countries where protein foods are too costly for all to buy, the effects are too often seen among the inhabitants.

Common examples of proteins are meat, fish and cheese. Eggs, bread and milk contain substantial proportions. Cereals, fruit and vegetables supply smaller amounts. Non-food commodities such as hair, horn, wool, silk and our nails consist of protein.

A simple test

First let us try a simple test for proteins. Take some nail clippings, horn or wool and add strong nitric acid to any of these in a test tube. The material turns yellow. This is known as the xanthoproteic reaction. Pour off the acid, rinse with water and add ammonium hydroxide. The colour deepens. Here is the reason why the skin turns yellow when nitric acid comes in contact with it. Skin is protein and as such gives the xanthoproteic reaction. Nitric acid should, of course, not be allowed to remain on the skin, but be washed off with plenty of water.

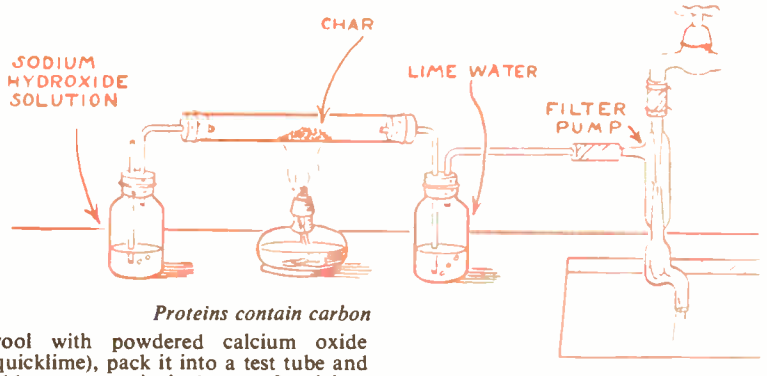
What do proteins contain? That is, what elements do they contain? Wool is a convenient protein to use to determine this. Since it contains adhering moisture it must first be dried for an hour or two in an oven. Pack some of it in a test tube and, clamping the tube horizontally, place a little anhydrous copper sulphate about an inch from the wool. Now heat the wool. The anhydrous copper sulphate turns blue proving that water is being evolved among the vapours. Since water contains hydrogen and oxygen it follows that wool contains these elements.

When vapour ceases to come off, let the tube cool, carefully remove the copper sulphate and then take out the charred wool. What is this black mass? Carbon? Possibly, but we must prove this.

Rig up the apparatus shown in the diagram. What we must do is to heat the char in a stream of air and draw the air through lime water. If the latter turns milky we will know that carbon dioxide is being formed by the combination of the oxygen of the air and the carbon. The wash bottle containing sodium hydroxide serves to remove atmospheric carbon dioxide so as not to give a false result.

Turn on the tap so that a slow stream of air is drawn through the apparatus and heat the char strongly. It glows and slowly burns away. The lime water turns milky. The char is therefore carbon.

With carbon, oxygen and hydrogen shown to be present in protein we now search for other elements. Mix some



Proteins contain carbon

wool with powdered calcium oxide (quicklime), pack it into a test tube and add a quarter-inch layer of calcium oxide. Hold a damp red litmus paper over the open end of the tube and heat the lime-wool mixture strongly. The litmus paper turns blue, showing an alkaline gas to be evolved. Smell the mouth of the tube. The odour of ammonia will be noted. As ammonia contains nitrogen, you now know that proteins contain nitrogen.

Put some wool in a test tube and cover it with sodium hydroxide solution. Heat the tube slowly. The wool dissolves. Let the tube cool and add hydrochloric acid. A smell of bad eggs will be apparent and a filter paper damped with lead acetate solution will be blackened if it be held to the mouth of the tube, proving that hydrogen sulphide is being disengaged. Since hydrogen sulphide contains sulphur then wool also contains sulphur.

The main elements

Carbon, hydrogen, oxygen, nitrogen and sulphur are the main elements contained in proteins. Phosphorus, too, is often found. To test for this a good material to use is the protein of milk. Namely, casein. Let about 100 c.c. of milk stand overnight in a separating funnel, run off the lower layer from the separated cream at the surface and add acetic acid to the decreamed portion. White curds of casin separate. Filter these off through a cotton filter (paper is too slow), wash with water and then dry the casein in the oven.

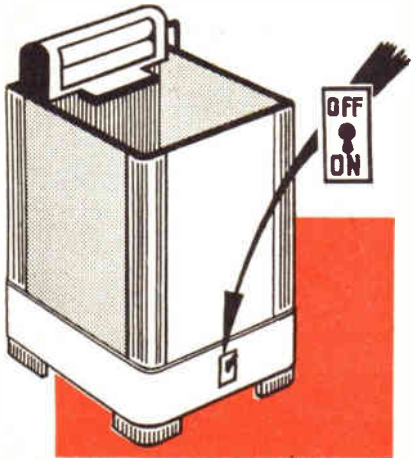
Mix some casein with twice its bulk of fusion mixture (which consists of two parts by weight of anhydrous sodium carbonate with one part of potassium nitrate) and heat it in a crucible until a grey or nearly colourless mass results. Cool, dissolve the mass in water, filter it and make the filtrate acid to litmus paper (blue paper changes to red) with nitric acid, add some ammonium molybdate solution and warm the test tube in a water-bath. A yellow precipitate of ammonium phosphomolybdate appears, proving that the casein contains phosphorus.

Amino-Acids

We hear a good deal about amino-acids these days. There are many of them. Proteins consist of varied combinations of these. In the digestive system proteins are broken down into amino-acids, passed to the blood stream and so carried to the parts of the body where they are needed, there to be built up once more into suitable protein. Some parts of the body need different amino-acids and a given protein may not contain the required types. This is why varied diet is needed.

● Continued on page 182

Fixing a Washing Machine Switch



Described by Ken Jarvis

MOST up-to-date washing machines are fitted with an on/off switch, but until two or three years ago machines with such a control were rare. Unless the housewife was fortunate enough to have a wall plug with a built-in switch, to cut off the current she was obliged to bend down and pull out the plug, and this is particularly dangerous with wet hands.

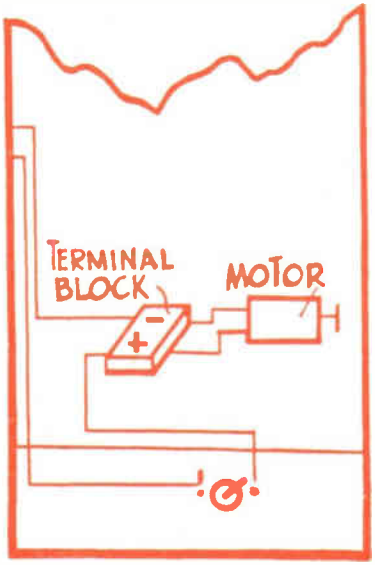
If you are the owner of a washing machine without a main switch, here is the method of incorporating one in your present model.

The best switch for the job is a long toggle, single pole, skeleton foot press switch obtainable from any electrical trader. Its value must not be less than 15 amp and must have an operating lever of 1in. long with some means of fixing to the machine.

Lay the machine on its side and find the mains positive wire to the motor. This wire will normally be a red one and should be separated from the motor by a terminal block. Disconnect this wire from the terminal block (or from the motor if it runs direct). To this loose wire connect wire of the same value. Make a good join and seal it securely with insulating tape.

To fix the switch to the casing of the machine drill three holes about 2ins. from floor level on the working side. The centre hole must be big enough to allow the long toggle of the switch to go through and operate. The other two will take the fixing nuts and bolts.

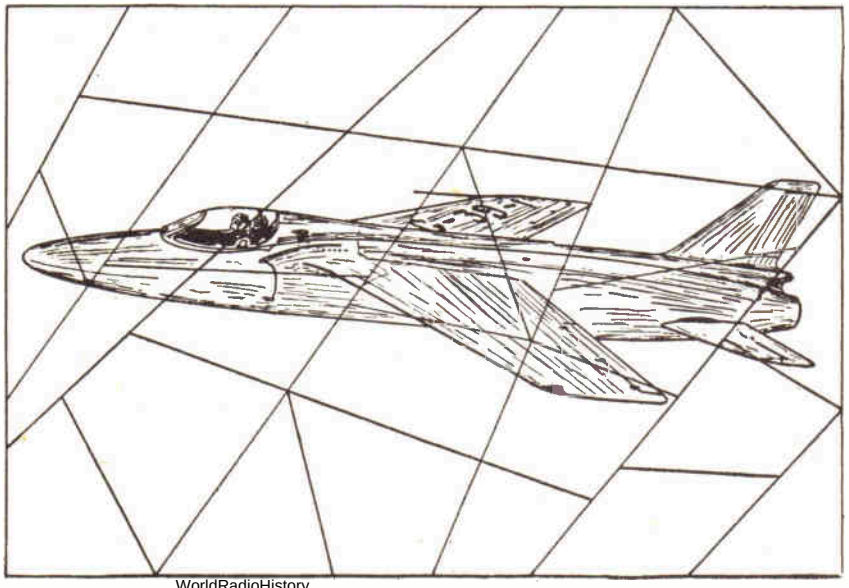
With the switch bolted firmly in position, connect the loose end of the extended wire to one side of the switch, and, with a further length of the same value wire, connect the other side of the switch to the terminal block (or motor).



Don't forget to make absolutely sure that no part of the live side of the switch, or any of the wiring to the switch which has been scraped free of insulation, comes into contact with the casing of the machine, and make sure that the new wires you have fitted don't hang down and drag underneath the machine.

SOLUTION TO JIG-QUIZ NO. 5

The aeroplane photograph in last week's Jig-Quiz is of the Bristol Orpheus powered Folland Gnat. The original aeroplane made by Folland Aircraft Ltd. and powered by the less powerful Viper engine was the Folland Midge.



Decorative and practical

Make a Weather-vane

A WEATHER-VANE, besides its functional value, provides just that finishing touch to the roof-apex of your garage or shed. With scraps of material, lying around in most workshops, you can quickly make a weather-vane. The one described below, running on ball-bearings, registers at the slightest waft of breeze.

The working centre of the vane consists of two 3ins. lengths of tubing, the smaller of which (A) fits into the larger (B), to revolve with the minimum of clearance. Useful sizes are 1in. outside diameter for the outer tube and $\frac{7}{8}$in. outside diameter for the inner tube, as shown in the drawings.

These tubes comprise the housing for the ball-bearings. The lower larger ball should be slightly smaller than the outside diameter of tube (A), whilst the smaller ball should be of a diameter to make it a drive fit into the inside diameter of tube (A) and held in an approximate position as shown.

The main upright to carry the direction arms is a length of $1\frac{1}{2}$ins. square deal. One end is rounded to form a stub which is driven into the mouth of tube (B) to a depth of approximately 1in. As shown, the larger ball-bearing rests on the stub end inside the tube.

By E. Capper

An alternative bearing can be used of two of the smaller sized balls as shown at (C). In this case, however, the lower ball must rest in a dimple hollowed out in the end of the stub, to prevent it 'wandering'.

The direction arms are made of $\frac{3}{16}$in. round bar, preferably galvanised and the two, through holes to carry them are drilled, one slightly above the other, on the side faces of the main upright.

The vane arrow is made of 1/32in. sheet metal, again galvanised if possible, to a body width of 1in. It is cut to a simple shape as shown on the finished vane drawing. You can, of course, have more elaborate tails on the arrow than the orthodox pattern shown. Simple outlines of a cock, a galleon and a dog are shown, as a guide. You may think of another.

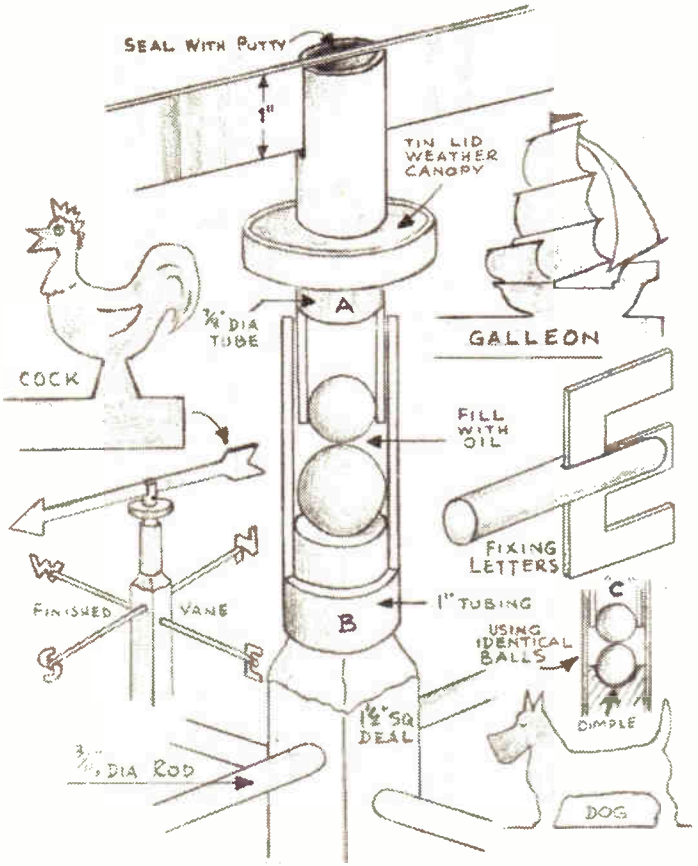
The arrow is held in the top of tube (A), by making a sawcut across the tube diameter, and inserting the arrow into the slot edgeways. The tube end is then squeezed slightly together in the vice, to hold the arrow more firmly. A $\frac{1}{4}$in. layer of putty should be then inserted into the tube end to prevent the entry of rain into the ball-bearings.

A weather canopy also protects the clearance between the two tubes from rain. It is simply made by punching an undersized hole through a small tin lid, and then force-fitting it over tube (A).

The letters are also made of 1/32in. sheet metal. Simple block letters are best. They are held in a sawcut slot made in the ends of the rods as shown, the ends again being squeezed together slightly to hold the letters more firmly.

To set your weather-vane in its correct position, find 'North' with the aid of a pocket compass. Be quite fussy in getting this point absolutely correct. Then, looking northwards, West and East points should always read 'WE' and not 'EW'. It is simple to make this mistake.

Finally, fill the well around the ball-bearing with lubricating oil. One filling should last you several months.



Next week's free design will be for a 'OO' gauge Signal Cabin for model railway layouts, also toy pattern and instructions on how to make delicious sweets for Christmas

MAINLY for MODELLERS

PAGES FROM MY NOTEBOOK
By Whipstaff

A VERY simple yet autnentic looking ship's navigation light can be made as in Fig. 1. From brass rod of suitable diameter for the scale of your model, turn a blank as shown. One side is then filed flat and the slot to take the lens is filed in the curved front. The actual lamp is then turned and filed flat on one side and cemented into position in the brass lamp holder. This method gives a very accurate representation of such lights. For each ship model you will have to make the lamps alternate colours. Use coloured perspex or else colour the perspex, the colours being red and green.

Hull clamps

In making models by the bread and butter method it is, of course, necessary to clamp the parts together while the glue sets. In many cases if clamped in the bench vice it holds up other work. To overcome this I made several wood clamps on the lines of Fig. 2, taken from one of my early notebooks. Two pieces of thick plywood are drilled to take 8ins. bolts with wing nuts. One clamp will serve for a small model, while three clamps will accommodate a large model up to 3ft. or 4ft. in length.

Sampson posts on modern ships

These are ventilators which also do duty as short masts to support the smaller derricks. The usual top is mushroom shape, but in older vessels they may have a cowl type top. They usually have a ladder up the inside to give access to the top; this, unless at large scale, will not be shown. In the average size model they can be modelled in either brass tube or dowel.

Method of grading British naval vessels

This system was first introduced during the reign of Charles II, and the following list shows how the ships were graded.

1st rate, ships of 100 guns and over.
2nd rate, ships of 56 up to 100 guns.
3rd rate, ships of 58 to 64 guns.

These latter two types were evidently rated according to tonnage.

4th rate, ships of 40 to 50 guns.

In 1688 a new list appears and the list then is as follows:

1st rate, ships of 90 to 100 guns.
2nd rate, ships of 82 to 90 guns.
3rd rate, ships of 60 to 74 guns.
4th rate, ships of 32 to 54 guns.
5th rate, ships of 26 to 32 guns.
6th rate, ships of 20 to 26 guns.

Flag codes

The following signal codes were in operation at the dates given:

1817 to 1857, Marriot's Code for the Merchant Service.
1857 to 1900, Commercial or 1st International.

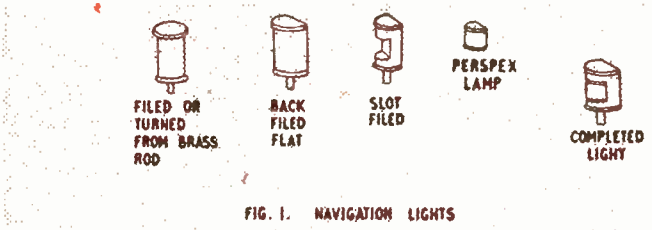


FIG. 1. NAVIGATION LIGHTS

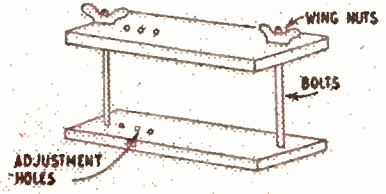


FIG. 2. HULL CLAMP

FIG. 3. MODERN SAMPSON POST

1901 to 1933, 2nd or 1901 International Code.
The present Code has been in use since 1934.

Flags used on the 'Victory'

White ensign at stern, Flag of St. George at the fore mast, Union Jack suspended from the fore-top-gallant stay. The Trafalgar signals were run up at the mizzen masthead. Last signal was 'Engage the enemy more closely'.

Method of giving a weathered effect to sails

This is very effective and consists of dipping the fabric sails in cold coffee or tea and then allowing to dry. This I find preferable to staining, because, in drying, the colour comes out slightly uneven as does the actual weather staining of the sails on the actual ships.

Modellers who wish to 'antique' their models of early ships should avoid a muddy effect. All that is required is a little unevenness in the actual staining, with a little darker staining in the corners. If painting is used to get the effect, the most useful colours to use are raw sienna, burnt umber and Vandyke brown. Any part of the hull of an old-time model which is to be painted brown is better done in what is known as antique brown. This is obtained by mixing one part of raw sienna, one part of burnt sienna and one quarter part of ultramarine blue. In obtaining an antique effect on gilded carvings, the best method is to paint all carvings with yellow ochre and then pick out the high spots of the carvings with the gilding or gold paint.

Hint for Decorating Pottery

SLIP tracing is a very useful means of decorating pottery. It resembles icing a cake, and is best carried out with slip tracers. The flexible rubber bag, held by hand, is fitted with a glass tube drawn to a point, and the slip is forced out by a constant, gentle pressure, producing a raised pattern.

In the absence of the slip tracers, however, a satisfactory substitute (which is more easily cleaned than the bag) can be found in a baby's bottle, fitted at one end with a cork and a small glass tube brought to a point. The pressure is supplied by blowing through the other end. (E.M.B)

PHILATELIC MYTHOLOGY

By R. Cantwell

MYTHOLOGICAL heroes have been a prominent feature of Greek stamps since 1861, when the first issues appeared bearing a portrait of Hermes.

In classical mythology, Hermes is described as the son of Jupiter and Maia, the herald and messenger of the gods, guardian of travellers, giver of good luck and the god of eloquence. The Romans, in later times, transferred all the attributes of the Greek Hermes to their own Mercurius, whose functions extended originally to commerce and gain only. For this reason, some catalogue illustrations of early Greek stamps (Hermes, 1861–86) have the description 'Hermes or Mercury.'

Hermes, to judge from his repeated appearance on Greek and other countries' stamps, is easily the most popular legendary character among stamp designers. And it is an interesting subject for thematicians.

The theme may be extended of course. There is ample material for a collection entitled, 'Philatelic Mythology'. The following figures which adorn various Greek stamps provide ideal items at the start:

Atlas — Leader of the Titans, who attempted to storm the heavens and to dethrone Zeus. For this he was condemned to bear the heavens on his head and shoulders. Hesperides — the three sisters who lived in the garden where grew the three golden apples. The situation of this garden is variously given, but all accounts agree in locating it in the extreme west.

One of the labours of Hercules was to obtain the golden apples. He slew the dragon which guarded them and the sisters fled, leaving him free to fulfil his mission.

Iris — a goddess of Olympus, a messenger of the gods to men often mentioned in the Iliad of Homer. Helen — wife of the Spartan king Menelaus. She was captured by Paris, son of Priam, king of Troy. To recover her, the Greeks began the Trojan wars.

Daedalus — architect and sculptor, whose most famous work was the labyrinth in Crete. To escape from that island he made himself wings with which he flew to Sicily.

Icarus — son of Daedalus. He soared too high on the wings his father made him. The sun melted the wax that secured the wings, and Icarus was drowned in the sea.

Minerva — a Roman goddess, patroness of arts and crafts, the protectress of all who wished to excel, whether in mental or manual pursuits. Warriors also were under her special protection, and she is represented with a helmet, shield and coat of mail. The Greek goddess, Athena, was later identified with Minerva. Here is a topic worthy of investigation

were held every four years in ancient Greece in the pleasant valley of Olympia, and was the occasion of a grand national festival. None but Greeks might compete, and no women or slaves might be present. Competitors trained for ten months and the victors received as their reward a garland of wild olive.

Greece, home of the Olympic Games issued commemorative of the first International Olympic Games in 1896, and again for those held in 1906.

These stamps can be included with the mythological designs, or arranged with those issued by other countries to celebrate the games. An appropriate title: 'A Philatelic History of the Olympic Games.'

And the notes: The Olympic Games

PENCIL SHARPENER

SLIPS of glasspaper are glued to the two small gadgets illustrated here. Give your pencils a rub now and then to keep a fine point for sketching. You will save money this way because your pencils will last twice as long.

Pieces A and B are cut from ¼in. wood and form a small pocket edition. They are hinged together and a small elastic band slipped over as shown in Fig. 1.

To stand on the desk, the other sharpener is provided with a ¼in. thick base (G). Piece D is cut from ½in. wood and pieces E, C and F from ⅛in. The assembly is shown in Fig. 1 with all parts lettered.

Paint them in bright colours, giving two or three coats for a high gloss finish. (M.p).

PATTERNS ON PAGE 191

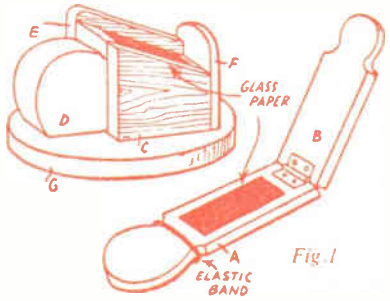


Fig. 1

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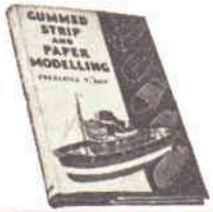

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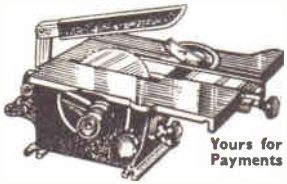

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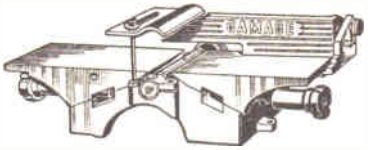

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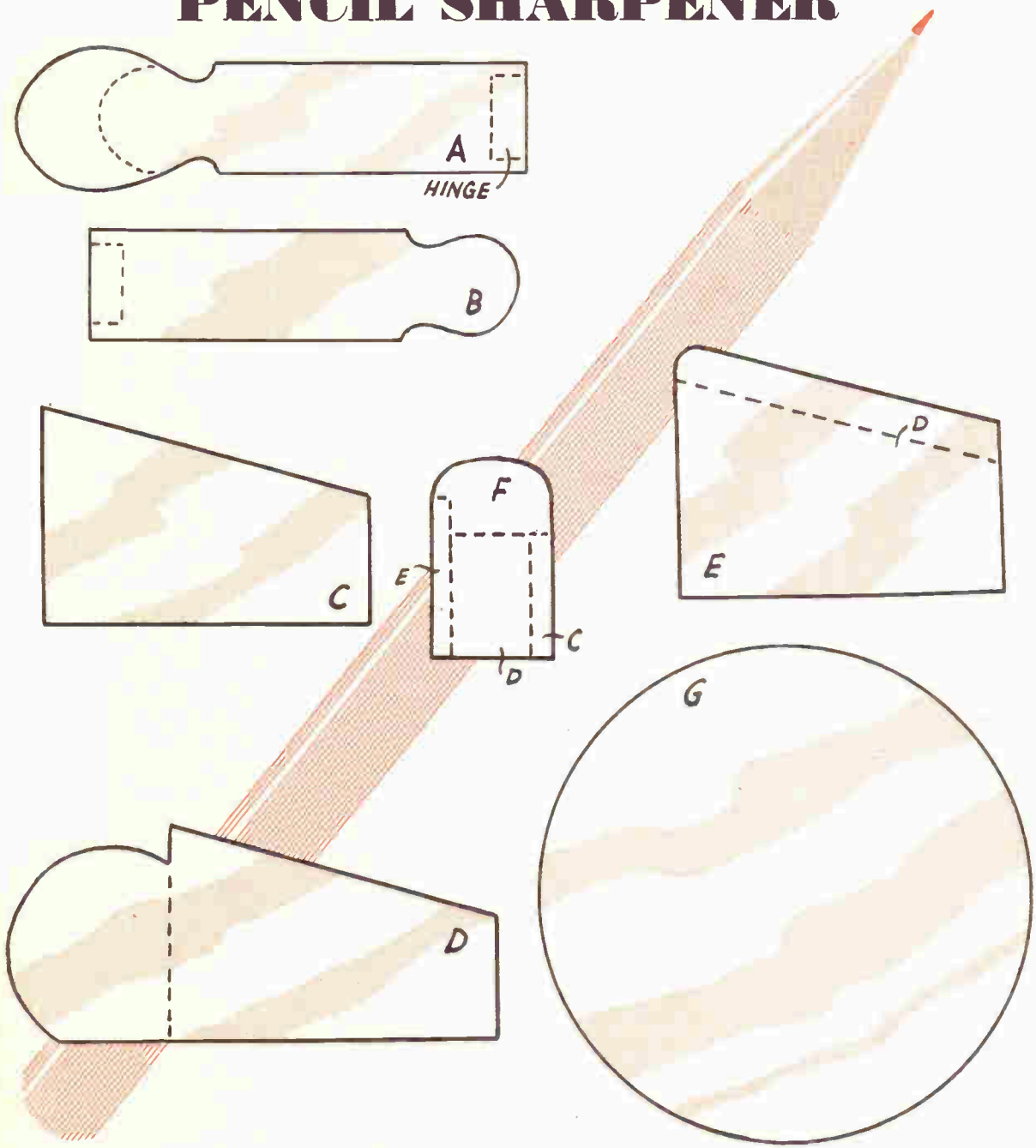

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