HOBBIES weekly

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Hobbies

FOR CRAFTSMEN OF ALL AGES

6D.

GREAT SNAKES!

By L. P. V. Veale

IT is probably true to say that most people who have never been to the tropics, when they hear that a friend is just about to go there imagine that he or she will encounter numberless snakes of all kinds and sizes.

If we consider the stamps that come from the tropical regions, although we find that every other kind of animal has been illustrated yet very few depict snakes for us. No doubt the designers of stamps wish to avoid a topic which might be distasteful.

Curiously one generally finds that people are either repelled by snakes or else fascinated by them. The fact remains that it is difficult to find many stamps which do picture snakes sufficiently clearly to identify the species. There are some that appear in margins or in corners of stamps but these do little except show that snakes are to be found in the country concerned.

One fascinating feature about snakes is their method of progression — by a series of side to side movements. But if you have ever seen a snake trying to make progress on a very smooth surface you will have noticed how difficult this is. Snakes do not entirely rely on the side to side movement. They have scales on the underside of their body, the leading edges of which are covered by the one in front so that only the trailing edge has any bearing on its movement. If it is on a rough surface this trailing edge can grip something and this enables the snake to lever itself forward. But if the surface is very smooth then the snake can only wriggle from side to side without any forward movement.

One of the best snake stamp designs is that which comes to us from Mozambique. It was issued in 1937, value 30c, printed in ultramarine, and it is well worth examining with a good magnifying glass. First of all note the shape of the stamp. Usually an uncommon shape such as a triangular is decided upon to induce collectors to buy them but here you have a subject which could not be portrayed anything like so well on a rectangular stamp as on a triangular.

See text for reference to the stamps

This African Python may reach a length of 23 feet, though 16 would be considered a big one. This snake has no poison; it wraps successive coils around its victim and crushes it to death, then swallows it head first. They are nocturnal and usually live in trees near water, waiting to catch an unsuspecting prey as it goes to drink.

French Equatorial Africa in 1947 issued the stamp (bottom left) showing an excellent picture of a rhinoceros and for this animal the rectangular shape is the best. But look at the snake at the right hand side of the stamp — it certainly could not be called a good picture, could it? In fact it looks as though the snake had been put there just to fill in that side.

Another snake appears on a French Empire stamp, this time from The Indian Establishments, the name given to those tiny settlements on the Eastern coast of India — all that remains of a one time mighty French Indian Empire. Unfortunately the picture of the snake is very small, but the snake is far from insignificant. It is the dreaded Indian Cobra with its hood spread out — the warning sign that the reptile is about to strike. The poison is injected into the victim through two large fangs. Ordinarily these fangs lie folded back in the snake's mouth, but when the snake strikes, the fangs which are hollow and very sharp, are raised up and forced into the victim. In the snake's mouth there is a bag of venom and the act of striking forces a small drop through the fangs into the victim.

This action will be quite familiar to those who have seen a rattlesnake being made to give up its poison into a wine glass. It has been demonstrated on television a number of times. By the way the snake's tongue has nothing whatever to do with it's strike. The tongue is some kind of sense organ — there is no question of a sting.

From Liberia we have a set of five stamps, triangular in shape, all different colours, but all the same design and all the same value. This may appear a little curious at first, but you will notice that on the base of the one shown (top right) there is the name Monrovia. The other four stamps will have the names Harper, Greenville, Buchanan and Robertsport. These are the five main towns of Liberia and each one had its own stamp.

The snake shown is the African Puff Adder which grows to some four to five feet. It is heavy in build and sluggish by nature. The markings on its body blend so well with the ground that it is most difficult to see, but like most snakes it is just as frightened of man as man is of it, so its camouflage helps it to escape. The Puff Adder gets its name by the fact that

● **Continued on page 212**

Accumulators and Charging

ACCUMULATORS are of two popular types — lead acid, and alkaline. The lead acid accumulator is used in motor vehicles, motor cycles, scooters, and for driving models.

Lead acid cells

A lead acid accumulator cell supplies about 2 volts. Cells connected in series form a battery — 2 cells for 4V, 3 cells for 6V, and 6 cells for 12V. A cell has positive and negative plates immersed in dilute sulphuric acid electrolyte, Fig. 1.

By 'Modeller'

For low discharge rates, single positive and negative plates may be used. But for higher rates, several positive plates and several negative plates are provided in each cell, to increase the plate area. Separators (insulated plates of porous plastic, wood, glass fibre, or similar material) are placed between positive and negative plates, to avoid short circuits from conductive material.

A basic cell has negative of spongy lead, and positive plates of lead peroxide, in dilute sulphuric acid. During discharge, lead sulphate forms and water is liberated, so that the electrolyte is further diluted. As a result, the electrolyte specific gravity falls. During charge, the action is reversed, and the SG rises. The SG thus shows the state of charge of the cell, as described later.

The active plate material is supported in grids, to obtain a durable plate. High discharge cells may have the plate material in tubes or cartridges.

Scooter, vehicle, and similar batteries usually have three cells (6V) in an insulated container, with filling vents.

Capacity

The capacity of a battery shows its ability to provide current. The capacity is generally given in Ampere Hours (AH) at the '10 hour rate.' This means that a 20AH battery could deliver 2 amperes for 10 hours. A 60AH battery could supply 6A for 10 hours.

The actual capacity increases with slow rates of discharge, but is reduced by fast discharge rates. Low temperatures also reduce the capacity. The capacity may also be reduced by crumbling of the active plate material, or by sulphation of the plates (due to the battery being left discharged), or by allowing the plates to be exposed to air.

When the electrolyte level falls from evaporation, it is restored by adding distilled water. But if electrolyte is lost by spilling, it should be replaced by fresh dilute sulphuric acid of the same specific gravity.

Specific gravity

The specific gravity shows the state of charge, and is read with a hydrometer. This has a nozzle and rubber bulb, so that a sample of the acid can be drawn up, as in Fig. 2. The SG is read on the float scale, level with the surface of the acid. Normal specific gravities, at a temperature of about 60°F, or 16°C, are:

Fully discharged	1110
Half charged	1200
Fully charged	1280

The SG of water is 1·000. The decimal point is often omitted, so that water would be 1000. Similarly, 1110, is really 1·110. Some float scales have the decimal point, as in Fig. 2.

The exact SG depends on the battery, and is given by the maker. Naked lights should not be taken near the cell vents, when the cell caps are removed. The top of the battery should be kept dry and clean. Terminal corrosion can be reduced by rubbing on petroleum jelly.

Eventual loss of plate material lowers the ability of the cells to deliver heavy currents. A heavy load tester is sometimes used to check the cells. This instrument consists of a voltmeter with a low resistance in parallel. If a battery does not maintain its voltage when a heavy load is drawn, and it is correctly charged, a new battery will be required. The load test can be done by connecting an ordinary voltmeter to the accumulator, then switching on items which draw a heavy current, such as headlights on a vehicle, or the motor driven by a model accumulator. If the voltage then falls

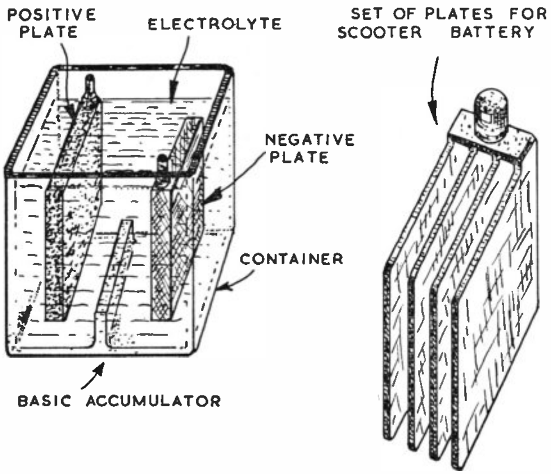


Fig. 1—Parts of an accumulator

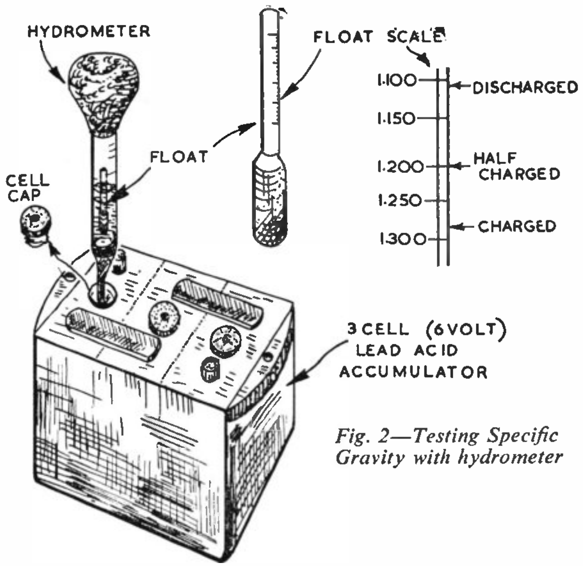


Fig. 2—Testing Specific Gravity with hydrometer

quickly, this shows the battery is in poor condition.

Small non-spill cells have jelly electrolyte, or the electrolyte is absorbed in non-conducting material. A little distilled water may be added at the vent before charging. After charging, any excess may be removed. As the SG cannot be measured, because there is no free acid, charging is usually at a given rate, for a particular time. For example, 15 hours at 1 ampere, for a 15AH battery.

Alkaline cells.

These are sometimes used for models and other equipment. Acid must never be put in them. They are assembled in steel cases, and will withstand severe misuse, and high charge and discharge currents.

Nickel iron cells have perforated positive plates of nickelled steel tubes filled with nickel hydroxide and other materials. Negative plates are steel and iron oxide. Electrolyte may be a 21 per cent solution of potassium hydroxide in water, with lithium hydroxide, and the specific gravity does not change on discharge.

Loss by evaporation is restored by adding distilled water. The electrolyte has to be replaced periodically as specified by the maker. The potential is about 1·2V per cell. Cells cannot be trickle charged, or charged at a very low rate.

Nickel cadmium cells have positive plates incorporating nickel hydroxide, and negative plates incorporating iron oxide. The potential is about 1·2V and the cells can be charged at quite low rates. Distilled water is used to replace evaporation losses, and the electrolyte has to be replaced as recommended by the maker.

The metal cases of alkaline cells have to be insulated from contact with other circuits, or contact with the metal cases of adjoining cells.

Accumulator charging

Accumulators are charged by the current from a vehicle dynamo, an AC generator with rectifier (especially in small motor-cycles and scooters) or by a mains unit. The maximum charging rate for a battery, as indicated by the maker, should not be exceeded. Lead acid batteries may be charged at lower rates.

Charging may begin at any time; or the battery may be fully discharged, before re-charging. 'Trickle charging' is charging at a very low rate, at any time, to keep an accumulator in good order.

An AC mains charger is shown in Fig. 3. Inexpensive ready-made chargers may consist of a transformer and rectifier only, and are generally for 6V or 12V.

In Fig. 3, the meter shows the charging current, which can be adjusted by means of the variable wire-wound resistance. For 6V accumulators, a rate of up to 2 amperes will usually go well. For this, the transformer secondary should be 9V 2 ampere. For charging batteries of up to 12V at 2 amperes, a 18V 2A secondary is required. The rectifier is 6V 2A, or 12V 2A.

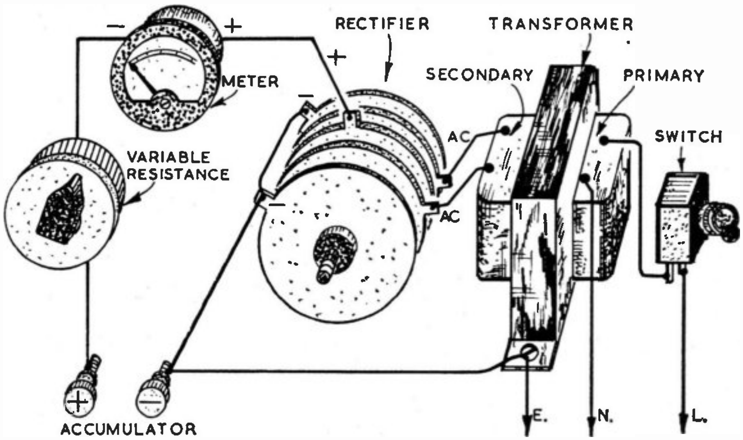


Fig. 3—A battery charger

The actual voltage needed from the transformer is somewhat higher than the battery voltage, because each cell rises to more than 2V, when nearly fully charged. A transformer with a tapped secondary allows accumulators of various voltages to be charged.

With lead acid cells, charging is at the rate given on the battery, or any lower rate which is convenient. Charging continues until the SG has risen to about 1·280 (1280) to 1·300 (1300). When an accumulator is connected, the correct polarity must be observed.

Charging should begin when a cell falls to 1·8V, as leaving the battery discharged will eventually damage it. If a non-reversible 2-pin plug and socket are used to connect the charger to a vehicle accumulator, the latter can be given refresher charges over-night without removing connections, or taking the battery out.

With simple chargers, the initial charging current may be fairly large, but begins to fall, as the battery voltage rises. This is quite normal.

Current for the charger in Fig. 3 is drawn from a 13A plug, which has been fitted with a 2 ampere fuse. Lead E goes to the large Earth pin. Lead N is taken to the Neutral pin, marked black, or 'N'. Lead L goes to the plug fuse, and thus to the Live pin. It is usual to employ 3-core flexible cord for such mains connections, with Green for earth, red for L, and black for N circuits.

● **Continued from page 210**

STAMPS WHICH FEATURE SNAKES

when it is alarmed it puffs up its body by drawing in air which makes it look much more formidable, and then when the air is allowed to escape from the body it produces a sighing sound, all of which helps it to appear terrible which is what it wants.

Another case of camouflage is that of the Brazilian Green Tree snake. The name indicates where it is to be found, its colour, and where it comes from. It is only small (about 3 feet in length) and lives on mammals, small birds, and eggs. Philatelically it is to be found on the 1945 stamp from Brazil and at one time it was part of the cap badge of the Brazliian forces.

Although there are other cases of snakes appearing on stamps they do not do so very frequently and it would not be worth while to try to make a separate topic of them. Of course the very fact that they are scarce would make the theme attractive. The stamps mentioned here are not very expensive ones. One French specimen should be noted because it was used as an advertisement for the Cancer Research Fund — the 1941 2f 50c + 50c for the fund.

The last illustration will suggest where you should look for specimens. The stamp is the St. Lucia 2d. of 1902 and the snake is in the right hand panel. Now see how many snakes you can find.

Illustrated on front cover:

DISPLAY CABINET

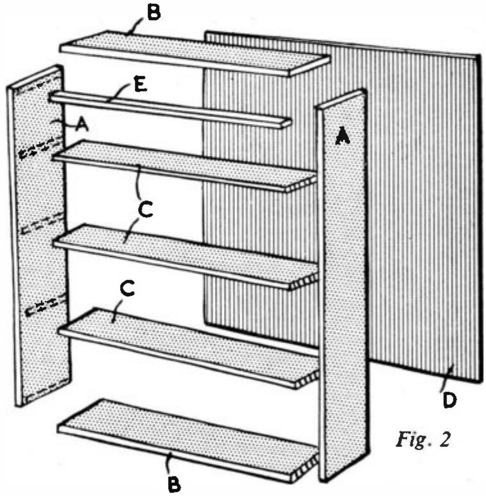


Fig. 2

DUST can create a great deal of work and cause a lot of annoyance to the collector. A cabinet for displaying models, stamps, butterflies, shells, fossils, cigarette cards or whatever else interests the collector, should have shelves with individual glass fronts which allow items to be displayed without 'collecting dust'.

Each 'window flap' on the cabinet described here is hinged so that it can be easily opened and closed when making alterations to a particular collection. The cabinet, fixed at a convenient position on the 'den' wall, has an open top 'shelf' for cacti and other small plants.

Prepare some 5 in. by ½ in. softwood for the sides A (18 in.), and the top and bottom pieces B (14 in.). Also the three shelf pieces C, are of the same length, but planed to a width of 4½ in. These measurements are shown in Fig. 1, but may be modified to suit the size of cabinet you need.

Use glue and panel-pins, hammering the pins through the side members into the ends of top and bottom pieces, to make up the simple cabinet frame as seen in Fig. 2. After marking the positions of the shelves on the inside faces of the sides, squaring with a try square, these can be fixed in place, again with panel-pins through the sides.

A piece of hardboard D, cut to the outside dimensions, is nailed on at the back, giving added strength to the cabinet. Drill holes in this for the wall fixing screws. Clean up with glasspaper, fill the grain, then stain and varnish.

Pieces of ply or pegboard, raised at the back with scrap bits of wood as in Fig. 3, can be stood on the shelves as sloping display panels for butterflies, etc.

Order four pieces of picture glass, cut to fit inside the shelf spaces, or use perspex or clear acetate sheet, and cut to size. The latter has the advantage of being unbreakable, as well as being easy to cut with your fretsaw.

Glue a strip of strong cloth tape along the top edge of each 'glass' to form a hinge as indicated in Fig. 4. Then stick passe-partout round the other edges, as you would in framing a picture. A small tab (or wood handle) stuck at the bottom edge, enables the hinged glass to be raised. Glue the top parts of the tape hinges to the front edges of the shelves.

An exception is the top of the cabinet B. Here a strip of light wood E, is needed on the underside to which the top glass can be hinged, to bring it in line with the lower 'windows'.

The inside can be covered with flock paper. Odd pieces of self-adhesive material can be used to make colourful, easy-cleaned shelf surfaces. (T.S.R.)

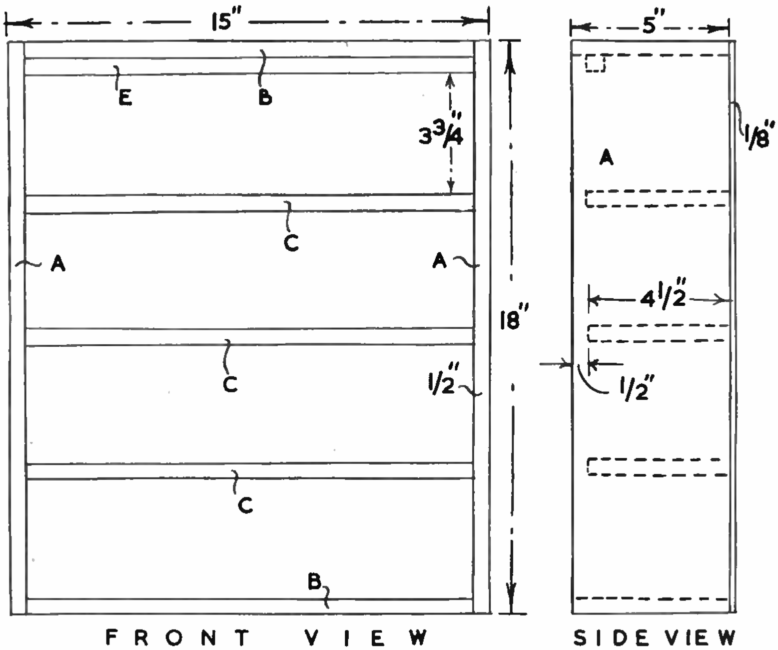


Fig. 1

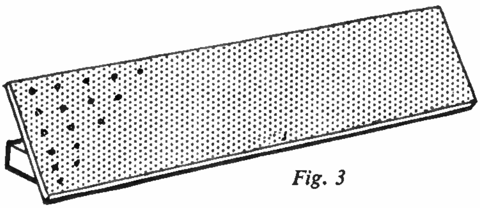


Fig. 3

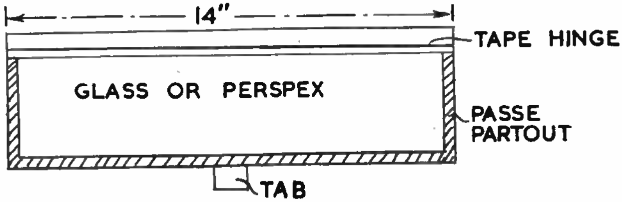


Fig. 4

CHEMISTRY AT HOME

COMMON chemicals and simple apparatus only are needed to carry out some of the most fascinating experiments in the growing of chemical vegetation and jewel-like crystals.

For coral-simulating growths some water glass will be needed. Water glass is a solution of a mixture of sodium silicates of the approximate composition $Na_20.4SiO_2$, or $Na_2Si_4O_9$. It reacts with solutions of many metallic salts to produce insoluble metallic silicates.

FASCINATING GROWTHS

By L. A. Fantozzi

Owing to certain physical properties, which will be outlined later, these lend themselves to peculiar growth. First let us see them in action.

A beaker or jam jar will do for the experiment, but the effect is more spectacular in a small gold fish bowl. Dilute 1 volume of water glass with 3 volumes of hot water. Stir thoroughly until an even mixture is obtained. Nearly fill the vessel with the solution, and drop in enough sand to produce a layer at the bottom of about ¼ in. in thickness. When the sand has completely settled, drop in small crystals of cobalt chloride, $CoCl_2.6H_20$, copper sulphate, $CuSO_4.5H_20$, ferrous sulphate, $FeSO_4.7H_20$, nickel sulphate, $NiSO_4.7H_2O$, lead acetate, $(CH_3.COO)_2Pb.3H_2O$, strontium nitrate, $Sr(NO_3)_2$, ferric chloride, $FeCl_3.6H_2O$, manganese sulphate, $MnSO_4.4H_2O$, and zinc sulphate, $ZnSO_4.7H_20$. If these are not all available, it does not matter. The use of all merely give wider variety of colour.

Very shortly the crystals begin to throw out shoots. Later these elongate and form branches. Growth continues until either the crystal is exhausted or the 'coral' reaches the surface of the solution. As the growth is sporadic, moving in little jerks of new growth, the spectacle is one to be enjoyed by the whole family. Care should be taken not to jolt the vessel, for the fronds are fragile and easily break and topple. After about 24 hours, growth halts; and one is left with what looks like a miniature tropical sea floor Fig. 1, The article can be kept as an ornament for some time if a film of plastic is fixed with a rubber band over the open top of the vessel. Gradually, however, deterioration sets in and a new garden must be made.

The growth colours obtained with the salts of the metals are: cobalt, deep blue; copper, blue; iron (ferrous), dark green; iron (ferric), brown; nickel, green; lead, white; strontium, colourless and transparent; zinc, white; manganese flesh-coloured. If uranyl nitrate, $UO_2(NO_3)_2.6H_2O$, is in the laboratory stock, a crystal of this will furnish a brilliant yellow growth.

Why do these insoluble metallic silicates form in this peculiar way? If water glass solution were added to solutions of salts of these metals gelatinous precipitates would form in the normal way. The strange growth depends on osmosis. When a strong solution and a weak one are separated by a colloidal membrane, water from the weak solution passes through the membrane into the strong solution. The crystal first forms a colloidal membrane of silicate around itself, water passes in, dissolves more of the crystal, stretches the membrane to bursting point, when the solution reforms more membrane. This process continues.

Crystals as seen in our jars of chemicals in general seem haphazard in shape. This is because no attempt has been made to produce perfect crystals, only to purify the salt by recrystallization. Yet of the crystalline compounds and of many elements each has a definite shape, sometimes more than one. Again, some compounds differing in chemical composition have the same crystalline form, for example, ordinary alum (aluminium potassium sulphate), $Al_2(SO_4)_3.K_2SO_4.24H_2O$, and chrome alum (chromium potassium sulphate), $Cr_2(SO_4)_3.K_2SO_4.24H_2O$. Fig. 2 shows some typical crystal shapes.

The principle behind crystallization is that a liquid at any given temperature can hold in solution a definite maximum of a soluble substance and the solution is said to be saturated. Hot liquids generally dissolve more of the same substance than when cold. A fall in temperature, or loss of liquid by evaporation, throws out of solution some of the dissolved substance. Where either of these two processes is rapid the crystals are minute; where slow, crystals are larger, and may be built up to even larger sizes. Growing perfect crystals demands patience and usually repetition

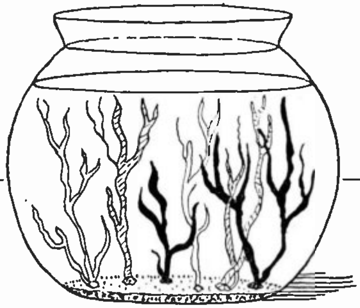


Fig. 1—Chemical coral

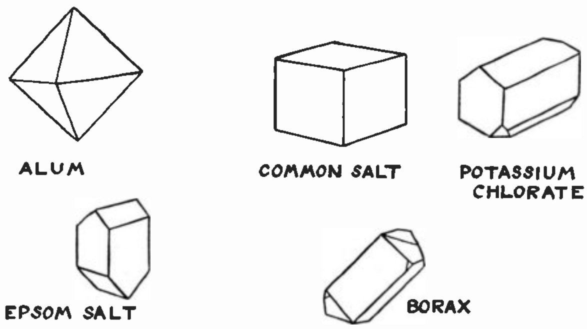


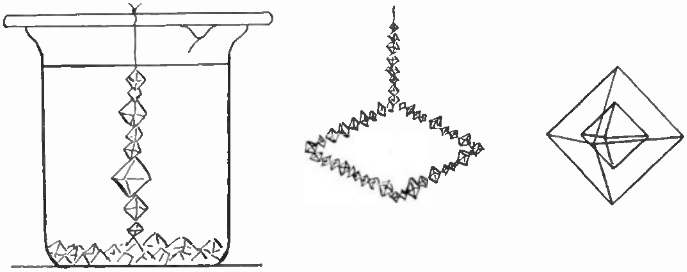
Fig. 2—Some crystal shapes

of initial experiments until one has a good shape to build upon.

Before attempting anything ambitious it is well to make some trials with alum, which is an encouraging salt to work with. Dissolve 50 grams of alum in 100 ml. of boiling water and hang a thread weighted with a scrap of glass tubing from a rod across the beaker (Fig. 3a). Leave the whole undisturbed. As the solution cools copious crystals deposit on the bottom, but also on the thread. Those on the thread being free on all sides grow more perfectly. Overnight large diamond shaped crystals build up on the thread.

By using a solution of 25 grams of alum in 100 ml. of boiling water and suspending a wire shape in the solution a pretty jewel-like effect can be obtained owing to formation of small crystals on the wire (Fig. 3b).

Pour off the saturated solutions from both beakers, mix them and allow them to stand. Sooner or later more crystals will form. Pick out a good diamond shape, put it in a clean beaker and pour over it the solution from the crystals, taking care that no other crystals pass into the second beaker. Turn the crystal each day so as constantly to present fresh faces to the slowly evaporating solution. Remove any secondary crystals which form, and also any overgrowths on the selected crystal. Gradually the crystal builds up into a good sized specimen. It is important during the growing period that the solution remain at an even temperature. Warming of the solution will cause some of the crystal to dissolve and so delaying growth.



a. ALUM. b. ALUM 'JEWELS'. c. TWO IN ONE.

Fig. 3—Crystal growths

As alum and chrome alum have the same crystalline shape, they may be grown upon one another. A striking experiment is first to produce a medium sized crystal of chrome alum, and then to grow upon it ordinary alum. The effect is of a purple diamond within a colourless one (Fig, 3c).

Dissolve 20 grams of chrome alum in 100 ml. of warm water, let the solution cool and stand until crystals have formed. Pour off the saturated solution into another beaker, and select a good crystal when further crystallization has occurred. Grow this in another vessel, as you did the alum crystal, and when of a suitable size, transfer it to a cold crystal-free saturated solution of alum and continue the growing process.

Following this general process of making a hot solution strong enough to deposit crystals on cooling and then using the cold saturated solution to produce a good typical crystal shape, crystals of many other substances can be grown. Some salts which are suitable to grow are copper sulphate, nickel sulphate, zinc sulphate, potassium chromate, K_2CrO_4, potassium sulphate, K_2SO_4, Magnesium sulphate (Epsom salt), $MgSO_4.7H_2O$.

As nickel and zinc sulphates have the same crystalline form, green nickel sulphate may be grown within colourless zinc sulphate; likewise yellow potassium chromate within potassium sulphate, very beautiful effects being attainable.

A GRAVITY MACHINE

'My candle burns at both ends,
It will not last the night;
But, ah, my foes, and, oh, my friends —
It gives a lovely light!'

WHEN you burn this candle at both ends the twin flames will leap up and down like fiery dervishes.

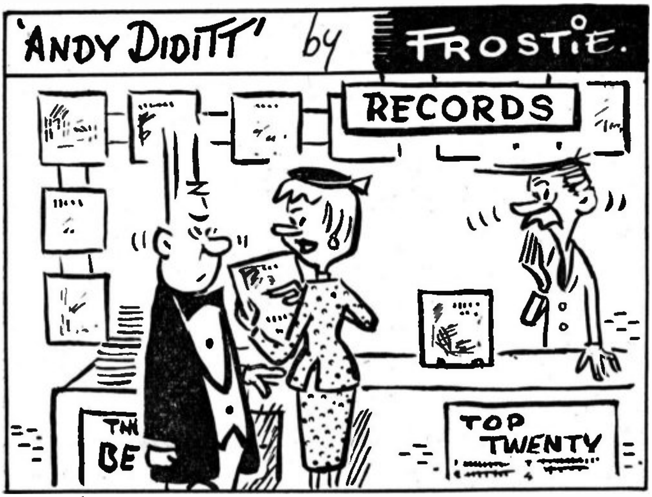
Cut away the bottom of a candle to expose a 'second' wick. Push a heated steel knitting needle across the middle to make a spindle. Suspend the spindle ends upon two inverted tumblers over a thick newspaper.

Turn out the lights and ignite both wicks. Wax will drip more copiously from the 'lower' wick. But as wax is unevenly lost from the ends, the candle will become horizontal between its supports.

Now you will have a 'gravity machine'. Drips falling from alternate wicks will cause the candle's centre of gravity to shift from side to side of the spindle. Consequently the candle will commence a see-sawing movement.

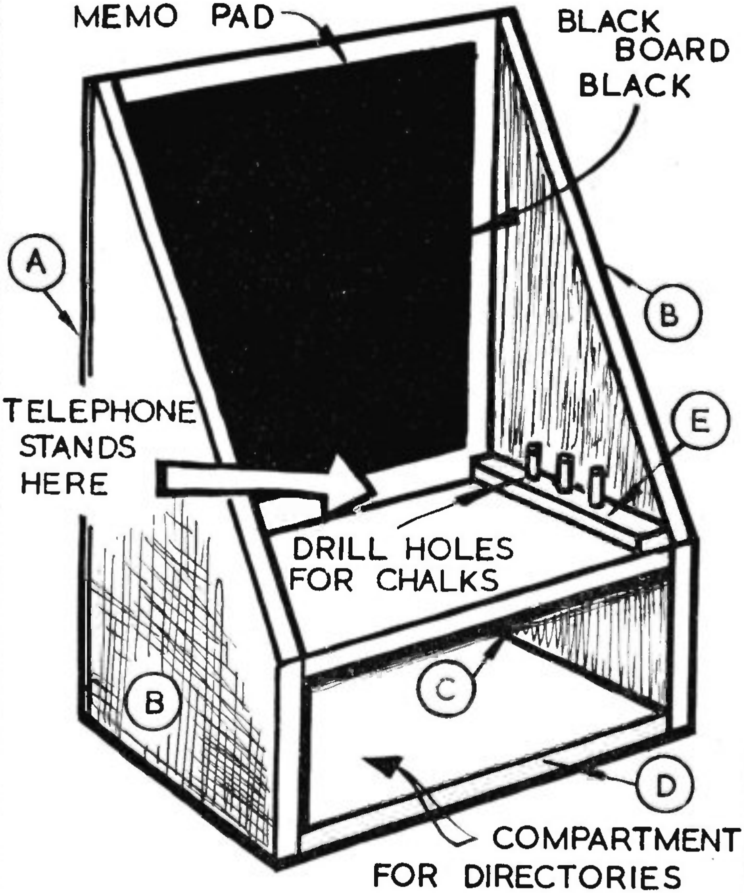
You will appreciate the pretty effect; though, as in the verse by Edna St. Vincent Millay, the candle will be short lived.

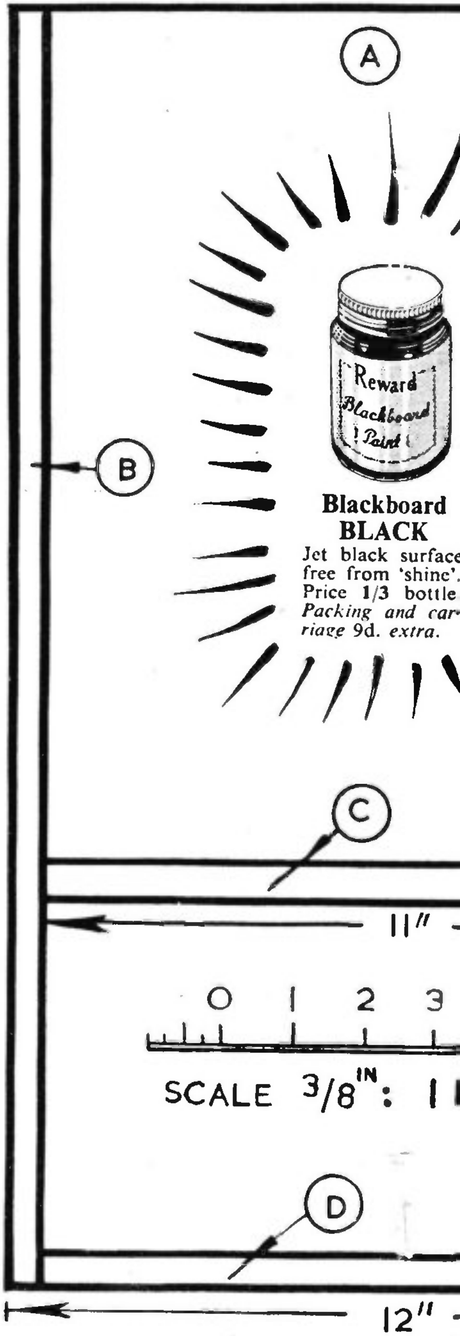
In a few minutes the candle will have melted — but the wax rolled up in the newspaper will make a splendid firelighter... (A.E.W.)

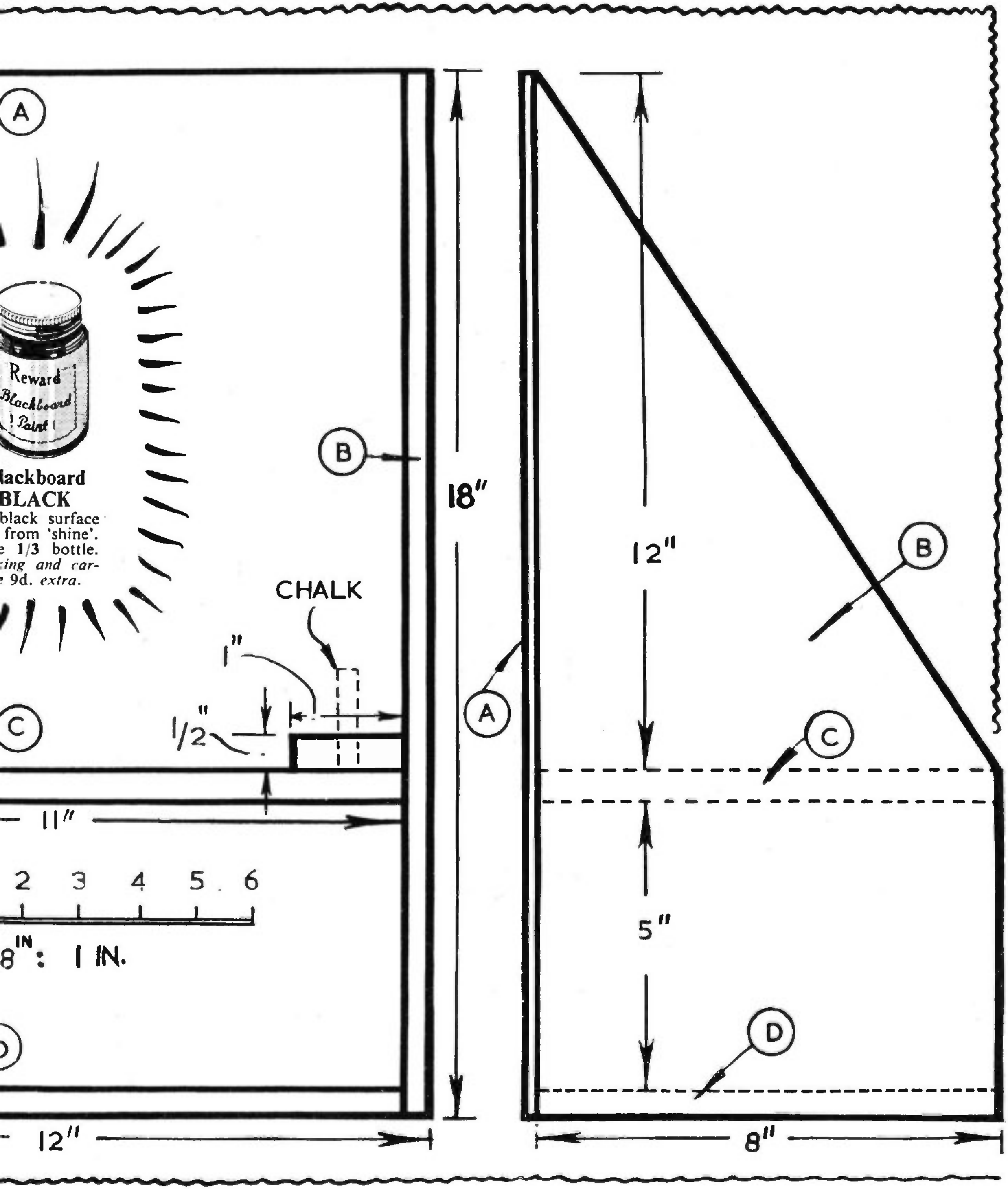


"I DON'T LIKE THE RECORD BUT I THINK THE PICTURE ON THE RECORD SLEEVE IS *FABULOUS!*"

TELEPHONE FITMENT






A
Reward
Blackboard
Paint
lackboard
BLACK
black surface
from 'shine'.
e 1/3 bottle.
king and car-
e 9d. extra.
B
18"
CHALK
1"
1/2"
C
11"
2 3 4 5 6
8IN: 1 IN.
D
12"
12"
5"
8"
B
A
C
D

MAINLY *for* MODELLERS

IN our last article we discussed the standing rigging of the 20 gun ship. We will finally detail the running rigging for the same vessel.

The sketch gives the details of the running rigging as we did with the standing rigging.

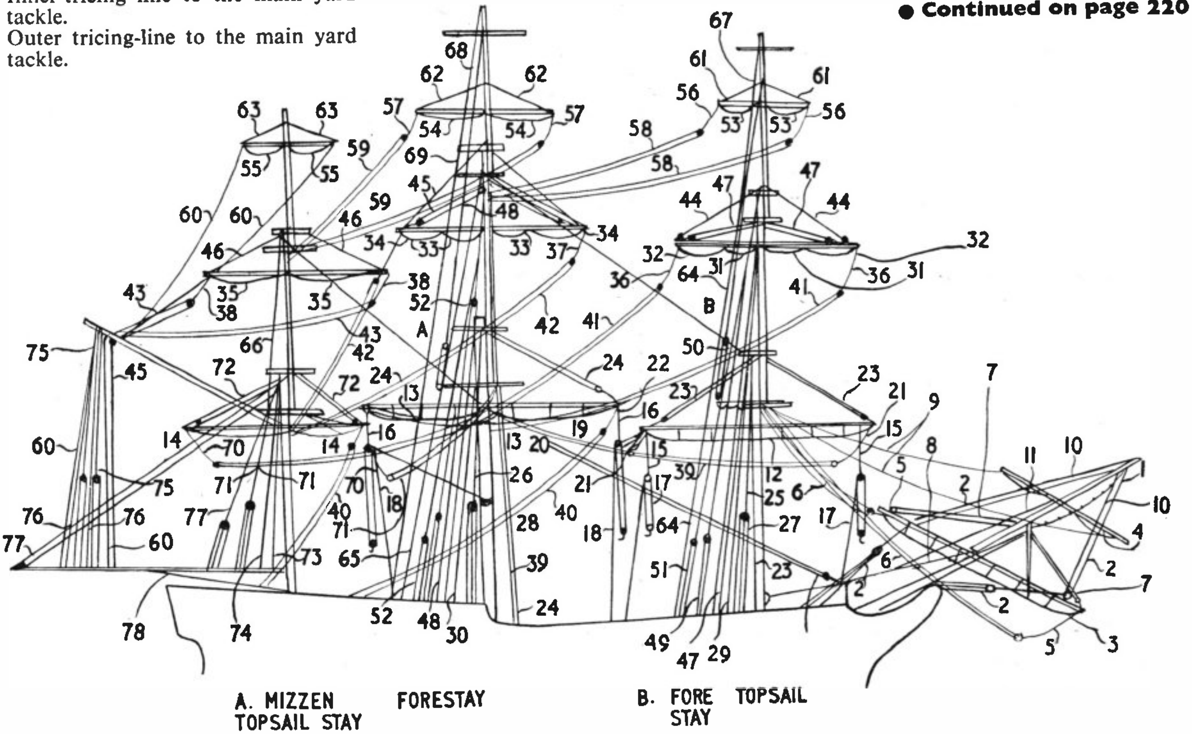
The running rigging on our plan is as follows:

1. Jib horses.
2. Jib guy pendants and falls.
3. Spritsail yard horses and stirrups.
4. Spritsail topsail yard horses.
5. Spritsail brace pendants.
6. Spritsail braces.
7. Spritsail lifts.
8. Spritsail halyards.
9. Spritsail-topsail braces.
10. Spritsail topsail lifts.
11. Spritsail topsail halyards.
12. Foreyard horses and stirrups.
13. Mainyard horses and stirrups.
14. Crossjack horses.
15. Foreguard tackle pendants.
16. Mainyard tackle pendants.
17. Foreyard tackles.
18. Mainyard tackles.
19. Inner-tricing line to the main yard tackle.
20. Outer tricing-line to the main yard tackle.
21. Fore brace pendants.
22. Main brace pendants.
23. Fore lifts.
24. Main lifts.
25. Tie of the fore-jeers.
26. Tie of the main jeers.
27. Fall of the fore-jeers.
28. Fall of the main-jeers.

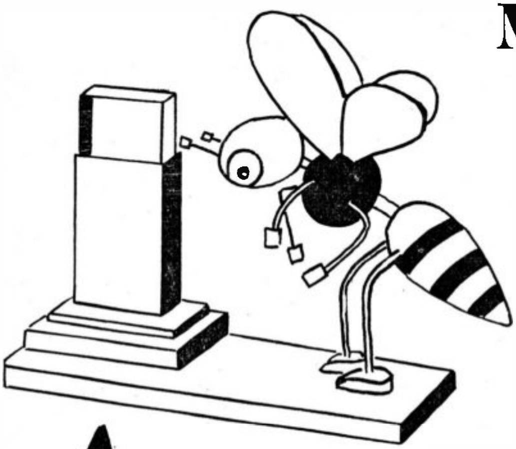
18th CENTURY RUNNING RIGGING 20 GUN SHIP

29. Nave-line of the fore truss pendants.
30. Nave-line of the main truss pendant.
31. Fore topsail yard horses and stirrups.
32. Fore topsail yard Flemish horses.
33. Main-topsail yard horses and stirrups.
34. Main-topsail yard Flemish horses.
35. Mizzen topsail horses.
36. Fore topsail brace pendants.
37. Main topsail brace pendants.
38. Mizzen topsail brace pendants.
40. Main braces.
41. Fore topsail braces.
42. Main topsail braces.
43. Mizzen topsail braces.
44. Fore topsail lifts.
45. Main topsail lifts.
46. Mizzen topsail lifts.
47. Fore topsail reef tackle pendants.
48. Main topsail reef-tackle pendants.
49. Fore topsail tie.
50. Main topsail tie.
51. Fore topsail halyards.
52. Main topsail halyards.
53. Fore top-gallant yard horses.
54. Main top-gallant yard horses.
55. Mizzen top-gallant yard horses.
56. Fore top-gallant brace pendants.
57. Main top-gallant brace pendants.
58. Fore top-gallant braces.
69. Main top-gallant braces.
60. Mizzen top-gallant braces.
61. Fore top-gallant lifts.
62. Main top-gallant lifts.
63. Mizzen top-gallant lifts.
64. Fore top-gallant halyards.
65. Main top-gallant halyards.
66. Mizzen top-gallant halyard.
67. Fore-royal halyard.
68. Main-royal halyard.
69. Pendant halyard.
70. Cross-jack brace pendants.
71. Cross-jack braces.
72. Cross-jack lifts.

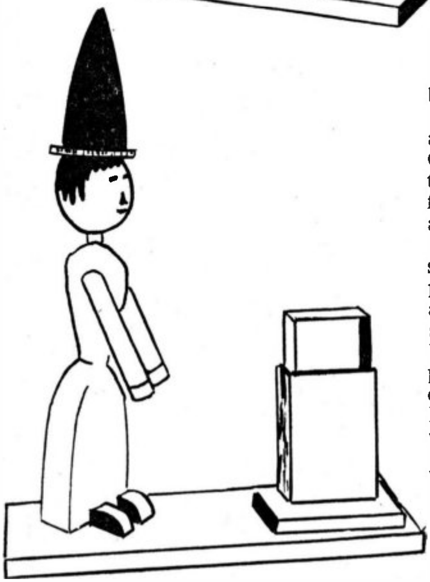
● **Continued on page 220**



MAKE NOVELTIES IN BALSA WOOD



By S. H. Longbottom



BALSA is the easiest of woods to work and shape. It saws easily and can be rapidly shaped with files or glasspaper, latter being wrapped round a pencil or ruler. A mousetail file can be used for boring holes if held between the thumb and first finger and twisted while exerting a little pressure. A small hole will then open the way for a larger one.

Your Hobbies branch can supply you with balsa for the models we are about to describe. Balsa grows best in Ecuador and it is so very light because it grows quickly and has a very large cell structure. You will realise how light in weight it is when we say that while balsa weighs from 6 lb. to 16 lb. per cubic ft. the heaviest known wood (Lignum Vitae) weighs 78 lb. per cubic ft.

The wood is imported from South America and occasionally you may find a few 'pinholes'. A little filler applied before painting will remedy this.

Jointing of models is best done with a balsa cement, Britfix being fast drying. Ordinary pins may be used for holding the wood together while the glue sets, for these push in with little pressure and are just as easily removed.

It is best to apply adhesive to both the surfaces which are to be joined to ensure perfect bonding. Pins may be removed after setting and a filler applied to the surface before painting. Your filler can be simply made by mixing a little powdered French chalk with clear cellulose dope to a cream consistency Brush on, allow to dry, then smooth with fine glasspaper.

Willie Wasp

Four wings are required cut from $\frac{1}{8}$ in. sheet balsa, a pair of each from the shapes shown in Fig. 1 where the unbroken line represents the front wings and the broken line the rear wings. These are attached to the body by gluing with cement. Fig. 2 shows the full assembly in detail.

The body is made in three separate sections. The head and body are made from 1 in. cubes; the rear body being made from a block 2 in. by 1 in. by $1\frac{1}{2}$ in. These are rough cut to shape and glasspapered, the two former being round while the latter is carrot shape. These three sections are fastened together by 1 in. lengths of dowel rod and glued together.

The arms are made from a 2 in. length of soft wire, e.g. pipe cleaners, with the ends pushed into the body. The legs are of similar wire 3 in. in length and similarly fastened to the body. It may be advisable to use two pipe cleaners twisted together for each leg if the wire is very soft. The antennae are made from 1 in. pipe cleaner lengths. Small pieces of balsa are shaped and fitted at the ends of the arms and antennae while the legs are inserted into small shoes cut from 1 in. by $\frac{3}{8}$ in. square section.

The base is a simple block cut 6 in. by 2 in. by $\frac{3}{8}$ in. and two small layers built on top of this measuring $2\frac{1}{2}$ in. by $1\frac{1}{2}$ in. by $\frac{3}{8}$ in. and $1\frac{3}{4}$ in. by 1 in. by $\frac{3}{16}$ in. On top of the upper block we also add a suitable piece for holding the matchbox and this measures 1 in. by $1\frac{1}{4}$ in. by $\frac{1}{2}$ in. all being glued one on top of the other.

The rear body may be painted in yellow and black stripes the body black, the head yellow with white wings. Colour the legs black and the base may be of your own choice. Add a box of matches and your novelty is complete.

The Witch

This novelty is more interesting to make involving more carving. Details

1/4" squares

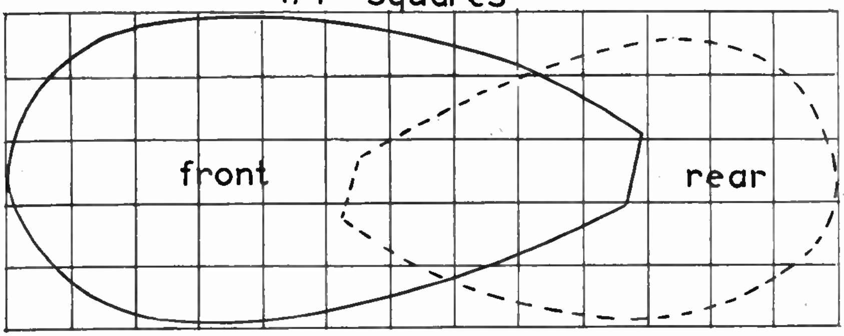


FIG 1

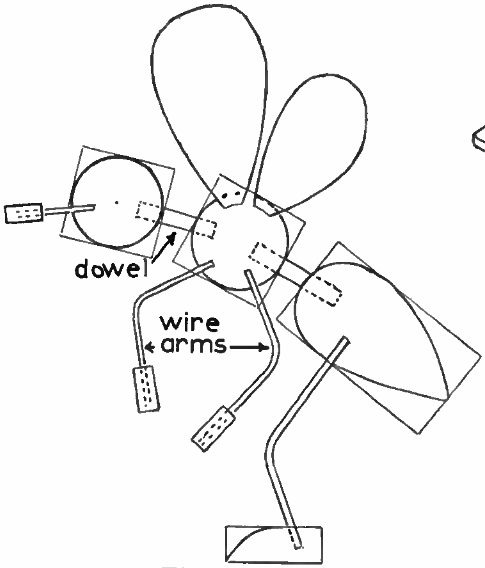


FIG 2

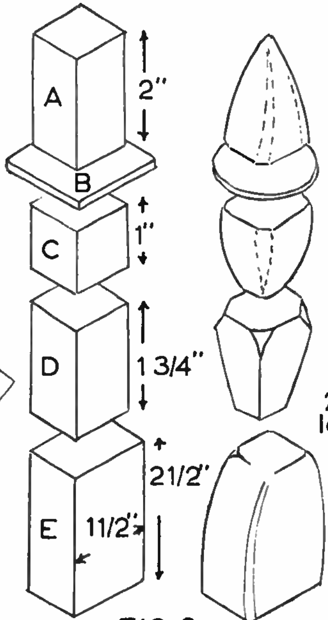


FIG 3

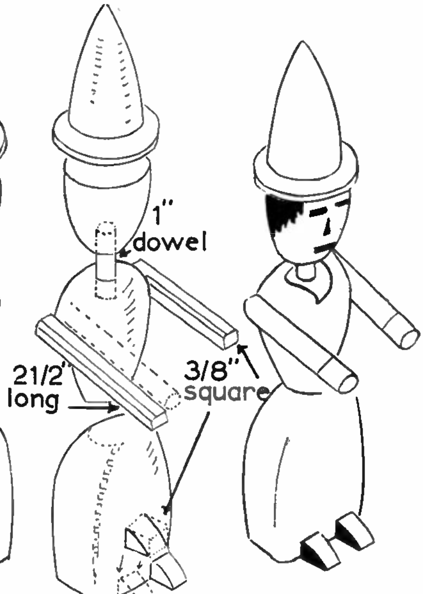


FIG 4

are shown in Figs. 3 and 4. You will see that we need separate blocks for the hat, head, body and legs.

The hat A, head C and body D are cut to length from 1 in. square balsa while block E is cut from $1\frac{1}{2}$ in. by 1 in. material. The hat rim B is cut from $\frac{1}{8}$ in. sheet balsa and is $1\frac{1}{2}$ in. square. Shape all the parts roughly as shown, then finish with glasspaper.

The arms are prepared from $2\frac{1}{2}$ in. lengths of $\frac{3}{8}$ in. square section balsa with the corners rounded off, while the feet are shaped from $\frac{1}{2}$ in. lengths of $\frac{3}{8}$ in. square section. Glue the parts together when smoothed, although the arms may be pinned in position.

It is suggested that the body and legs should be painted completely in red, the hands being white. The head is painted white with the facial details and hair painted in black. The hat should also be painted in black. If you wish you may add a broomstick made from a piece of thin dowel rod which has some short pieces of fine wire tied to the end.

The base block for mounting the matchbox holder itself may be made as described for the other model.

Both these novelties can be easily made and you will find that this wood works very quickly. Too much pressure with a file or glasspaper and you may remove more than was intended. Well-made novelties will no doubt find a ready sale at bazaars and fund raising efforts.

● **Continued from page 218**

MAINLY FOR MODELLERS

73. Gaff-throat halyards.
74. Gaff-peak halyards.
75. Vang-pendants.
76. Vang falls.
77. Boom topping lift.
78. Guy-pendant and tackle.

In the current numbers dealing with this period, as we have given complete rigging plans each article has of necessity been mainly a plan and detail list of rigging for reasons of space. It may help, however, to detail the purposes of each rope of the rigging.

BOWLINE. To keep the leech of the sail taut.

BOWLINE BRIDLES. Ropes joining the bowline to the sail.

BRACE. A rope to traverse the sail upon the masts.

BRAILS. A rope attached to the leech of the sail to reduce the area of canvas when required.

BUNTLINES. Attached to the lower edge of the sail to draw it up to the yard.

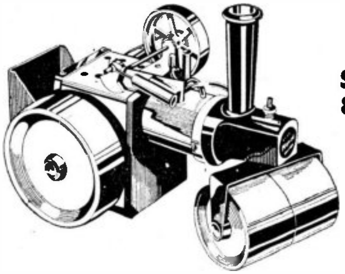
CLEWLINE. Attached to lower corner of square sails.

LIFTS. Ropes descending from the cap of the yards, to square the yards and take the weight.

SHEET. A rope attached to the lower corner of the sail to retain it in its correct position.

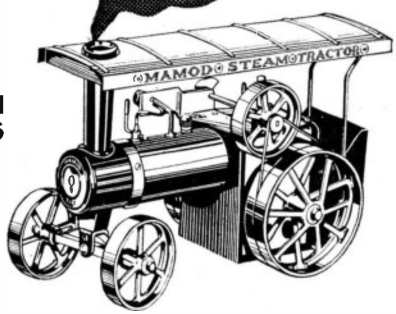
TOPPING-LIFT. A tackle used to support the outer end of the gaff.

VANGS. Braces to support the mizzen gaff.

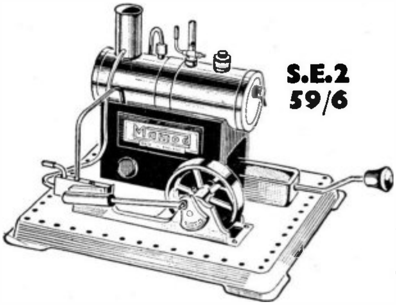


S.R.1
89/6

full steam ahead



T.E.1
99/6



S.E.2
59/6

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THE LE ROYS

BESPECTACLED Mike Sturgess, Len Brooks, easily recognizable by the cheeky grin, Mike Porter (he just refuses to be parted from his drumsticks) and quiet Tony Cooke — these are The Le Roys.

These four bright young men from Walthamstow first played together five years ago, but it was not until April 1962 that they became fully professional. They played ballroom dates and one night stands in and around the London area, and also toured Europe, travelling through Denmark, France, Germany, Holland and Sweden.

Their Swedish visit was so successful that their first job on returning to England was to cut a disc called *That's Too Bad* for release in Sweden.

The Le Roys first came to the notice of Robert Stigwood in November 1963. He auditioned them late one evening in his office and was so impressed that he signed them there and then to make the first disc for a new record magazine called *Give-A-Disc*.

In February 1964, they commenced a nationwide tour backing such artists as Mike Sarne and Billie Davis, and giving a polished vocal backing to John Leyton. Their performance, both as instrumentalists and vocalists, received high praise from the press.

The Le Roys have made their first record for release in Britain. It is an exiting revival of *Ciribiribin* given new lyrics, a modern beat and a new title, *Gotta Lot of Love*. On the flip side is *Don't Cry*. Released on the H.M.V. label, this disc should make The Le Roys' fast-growing legion of fans extremely happy.

MYSTERIOUS No. 3

HERE is an amazing self-working trick that resembles 'thought reading'—and to a certain extent this impression you create is genuine. Begin by writing some words on the 'back' of a large sheet of paper. Actually you must write a question: Why did you select three?. Of course you must not let your friend see this writing.

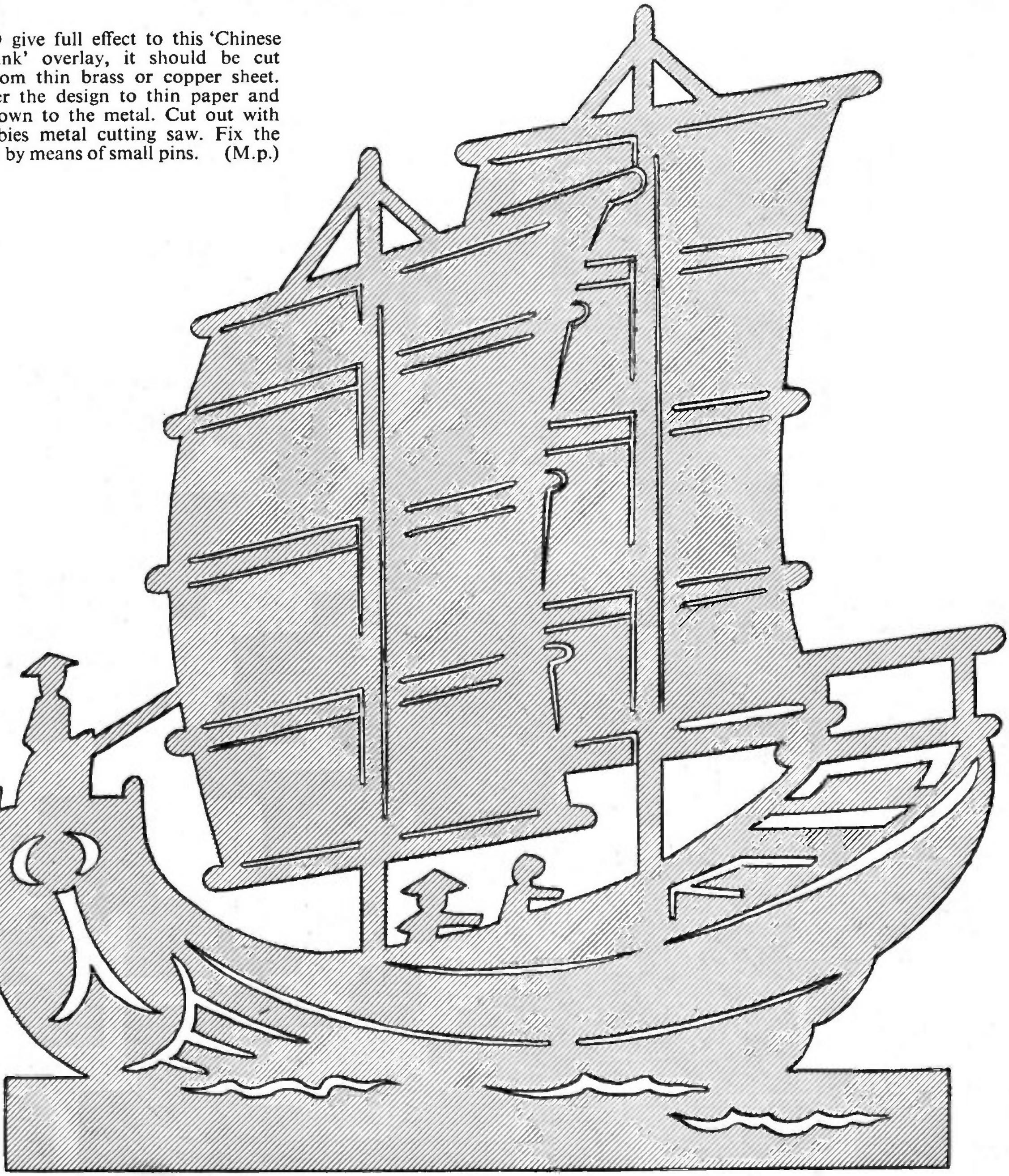
Then put down the paper and boldly write the numbers: 1, 2, 3, and 4 — going from top to bottom — on the paper's blank side. Hand your friend the pencil and ask him to cross out any one of the numbers. HE WILL AMOST CERTAINLY CROSS OUT 3! Apparently this likelihood is just a curious quirk of the human mind, like the fact that we usually put on a right shoe or a left glove first.

Finally, ask your friend to turn over the paper and read what you wrote on the back. Wait till he begins to grasp or smile in bewilderment; then look him straight in the eye and say: 'Interesting isn't it?' The pleasure your many successes with this trick will give you will more than compensate for an occasional failure. (A.E.W.)

CHINESE JUNK

An interesting fretwork project

TO give full effect to this 'Chinese junk' overlay, it should be cut from thin brass or copper sheet. Transfer the design to thin paper and stick down to the metal. Cut out with a Hobbies metal cutting saw. Fix the overlay by means of small pins. (M.p.)



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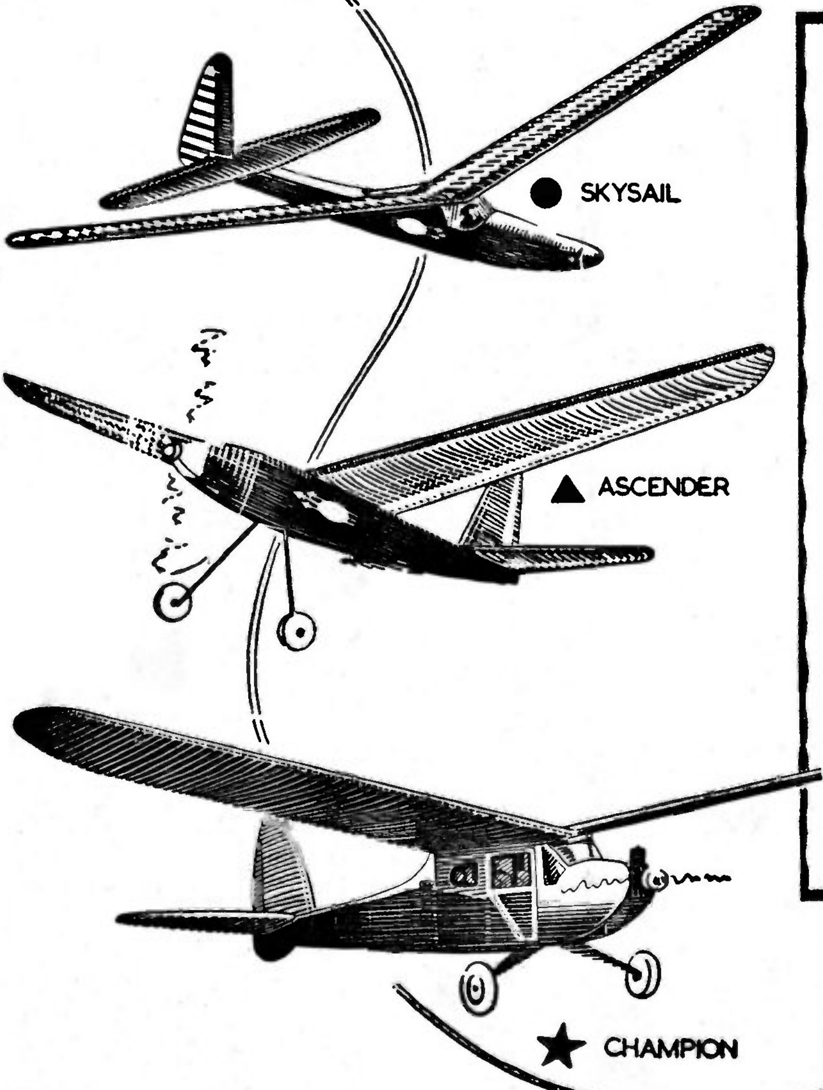

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