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'DO-IT-YOURSELF'


FOR ALL

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## FREE Design

## Supplement



## Up-to-the-minute ideas

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CHINESE boys don't play marbles. They toss pennies instead. They love playing shuttlecock. For a ball game some wool is wound around bits of snake-skin, and the ball thus made is as elastic as one made of rubber. The game consists of making the ball bound as many times as possible. Sometimes the ball is made to strike against a wall, and then under one leg of the player before it is again struck with the palm.

## COLLECTING CHOPSTICKS

By R.L.C.
I once tried eating with chopsticks and made an awful mess on the table. The Chinese find our knives and forks just as clumsy to use.

Chinese chopsticks are longer than the Japanese kind. They are often metaltipped and decorated. Mandarins used to carry their own silver-tipped ivory chopsticks to a feast, wipe them clean, and take them home again.

In some Chinese cafés the sticks are kept in a box. Some are marked with a number. Customers who select those sticks get a free meal.

Chinese cooks turn the chops or anything in the pan with chopsticks. Spoons are never used.

In raising silkworms, the young worms are moved to fresh trays of mulberry leaves twice a day with chopsticks. The tiny, soft worms would be killed by rough handling with clumsy fingers, but Chinese girls lift them with their chopsticks so lightly as to do them no harm.

Collecting chopsticks has been a hobby since the seventeenth century. Some collections are valuable. But cheap wooden specimens are easily obtained to make a start.

## How pencils are made

AS a youngster I often wondered how pencils were made. I began collecting them. Later, I wrote to a factory at Keswick for information, and back came an invitation to visit the factory.

We entered a room filled with benches. These were fitted up with various machines. Piles of cedar wood were stacked in the corners. My guide took down a flat piece about the shape and size of a pencil box lid - only much thicker.
'The length and diameter are about the same as those of a finished pencil', I said. 'But why so broad ?' 'It's as easy to make six pencils in a row as to make one', he replied.

He then fixed the wood in a groovecutting machine which ploughed six parallel grooves in it, in depth exactly half the thickness of the lead. He then took two of the grooved slips to a lad seated at a table with a big glue-pot before him. The lad well-smeared them with glue. Then he picked out one of a bunch of long leads, laid it in the groove, and clapped on the other piece of wood. When a dozen or two of these sandwiches had accumulated they were packed into a press and screwed tight, so as to squeeze out the superfluous glue and bring the upper and lower wood close together. Then they were left to dry. In large factories 'gluing and casing' is done by machinery.

I was then taken upstairs where a cutting machine split up the flat wood into six narrow strips, each containing its own lead. But each strip was foursided; the edges had not been removed. However, the rounding action was soon performed by another machine, and six lead pencils were put in my hand. Those pencils have a special place in my collection.

## Pen friends

GEOFFREY DOBSON is 14 years of age. His hobbies are stamps, model railways, and photos. Write to 416 Livingstone Road, Bolton Villas, Wrose, Bradford 2, Yorkshire.

Many readers have found Mr K . I. GEVERGEIEFF of Moscow, U.S.S.R., a reliable pen friend. I have seen some of the match labels he has been sending.
M. GOODWIN of 13 Higher Bridge Street, Sandy Lane, Stockport, Cheshire, has beer labels for exchange.

CLAYTON CAMPBELL,R.R.3. Bobcaygeon, Ontario, Canada, and
C. M. DOBSON, Coates House, Ripley Road, Knaresborough, Yorks., also seek pen friends.


Mr Gevergeieff of Moscow is a keen collector of labels. His daughter is seenhere examining a page.

Other examples of the Gevergeieff collection are seen below


# STliAWMERBIES IN A TABIREL 

A. Simpson



AN excellent method of growing strawberries is in a barrel; it is ideal where space is limited, such as a back yard, provided it is sunny and sheltered from strong winds.

You need a barrel (40-gallon beer or wine barrel is the best size), two dozen

young plants or runners, a mixture of garden compost, manure, bonemeal or garden compost, manure, bonemeal or
potash, and small stones or rubble. See that the barrel is clean, i.e., it has not
held anything harmful to plant life, such that the barrel is clean, i.e., it has not
held anything harmful to plant life, such as tar. If you clean it, do not use creosote which will kill the young plants.

## To prepare the barrel

Make four rows of holes round the girth of the barrel, starting above the base and finishing below the top two bands. The holes should be about $2 \frac{1}{2}$ in. in diameter, except the bottom row which is for drainage, and these can be smaller. Make six holes to a row. Mount the barrel on concrete blocks or bricks so as to preserve the wooden bottom. If you are expert, try mounting it on a wheeled base, and then you can move the barrel round so that each plant can get the maximum amount of sunshine.

Now cover the bottom of the barrel with small stones or rubble to a depth of about 4 in . Do not use large stones mill C
which will not prevent the earth on top from sinking down and clogging the drainage holes. Next, fill up to the lowest row of plant holes with the mixture of compost, manure etc., making it quite firm. Put in the first 6 plants, with their roots inside and the leaves and crowns outside the barrel. Spread the roots against the side of the barrel to prevent the plants from falling out until they start growing, and to give them the maximum amount of manure etc. That completes the first row. Now add more earth until the next row is reached when you repeat the process to the top. Plant firmly, water each row, and put the last six plants on top.

## Watering

The core shown in the centre of the barrel is the means whereby the plants, except the top six, receive water. You can, of course, water the outside of the barrel, but this only cools the metal bands and woodwork and leaves of the plants. It does not reach the roots, and strawberries need a lot of water to swell
the fruit, so it is essential to see that the roots of each plant get water when they need it most. Hence the core of small stones or rubble that will allow the water to percolate down to each row and finally to the exit holes at the bottom.

After you have planted the first, i.e., lowest row, stand a pipe or funnel 4 in . in diameter and 18 in . in length in the centre (the pipe in the photograph is made of cardboard), and fill it with rubble or stones. As you plant with earth and compost, raise the pipe slowly and the rubble will sink down. Add rubble as you plant until you are 6 in . below the top, when you can lift out the pipe, leaving the core intact. When you have put in the last six plants, the core will run from below those plants to just above the first six plants.

A good time for planting is either in early spring after the frost, or after the fruiting season when the new runners can get a firm hold before winter.

If you like a flower garden with your strawberries, try two barrels; one for fruit and one for flowers.

## HOW TO LABEL GROWING TREES

THE job of labelling growing trees and shrubs needs care in order to avoid damage. A label tied tightly round the trunk or branch may very soon cut deeply into the wood especially if it happens to be a rapid grower and might even eventually kill the tree. By fixing the label to the tree with an expandable tube it can grow as quickly as it likes without injury.

A short length of rubber hosepipe is all that is needed. With a sharp knife a spiral cut is made round its circumference as shown and this is what allows for expansion.

The label is secured by a piece of twine or wire placed around the centre part of the hose.

The same method can be used to secure a young tree to a stake and no injury will occur however tender the stem may be. It is an easy matter to slip the hose over the stem, and it is best done while the plant is still young and small.
(A.F.T.)
all carefully considered.
Most of the wood parts are shown full size on the design sheet. They should be traced and transferred to their appropriate thicknesses of wood. Similarly pieces 4 , for which the dimensions only are given, should also be marked out on to $\frac{1}{2} \mathrm{in}$. wood and then all the pieces can be cut out with the fretsaw.
Clean up all parts preparatory to assembly, which can be started by gluing together pieces $1,2,3,4,7$ and 8 , as shown in Fig. 1. It will be noted here that piece 2 is shown cut away in order to give a clearer view of the inside. When the glue is thoroughly set, shape the ends (pieces 4) to conform with the shapes of pieces 1 and 2 .
Turn the assembly over and glue the axle (5) and chassis (6) in position as indicated in Fig. 2. Next shape the lamp holder support (9) and glue it in

Editor. We cannot always act on them
because of difficulties in makeup and supplying of materials, etc., but they are
lamp holder support. For the purposes of this design, however, a special minia-ture-type bayonet fitting lamp holder and nipple are included in Hobbies kit.
The model has been designed at the suggestion of a reader who is obviously a caravan enthusiast, and such ideas as these are always appreciated by the

CARAVANS have become very much a part of the British holiday scene, and thousands are located on sites dotted all over the country. Holidaymakers may have pleasant memories of happy times spent in a caravan, one of which is featured in this design for an electric lamp.
It stands on a base measuring 8 in . by $6 \frac{1}{2}$ in., and is ideally suitable for use at the bedside, on a sideboard, television

set, writing bureau or low table, etc. The top half of the caravan is in Crinothene, which gives a delightfully diffused lighting from the small lamp.

Our model has been specifically designed to take a 'pygmy' 15 watt lamp which can be obtained in a range of colours from electrical dealers everywhere. It is not included in Hobbies kit for the obvious reason of liability to damage in transit. If, however, greater illumination is required, say for reading or writing, a larger lamp of higher wattage can be accommodated in the model by altering the position of the

10 , strengthened by pieces 11 and 12 , which are mitred and glued round underneath piece 10 as shown on the design sheet. One piece 11 (that at the back) should be drilled to take the flex.

Place the model on its base, mark the positions where the legs come, and drill the base accordingly. Temporarily screw the 1 in . diameter plastic wheels in position and glue the model to the base at the correct height.

The flex goes through a hole in the base. One lead is cut and the ends are connected to the push-button on/off switch which is fixed in the hole provided in the base. The leads then continue to the plug.

The wire frame (Fig. 4) which will support the Crinothene shade can be soldered or bound together with cord or thin wire. A neater job is, of course, made by those proficient with the
soldering iron. But as the joints are concealed, binding will be quite satisfactory. The frame is made up in size to fit the top of the wooden section of the caravan. It is held securely in position by the brace which is sprung inside the sides of the model.

The Crinothene shapes which go to make the top are thonged to the wire frame and also joined in a similar manner along the top edges, as seen in the finished illustration.

Remove the shade and plastic wheels in order to apply the finish to the model. The final colouring will be to individual taste, but it is emphasized that to get a nice finish the grain of the wood should be filled and then rubbed down before an undercoat is applied, finally finishing with a gloss paint. Individual decorations, such as for the door, etc., can be painted on.

## A KIT FOR 18/7

Hobbies kit for making this attractive 'Holiday Caravan' Electric Lamp contains all materials, including panels of wood planed to the correct thickness, stripwood, wheels, Crinothene, thonging, lampholder, flex, switch, etc. The special 'pigmy' lamp, as mentioned in the instructions, should be obtained from your local electrical dealer.

Kits cost only 18/7 and can be obtained from all Hobbies branches and stockists or by post ( $1 / 9$ extra) from Hobbies Ltd., Dereham, Norfolk.

## SEND FOR ONE NOW

## 'Mystifier' says

## Try this Card Trick

HERE is a simple little trick requiring minimum preparation but one which will mystify your friends.

A full pack of fifty-two cards is taken, shuffled and offered to your audience with a request that five members each select a card of their choice, but there is no need to look at the value. The selection is quite free, the cards are taken and laid face down on the table as shown in Fig. 1. Here the cards are numbered for the sake of convenience in explanation.

Another member - who has not
explain that you are going to attempt to discover the selected card.

With this statement you bring out four cards from your pocket, placing them on the table as shown in Fig. 2, that is with one card missing. Note the blank space may be position two, three or four at your discretion.

You now ask the member selecting the card if the one chosen occupied the blank space and if the answer is in the affirmative same can be produced from the pocket. If the answer is in the negative move card number three to position number four asking whether the selected


Fig. 1
selected a card - is now asked to select any one card of the five, note its position and value, writing same on a slip of paper, this being done while your back is turned.
You now take up the five cards in the order shown, number one being at the bottom of this small pile, number two on top of that and so on. This is important. The cards are now placed in your jacket pocket in the order mentioned while you
card had occupied the middle position. The whole purpose of the questioning being to ascertain the position of the selected card.

When this has been determined the slip of paper is collected and the selected card brought from the pocket! Both should agree.

This trick is not so miraculous as it may sound and of course your audience is not aware that you had already concealed four other cards in your pocket before starting. When the five original cards are taken up they are replaced by the four others and the values are of no concern since their faces are never seen. You are only interested in learning the position of the selected card. If we assume that the centre card was selected all that is required is to count to the third card in the pack of five in your pocket and this is quite easy if you feel the edges between the thumb and first finger, and when it can be produced.

You will see that this trick is quite easy to perform but remember that you must pick up the cards correctly in the first place and put them into your jacket pocket in the same order. Any reversal will ruin the trick. There is no real point in requesting that the value be written on a slip of paper but it may prevent counter trickery by your audience!


Fig. 2

## Portraiture (2)

## LIGHTING

THE lighting required for a small studio comprises three ordinary photoflood lamps set in aluminium reflectors, and one ceiling or toplight consisting of an everyday $100-150$ watt bulb suitably shaded.

For the sidelights, which are placed centrally, one on each side of the room, you will require two photoflood lamps and two reflectors. Alternatively, two photoflood lamps with built-in reflectors can be used. In the long run, however, if cost is to be considered, a worthwhile saving will be made by purchasing ordinary photofloods together with suitable reflectors. A good many photography shops deal in second-hand equipment and you should be able to pick up the reflectors quite cheaply.

A diffuser should be fitted to each of the sidelights. Translucent plastic is an ideal material for this purpose. Mount the plastic on a circular wire frame which is of slightly larger circumference than the mouth of the reflector. Bend one end


Translucent plastic diffuser mounted on wire assembly -showing hook for attaching to bolt on top lip of reflector.
of the wire to form a small hook. Overlap the plastic all round to achieve a strong finish and fasten down with impact adhesive.

Through the top of the reflector, near the lip, drill a hole to take a small bolt. Clip the hook of the diffuser over the bolt and secure with a nut.

Photoflood lamps give off intense heat so make sure the diffuser stands away from the mouth of the reflector, thus allowing an adequate circulation of air.

Diffusion modifies the brilliance of the lighting to the sitter's benefit. The amount of modification is dependent on whether plain or patterned plastic material is used. A design of concentric circles will have a softening effect three times greater than is possible with plain material.
The backlight needs to be of a strength equal to one of the sidelights and is built up in a similar way. There are two major differences. The reflector is shaded and an effects disc is used in place of a diffuser.

## FDR <br> A tall, round sweet-tin with the bottom removed makes an excellent shade. Pierce two holes near the top lip to receive the effects disc, then four, equally spaced, round the base of the tin. Drill four corresponding holes round the lip of the reflector. Paint both the outside and the inside of the tin with aluminium paint. While this is drying the effects discs can be prepared. <br> By K. Baxter

Using thin cardboard cut out two circles slightly larger than the mouth of the tin shade. From one piece cut out a series of rectangles to create a slatted effect; from the other a series of circles. A cardboard collar of the required length and $\frac{1}{2}$ in. wide surrounds the discs, being held in place by transparent adhesive tape. Paint the face of each disc with aluminium paint.

Wire the shade to the reflector and, for a really neat effect, finish off with a band of tape painted over to match the discs. Two short lengths of fairly stiff wire hold the discs in position.
The backlight can be used with or without these effects discs, their use depending on the subject being photographed and the final result you wish to


Section of sidelight assembly showing bolt on top lip of reflector for diffuser attachment, supporting arm and positioning peg.


Toplight assembly
obtain. An effects disc creates background interest by producing a pleasing pattern of light and shade.

The last item of lighting equipment required is a toplight. This should be adjustable, and takes the place of a boom light, a very costly item used essentially in large studios.

To convert an ordinary ceiling light into a toplight you will need three yards of flex, two small pulley wheels, a weight and a square, aluminiumpainted tin with the lid removed to be used as a shade. Again you will find a sweet-tin is ideal.

Firmly secure one of the pulleys to the ceiling about four inches away from the rose. Replace the existing flex with the nine foot length. Run this under the second pulley, which is free, over the ceiling pulley and down to the light position. Wire up the bulb holder, insert this through a suitable hole cut out of the base of the tin with a metal
saw, and push home the $100-150$ watt bulb. Attach a small balance weight to the free pulley.

The lighting equipment completed, all that remains is to make wall battens to receive the sidelights. For these you
depth of approximately 1 in . Slightly taper a length of dowelling and insert one end into the hole in a block. Glue or use a screw for extra strength. Repeat the procedure for the other end of the dowelling.


## Backlightshaded and showing effects discs.

require two 1 in . dowel rods each 3 ft . long, with five equally spaced $\frac{1}{4} \mathrm{in}$. holes drilled through them, four pieces of softwood 5 in . by 2 in . square, and two pieces 1 ft . by 2 in . square.

To assemble a batten, take one of the 1 ft . lengths and $\frac{1}{2}$ in. away from each end drill a hole; one for a small bolt, the other large enough to take the dowel rod comfortably and be adjustable. Place this in position.

Next drill a 1 in . hole in the centre of two of the 5 in . by 2 in . blocks to a

Screw the completed unit to the wall, central to the room and equi-distant from floor and ceiling.

Solder or screw to the base of the sidelight a clip or metal strip. Through this place a small bolt and fix to the end of the adjustable wooden arm. The arm is held in position at the required height by a peg inserted into the appropriate hole in the dowel rod.

For additional security run a groove along the underside of the supporting arm. This will eliminate all risk of the
peg slipping and allowing the sidelight to drop away from its set position. Alternatively, a wire loop attached to the underside of the arm will prevent undue movement.

To obtain maximum benefit from the
 ASSEMBLY
backlight it requires a free range of movement and so no special fixing is required.
The overall positioning of the various lights needs to be arranged to create a balanced effect. How to achieve this will be described in a later article.

## Interesting Locos-26

The Cireat Westerin Tin engines took over the duties originally operated by Daniel Gooch's 8 ft . 'Singles'. On 26th September 1892, however, No. 3021 left the rails when descending the gradient in the Box tunnel, the cause of the mishap being excessive lateral play over $1 \frac{3}{4} \mathrm{in}$. of the
for the Great Western Railway in 1891. The engines were known as the ' 3001 , class, and were built at Swindon, eight of the class being built as broad gauge convertibles having all the wheels outside the frames as shown.


Great Western Railway. Broad gauge
convertible express locomotive of 1891
leading axle boxes in their guides, not controlled by springs.
This resulted in all the thirty engines being rebuilt to the 4-2-2 type with leading bogies. They were numbered 3001-3030, and became the forerunners of the celebrated $7 \mathrm{ft} .8 \frac{1}{2}$ in. 'Dean Bogie Singles', the first of this class, No. 3031, 'Achilles' being built at Swindon in 1894.

The engine shown in the illustration carried the following leading features: cylinders 20 in . by 24 in ., wheels, driving diameter 7 ft . $8 \frac{1}{2}$ in., carrying 4 ft . 7 in ., wheelbase 18 ft .6 in . Total heating surface $1,445 \mathrm{sq}$. ft. Grate area 20.8 sq . ft., working pressure 160 lb . sq. in. Weight in working order 44 ton 4 cwt. The engine had underhung springs to all the axles.
(A.J.R.)
 $\star$ Patterns for making a novel 'vintage $\star$ car' clock case will be included $\star$ $\star$ among the interesting features in $\star$ $\star$ next week's issue. Make sure of $\star$ $\star$ your copy.


## A Magic Rontine with Bands

TAKE a rubber band and place it, well down, around the first two fingers of your left hand. Hold the palm of your hand facing towards yourself. Pull out the band with your right hand, to make a large loop. Close all the fingers of your left hand into this loop and then snap the loop closed against the backs of your fingertips. Open out your fingers again. There will be a sharp flick and, wonder of wonders, the rubber band will 'jump' around fingers three and four. If you have followed these instructions correctly you will now understand the self-working principle of an entertaining magic routine.
Supply yourself with three coloured rubber bands - red, blue and yellow. Place the blue band upon fingers one and two of your left hand and proceed with the manipulations described above. Repeat the moves and watch the band spring back on to your first two fingers. Now you must practise the effect, using two differently coloured rubber bands. Put the blue band over fingers one and two, and put the red band over the last two fingers. On this occasion you form two loops and then close your fingers into them both. When you straighten out
your hand, the bands will change places.
Finally, you must learn to do the changeover manipulation whilst your fingertips are 'tied' together. Prepare for the colour change-over by putting the bands well down over the respective fingers. Then take the yellow band, which should be a trifle larger than the others, and place this over your fingertips in such a manner that the band is given a half twist between each finger. This technique is not difficult and it will ensure that the fingertips are bound tightly together, furthermore. This is a showy move if done smartly. Pull out the red and blue bands to form loops as before, and close your fingers into the two loops before letting the two bands go. When you open out your fingers the blue and red bands will have changed places once again. The yellow band will remain intact!

You will now have learned all the manipulations necessary to give a startling performance. Begin by making the blue band jump from fingers one and two to fingers three and four. Then cause the band to spring back again. Next, introduce the red band and let the blue and red bands exchange places. Build up
your routine to a climax by securing your fingertips. Do this with a grand sweeping gesture. Now bring your act to its conclusion by making the bands change over beneath your bound fingers. As you perform your routine keep the back of your hand raised and facing towards your audience. Make all your moves smoothly and with confidence.

A neat presentation will enhance the entertainment value of your routine. To begin with, produce the blue band casually and show the simple jumping effect. When your audience becomes interested, offer to repeat the demonstration, using the two bands. Call them the 'blue boy' and the 'red girl' and describe how magicians like to put their assistants into cabinets and make them change places. Tell your audience to watch your hands closely and to 'listen for the pistol shot'. Snap the fingers of your right hand loudly when you bring about the changeover and point out that the exchange occurred 'without curtains, before your very eyes'. To finish with, make a great show of binding together your fingertips before repeating the 'boy-girl' changeover, with 'locked cabinets'.
(A.E.W.)


# Making Dainty Napkin Holders 

## DIAGRAMS

ON PAGE 405

DAINTY napkin holders comprising one large and six small individual pieces are useful and attractive gifts for the enthusiastic fretworker to make. Those shown in the illustration are made from thin plywood, enabling several to be cut out at the same time.

The large holder is designed to hold extra napkins, while the smaller are arranged on the table at the set places. The latter are smaller editions of the former. The shapes to be cut are shown full size in Figs. 1 and 1A on the pattern page 405 . As already stated, at least three of these can be cut out at the same
time, if small pieces of plywood are cramped together.

The decoration should then proceed by giving an initial undercoating of flat white paint. Place the design on the wood, so that both coincide at the edges. Trace details of the design with a pencil after rubbing a little pencil lead on the back.

This will give a light tracing of the design and you may proceed to colour. You may use quick drying poster paints or water colours for the decoration, giving a final coat of thin, clear varnish for protection.

As a guide we would mention that the
following colours are most suitable: Dress - cream, beige or parchment. Hat and collar - pink with red hatband. Grass and leaves - green but not too vivid. Flowers - various colours which can be spotted on here and there to make the bouquet held by the young lady.

Stripes and polka dots were also added to the dress in the original.

It will be found most convenient to complete the decoration - except for the varnishing - adding the simple stand at the back as the last stage.

Reference to Fig. 2 will reveal how the the latter is achieved by cutting appropriate lengths of $\frac{1}{8} \mathrm{in}$. sq. section for the small figures, and $\frac{1}{2} \mathrm{in}$. sq. section for the large figure. These are glued to the backs of the figures. Triangles of plywood are then glued and pinned to the small blocks, and the holders are completed.
(S.H.L.)


# MOULDING AND LETTERING 

FEW pieces of work in paper sculpture are quite so effective as the moulded frame illustrated in Fig. F. Made from stiff paper or thin card such as Bristol or Ivory board, such frames are most attractive, and will stand up to considerable handling. Such work could be used to represent the small blocks or projections in the bed moulding of the corners of columns in stage and theatre work.

In the planning of models for buildings and toy model stations and other similar items, the moulded style as shown is most useful. It is not as difficult and involved as it appears at first sight, and such work may be carried out as an exercise on the following lines. In the first place, clean hands, accurate lines and clean cutting are essential to good work. All lines must be accurately measured and drawn in position as shown. This frame style is made in four pieces, and attention should be paid to the mitred corners and their joints so that a really good job will result. Study the illustration, and it will be seen that the material has been marked out with vertical lines, and these are cut right through while the horizontal lines crossing them must be half cut or deeply scored on alternate sides of the thick paper or board used. This emphasizes the importance of good stout material.
together with a plain, stiff base-sheet or card at the bottom, thus making up the completed frame. All sides are fashioned or moulded carefully with the hands after cutting, scoring, and mitring.

## Lettering

All forms of lettering are useful for many purposes, quite apart from the exercise gained in working out letters and figures. Paper sculpture letters are very effective, and this is because they are not merely flat letters, but moulded with the fingers after scoring, providing a threedimensional effect (illustration G). In addition to word-making, lettering is used in many forms of display, motifs and announcements which may be required in schools or elsewhere. In paper sculpture, letters are cut to shape, scored, and folded. Lettering can be large or small; it depends upon the use and the distance from which one has to read the words thus made up.

The styles may be copied from a standard book of lettering, which can be obtained from the local public library or bought at an art shop.

Practice in the beginning with one simple style is better than going off into lettering haphazardly. Looking at a type-
harmonize with the rest of the layout.
Each individual letter when cut and moulded should be carefully laid out, well-balanced, and spaced. A drawn line is helpful in getting the necessary layout of letters. Always measure out the space or area to be used, so that once the size of the letters has been decided, these will fit into the poster or design without cramping. The beauty of paper sculpture letters is that they may be juggled around in order to get the best distribution, while painted lettering cannot be removed, and must stay where painted. The study of the printer's layout, the newspaper headings and titles will give some idea of letter layout and distribution.
In the place of free cut or drawn letters on white paper or card, stencils may be obtained from which accurate letters in many styles may be taken. All that is necessary afterwards is to mark and carefully score the individual letter in order to obtain the desired paper sculpture character or moulding.
Stencils, which are obtainable in zinc plates or made from oiled boards, may be circular or oblong in shape, so that the necessary letters may be progressively traced out. There are, of


F-Border and friezes
The material is now bent or fashioned in the hands after cutting, and it must be bent away from the half-cut or deeply scored surface. In phase two of the illustration, it will be observed that one section of the frame has been finished, and combined by clips stapled together at both ends of the work.

In the third phase two separate sections are joined together at the mitred corner, and some reinforcing material is used to give added strength. Gummed tape, which is available in white, will come in handy for this. Obviously, where a frame is being worked out, four sides will be necessary, and all four pieces or sections are fixed

face book it will be seen that letters are consistent in height but not always in width. Many artists create their own special style of lettering, and while this is not recommended, as the variety of styles already available covers most needs, creative lettering is rather different in the case of paper sculpture.

Styles worked upon should be legible at the desired distance. Certain work calls for a bold clear-cut type or letter, while other work demands fancy styles. Lettering may be a part of the tableau, design or picture; the style chosen must
course, many methods of obtaining drawn letters, but the square method of vertical and horizontal lines, say four each way to the inch, is perhaps the best for desk work. Stand at a distance when placing lettering down on to backgrounds, so that the ultimate effect may be gauged. If the message can be read easily at some distance, the lettering is successful; otherwise try again.

Finished lettering may be coloured or hand-tinted with poster colours if desired.
(F.T.D.)


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## ADI A CANOPY TO YOUR DOOR

fairly strong timber to give an appearance of solidity, say, 3 in . by $1 \frac{1}{2} \mathrm{in}$. The timber should be planed smooth on all


THE illustration shows how the provision of a simply-constructed canopy can greatly improve the appearance of a doorway. Furthermore, the canopy affords a certain degree of protection from the weather to visitors and callers at the door. The construction is very straightforward and only a few basic woodworking tools are necessary to tackle the job.
The first thing to do is to make the two supporting brackets illustrated in Fig. 1. These should be made from
sides, and then cut into the respective lengths. Note that one open dovetail joint and two splayed housings are employed in fitting the members together. The roof slopes at an angle of $30^{\circ}$ to the side members. Care should be taken to form these joints accurately, which should afterwards be securely nailed together during assembly. The brackets should be plugged in position on the wall on either side of the doorway.
The roof of the canopy should be made from $\frac{7}{8}$ in. thick tongued and grooved flooring. Allow for the boards to project beyond the edges of the brackets about 1 in . for improved appearance. Once the boards have been fixed in position, cover the canopy with mineralized felt, which is usually green in colour. The edges may be decoratively finished off with a series of scallops. The felt should be carried up the wall a few inches and then covered with a felt, lead or copper flashing to make the join weatherproof.

Complete the job by giving the woodwork two coats of outdoor paint to harmonize with the door.
(F.K.)

## MAKE THESE PRINT TONGS IN PERSPEX

WHEN a large amount of photographic printing has to be dealt with, people with sensitive skin may encounter irritation caused by the developer. Tongs will prevent this, but these may seem expensive when three pairs must be bought to avoid contamination of the solutions.
However, tongs which will look quite professional can be made very cheaply. The material used is perspex, 12 in . by $\frac{3}{4} \mathrm{in}$. by $\frac{3}{16}$ in., and this could be from off-cuts which may be obtained at very little cost. It would be useful to have different colours for the three tongs to prevent confusion. But it must be remembered that in the monochromatic orange light of the dark room safe light only black, orange or white, and transparent material is suitable.

Do not at this stage remove the paper from the perspex as this is designed to
avoid scratching it unnecessarily. Cut to size and round or bevel off the edges carefully. Next, a jig is required, which is made from any 1 in . scrap wood, as in the diagram. Remove the backing paper and at exactly 6 in . scribe a mark against a set square.

The perspex strips are now heated on a flat plate, in a domestic oven, at least three shelves from the source of heat. The heat in the oven should not be too fierce as it would tend to buckle the strips. It is far better to start a little while after the oven has been used for some other purpose, then gradually increase the temperature until the material is flexible. Wear leather gloves to remove the perspex from the oven, then quickly bend and form it round the jig, locating the scratch mark with the top of the pattern.

When cool, the jaws of the tongs may

be ground to a neat bevel, and the finished job can be finally cleaned up with a metal polish.
(D.J.R.)


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And for a professional finish to your woodworking jobs, be sure to use CASCO Wood Stopper for filling cracks and knots, covering nail and screw holes, etc. It sets rapidly giving a hard surface which takes stain, polish or paint. Packed in 8 oz ., 2 lb . and 8 lb . tins ( $2 /-, 4 /-$ and $10 / 6$ respectively) and available in white, cream and 8 wood colours.

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