

# HOBBIES

## *weekly*

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**A Bedroom  
Feature  
with twin  
purposes**



**BED LAMP  
BOOKCASE**

**FOR CRAFTSMEN OF ALL AGES**

**6<sup>p</sup>**





## LEE CASTLE

### AND THE BARONS

**L**EE CASTLE and the Barons were unanimous that *A love she can count on* was their type of song. So they recorded it. But they could have been so wrong. Because they didn't hear it for the first time in the cosy warmth of a living-room. Not even in the comparative comfort of a record shop or dance hall.

They were introduced to *A love she can count on*, in fact, in a cold and bleak gentlemen's cloakroom at Egremont, deep in the heart of Cumberland. That is, it was the first hearing for all except guitarist Mike Liston — he was singing it to the others. Mike first heard the song by the Miracles and suggested that they recorded it for a 'single' release. He attempted to sing it to them in their dressing room at an Egremont dance hall, but the group on stage were making so much noise that the Barons had to file out to the gentlemen's cloakroom where Mike proceeded to recite.

They liked the song and as a result it appears on Parlophone R5151. Of Lee and the Barons, Mike is the odd man out — he comes from St. Helens, Lancs., whereas the rest come from Liverpool. But they are emphatic about their opinion of Liverpool. They think it's great as a place, but very seldom perform there.

In the words of Lee Castle 'There are so many groups there that the money is atrocious. A recording group can be booked for as little as £5 per night! We like to eat, and therefore steer clear of Scouseland.'

LEE CASTLE, at the age of 12, was appearing in a summer season at Blackpool with Terry Thomas and David Whitfield. He was an impressionist at that time, but when his voice broke at the age of 15 he began 'straight' singing and at 17 was in his first rock group. He's 22, dark-haired and 5 ft. 11 in.

THOMAS BENNETT can be seen at most times plucking the strings of his bass-guitar. If he's not doing that you'll find him shouting the praises of chips, scouse, tea, coffee and milk. He's 6ft. tall



weighs 14 stone and used to be a seaman. After that he became a tyre-fitter and a driver before turning fully professional. He's 20.

MEL PRESTON is the drummer. He, too, used to be a driver. Offer him a drink and he'll ask for a lemonade; mention food and he goes bleary-eyed for chicken and fried rice. He's 20 years

old, has green eyes and weighs 9 st. 7 lb.

MIKE LISTON has 8 GCE 'O' Levels and 4 'A' Levels. He studied English Literature at Leeds University but gave it all up for the group. Mike plays lead guitar and is 19 years old. He has been a Butlin's Redcoat and says 'It was the life I led then which made me decide against studying.'

## Miscellaneous Advertisements

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## A twin-purpose feature

# BED LAMP AND BOOKCASE

**T**HIS novel feature serves two very useful purposes in the bedroom, since it is provided with a lamp and a shelf large enough to hold favourite novels, within easy reach for that last cosy read of the day.

It is fixed to the wall at a convenient height above the bed, and so is ideal to put away a book, and switch off the light without having to lean out of bed

at an awkward angle, as is the usual procedure.

Use oak or other hardwood for this unit, if the finish is to be stain and polish. Softwoods may be used for a paint or enamel finish. The measurements are shown in the side and front views in Fig. 1. For the sides A, two pieces are needed each 12 in. long, 6 in. wide, and  $\frac{1}{2}$  in. thick. Before shaping the

in Fig. 2. These slots should be  $\frac{1}{2}$  in. wide and  $\frac{1}{4}$  in. deep.

Next shape the ends of A, using a fretsaw, taking a 6 in. radius for the lamp section, and a 2 in. radius for the bookshelf.

Now cut the shelf B  $12\frac{1}{2}$  in. long,  $5\frac{3}{4}$  in. wide, and  $\frac{1}{2}$  in. thick, and to fit into the housings in A, remove two pieces each 1 in. by  $\frac{1}{4}$  in. from the front

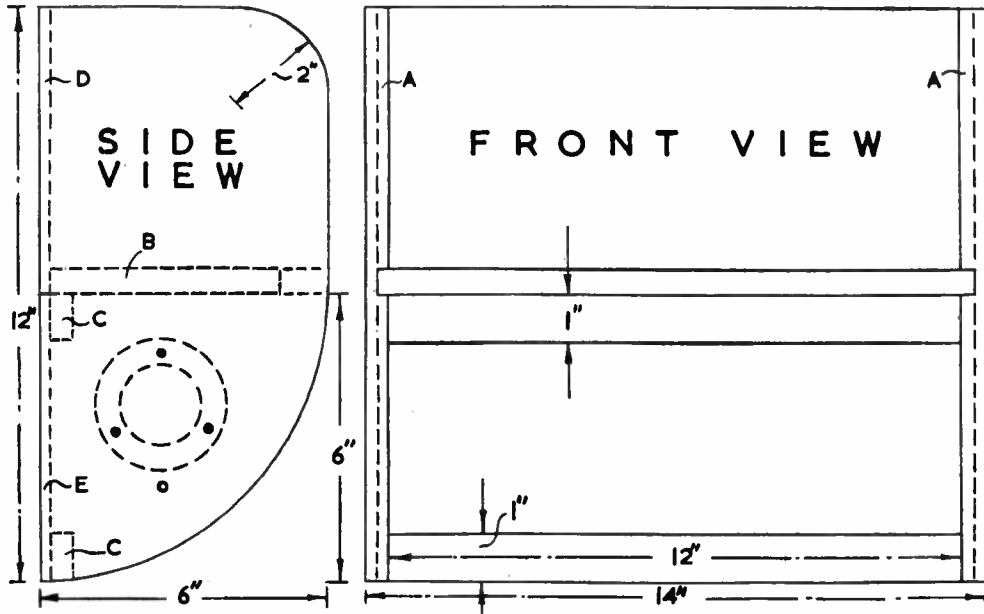


Fig. 1

ends, a  $\frac{1}{4}$  in. rebate has to be cut along the rear edge of each piece to accommodate the back boards D and E.

As seen in Fig. 1, the shelf B is 6 in. from the bottom, and is fitted into housings which are stopped 1 in. from the front edges of the sides, as seen at A

edges, as shown in Fig. 2. The shelf can now be glued and pinned in position.

The back of the unit is in two parts, D and E. Use  $\frac{1}{4}$  in. or  $\frac{3}{8}$  in. plywood, each piece measuring  $12\frac{1}{2}$  in. long by 6 in. wide. The upper half of the back D is a permanent fixture, being glued and pinned in the rebate, and along the back of the shelf.

The lower half E must be removable to give access to the lamp. Two strips of wood C, each measuring 12 in. long, 1 in. wide, and  $\frac{1}{2}$  in. thick, are fitted, as shown in the diagrams, Figs. 2 and 3, and E is then screwed to these cross members, so that it can be removed when required.

Use a batten type lamp holder, screwing it to the inside of one end A, as shown in Fig. 1, with a hole bored

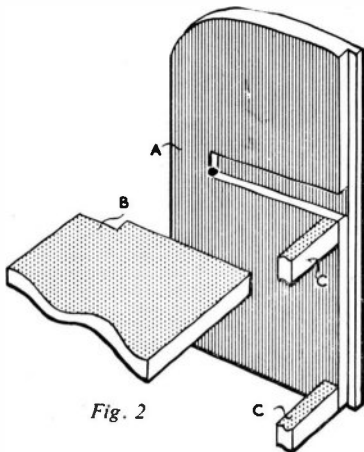


Fig. 2

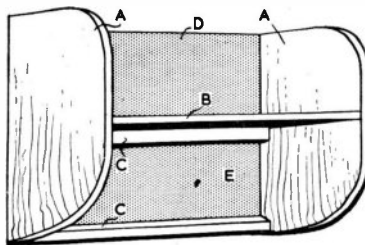


Fig. 3

● Continued on page 21

For your colour slides

# A HANDY STORAGE CASE

As you obtain more and more valuable colour slides, you will realize that some efficient means of storing them is necessary.

The slide case described here does not have the usual slots to hold the transparencies, as their construction would seem too difficult for the average handyman. However, the advantage of this system is that as many as 350 glass, or 700 cardboard slides may be stored. Also, slides may be kept in strict order after showing, for once a slide has been projected it is returned to the end of its compartment, and so on, until all slides in that block have been seen. Then they are back in order once more.

First, two frames are made from the  $1\frac{1}{2}$  in. by  $\frac{3}{8}$  in. wood for the box and lid. Lengths are as shown in the diagram. The corners are glued and nailed for ease. The two hardboard sheets make the base and top of the case, and they are attached to the frames with panel pins.

In the box, strips of  $\frac{3}{8}$  in. by  $\frac{3}{8}$  in. wood are used for divisions. The more experienced worker may prefer to make elaborate halving joints for the cross pieces, but a simpler method is to have four strips of the wood glued in the appropriate places, with three 2 in. divisions between each column. All corners, joints, and rough edges should now be neatly finished and glasspapered. If required, leather cloth or plastic material may be used to cover the case. This makes it look quite professional.

Case fittings are now added, the lid is hinged, and the fasteners and handle are attached to the front of the box, as shown. Provision could be made for a small viewer to be stored in one corner of the case. Finally to stop the slides vibrating in the box as it is being carried, a piece of baize or foam plastic can be glued to the inside of the lid.

A metal handle as shown (No. 6189) costs 9d. (post  $4\frac{1}{2}$ d.) and clasps (No. 6198) are 8d. a pair (post 3d.) from all branches

**MATERIALS REQUIRED**  
Two 5 ft. lengths,  $1\frac{1}{2}$  in. by  $\frac{3}{8}$  in. hardwood.  
One 4 ft. length  $\frac{3}{8}$  in. by  $\frac{3}{8}$  in. hardwood.  
Two pieces of hardboard,  $12\frac{1}{2}$  in. by  $9\frac{1}{2}$  in.  
Various case fittings — Small brass hinges and screws. Handle and case fasteners.

or direct from Hobbies Ltd, Dereham, Norfolk. (E.)

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## Bed Lamp and Bookcase

underneath to take the flex. The light is controlled by a hanging switch, and this is fitted to one end of the flex. One wire is then cut at a convenient point, and the two ends taken through the hole in the side A to the lampholder. A low wattage lamp should be used to avoid excessive heat.

Before fitting the lampshade, rub down the unit with glasspaper ready for finishing. If oak is used, a pleasing effect can be obtained by wax polishing, the wood being left in its natural colour or toned down to blend with the colour of existing furniture. Give two thin coats of white polish, rubbing down after each application with used glasspaper, then apply the wax polish, and burnish with hessian or sacking.

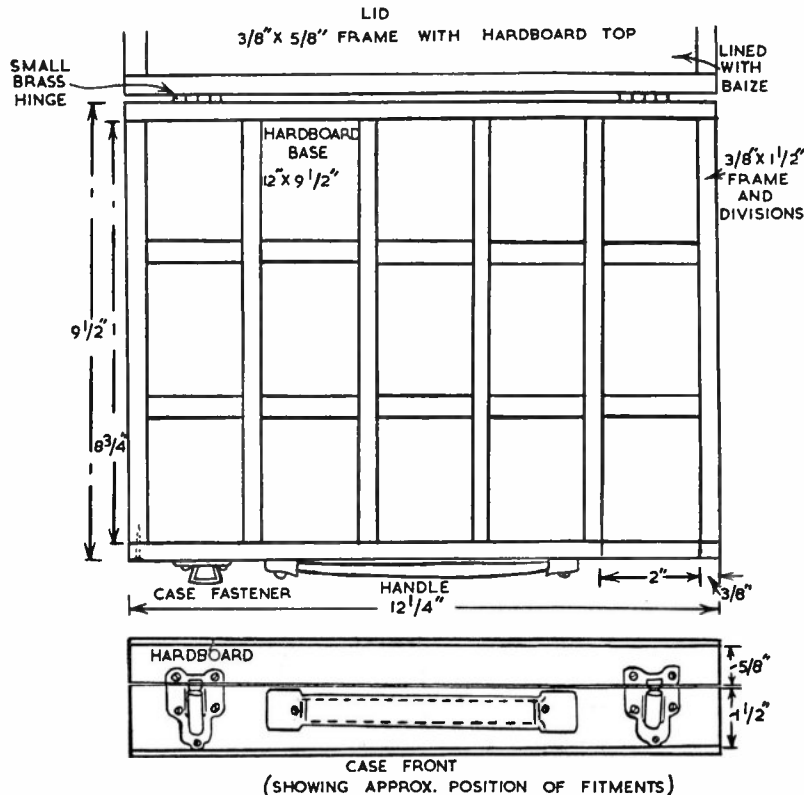
Crinothene, parchment or similar material can be used for the shade. A piece 13 in. by  $9\frac{1}{2}$  in. is pinned along the curved sides, the front of the shelf and the bottom of the lower cross member. Narrow braid or other decoration may be added if desired. (M.h.)

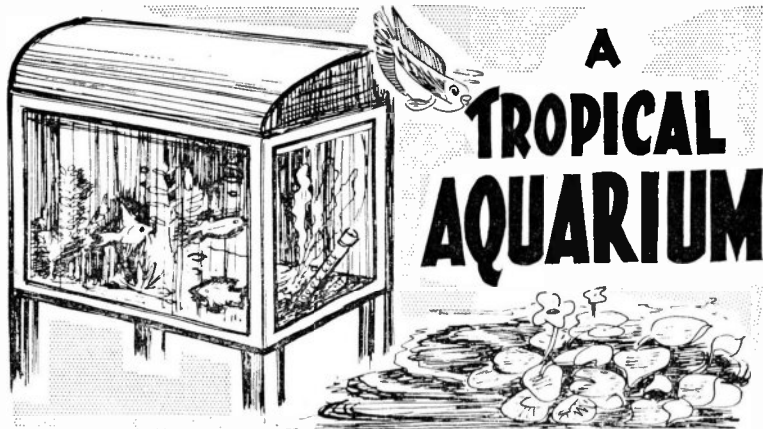
## Practical Household Repairs

By A. T. Collins

THIS book is a valuable money-saver for all homeowners who take a pride in keeping their homes in good condition. All the important aspects of home maintenance, preservation, modernization and repair are covered by an expert who knows just how to put his knowledge over to the layman.

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# A TROPICAL AQUARIUM

**S**OME fish-keepers fill their tanks with filtered rain-water, but this is not really necessary. Ordinary tap-water is not harmful to tropical fish, but as some town supplies are rather heavily treated with chemicals it is a good idea to draw off the amount of water that is needed to fill the tank and to keep this in open buckets in the room in which the tank is to be installed. It should be kept exposed to the air for about three days before being put into the tank.

To pour the water direct on to the aquarium gravel will only disturb it, so the gravel should be covered with a sheet of newspaper and the water poured gently on this. As the water level rises the newspaper will float up and can be lifted off when the tank is full.

The next step is to put in the heater. This must not be buried in the gravel, but must be laid on top of it. It can be prevented from moving by putting pieces of artificial stonework round it. This stonework helps to give the aquarium a better appearance and is useful for providing hiding places for the more timid fish. The heater wires will look rather out of place at this stage, but later they will be hidden by the aquatic plants. After installation the heater must be switched on to bring the water up to the proper temperature.

Every tank has to be fitted out with aquarium plants. There are several reasons for this. The plants give out oxygen to help to maintain fish life, provide anchorage places for some kinds

## Part 2—STOCKING THE TANK

*By N. Wainwright*

of fish egg, make hiding places for the 'fry' (young fish) which is very necessary as some parents are cannibals, and also their leaves give a certain amount of shade which the fish need from time to time. The plants themselves are nourished by fish excreta, so while the plants are necessary for the well-being of the fish, the fish are essential for the well-being of the plants.

There are several different varieties of aquatic plant, growing to different heights. The tallest growing plants should

be put at the back of the tank, with the smaller at the front. A tank should not be over-planted, and periodically the plants will need thinning out. The plants usually propagate by means of runners which spread through the gravel, and send up a new plant at a little distance from the 'parent'.

### Plant in clumps

Perhaps the best under-water plant for the beginner is *Vallisneria*. This is a slender, grass-like plant that looks at its best and is most useful when planted in small clumps. The plants can be bought at any water-life stores and should be brought home wrapped in damp paper. The plants must not be allowed to dry out before being set-out.

When planting, a small hole is made for the roots, which must be well spread out and the gravel firmed back over them. To help to keep them anchored a small strip of lead (similar to that used by anglers) can be folded round the base of each plant. The strip must not be pressed round so tightly as to interfere with the growth of the plant.

With the tank planted out and the water brought up to the right temperature the tank is ready for the introduction of the fish.

As regards fish there are two kinds of tank that can be kept, the 'specialized' and 'community'. In the specialized tank fish of only one particular breed are kept, but in the community tank there are a number of different breeds.

Not all breeds of fish will settle down happily in the same tank, so some care has to be taken in selecting the kind of fish that are to go into a community tank, but this latter form of tank is by far the best for the beginner. The brief notes on fish breeds now to be given are of those species that do well in a community tank.

It will make the description of a fish easier if the different 'points' are understood. These points have been shown on the rough sketch of a fish in Fig. 2, but it must be realised that this drawing is

● Continued on page 23

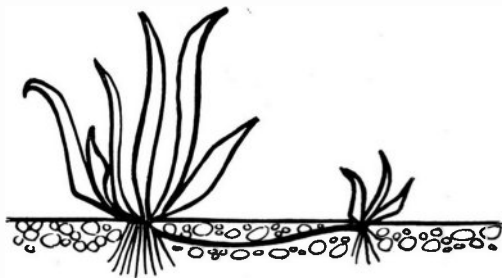


Fig. 1—Aquatic plant spreading by means of runner

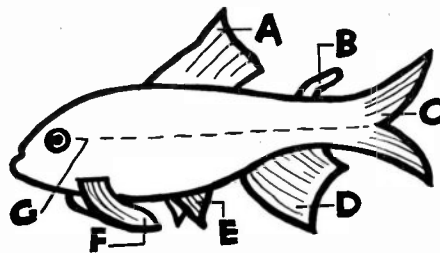


Fig. 2—The 'points' of a fish. A. Dorsal fin. B. Adipose fin. C. Caudal (or tail) fin. D. Anal fin. E. Pelvic fins. F. Pectoral fins. G. Ventral line

# Wardrobe Novelty

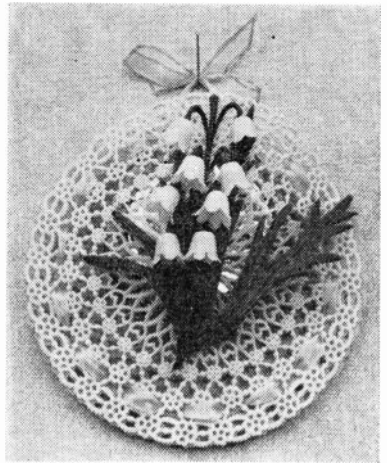
THE pleasing little novelty shown in our illustration is a useful accessory for the wardrobe, designed to hold either a moth repellent or dried lavender. It is easy to make, yet ideal as a fund raiser for bazaars or bring and buy sales.

You will need a pair of small plastic doilies about 4½ in. in diameter, and which may be of the same colour or in contrast. For example, a white doyley looks very nice with a pale blue one at the back. Other combinations are quite good, but we have to remember that they are joined together by a matching ribbon.

A ¼ in. wide ribbon is threaded through a series of holes to bind the two together. While the binding of the two doilies should finish near the top to leave an opening, it is best to continue threading on the front for the sake of decoration. The back doyley should then have a length of ribbon threaded to

finish up with a small bow for hanging purposes. When the bow has been made a few stitches at the back with needle and thread will keep this permanently fixed.

You will see that we have also added a small plastic flower to decorate the novelty, and there are many similar sprays available at small cost. All you



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*By Anne Bradford*

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need to do is to fasten to the front doyley by needle and thread at a few suitable points.

Finally we add the filler in the pocket which has been formed between the two doilies. There are small cakes of moth repellent available to fit the pocket, or you may insert a small bag of dried

lavender. Should you be making a few of these for a sale of work it is wise to have different fillers. They are very easily made, cost little, and if sold at a reasonable price are just the thing for fund raising.

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● Continued from page 22

## AQUARIUM

not of any particular breed but shows the points that are applicable to all fish.

### Fish to choose

ANGEL FISH are well known and popular but are at their best when kept in small shoals of about four. They are yellowish to olive-green in background colour, barred with almost jet black stripes. Their outline is nearly circular. For a community tank the fish should not be of a larger body diameter than about the size of a penny. They prefer a fairly large tank and do best on live food. (More will be said about feeding later.) When out of sorts this breed loses its colouring in the bars.

BEACON FISH are sometimes called 'head and tail light' fish. The fins are golden, with the body colouring olive-green to silver, but they show bright orange markings over the eyes and tail and have a black mark at the base of the latter. The breed is not fussy as regards food, and it is an easy species from which to breed.

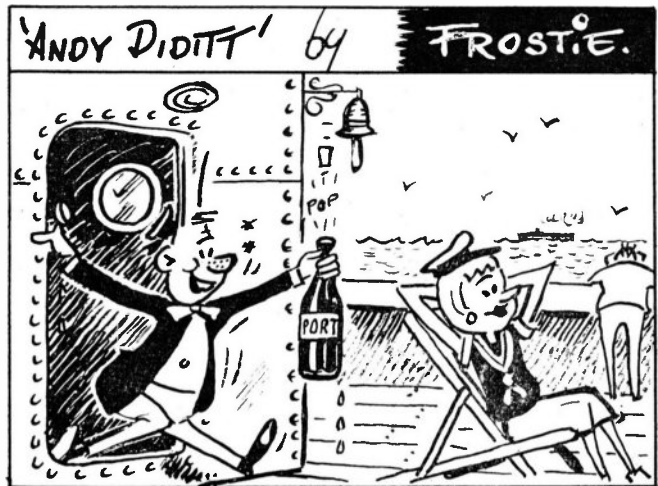
BLACK MOLLIES are jet black when fully mature and look almost like a piece of swimming velvet. It is a breed that prefers dried foods and although it grows to a larger size than most members of the community tank, it is quite peaceable.

The BLACK WIDOW should never be

kept as a single specimen, as it is then likely to become aggressive, but in small groups of its own kind it is peaceable. The breed has a black anal fin with the black extending up into the dorsal fin, but as the fish gets older the colouring of the fins gets more mottled. The body

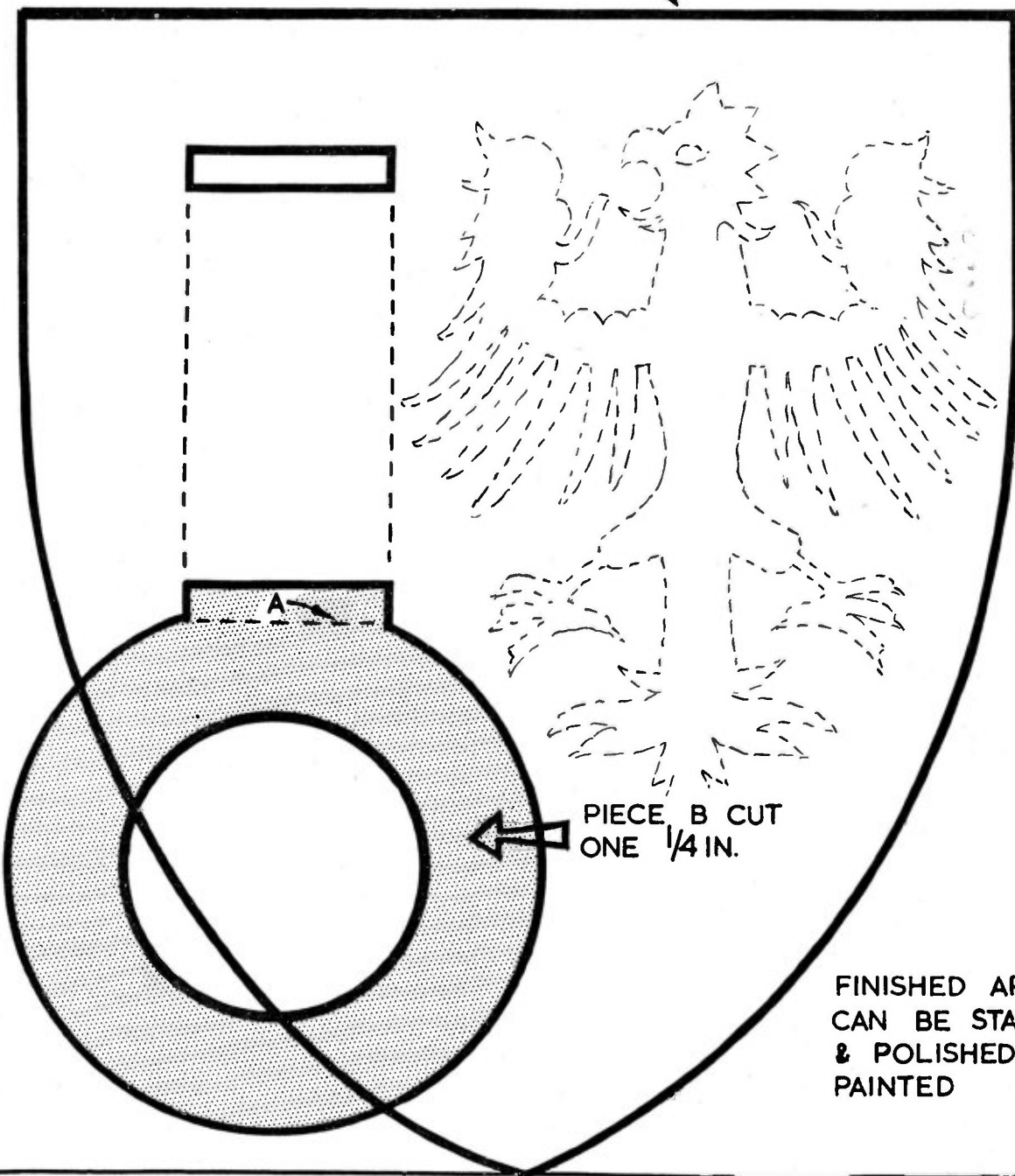
colour is greenish with two vertical black lines. Black widows thrive on dried food, though they appreciate an occasional meal of raw scraped liver.

A few more breeds will be described in the next article, together with instructions on feeding and tank maintenance.



"MA! I CAN TELL PORT FROM PORTSIDE AT LAST!!"

PIECE A CUT ONE 1/4 IN. →

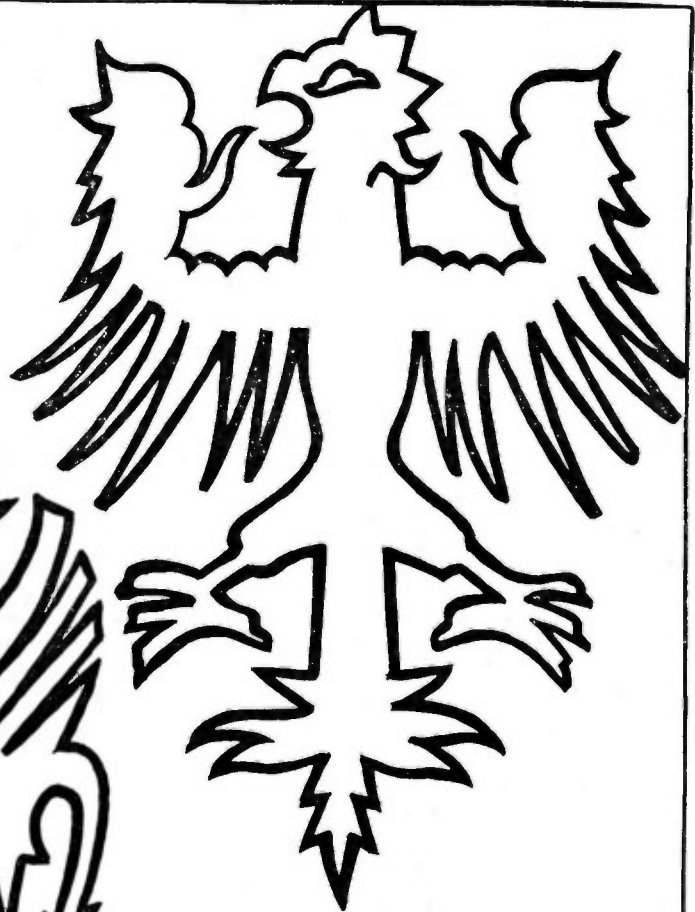


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# PHOTOGRAMMICS

**I**N a previous issue we considered some elementary principles in making photogrammics with the aid of shading screens, and we now propose taking these experiments a little further.

In Fig. 4 we have an entirely different project where the Plastitone screen separates the two animals by changing the direction of the lines.

*By S. H. Longbottom*

Here the little animals were deliberately sketched in an overlapping position, necessitating the preparation of two separate images. A suitably sized piece of transparent tracing paper was folded in half, a piece of carbon paper placed on the top half, and the original sketch over both, the pieces being held together firmly by paper clips.

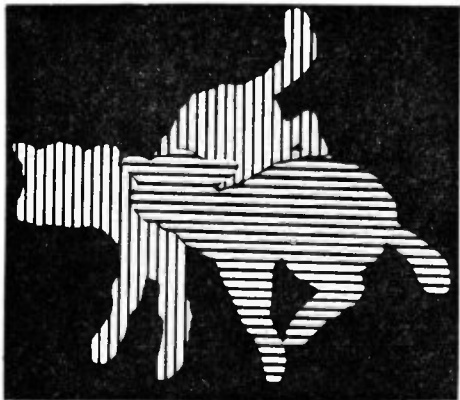


Fig. 4. Above are negatives of the separate images combined to give the result below

Fig. 5. Another result from combining two negatives



A first tracing was made of the front animal, the carbon paper removed and transferred to the lower tracing paper, when a tracing was made of the rear animal. Leaving the carbon paper in the centre a frame was now ruled to ensure correct register in the later stages of processing. For this reason the tracing paper was kept folded and not cut in half until the frame had been ruled.

The tracings were now filled in with process black to give a dense black image, and to become objects for laying on the printing paper, not unlike the photogram method.

The first step was to produce a horizontal line printing on the sensitized paper, achieved by laying on a line screen, and making an exposure. Note that it is advisable to lay a sheet of plate glass on top of the screen to ensure

perfect contact. Following this one of the animal tracings was placed in position, and a further exposure made, ultimately giving a picture of the animal in horizontal lines with a dense black background. A picture of the second animal was similarly made, but with the lines in the vertical position. It should be noted that we could make prints from the tracings to give a clear, white image, and then affix the Plastitone film direct to the prints.

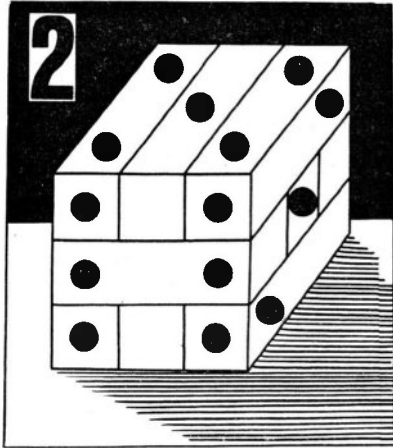
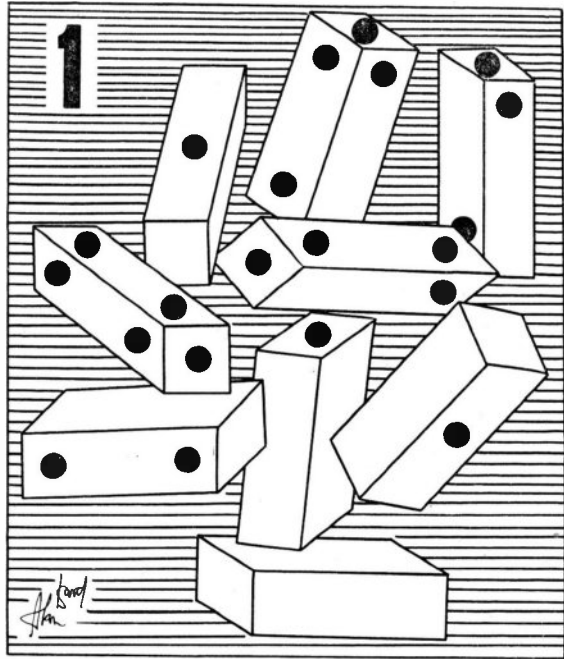
These two photograms were then regarded as negatives for the production of the final picture. These are paper negatives and can be used in direct contact with sensitized paper, emulsion side to emulsion. Sometimes when using paper negatives it is advisable to brush the backs with a mixture of half castor oil and half petrol to make them translucent. But this is not always necessary when the negatives have no half tones, as in this instance; yet we would advise the use of a hard grade of printing paper.

● Continued on page 27

# THE 'DOTTY BLOCKS' PUZZLE

**M**AKE nine identical wooden blocks measuring 1 in. by 1 in. by 3 in., and having square ends. These blocks can be stacked to form a perfect 3 in. cube. Paint the blocks white, then paint black spots upon eight of them — exactly where shown in Fig. 1.

It is important to hold each block, as illustrated, before you mark on where



the spots must go. When the paint is dry, you will have a fine puzzle to try the wits of your family, friends, and party guests — or to give away as a present.

The aim of the puzzle is to assemble a big dice from the nine pieces. The numbers of spots on the respective faces on the dice must be one to six — and spots

upon opposite faces must always total seven.

For your guidance we have drawn a picture (Fig. 2) to show you how the blocks must be positioned. Most people attempting the puzzle assume that all the blocks have to point the same way.

Make a cardboard or wooden box

into which the parts can be fitted snugly in a cubic arrangement. Paint the outside of the box to resemble the completed dice exactly — but without any lines to suggest how the blocks must actually be assembled. Type the necessary instructions on a slip of paper, and paste this inside the box lid. (A.E.W.)

● Continued from page 26

## PHOTOGRAMMICS

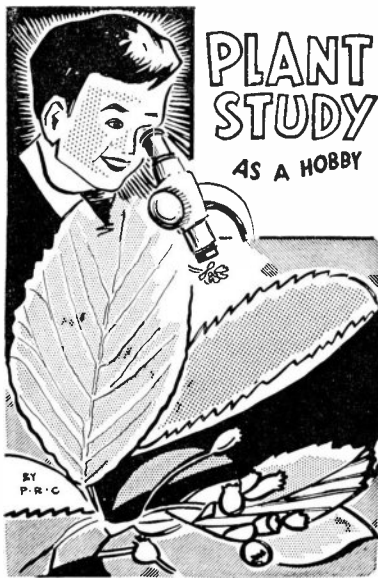
A new sheet of sensitized paper is now laid on the enlarger baseboard with one of the paper negatives on top — it does not matter which — and fitted so that emulsion is to emulsion, and the corners are exactly together. An exposure is made by switching on the enlarger lamp, followed by replacing the first paper negative by the second, when a further exposure is made. On development we have the result as shown. No doubt you will realize that it is necessary to make test exposures to ensure correct printing.

The foregoing has revealed a few experiments with the aid of Plastitone screens, and the same or slightly modified methods can be used to produce all kinds of fascinating pictures or designs. A few twigs or grasses can be laid on the paper for one photogram with another set for a second. It is then possible to combine the two by treating as paper negatives, using a line screen for one when different tones are produced. Ornamental grasses at the seeding stage, roses in bud, flowers and the like can be

similarly treated, as shown in Fig. 5.

While the examples shown are mainly subjects in black on white, we can reverse the process by using positive prints as paper negatives in conjunction with screens crossed at right angles. These produce intriguing effects. We can also use contrasty negatives similarly to make highly effective pictures.

Cellulose sheet acetate is readily obtainable from Hobbies Ltd., should you care to make permanent screens, and we would advise that same should be kept between sheets of thick cardboard, so that it will keep perfectly flat. There is, no doubt, that with a little imagination you will be able to produce all kinds of unusual designs by these methods apart from the fact that it will provide a good exercise in processing.



shoot), the cotyledons, or seed leaves (only one in monocots), the radicle (developing into the root), and the hypocotyl, the part between where the cotyledons are attached and the upper end of the radicle. This varies in length in different seeds.

## SEEDS AND GERMINATION

By P. R. Chapman

These parts are indicated in the diagram, and a careful examination of your soaked bean seed will show them. Before removing the seed coat or testa from the soaked bean, examine the outside carefully. A scar at one end is known as the hilum; this is the point at which the bean was attached to the pod, and a small hole at one end of the hilum is the micropyle.

### Types of germination

To study the germination of seeds, they have merely to be kept moist. Again beans and peas make ideal subjects for

study, and the simplest way is to place a loose roll of blotting paper inside a glass jar (or a large glass tumbler can be used). The peas or beans are then pushed down between the paper and the glass. An inch or so of water is put into the bottom, and the whole placed in a warm spot for a few days.

Soon the radicle will be seen to emerge and grow downwards, whilst the shoot or plumule grows upwards. This growing upwards and downwards is a response to gravity and is considered to be due to growth hormones in the plant tissues. If a partly germinated bean is placed on its side, so that the root and shoot are horizontal, but not on a flat surface so that movement is prevented, the shoot and root will soon grow at right angles so that they are again pointing up and down. Therefore it does not matter which way up you sow a seed.

You can now demonstrate the two types of germination, one or the other of which is shown by all flowering plants. For this it will be necessary to start with either broad beans or French beans on the one hand, and runner beans or peas on the other. In the case of the former, the hypocotyl (between cotyledons and root) elongates and the cotyledons are forced above the soil, or upwards in the case of your glass jar experiment. This is

**I**N the last article we merely mentioned that the fruit contained the seed of the plant, and went on to describe different types of fruits. The seed itself however is such an interesting and important structure that it needs an article to itself.

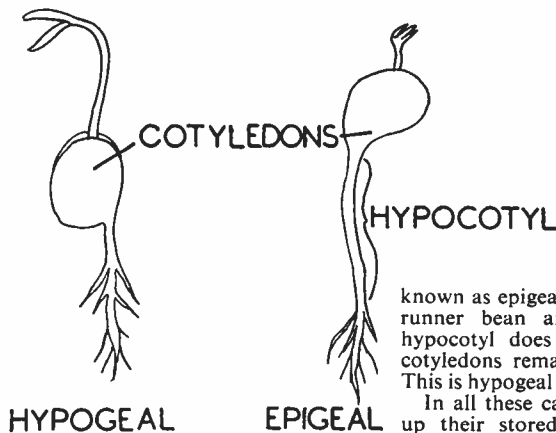
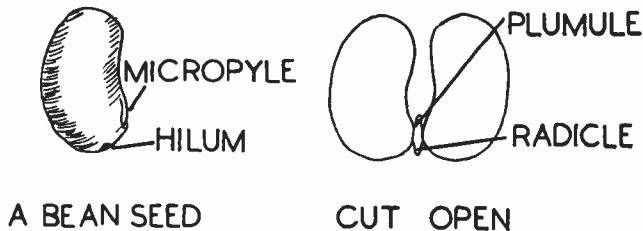
Although we saw that many fruits provide important articles of food, a number of types of seed are greatly valued in this respect. The most important of these are wheat and rice, upon which many millions of people depend all over the world. In this country, everybody knows how much we use and enjoy peas and beans. Peas are simply seeds, as are broad beans, but in the case of runner and French beans, we eat the entire fruit, including seeds.

Without seeds also, we should not be able to reproduce most of our garden plants and crops. Many oils are obtained from seeds, those from peanuts, coconuts and cottonseed being used, amongst other things, in the manufacture of margarine and soap. Linseed oil, used in paint manufacture, is obtained from the seed of the flax.

### The parts of a seed

As we saw in an earlier article, the spores of more primitive plants are single cells, whilst a seed is really a plant in miniature, being an 'embryo' surrounded by the seed coat or 'testa'. Although many of our flower seeds are tiny, an excellent seed to examine is that of the broad bean or runner bean. It is best to soak it in water for a day beforehand; it will absorb water and swell, making it easier to examine.

There are four parts to a typical seed, the plumule (which develops into the



*The various parts of typical seeds*

known as epigeal germination. With the runner bean and pea, however, the hypocotyl does not elongate and the cotyledons remain below ground level. This is hypogeal germination.

In all these cases the cotyledons give up their stored food to nourish the young plant until it is able to fend for itself, but when they are above the ground, they turn green and help in the

## GERMINATION

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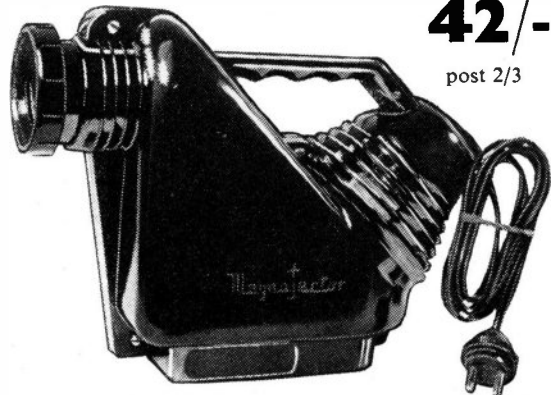
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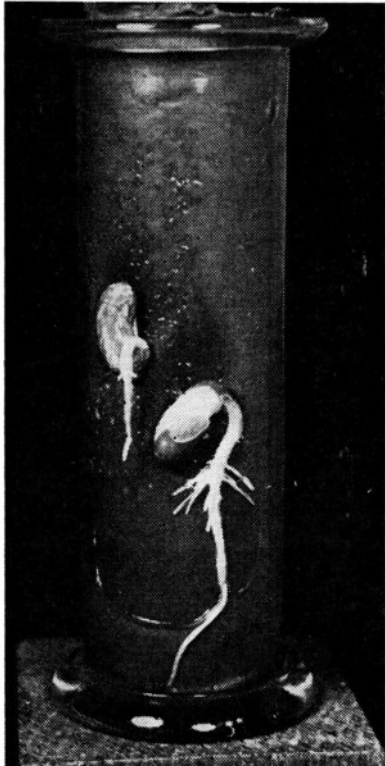
manufacture of food by the action of light, or photosynthesis.

After a while, when the first true leaves of the plant are large enough, the cotyledons wither away. If you try the experiment with different fairly large seeds you can classify them into one or other of these types of germination. Apart from the peas and beans mentioned, other seeds to try are sunflower, marrow, melon, maize, radish, onion, etc.

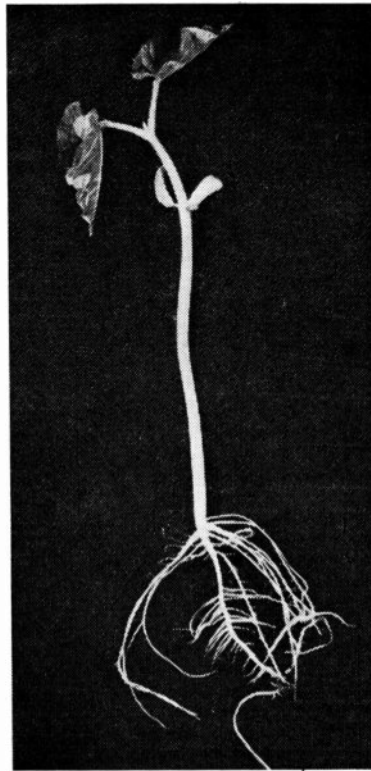
#### Percentage germination

The commercial seed raiser tests samples of his seeds (or he should do so!) by estimating what is called their 'percentage germination'. The amateur botanist can easily carry out similar tests on seeds he buys, or saves from his own plants. The usual apparatus is a glass Petri dish (a flat dish with a cover, as used in bacteriological work), but a saucer with a sheet of glass to cover it will serve quite well. A few filter papers, or two thicknesses of blotting paper should be laid in the saucer, and thoroughly wetted.

The seeds to be tested are then scattered on the surface of the wet paper. If measurements are to be made, they



*Experiment to show French bean germination. Radical emerged, cotyledons can be seen*



*French bean seedling, showing elongated hypocotyl and cotyledons (below true leaves)*

must be counted out; at least 50, preferably 100 seeds. The saucer is covered with the sheet of glass and stood in a warm place for some days. Once germination starts, the number of seeds appearing each day should be noted, until no further germination takes place.

Most seeds germinate equally well in light or dark, but there are some that need light and others the absence of light. You can also test this if you care to do the germination test in duplicate. The two saucers should be together (to avoid differences of temperature) but one covered with an inverted cardboard box. If you have started with a hundred seeds, the number germinating will of course give the percentage, otherwise a simple calculation must be made.

#### Storage of food

We have mentioned that the seed stores food for the young developing plant. In some seeds, such as pea and bean, this is stored in the cotyledons, whilst in others, such as castor oil seed, wheat and other cereals, the food is stored in a special structure known as

the endosperm. It is this endosperm which gives us the flour of wheat and oil from oil-producing seeds.

#### Dispersal of seeds

We must not leave the subject of seeds without mentioning briefly the wonderful methods by which plants are able to spread their seeds. The most important agents for this spreading are animals, wind and water.

In the case of wind dispersal, the tufted seeds of dandelion are well known, and many garden weeds are spread in this way. Sycamores and related trees have winged fruits, so that the seeds can be spread some distance from the tree. Many waterside plants have floating seeds or fruits; a notable example, although not of this country, is the coconut.

Animals, including man, are responsible for the dispersal of many types of seeds. Some plants have spiny or barbed fruits which attach themselves to the coats of animals, to be carried long distances before being rubbed or knocked off. The fleshy fruits are often eaten by animals and the seeds either removed before eating, or released after passing through the animal's digestive tract. Squirrels are responsible for the dispersal of many nuts, which they bury and forget.

Man himself, apart from carrying small seeds, such as that of grasses, on his clothing, deliberately spreads seeds far from their native homes. Finally, some plants have explosive fruits, the seeds being ejected to a considerable distance. Gorse, Impatiens and Euphorbias do this.

Next: The Succulents — Plants of dry places.

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#### A SQUARE BRADAWL

A SMALL chisel or a screw-driver which has come to the end of its useful purpose can, nevertheless be fashioned into a very handy



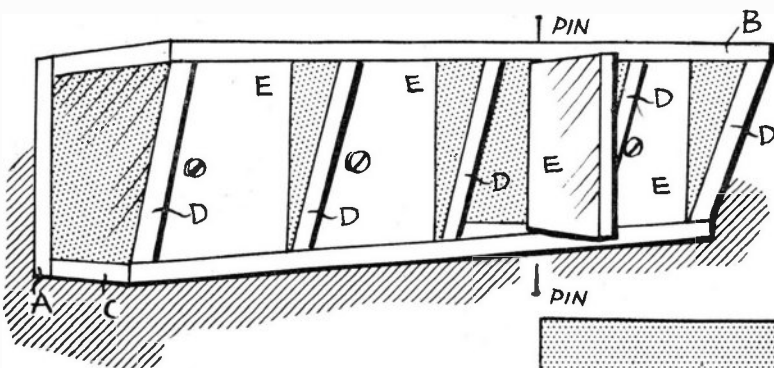
bradawl for making small screw-holes, etc. Grind about 2 in. of the shank carefully, making sure that the steel does not get too hot. Grind to a square point, and use the tool like a reamer.

# DOLL'S CABINET

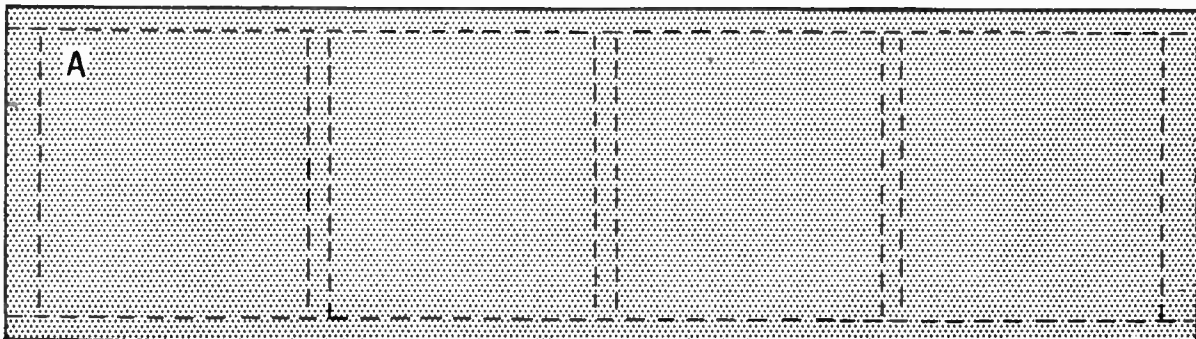
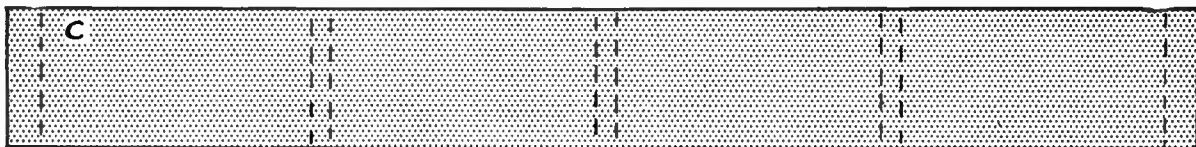
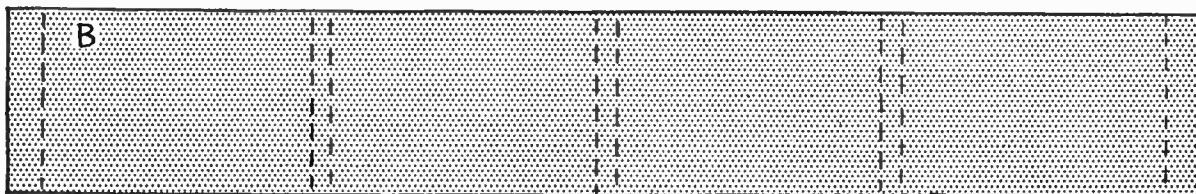
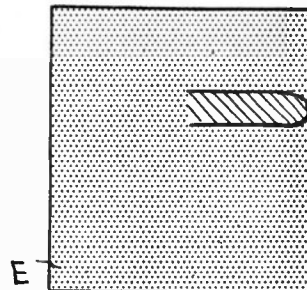
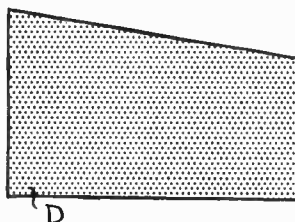
**D**ESIGNED to an approximate scale of  $\frac{1}{4}$  in. to 1 ft. these wall cabinets will make a useful addition to the doll's house. The parts are cut out with a fretsaw and are assembled as shown in the diagram. Finish off by painting.

You will need one of A, one of B, one of C and three of D cut from  $\frac{1}{8}$  in. wood; also two of D and four of E from  $\frac{3}{16}$  in. wood. One edge of each door E is rounded and the doors are then pivoted by means of  $\frac{1}{4}$  in. fretpins as shown. Use  $\frac{1}{4}$  in. roundhead screws as door knobs and provide small scraps of wood as stops.

(M.p.)



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