HOBBIES weekly

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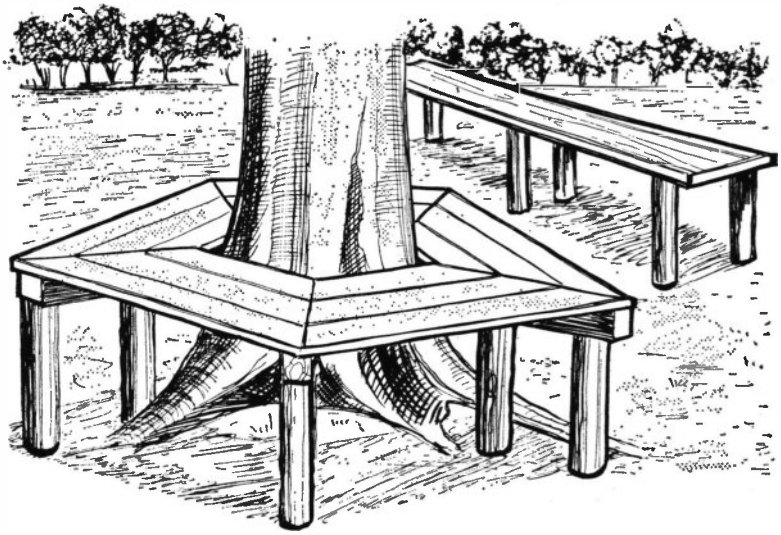
Hobbies

FOR CRAFTSMEN OF ALL AGES

6D.

IDEAS TO EASE WORK IN YOUR GARDEN



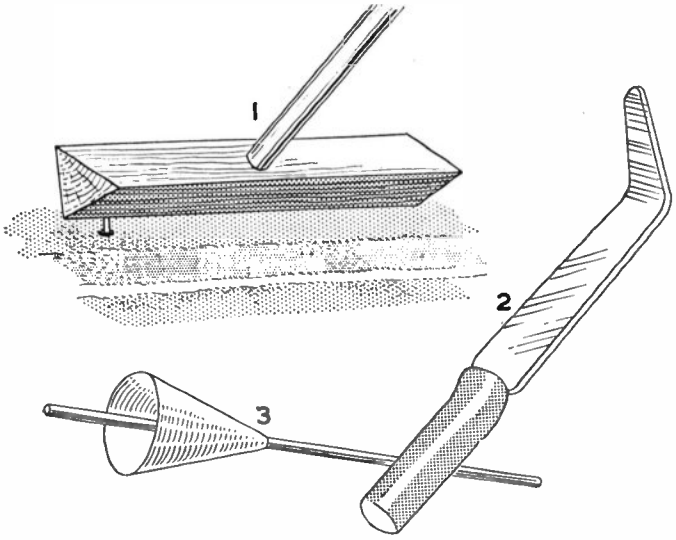
AN odd seat is often welcome in the garden, even if only for permitting a short rest after doing one or two odd jobs of weeding or grass cutting. Low picnic tables, small benches and stools can often be made quite cheaply from slab wood (planks of irregular width still retaining the bark at the edges) and hardwood logs. You should be able to obtain these from a local woodyard or sawmill. If you have a tree in your garden you can make a shady seat round the bole.

You will need four logs, roughly sharpened at one end, each sunk part way into the ground to act as the legs of a small seat. A broad plank of slab wood then forms the seat. Larger seats will need more support in the centre and call for a further two legs. All you have to do is to nail the seat in position on to the legs.

When making a seat round a tree you will need five pairs of legs, although much depends on the girth of the tree. In this instance we fasten a piece of 2 in. square material to the legs, nailing planks to these after preparing appropriate joints. Little else is needed for treatment and there is no need to paint or varnish since this type of material looks better in the natural wood.

Seed drills usually take the form of a hoe or the rake tilted to an angle. In Fig. 1 we show an unconventional tool you can make for the speediest drillmaking. It is a piece of arris rail 16 in. long as used for fences, merely drilled to accept a handle. Since the arris rail is of triangular section it leaves a perfect drill if pushed through the soil. Should your soil happen to carry a lot of stones a nail knocked into the leading edge of the rail will clear them.

Some time ago I made another useful little gadget for sowing lettuce seed. This is a straight length of 1 in. square section. On one side of this I glued a series of small corks, obtained from the local chemist, at 6 in. intervals. When ready to sow the lettuce seed I merely place the rod on the ground, corks downwards, and press on the prepared soil. This leaves small impressions with evenly spaced holes for the seed. All that remains to be done is to drop in the seed and cover with soil.



If you happen to have an old carving knife which is no longer giving service in the kitchen why not turn it into a little hand cultivator as shown in Fig. 2.

Heat the end of the knife in a gas ring or fire then bend over a few inches at an angle of 45°. You will find it ideal for hand hoeing between rows of plants or clearing weeds from crazy paving. It will still cut string and help you to attack garden enemies like snails, leatherjackets or wireworms.

Another way of modifying an old knife is by inserting a steel pin through the blade. This pin can be made from a stout 3 in. nail. Drill a hole about three-quarters of the

way from the point and nearer the handle, knocking in the pin, which acts as the fulcrum. The hole should be slightly smaller than the pin to ensure a tight fit. If the blade is inserted in the ground for, say, a dandelion root and pressed in as far as the pin you will find that it is an easy matter to force out the weed by levering. It can also be used for unwanted daisies on the lawn and other deep rooting weeds.

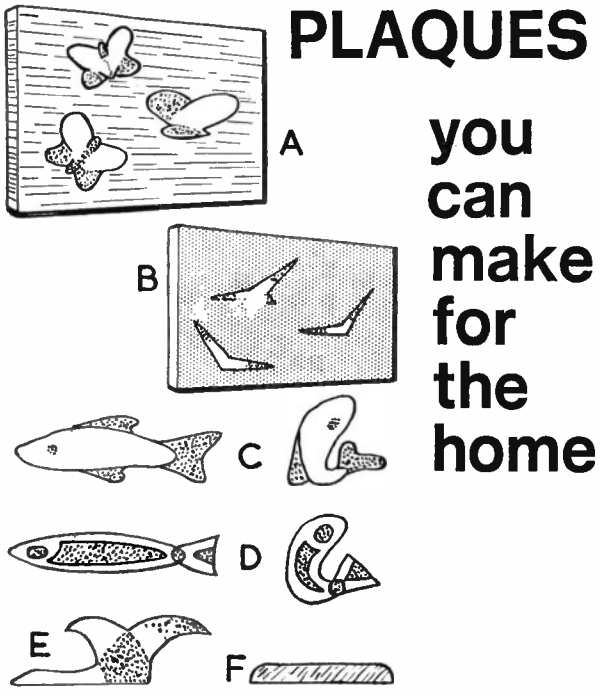
We sometimes receive nasty cuts and scratches by trying to push back thorn hedges or holly bushes for pruning. When a stick is used a branch may spring back threateningly. The gadget shown in Fig. 3 is merely a stick, or cane, pushed through an old funnel which then becomes a guard for the holding hand. The same tool can be used when cutting long grass with a hook. The guard will help to hold back the grass while the hook can make a closer cut without danger of injury to the hand.

If you are apt to flood your boxes of seedlings when watering with a can here's another dodge you may care to try. You should be able to obtain a laundry sprinkler at the hardware shop — a kind of plastic head with a lot of fine holes which fits into the top of a medicine bottle. This will give a really gentle watering to tiny seedlings.

Last, but not least, I would mention a few uses for pipe cleaners. These are cheap, costing about 2d. per bundle and can be used for securing both indoor and outdoor plants to sticks. All you have to do is to twist round the plant, crossing between the stem and stick like a figure eight, then twisting securely to the stick. No tying is necessary and the cleaner covering is so soft that it cannot hurt the plant.

If the holes where you oil the lawn mower become clogged use a pipe cleaner for clearing. The cleaners will also be useful for applying drops of oil to shears.

(S.H.L.)



PLAQUES you can make for the home

PLAQUES with clean, simple lines which blend well with modern furnishing schemes can be an attractive alternative to pictures or photographs on the wall. The effectiveness of the plaques described here depends on the simplicity of their design and colour. The contrast between the honey-coloured finish of the wooden panel and the glossy grey and white of the symbols on its surface is an ideal combination, and this colour scheme should not be departed from.

The panel is made from a piece of ¾ in. thick wood, and is rectangular in shape. A suggested size is 15 in. by 9 in., but this depends on where the plaque is to hang. Before cutting the wood, a brown paper template pinned in position on the wall will give an idea of whether the size is suitable or not.

The panel is cut to size, and two ½ in. diameter holes are drilled in its back so that it can be hung flush with the wall on two picture hooks. The finish on the panel must be impeccable. It is glass-papered on all surfaces and given three coats of wood sealer, rubbing down between coats. The sealer used may have either a gloss or a semi-matt finish; this is a matter of personal taste.

The decoration consists of three motifs which are also made of wood, but finished to resemble glazed pottery. The choice of subject is very wide, but the simplest and most effective shapes are probably those inspired by living creatures.

The butterflies shown at A, or the severely simple gulls at B show two possible examples. Two different shapes are used, two of one shape and one of the other being cut. These are drawn or traced on to ¼ in. thick wood and cut out with a coping saw or fretsaw.

Illustration C shows one way of treating a fish design, and D is a more stylized version of the same theme.

The edges of each shape are rounded off to the section shown at F, and then each piece is painted all over with white enamel, cellulose or one of the new polyurethane finishes. Two or three coats should be applied, and when the surface is perfectly smooth and free from blemishes, pale grey is used to complete the effect. This is shown by the shaded sections in the illustrations. It should be very carefully applied, for the finished pieces must have a glossy appearance like china. When the paint is dry, they are fixed in place with impact adhesive.

A possible simpler variation is shown at E. Here, three identical shapes are cut, and when finished are mounted in a line across the plaque, as a flight of geese. For anyone who does not wish to design his own motif, this means that one magazine illustration or picture can be traced out three times to give the required shapes. (A.L.)

CHANGES TO NOTE

by L. P. V. Veale

ABOUT 25 years ago an article appeared in these pages on 'Britain and British in the stamp album'. At that time it was not very common to find either portraits of foreign statesmen or views of foreign countries on stamps. Countries were very conservative and only portrayed their own, so that most of the stamps mentioned came from the various British Colonies with some exceptions, notably France amd Greece.

Now that the 1965 catalogues are available for collectors to consult it seems a good opportunity to compare the prices asked for stamps in 1940 with 1965. As the value of a stamp depends so much on its condition we shall only consider the case of the mint stamp, that is to say a stamp in the condition you would expect to purchase it over the counter at the post office.

To commemorate the visit of H.M. King George VI and Queen Elizabeth to Paris in 1938 France issued a special stamp. On one side we see a picture of the Houses of Parliament and on the other the Arc de Triomphe. This stamp in 1940 was priced at 9d. and now it has only risen to 1s. 0d. — a very small rise for 25 years.

Suppose we pause for a moment to consider the factors which govern the change in price of a stamp. Briefly it is the law of supply and demand. In France there are some 46 million people so that a very large number of stamps will be used as a matter of course. The stamp illustrated was a commemorative one and many people bought a specimen, consequently there are plenty of them about and not many people still want one. Philatelically speaking 25 years is not a very long time so it is not very likely that many of the stamps will have been destroyed by waste or by fire, etc. Another thing that affects the demand is the popularity of the country concerned. Many collectors go in for the older stamps of France but not very many are interested in the later issues.

Greece is another foreign country that has produced stamps connected with Great Britain. In 1924 there was the issue of an 80 lepta stamp which commemorated the death of Lord Byron (1788—1824). He had accepted an invitation to take an active part in the Greek War of Independence but his health broke down and he died in Greece. Another Greek stamp issued in 1927 bears the portrait of Sir Codrington and this commemorates the battle of Navarino. It was in the bay of this name that the British, French and Russian fleets in 1827 destroyed the Turkish and Egyptian fleets and thus secured the independence of Greece. Well, the Byron stamp has increased from 4d. to 1s. 0d. while the Sir Codrington goes from 1s. 0d. to 10s. 0d.

We must now turn to the stamps of the colonies to give us further examples of 'England on Stamps'. In 1935 the Silver Jubilee of King George V was celebrated by the issue of special stamps. All the crown colonies had the same design of Windsor Castle. As the design was the same for each colony you only see one illustration in the catalogue, and that is for Antigua, Generally there are four values varying between ½d. and 1s. 0d., and in the named colony the 1s. 0d. value has gone from 4s. 6d. in 1940 to 15s. 0d. today, and that represents the normal advance in value. For her Jubilee set Australia showed a picture of King George V on his horse Anzac and the 2s. 0d. stamp has advanced from 6s. 6d. to 35s. 0d., while the 1s. 0d. stamp, which was issued in the same year to commemorate the 20th anniversary of the landing at Gallipoli and which showed a picture of the Cenotaph in Whitehall went from 2s. 6d. to its present value of 20s. 0d.

The two stamps that have shown the highest increase in value during this period come from the Cape of Good Hope or rather they are the two Mafeking siege stamps issued in 1900. Unfortunately many of these stamps were forged and the forgeries were often sold to those returning home after the campaign. The 1d. design showed Sgt. Major Goodyear riding a bicycle and the 3d. value had a portrait of General Baden Powell. These were rather expensive items. In 1940 they were 17s. 6d. and 22s. 6d. respectively, but they are both very popular stamps and the demand has exceeded the supply, so today you would be charged £18 and £22, respectively; in other words they are just 20 times as much.

Before it became part of Canada, Newfoundland was Great Britain's oldest Colony and if anybody wanted to have a royal picture gallery then they could not do better than purchase the 1911 Coronation set. In that they would have portraits of King George V and Queen Mary and eight members of the Royal Family.

1. Houses of Parliament on a French stamp.
2. Newfoundland depicts Eton College.
3. King Charles I on Barbados stamp.
4. King William IV on Cayman stamp.

If some unexpected views of England were desired they would be found in the 1933 Sir Humphrey Gilbert set. For example on the 2cent there is a picture of Compton Castle in Devon, the home of Sir Humphrey. The value of that went from 8d. to 1s. 0d., and the stamp illustrated (the 4 cent) shows a picture of Eton College. This increased from 10d. to 1s. 9d. The 8 cent shows Sir Humphrey Gilbert's fleet leaving Plymouth in 1583 and that just doubled its value from 4s. 0d. to 8s. 0d. On the 32 cent value of this set you can see a picture of Gilbert's statue which is at Truro. This stamp increased from 17s. 6d to 60s. 0d.

A point may well be made here and that is that the better the stamp the bigger the rise. Note that the 2 cent rises 50%, the 4 and 8 cent both go up 100% while the 32 cent increases by nearly 250%. It is always a better proposition to buy one high value stamp than two or three of the lower values.

Two examples now to show how unpredictable the market is. The 1927 1d. Barbados issued to mark the tercentenary, (illustrated) showed the portrait of King Charles I. In 1940 this was 10d. and in 1965 4s. 0d. — very nearly five times as much. Also illustrated is a stamp from the Cayman Islands. This one has only increased from 2d. to 6d.

Here you have some interesting examples of how stamps increase in value. Twenty-five years may seem a very long time to keep a collection but it isn't really, and if you bear two points in mind there is every chance that later on you may have a very pleasant surprise.

Do not collect stamps just because you expect a sudden rise in value; rather collect for the interest that the stamps give you, then any increase will be pleasant. Secondly if at any time you seem fed up with collecting then do not sell or give away the stamps; rather wrap them up and put them away carefully until such time as you have the urge to start again. Then you will probably find that your collection has been growing in value as far as money is concerned, and even more important, it has grown in interest as well.

From what we find in the last 25 years it would appear as though the increase in value might be up to twenty times with an average gain of at least three times, in addition to which we have had the pleasure and interest. In other words we are paid for our pleasure.

You can have fun with Word Chains

HAVE you played at making 'word chains'? You begin with two different words having the same numbers of letters, like the words 'SLOW' and 'FAST'. Then, by changing one letter at a time, you form a chain of words that transforms one word into the other. Thus, to turn 'slow' into fast', you can write: 'SLOW', 's(h)ow', 'sho(t)', 's(o)ot', '(m)oot', 'mo(s)t', 'm(a)st', and '(F)AST'. The brackets are used here to emphasize which letters are changed each time.

You can practise with these ten word chain puzzles, by transforming:

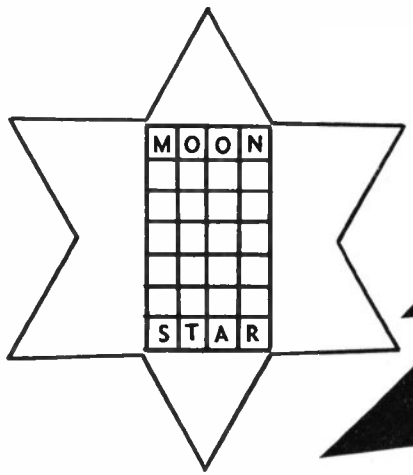
(1) 'SOLO' into 'DUET',
(2) 'MAN' into 'APE',
(3) 'WALK' into 'RIDE',
(4) 'DOLL' into 'BABY',
(5) 'MOON' into 'STAR',
(6) 'HEAT' into 'COLD',
(7) 'SHED' into 'BARN',
(8) 'RISE' into 'FALL',
(9) 'BOLT' into 'LOCK',
(10) 'BLACK' into 'WHITE'.

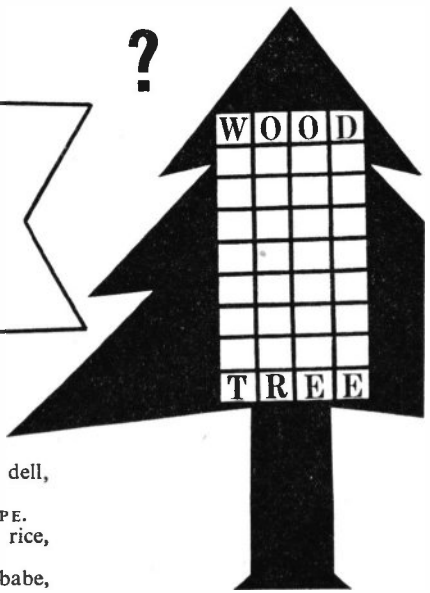
Sometimes you can make several different word chains between a given word pair, but the shortest chains are regarded as the neatest solutions to these problems. Also, all your words must be genuine; so do keep a dictionary handy.

When you make up your own word chains, try to join words that have opposite meanings, like 'GIVE' and 'TAKE', 'HEAD' and 'TAIL', 'PAWN' and 'KING'. It is always fascinating to see how completely the alteration of single letters changes the meanings of successive words.

Inventing word chains is an instructive game of skill, as absorbing as playing patience with cards. If you like, you can devise these puzzles for your school, works or club magazines. The problems look more inviting if you provide spaces for the words to be written inside. If you can draw, illustrate your puzzles with simple pictures such as those shown. Each illustration, you will note, has a bearing on the words used in the chain. Don't forget to accompany your efforts with clearly written instructions and, of course, your own solutions.

Here are some possible answers to the ten puzzles given earlier:





(1) SOLO, sold, told, toll, tell, dell, dull, duel, DUET.

(2) MAN, mar, ear, err, ere, are, APE.

(3) WALK, talk, tack, rack, race, rice, RIDE.

(4) DOLL, dole, bole, bale, babe, BABY.

(5) MOON, soon, soot, spot, spat spar, STAR.

(6) HEAT, head, held, hold, COLD.

(7) SHED, seed, send, bend, band, bard, BARN.

(8) RISE, rile, file, fill, FALL.

(9) BOLT, boot, loot, look, LOCK.

(10 BLACK, slack, slick, slice, spice, spine, shine, whine, WHITE.

Can you find any shorter 'chains' than the solutions given? (A.E.W.)

Simple to make

INDOOR SHOOTING GAME

By C. A. Guy

THIS is a game that should prove popular with the younger members of the family. The gun actually fires wooden bullets at cut-out figures of cats sitting on a wall, so that on scoring a hit there is the satisfaction of seeing the cat sent toppling off the wall. Measurements and full-size diagrams are shown on the centre pages.

Marking and cutting

Simplicity has been aimed at in designing the gun. Moving parts have been kept to a minimum, making the cutting and assembling of parts comparatively simple. The gun is built up, sandwich fashion, from three pieces of ¼ in. thick wood which can all be marked from the full-size plan shown on the centre pages. To transfer the shapes to the wood, simply insert a piece of carbon paper between the plan and the wood, then draw round the outline; this leaves a clear impression on the wood.

Start with the two outer pieces. For these, draw round the general outline of the gun, but where a dotted line is shown, follow this instead of the main outline. This results in the shape shown at B. The pieces are easily cut out with a fretsaw. The narrow slots shown are cut in these outer pieces only. If an ⅛ in. hole is drilled each end of the slot, the remaining wood is easily removed with a fretsaw, cleaning up afterwards with a thin flat file.

For marking the centre piece of wood (as at A) draw round the outline of the areas shown shaded. These can all be cut out at the same time; the sliding block can be cut from one of the oddments, and has a 3/16 in. hole drilled in it as shown. The cut pieces should be cleaned up with glasspaper, paying particular attention to the edges that form the inside of the barrel. The faces of the trigger lever and the sliding block should be well rubbed down as they must move freely between the outer sections when the gun is assembled.

To assemble the gun, the middle section, plus the two small pieces C and D, should be glued to one of the outer pieces, a few small countersunk wood-screws can also be used to prevent the pieces moving. The other outer piece can now be glued or screwed in place. If no screws are used, the three pieces should be suitably clamped together until the glue hardens. The gun can now be cleaned up with glasspaper, after well rounding all the edges with a file.

The trigger lever is held in place with a ¾ in. length of ⅛ in. wooden dowel, on which it should pivot freely. The sliding block is slid into place, and a 1½ in. length cut from a 2 in. nail is inserted through the hole, projecting an equal distance both sides. A rubber band (about 3 in. long) is pushed through the 3/16 in. hole and the two ends looped over the ends of the nail.

To check the action, draw back the sliding block until it locks in place, this sets the gun for firing. The gun is fired by applying pressure to the trigger lever with the thumb. This releases the sliding block, which shoots forward with a crack.

The bullets are simply ¾ in. lengths of ¼ in. wooden dowel, with one end rounded. The dowel should be well rubbed down with glasspaper before cutting into lengths to ensure a good sliding fit in the barrel. A 3 ft. length of dowel will provide an ample supply of bullets. The gun is loaded of course, by inserting a bullet into the hole provided on the top of the barrel *after* setting the trigger lever.

Targets and wall

Working to the full-size plan, three cats are cut out of ⅛ in. thick wood or cardboard. A 1 in. length of ¼ in. square strip wood is glued to the back of each one to form a base.

The wall is made from a piece of ¾ in. thick wood to the dimensions shown. The 'gate' is simply a 5 in. by 3½ in. piece of ¼ in. thick wood, nailed or screwed in place. Two ¾ in. squares of the same wood are glued to the top of the wall as shown. The two discs, also shown full-size, are stood one each side of the gate to provide additional targets, these also have a small strip of wood glued to the back. The wall can be covered with brick-paper, as sold for model making, which makes it look more realistic.

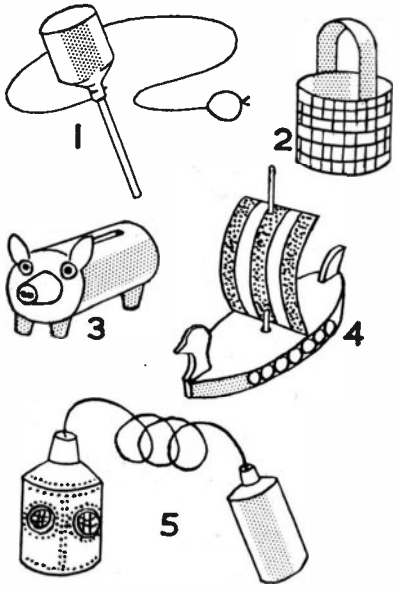
A large cardboard box provides the background. This should have one side and the top removed. On the inside of the back a house front should be drawn or painted; nothing elaborate is called for, just a few windows and a door is enough to suggest a house front. The wall is of course just stood up in the front of the box.

The gun rest is an optional extra, and can be omitted if desired. It is made from ½ in. thick wood to the dimensions shown. The rest is only used to steady the gun when shooting, and is not attached to it in any way.

When playing the game, the following method of scoring is suggested: each cat is given a value of 5 points, and the two discs 10 points each. Each player in turn fires five bullets, and the first player reaching a pre-arranged figure is the winner.

Although the gun has a range of about 20 feet, it is only really accurate up to about 5 or 6 feet, which is ample for the game, especially if it is played on a table.

Although powered by a single rubber band, the bullet leaves the gun with surprising force, so please be careful — do not point the gun at anyone's face when loaded. Always set and point it at the target before loading with a bullet.



Novel Squeeze Bottle Games and Ideas

TRY making these amusing novelties from empty plastic detergent containers. Each one can be made in a few minutes, and finished in bright enamel they look most attractive.

1. A cup-and-ball game, where the aim is to catch a captive ball in a cup, needs only the top half of a plastic container. A length of dowel rod is glued into the neck of the container, and a piece of elastic is tied round it. The other end of the elastic is passed through a hole bored in a small rubber ball, and knotted at the end.

2. Attractive little baskets for flowers or novelties can be made from the bottom halves of containers. Cut round each container half-way down its side, leaving a vertical strip at each side to form the handles. Bend the strips over and glue them together with impact adhesive or fasten them with brass paper-fasteners. Paint the outside of the basket in a wicker-work pattern as shown, using brown, fawn and yellow. Alternatively, cover the outside with strips of coloured adhesive tape in the same pattern.

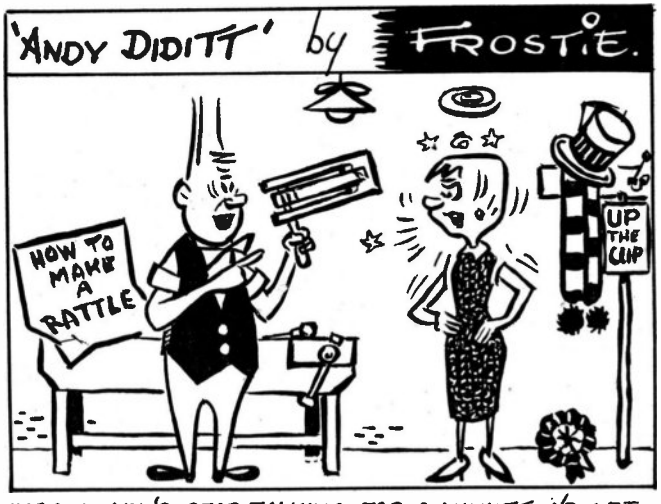
3. For a piggy-bank, cut a slit down one side of a container, glue four cork legs in place after cutting their top ends at an angle so that they sit squarely when in position, and glue plastic ears, cut from a piece of another container, to the shoulder of the piggy-bank, as shown. Paint the container pink, with black and white eyes and snout.

4. A Viking ship for a young child needs only a 9 in. length of 3 in. by 1 in. wood, shaped as shown and given a 9 in. mast of ¼ in. diameter dowel rod. The ornamental bow and stern pieces are cut from ¼ in. thick wood with a fret-saw and fitted into notches in the hull, being held with panel pins. The waterproof sail is cut from a plastic container; two slits are cut in it so that it can be slipped over the mast, and it is painted in red and white stripes. The hull is white with red circles along each side for shields.

5. A working model diving-bell which rises and sinks realistically in water by remote control uses only two containers and a length of thin plastic tubing. The bell itself should be a small size container, if possible, but this is not essential. A ring of small holes is pierced in its underside with a knitting needle or a bradawl, and two or three small pebbles are inserted to weigh it down. The plastic tubing is passed through a hole in the cap and glued in place to make an airtight joint; and the cap is screwed tightly in place.

The other end of the tubing is similarly fixed to the second, unpunctured container. The bell is painted black, with white 'port-holes', and dots for rivets.

The bell is immersed in water and turned sideways until enough water enters to allow it to sink. Squeezing the second container will make the bell rise or fall, depending on the pressure applied. (A.L.)



"IF ONLY YOU'D STOP TALKING FOR A MINUTE, I'D LET YOU HEAR THE TERRIFIC NOISE THIS THING MAKES!"

PICTURE FRAMING

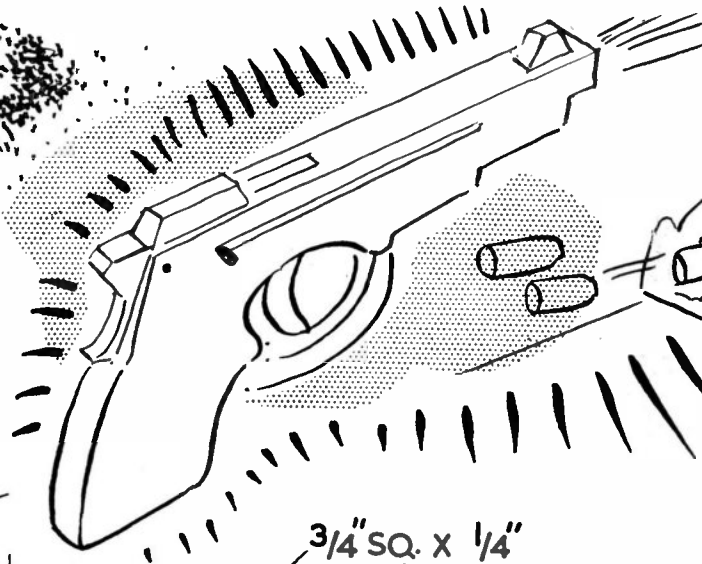
By Max Hyder

WHETHER you are going to select an appropriate frame at an art store or buy the materials to make it yourself, you will find helpful advice in this book.

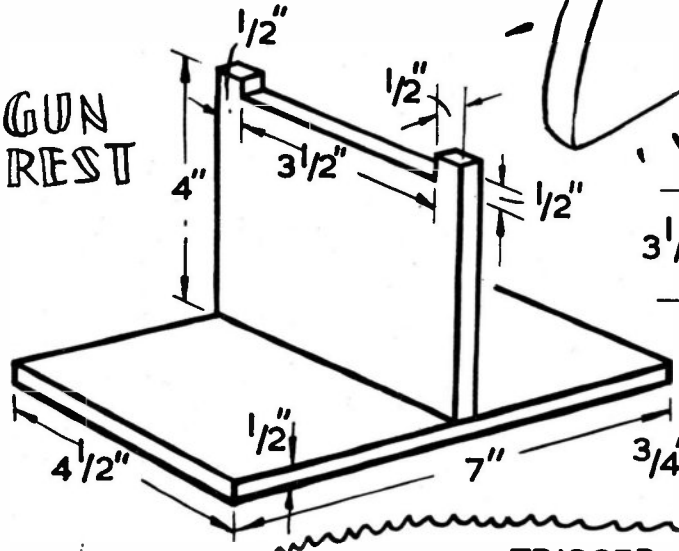
The instructions for making frames with readily available materials and tools make picture framing easy enough for anyone to do. An illustrated step-by-step framing job shows exactly how it is done. Even if you do not make your own frames, the appreciation of effective framing gained from this book will enable you deal more knowledgeably with professional framers.

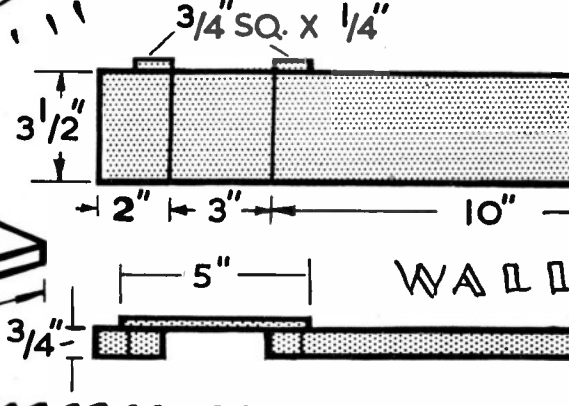
Published by Sir Isaac Pitman & Sons Ltd. Price 16s. 0d.

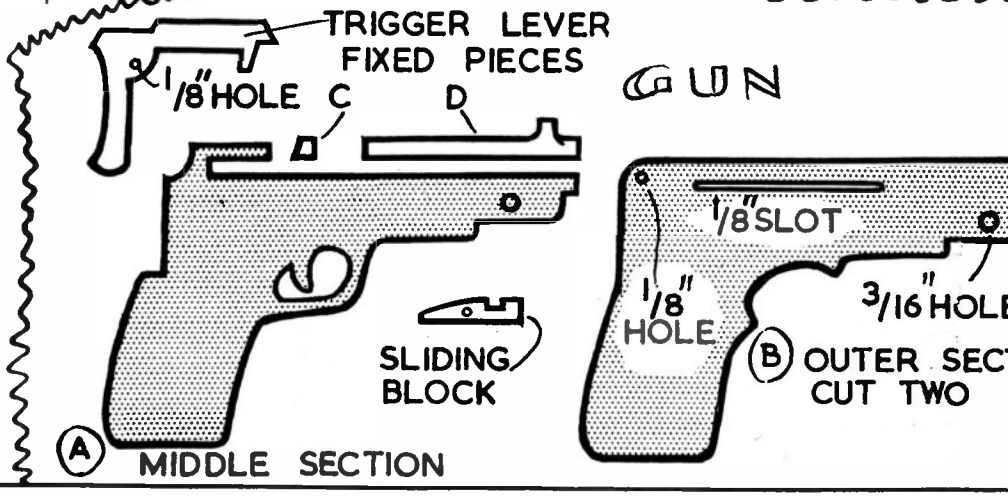
SHOOTING GAME

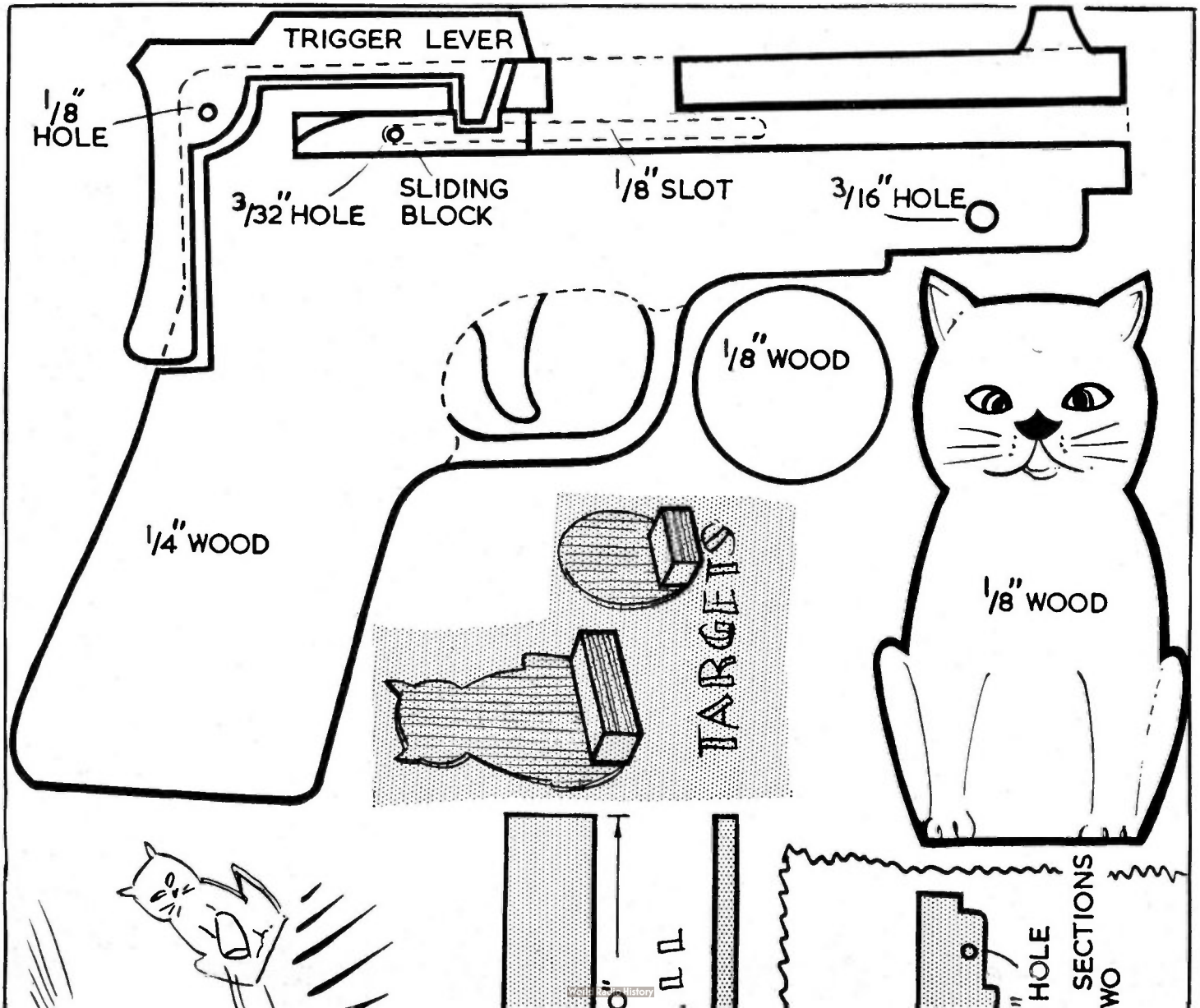


GUN REST








TRIGGER LEVER
1/8" HOLE
3/32" HOLE
SLIDING BLOCK
1/8" SLOT
3/16" HOLE
1/8" WOOD
1/4" WOOD
1/8" WOOD
TARGETS
HOLE
SECTIONS
WO

CHEMISTRY AT HOME

TANNIC ACID

By L. A. Fantozzi

OAK apples, or galls, contain a peculiar astringent substance which we call tannic acid. It is one of the rather large group of substances known as tannins, all of which occur in plants and trees.

Though they have been known and used since ancient times for making leather and ink, their precise chemistry has still not been completely clarified by research. Ordinary tannic acid from galls, for instance, is now known to be a mixture of closely similar substances whose elemental proportions consist of $C_{76}H_{52}O_{46}$. Because of its mixed composition, formulae for its salts would be misleading, for they themselves are mixtures.

About its reactions, however, a great deal is known and they form the basis of a number of interesting experiments.

Add some tannic acid to water in a test tube. You will find it is readily soluble, especially on warming. Mix a few drops of the solution with one of ferric chloride, $FeCl_3.6H_2O$. A blue-black colouration appears. It looks inky, and in fact is the basis of common blue-black writing inks and for which it has been used for a very long time. The older inks were rather crude. Modern formulations have brought about great improvement.

An excellent ink, suitable for steel or for fountain pens, can be made up by dissolving each in 30 ml. of hot water, 1·5 grams of tannic acid, 1·5 grams of ferrous sulphate, $FeSO_4.7H_2O$, and 0·35 gram of Soluble Blue. Mix the three hot solutions. To 9 ml. of water add 1 ml. of strong hydrochloric acid, HCl (caution, corrosive; any on the fingers should be flushed off with water, and wet sodium bicarbonate, $NaHCO_3$, dabbed on). Stir this diluted acid into the mixed solutions, allow to cool, and then bottle it. Let it stand for about a week. After filtering from any sediment through a loose plug of cotton wool (Fig. 1) the ink is ready for use.

Tannins have the property of converting proteins into insoluble non-putrifying substances. This is of great importance in the leather industry. Skin consists of protein. Consequently, if hides are steeped in tannin solutions, the easily putrifiable skin is converted into stable leather.

Gelatine is a protein and may be used to see what happens. Dissolve some gelatine in hot water in a test tube, and add tannic acid solution. The soluble gelatine forms a white or buff precipitate, so finely divided as to appear milky. By adding a solution of ammonium chloride, NH_4Cl, the precipitate clumps together and is more readily observed.

Because of this property tannic acid has been used in the treatment of burns. The soluble protein toxins in the burns are made insoluble and so unabsorbable by the wound.

Other reactions are interesting and form a basis of distinguishing tannic acid from other similar tannins.

To a solution of potassium ferricyanide, $K_3Fe(CN)_6$, add enough ammonium hydroxide, NH_4OH, to impart a fairly strong smell of the latter. Add a few drops of this reagent to some tannic acid solution. A red colour appears.

To a small volume of tannic acid solution add excess of lime water, $Ca(OH)_2$. Here a white precipitate forms which rapidly becomes blue on exposure to the air.

Added to tannic acid solution lead acetate, $(CH_3.COO)_2Pb.3H_2O$, also produces a white precipitate, but this does not become blue.

Mixed Fehling's and tannic acid solutions, on heating, throw down a red precipitate of cuprous oxide, Cu_2O.

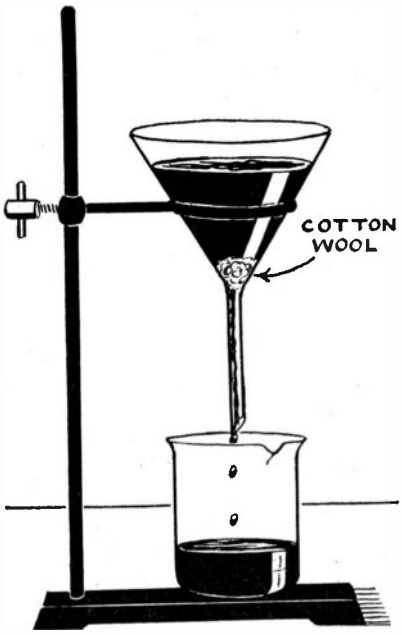


Fig. 1—Filtering the ink

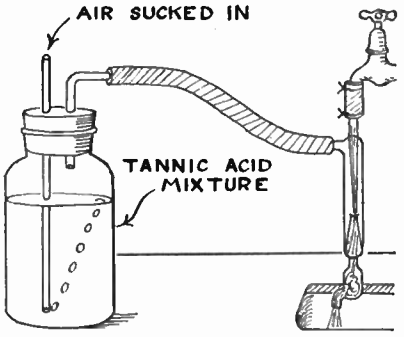


Fig. 2—Rapid conversion of tannic acid to ellagic acid

Solution of copper sulphate, $CuSO_4.5H_2O$, shows no change when mixed with tannic acid solution, but on adding ammonium hydroxide a brown precipitate forms.

Solution of potassium dichromate, $K_2Cr_2O_7$, also produces a brown precipitate.

When acted upon by certain substances, tannic acid is converted into glucose, $C_6H_{12}O_6$, and gallic acid, $C_6H_2(OH)_3.COOH$, by addition of the elements of water:

$$C_{76}H_{52}O_{46} + 10H_2O = C_6H_{12}O_6 + 10C_6H_2(OH)_3.COOH.$$

One of these substances is the ferment tannate which exists in oak apples. To prepare gallic acid from tannic acid first crush an oak apple, wet the mass and keep it moist in a warm place for a few days until it grows mouldy. Add the mouldy mass to a solution of 10 grams of tannic acid in 200 ml. of water and leave the whole in a warm place for a few weeks. The mould increases. Maintain the level of the liquid by occasional additions of water.

After about 8 weeks the liquid should be tested weekly to see if all the tannic acid has been converted into gallic acid. The test is based on the fact that whereas tannic acid precipitates gelatine solution, gallic acid does not. Therefore, when a few drops of the liquid no longer give a precipitate with warm gelatine solution,

the reaction is at an end.

Now pour away the liquid from the solid residue in the vessel. Boil up the solid matter with 50 ml. of water, and filter hot. The filtrate on cooling and standing overnight deposits minute buff crystals of gallic acid, which may be filtered off and allowed to dry at room temperature.

An interesting change occurs when oxygen, O, from the air acts upon tannic acid under certain conditions. Ellagic acid, $C_{14}H_6O_8$, is formed, together with glucose: $2C_{76}H_{52}O_{46} + 50_2 =$

$10C_{14}H_6O_8 + 2C_6H_{12}O_6 + 10H_2O$.

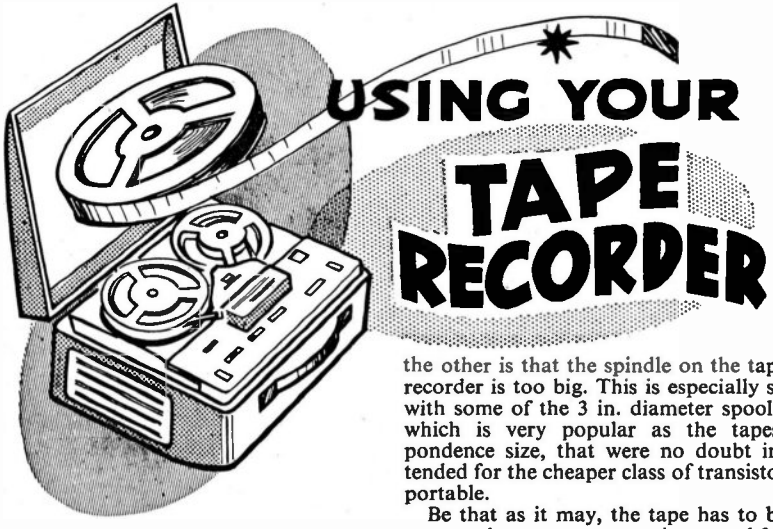
This acid has found use as a dye in conjunction with chromium, Cr, mordants.

To prepare it, dissolve 5 grams of tannic acid in 100 ml. of warm water. Let the solution cool. Add a solution of 21 grams of sodium bicarbonate in 400 ml. of cold water. The tannic acid is hereby precipitated in a finely divided form. The buff colour of the precipitate gradually darkens to bottle green, and then to grey-green as oxygen is absorbed.

This oxygen absorption is a slow process. There are two ways of hastening it. Shake it with air in a bottle at least once daily, leaving the bottle uncorked between each shaking. This method requires about two months. A quick process which is complete in 48 hours consists of drawing air continuously through the liquid, using a filter pump as shown in Fig. 2.

After the period required by either of these methods, filter off the ellagic acid. When it has drained, slowly pour through it a solution of 0·5 gram, of ammonium bicarbonate, NH_4HCO_3 in 50 ml. of water. After the solution has drained through, remove the ellagic acid to a beaker containing a mixture of 1·7 ml. of strong hydrochloric acid and 20 ml. of water. Stir for a few minutes, filter off the ellagic acid once more, run through it a mixture of 1 ml. of strong hydrochloric acid in 100 ml. of water, and then let the ellagic acid dry.

It will be found to be insoluble in water, but dissolves in alkalis, such as potassium hydroxide, KOH, to yield a yellow solution.



USELESS SPOOLS

By G. E. Gompers

MAGNETIC tape is always an acceptable gift to a tapeologist whether the occasion is birthday, Christmas, Easter, Wedding Anniversary or just a good will gesture. But those making such gifts are not necessarily tapeologists and quite likely to them one tape spool is just like another, so that it is not unlikely that the recipient of such a gift may have a beautiful spool of unused, new tape which he cannot fit on his machine to use.

There are two reasons why a spool is useless. One is that it is too large, and the other is that the spindle on the tape recorder is too big. This is especially so with some of the 3 in. diameter spools, which is very popular as the tapespondence size, that were no doubt intended for the cheaper class of transistor portable.

Be that as it may, the tape has to be unwound on to an appropriate spool for use. A keen tapeologist has a number of empty spools on hand for such occasions. Personally, I have no problem here since I happen to own a special tape stand and all I have to do is to remove its little brass spool and put the unwanted tape spool on its spindle. This, incidentally, I made at a metal work class, but most recordists will have to think of something else to act as a spindle.

After tackling the problem, I resolved that the best method was to use a shilling biro pen, and to use the thumb to prevent the spool sliding too far down the pen, thus getting stuck. This works well, but care should be taken to keep the useless spool level with the winding spool.

What to be done with the useless spool? I should imagine that you could sell it to any tape dealer, or if you are a club member you could donate it to the 'pool'. For me, I am really original. I throw them in the dustbin!

NOTE TO CORRESPONDENTS

All correspondence on any subject covered in this magazine *must* be addressed to: The Editor, Hobbies Weekly, Dereham, Norfolk. If a reply is required, queries should be accompanied by a stamped addressed envelope and reply coupon inside back cover.

CARE OF STRAWBERRIES

IT is now time to take particular care of your strawberry bed if you are to enjoy these luscious fruit next month. A little time spent now will pay dividends later.

Clean the beds

Naturally the first requisite is to clear any weeds that may be apparent. Strawberries are surface rooting plants and the soil should be disturbed as little as possible when weeding or hoeing. Weeds should not be left lying on the soil, but should be raked up and removed.

Prepare for frosts

A late frost in May could well cut the crop by half if the flowers are already open. You will see the centre of the flower turn black, a sure sign of frost damage. It is comparatively easy to avoid damage in a small garden, simply cover with newspapers if frost threatens on clear still evenings following a warm day. The papers can be weighted down with stones or a little earth drawn up from the bed. It is often stated that strawberry netting will prevent frost damage, but this is a debatable point, and should not be relied upon.

As far as feeding is concerned, the main requirements at this time of year is a dressing of superphosphate of lime — about two or three oz. per square yard will suffice.

Runners

Unless new plants are required to fill blank spaces, or to provide new beds, all runners can be removed as they appear. Snip them off near the plant, and remove them. If new plants are required, the runners can be pegged down in the centre of the row. Use pieces of wire, stones or a little loose soil to hold the runners in contact with the ground. Once it is obvious that they have rooted, the runners can be severed from the parent plants. It is usual to take runners in this way from maiden, i.e. one year old plants. These usually have more vigour, and are healthier than those from older established beds.

Straw

Buy or beg your straw in good time, and keep it in the dry. When the fruit begins to form, the beds should be strawed, tucking sufficient under the bunches of fruit to keep them above ground and prevent splashing and soiling. Use only clean straw, discarding any that may appear mildewed.

The alternative to straw are strawberry mats or black polythene sheeting. Either of these is efficient, but will of course be more expensive than straw.

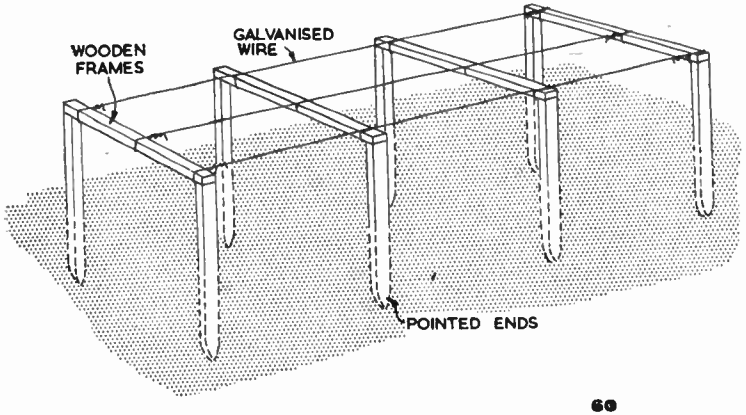
Nets

Finally the fruit must be protected against birds. The normal method is to use small-mesh strawberry nets, stretching them over the beds as soon as the fruit begins to colour.

A simple framework of wood and wire can quickly be made up as shown in the diagram. Use 1½ in. by 1 in. timber, rough sawn and treated with green cuprinol. Drive the frames into the ground at suitable intervals and then stretch wires across as shown. The nets are then draped over, with a few pegs here and there to prevent them blowing about. It is a simple matter to remove the pegs and fold back the nets for picking.

For larger beds it is sometimes an advantage to erect a temporary cage about 6 ft. high. It simplifies picking but more work and more netting. The exact composition of the cage framework would depend upon material at hand, but stakes, angle irons or spare bean poles could all be pressed into service.

(M.h.)

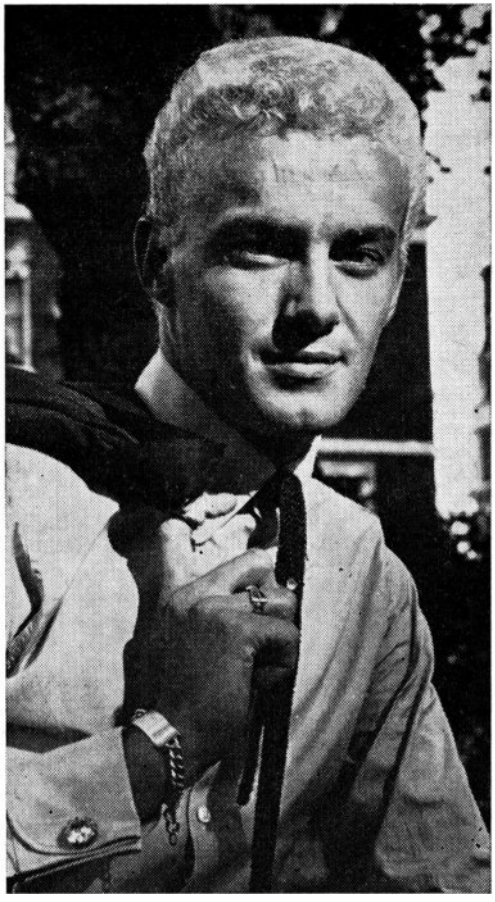


BEAU BRUMMELL

Trying to recreate a personality who lived over 150 years ago and become a pop singer into the bargain is a difficult enough task for anyone, but a 22 year-old South African is trying to do just that. The personality is one of the most eccentric men who ever lived — Beau Brummell. Unlike the foppish dandy of the original Brummell, Beau 1965 is blond, handsome, 6 ft. 3 in. tall, weighs 13 stone and is an accomplished sportsman. First disc by Beau Brummell Esquire is *I Know, Know, Know* on Columbia DB7447.

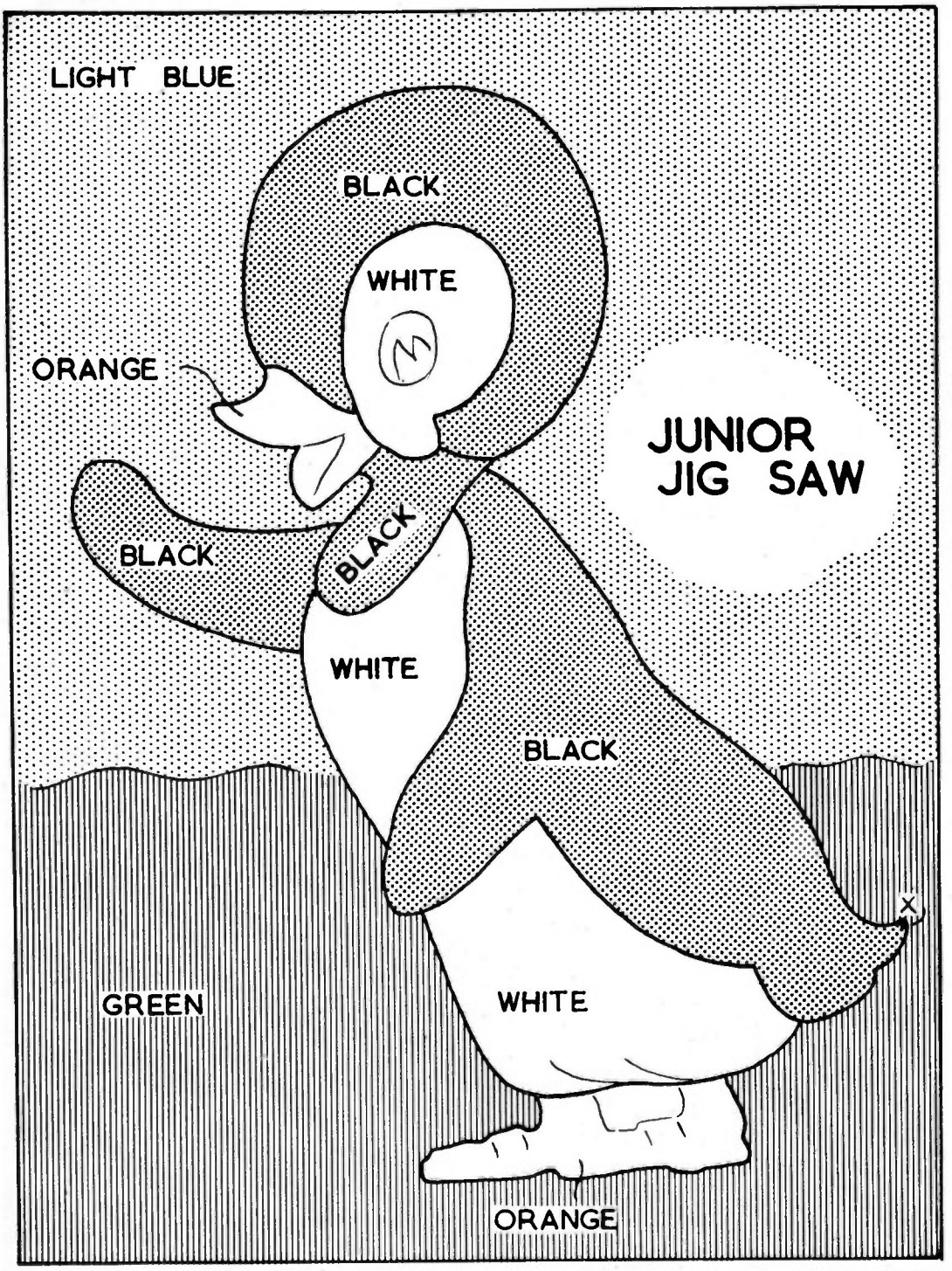
SUSAN HOLLIDAY

Girl with an eye on the hit parade is pretty young Susan Holliday. Susan went straight into show business from school at 15 and made records under the name of Susan Singer. Now at 17 Susan has a brand new recording contract with Columbia, her first disc being *Street of Dark Despair* (DB7363).



HEINZ

Heinz made his debut on the Columbia label with *Questions I can't answer*, recorded by Joe Meek. Here he is seen relaxing before setting off on a hectic trip to Australia.



Cut from ¼ in. plywood with a fretsaw. Trace the pattern and transfer the design on to the wood by means of carbon paper. Drill at X to start the interior cuts. Clean up with glasspaper and paint as indicated. Alternatively use a Decorette transfer No. 400.

(M.p.)

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BUILD YOUR OWN CRAFT

Plans for CANOES, DINGHIES, POWER BOATS

MUCH of the cost for a professionally built boat is for time, and a craftsman's wages can be a considerable item. As time costs the amateur nothing he can, solely for the price of the materials used, achieve first-class results if he is prepared to be patient and careful. The plans of the craft specified below are by the expert P. W. Blandford and provide all the information you need to build from scratch. Shaped parts are shown full size and there are detailed instructions. A list of firms supplying materials and kits is provided with each plan. Postage 10d. extra on each plan.

CRUISER

NOMAD. 16 ft. × 6 ft. 2½ in. double-chine cabin cruiser, with full-size bunks for two and room for two more on air beds in the cockpit. Space in cabin for cooker and toilet, and ample lockers. Performs well with outboard motor of 4–10 h.p. and will plane with 18 h.p. The complete boat weighs about 6 cwt. and is easily towed and launched from a trailer. Draught 12 in. Cabin 8 ft. long and 47 in. headroom, with 34 in. over the bunks. The prototype was built single-handed in one month at a cost of £100. **Price 45/-**

DINGHIES

WENSUM. 11 ft. × 56 in. double-chine plywood sailing boat. The basic boat is an open dinghy with a gunter rig of about 66 sq. ft. Weight complete about 220 lb. Draught of hull only 6 in. and with centreboard down about 30 in. The sailing gear is easily removed to make a general-purpose dinghy for rowing or outboard use. Suitable for sailing by a crew of two or will carry four for general use. **Price 17/6**

GOBLIN. 9 ft. 10 in. × 54 in. plywood pram dinghy of special form, light enough to be easily lifted on to a car roof. Construction is easy and quick. Good foredeck and buoyancy built in under side benches. Weight complete 120 lb. Sail area 52 sq. ft. in a single lug sail. Good performance as a racer and sail numbers are issued. **Price 16/-**

GREMLIN. 7 ft. 7 in. × 46 in. plywood pram dinghy of special form. This is the longest hull that can be got out of standard 8 ft. sheets of plywood. The bottom is a single sheet, split at one end and sprung to give a V forward and a curve aft. Has been built as a rowing boat for £10 and with rudder, dagger board and sailing gear for £16. Can be carried single-handed. **Price 15/-**

PETE. 6 ft. × 44 in. flat-bottom pram dinghy. The cheapest and simplest practicable boat. Can be built from one plywood sheet and may cost less than £5. Details of simple sailing gear included. Suitable for angling. Will carry two adults or three children. **Price 11/-**

CORRIB. 10 ft. × 51 in. single-chine V-bottomed plywood, general-purpose dinghy for rowing or outboard motor (3 h.p. is adequate). Simple construction, but a very shapely craft and a fine family boat. **Price 13/6**

VENTURER. 11 ft. × 54 in. double-chine fast outboard boat. Two versions are included. The basic design is a camping cruiser, adaptable to sleep two on air beds under canvas cover. Runabout version also described. A 4 h.p. motor is adequate for general purposes and the boat will plane with upwards of 10 h.p. The basic boat has been built for about £25. Not adaptable to sailing, but can be rowed. Normally seats four. **Price 17/6**

CANOES (Folding)

PBK24. A short single-seater of similar lines to PBK10, but with a longer cockpit. Packs into one bag. 11 ft. long, 28 in. beam, 55 in. cockpit, draught 4 in. Normal maximum load 300 lb. **Price 13/6**

CANOES (Rigid fabric-covered)

PBK10. The shortest satisfactory canoe, carrying a man and camping kit. Suitable for most waters. 11 ft. long, 28 in. beam, 48 in. cockpit, draught 5 in. Normal maximum load 300 lb. **Price 12/-**

PBK14. Roomy single for the big man or a two-seater for an adult and child or two young people. A popular tourer. Has crossed Channel as a single-seater. 14 ft. long, 29 in. beam, 76 in. cockpit, draught 5 in. Normal maximum load 500 lb. **Price 13/6**

PBK15. Fast touring single-seater, suitable for rapid rivers and the open sea in capable hands. Safe and stable. The adult enthusiast's canoe. Many Channel crossings. 14 ft. 6 in. long, 26 in. beam, 48 in. cockpit, draught 4 in. Normal maximum load 400 lb. **Price 13/6**

PBK20. Very stable and seaworthy two-seater, with sufficient beam to carry an efficient sail plan. Very roomy and popular as a tourer on most waters. 15 ft. long, 32 in. beam, 7 ft. cockpit, draught 6 in., normal maximum load 600 lb. **Price 13/6**

PBK26. Fast and stable single-seater with a shorter cockpit and a rockered keel, making it a good boat for rapid rivers. Many successes in long-distance racing. 14 ft. long, 26 in. beam, 39 in. cockpit, draught 4 in. Normal maximum load 400 lb. **Price 13/6**

CANOES (Rigid plywood skinned)

PBK16. A two-seater, flat bottomed, safe and robust. May be left afloat. 16 ft. long, 32 in. beam, 7 ft. cockpit, draught 5 in. Normal maximum load 700 lb. **Price 13/6**

PBK23. A single-seater with the same main dimensions as PBK15, but with V-bottom and hard-chine section. Roomy and stable, may be left afloat. 14 ft. 6 in. long, 26 in. beam, 48 in. cockpit, draught 4 in. Normal maximum load, 400 lb. **Price 13/6**

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