

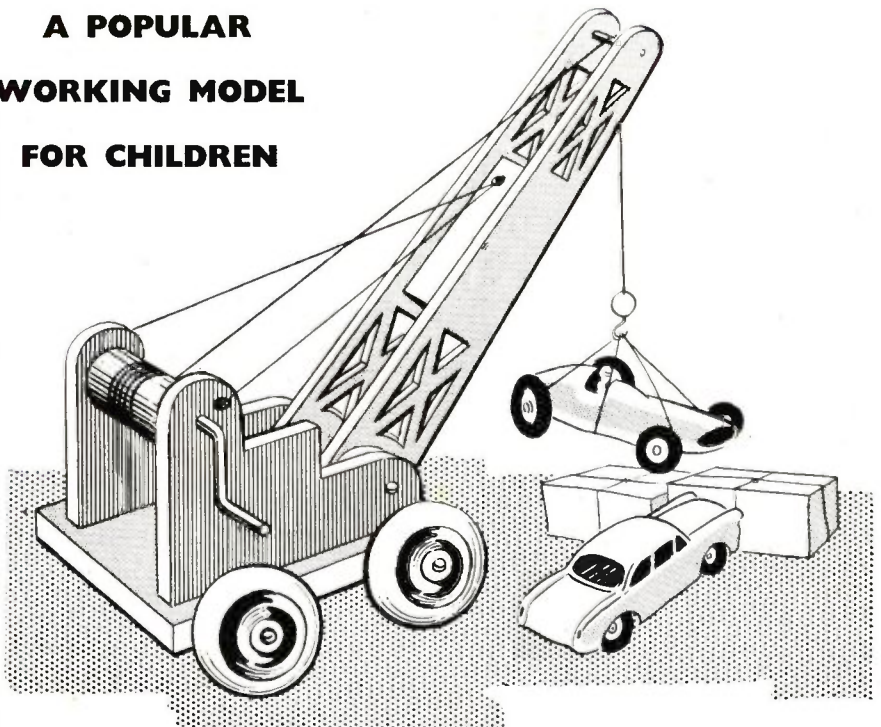
HOBBIES *weekly*

20th OCTOBER 1965

VOL. 141

NUMBER 3645

**A POPULAR
WORKING MODEL
FOR CHILDREN**



TOY CRANE

FOR CRAFTSMEN OF ALL AGES

6^p



A WORKING TOY CRANE

NOT only is this an attractive working model for a small boy, but it is one which he might well attempt to make himself. With a little guidance and help from father, the model could be constructed in a couple of evenings and provide hours of fun in the making and using. It can be painted in bright colours to provide an acceptable gift at Christmas or for a birthday.

The general construction of the crane is shown in Fig. 1 and the exploded diagram in Fig. 2. The side, jib and jib washers are shown full size in Fig. 3. Trace these pieces on to a piece of tracing paper and transfer them to wood by means

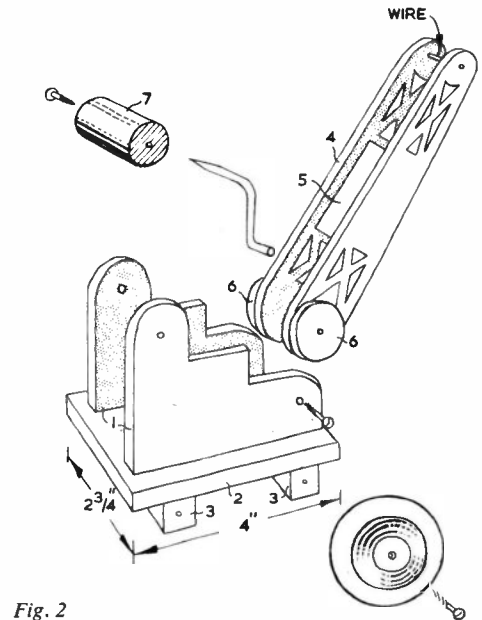
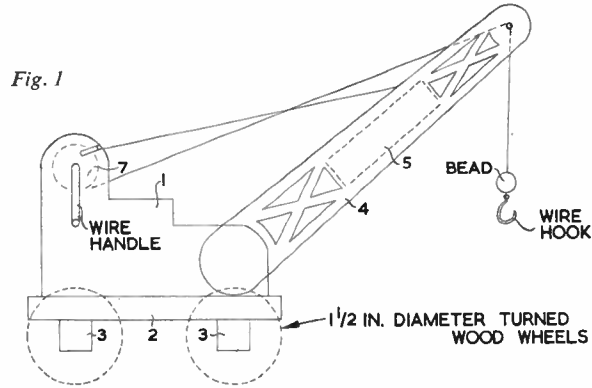


Fig. 2

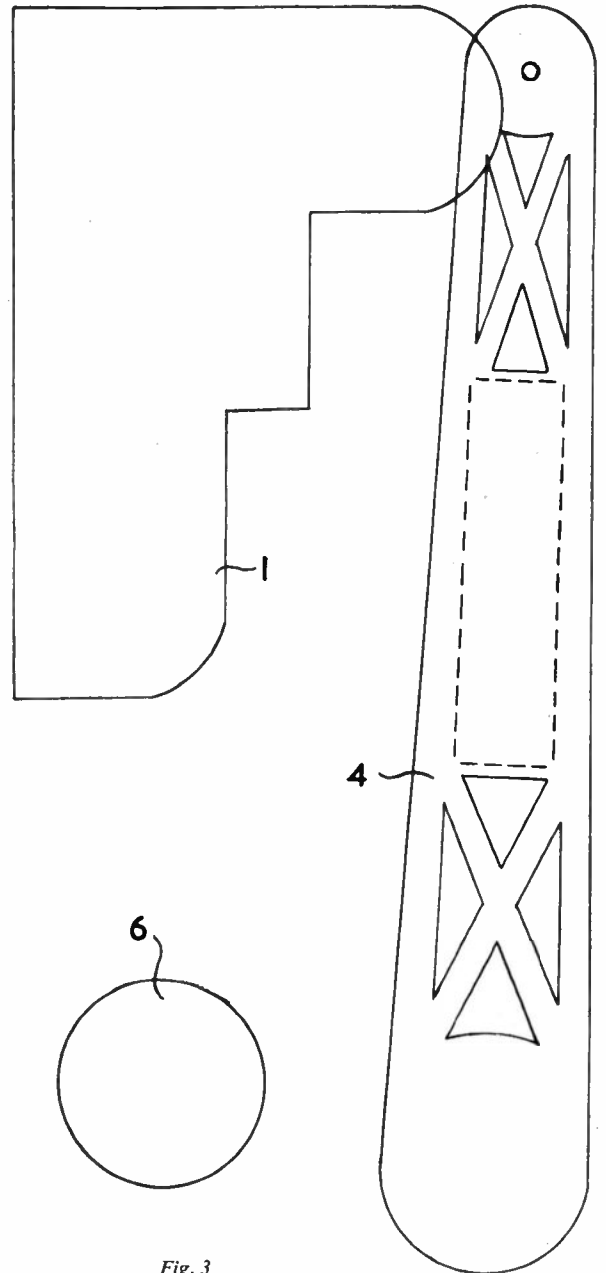


Fig. 3

of carbon paper. You will need two of each of these parts, the sides 1, being $\frac{3}{8}$ in. thick, the jib pieces 4, and the washers 6, being $\frac{1}{4}$ in.

All parts are cut with a fretsaw, the jib being neatly fretted as shown. For the beginner these frets may be omitted if desired, but an attempt should at least be made. If the interior cuts are drilled and the saw inserted the interior cutting is really no different from any other and is certainly just as easy.

Commence by gluing the sides 1, to the base 2, which is $\frac{3}{8}$ in. thick, spacing the sides $1\frac{1}{2}$ in. apart. The axles 3, are of $\frac{1}{2}$ in. square stripwood $2\frac{3}{4}$ in. long and are glued underneath the base 2.

The jib is made up from the two pieces 4 with a piece of $\frac{1}{2}$ in. square stripwood 5, 2 in. long glued between them. The washers 6, are now glued at the bottom of the jib on the outside and a short length of wire inserted at the top. If desired a small plastic pulley, or one shaped from wood could be inserted here.

The drum 7, which will be fixed after painting, is a $1\frac{1}{8}$ in.

piece of $\frac{1}{2}$ in. or $\frac{3}{4}$ in. round rod, supported by a roundhead screw at one end and a wire handle at the other. The handle should be flattened and pointed before it is driven into the drum.

Clean up the model with glasspaper and give an undercoat, allowing this to dry thoroughly before applying the top coat of high gloss. The wheels are Hobbies $1\frac{1}{2}$ in. turned wood wheels, obtainable from Hobbies Ltd., Dereham, Norfolk or from any Hobbies branch, price 1s. 6d. for four, post 6d. They are coated with clear varnish and then pivoted to the axles by means of roundhead screws.

The jib is supported by a cord attached to three screw eyes, one in each side and one in the spacing piece 5. The jib can thus be lowered or raised by adjusting the length of this cord.

The cord for lifting the loads is attached to the drum and goes over the wire or pulley at the top of the jib. It terminates in a hook fashioned from a piece of wire after passing through a wooden or glass bead.

(M.h.)

For trick photography

USE BLACK BACKGROUNDS

BLACK backgrounds are regarded as being too dull and sombre for normal photographic work but with a little ingenuity it becomes possible to use them for successful trick photography.



Fig. 2. A 'light-fingered' hand

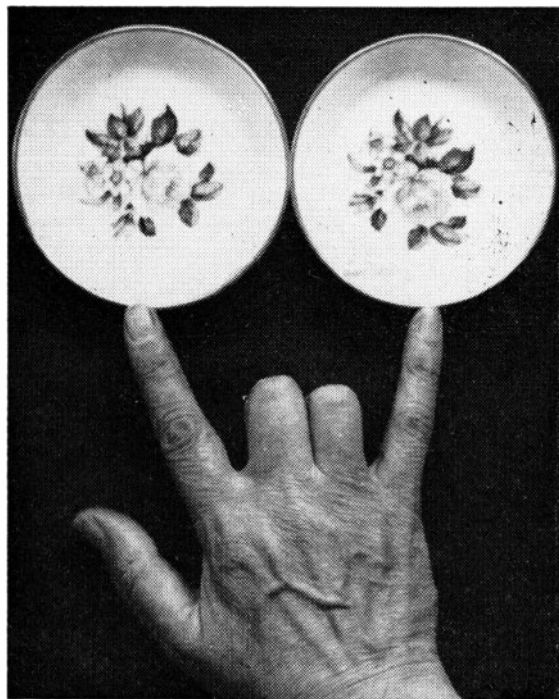


Fig. 1. Balancing the dishes

One of the main advantages of such a background is that it permits multiple exposures on one negative. You will realise that if we expose a frame of film in a darkroom we only produce a blank piece of negative. In other words, the negative remains transparent until an image is introduced. We may thus use a section of the frame by taking one shot and the balance will still be blank until another image has been taken.

Care is necessary to ensure that multiple subjects do not

overlap — although this may sometimes be deliberate for a special effect — and the old type of camera with a focusing screen would be ideal. Most of us must be content with modern cameras with the usual viewfinder, yet with a little scheming and planning good results can be obtained.

While the background must be black it must also be dull and without any glossy areas which would reflect. Large pieces of black pastel paper are useful for our purpose while a piece of hardboard painted matt black would be ideal. You may also use lining or velvet if large enough but any creases should be pressed out since these are likely to catch some rays of light. A piece of similar cloth, or paper, may be required to shield any unwanted part or one which will clash with another intended exposure.

You will also require a sturdy base for your camera if any parts are to be re-photographed and a ball and socket tripod head is useful when the camera is to be directed vertically on to the floor. But let us examine a few ways of producing some trick shots.

If we wish to portray a fantastic balancing feat we merely lay the objects on the background, which has been placed on the floor. In Fig. 1 we show an example where two small dishes are apparently being balanced on the first and little fingers. Any shadows should be absorbed by the black background, but if any do appear we can always raise the surface by using a piece of glass. The latter is placed on books, suspending it above the background, and there will be no shadows. The camera is then directed downwards.

We can also suspend objects against the background, pinned to a wall by means of black cotton thread, when pictures are again taken in the normal fashion. For instance, suppose we wish to make a picture of a set of rings, or cups, being 'juggled'; we may suspend two at different heights with the third held in the hand. We may even 'catch' darts in their flight to the board merely by suspending them with cotton thread, which will not show in the finished picture.

The foregoing describes a few simple tricks which can be achieved with the black background and practically straight-forward photography but more interesting shots can be produced by a combination of negatives.

In Fig. 2 we show what may be termed a 'light-fingered' hand, produced from two negatives. We first make a negative of a candle flame. This is done by rolling a strip of black paper around a candle, standing it on a stool and taking the shot in a darkened room. An exposure of $1/25$ th second at $f/16$ was given and except for the flame the remainder of the negative was entirely blank.

Next a picture of a hand in a suitable posture was taken against a black background under normal lighting conditions. The two negatives were combined, emulsion to emulsion, and taped together with a strip of Sellotape after carefully positioning the flame negative. This gave the picture as shown.

There is no difficulty in this providing you carefully position the hand in the picture frame and combine the two negatives to give the desired effect. The idea of placing the two negatives emulsion to emulsion is to combine them in the same plane as near as possible.

Interesting pictures can be made with heads and it becomes possible to take two profiles, both facing the same way and on two separate negatives. When these are combined emulsion to emulsion the profiles face in different directions and the effect is as shown in Fig. 3. By restricting

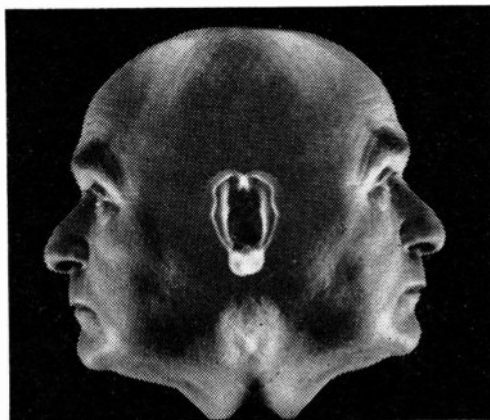


Fig. 3 A head with two faces

light to the front of the face only the back of the head is in the shade and we can thus position them to make a head with two faces!

Multiple exposures on the same negative with a head allows us to portray ourselves looking at ourselves! A subject is positioned so that it is just within the right-hand side when an exposure is made. The position is then reversed and another exposure made with the subject on the left. You can see the effect through your viewfinder quite easily and if you then cover alternate halves with a piece of card or paper you can arrange your subject accordingly. If the head is on the extreme edges you may even have space for a frontal view in the centre!

Remember that any portion of the body can be easily blacked out by covering with a black cloth, while during the printing process some parts may be exposed to the light without the negative in the holder.

You can hardly fail to make some novel and interesting pictures by this unusual technique of the black background. Remember we can make double exposures, combine negatives, fake the sets and control the printing. It is up to you to think up some ingenious tricks and you will find it a real change from normal practice.

Lay the background on the floor for some shots, pin it on the wall for others and you will no doubt think of some novel idea. (S.H.L.)

You simply pour out these

NOVELTIES

with NEW LIQUID PLASTIC

Here's the hobby to make your spare time pay dividends. You simply choose your mould and pour out beautiful castings. We supply everything, including instructions. Wonderful results achieved — wonderfully quickly! Start right away — no training needed. Send 6d. stamp for exciting book and market details. No obligation.

QUALITY PLASTICS LTD.

Dept H.41, Feering Factory, Kelvedon, Essex



CHEMISTRY AT HOME

THE usefulness of the metal chromium, Cr, is everywhere apparent in brightly plated articles. Its resistance to corrosion is also made use of in alloys. Stainless steel, for instance, contains 12 to 14 per cent of chromium. Many industries use its compounds, among them being the paint, dyeing, tanning and photographic. Our natural source of the metal is the mineral chromite, $\text{FeO} \cdot \text{Cr}_2\text{O}_3$, which mostly comes from Russia, Turkey, Southern Rhodesia and South Africa.

Chromium Compounds

By L. A. Fantozzi

Chromium compounds are highly coloured. This we see in the common laboratory chemicals potassium chromate, K_2CrO_4 , potassium dichromate, $\text{K}_2\text{Cr}_2\text{O}_7$, and chrome alum (chromic potassium sulphate, $\text{Cr}_2(\text{SO}_4)_3 \cdot \text{K}_2\text{SO}_4 \cdot 24\text{H}_2\text{O}$) which are yellow, orange and purple respectively.

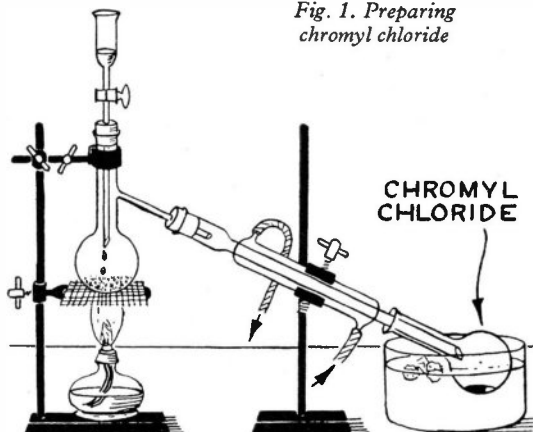
All these salts are soluble in water. Some of the insoluble salts of chromium provide the paint industry with useful pigments. The bright yellow lead chromate, PbCrO_4 , is one of these.

To prepare it dissolve 12.6 grams of lead acetate, $(\text{CH}_3\text{COO})_2\text{Pb} \cdot 3\text{H}_2\text{O}$, and 6.5 grams of potassium chromate each in 100 ml. of water. On mixing the solutions a brilliant yellow precipitate of lead chromate appears. Potassium acetate, CH_3COOK , remains in solution:



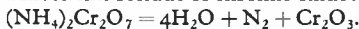
Filter off the precipitate and wash it several times on the filter. Open out the filter paper and let the compound dry. Lead chromate is the pigment Chrome Yellow. Grind some of it with a little boiled linseed oil and try it out as a paint.

Fig. 1. Preparing chromyl chloride



It will be found to have good covering power. By mixing it with white or blue pigments many shades of yellow and green are obtained.

A very light-fast green pigment is Chrome Green (chromic oxide, Cr_2O_3). This is easily — and spectacularly — made in the laboratory from ammonium dichromate, $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$. Powder some ammonium dichromate and make a conical heap about as wide as a shilling on a tin lid. Hold a burning match to the tip of the heap. The heap takes fire and glows furiously, decomposing into water, nitrogen, N, and leaving a moss-like residue of chromic oxide:



Apart from its better known chromates and chromic salts, chromium forms some rather strange and less known compounds. There are few liquid compounds formed by metals, but chromium forms one. This is chromyl chloride, CrO_2Cl_2 . To prepare it powder 6 grams of potassium dichromate and 5 grams of sodium chloride, NaCl. Mix the two intimately and put the mixture in the distilling flask shown in Fig. 1. From the dropping funnel add a few drops at a time 6 ml. of concentrated sulphuric acid, H_2SO_4 , with which care should be taken since it is a skin corrosive. Any acid coming in contact with the fingers should be flushed off with water and wet sodium bicarbonate, NaHCO_3 , dabbed on.

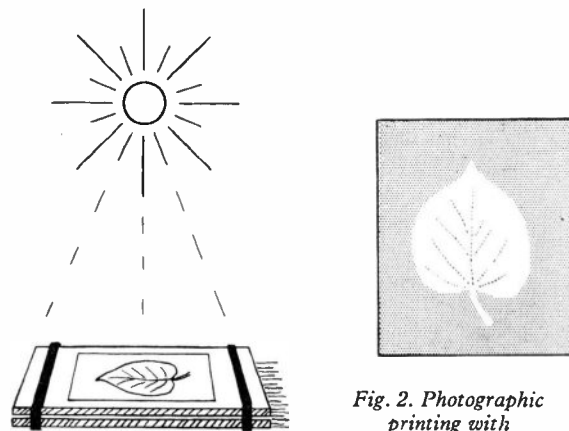
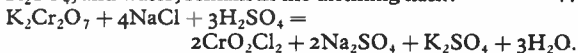


Fig. 2. Photographic printing with potassium dichromate

When all the acid has been added gently warm the distilling flask. Red vapours of chromyl chloride liquify in the condenser and collect in the cooled receiving flask. Though the latter may be cooled in water alone it is preferable to add a few pieces of ice to the water.

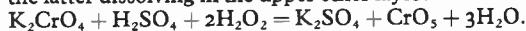
Sodium sulphate, Na_2SO_4 , and potassium sulphate, K_2SO_4 , and water, remain in the distilling flask:



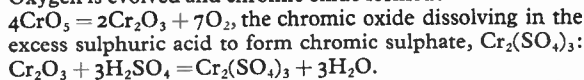
Chromyl chloride is a heavy dark red liquid much resembling bromine, Br, in appearance. It is a powerful oxidising agent, even setting fire to some substances. It is also quickly decomposed by water. Add a drop to a few ml. of water. The brown liquid reacts with the water forming a yellow solution containing chromium trioxide, CrO_3 , and hydrochloric acid, HCl: $\text{CrO}_2\text{Cl}_2 + \text{H}_2\text{O} = 2\text{HCl} + \text{CrO}_3$.

Because of its avidity for water chromyl chloride should be stored in a small glass stoppered bottle, melted wax being run round the stopper so as to keep out atmospheric moisture.

Another unusual compound is chromic diperoxide, CrO_5 . Its formation furnishes a useful test for soluble chromates in the so-called 'perchromic acid' test. Add a little dilute sulphuric acid to a few ml. of a solution of potassium chromate in a test tube. Run in about 1 ml. of ether, $(\text{C}_2\text{H}_5)_2\text{O}$, (highly inflammable) and then about 1 ml. of 20-volume hydrogen peroxide, H_2O_2 , dropwise, shaking after each addition. Potassium sulphate and blue chromic diperoxide are formed. The latter dissolving in the upper ether layer:

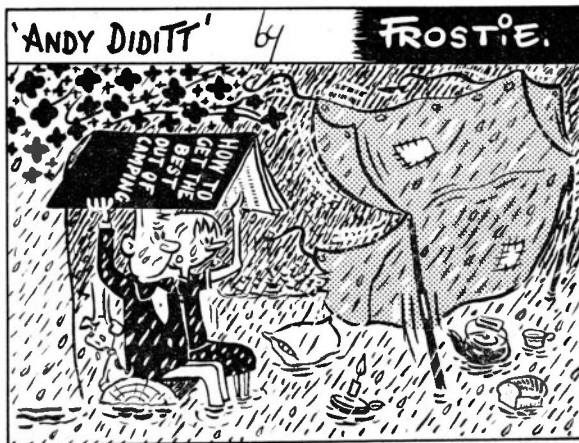


Chromic diperoxide is unstable and the colour soon fades. Oxygen is evolved and chromic oxide formed:



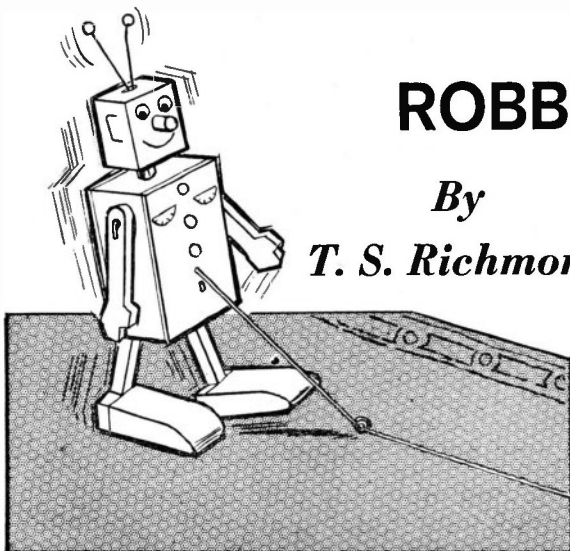
A strange chromium salt is Reinecke's salt. It is a complex salt chemically known as ammonium tetrathiocyanatodiammine-chromiate and has the formula $\text{NH}_4[\text{Cr}(\text{NH}_3)_2(\text{SCN})_4]\cdot\text{H}_2\text{O}$. Heat 6 grams powdered of ammonium thiocyanate, NH_4SCN , in a crucible until it begins to melt. Add little by little 2 grams of ammonium dichromate. A complex reaction occurs, ammonia, NH_3 , being given off.

When all the ammonium dichromate has been added let the mass cool, powder it, put it into a filter and run through several lots of warm methylated spirit in order to remove unreacted ammonium thiocyanate. Warm the meths. by standing the beaker in hot water (no flame). Next run through a little cold water to remove any unreacted chromate. The Reinecke's salt may now finally be purified by dissolving it in hot water at a temperature not higher than 50 degrees Centigrade. On cooling and standing the pure salt separates as shining red plate-like crystals. Filter them off and allow them to dry in the air.



A photographic use of chromium consists in the reduction by light of potassium dichromate in contact with organic matter. Prints of more or less opaque objects such as leaves can be made using this process. Brush a piece of unruled writing paper with potassium dichromate solution. Let it dry, lay a leaf upon it and fix the two between sheets of glass held by rubber bands Fig. 2. Expose to light, preferably sunlight until the parts uncovered by the leaf have turned brown from their initial yellow-orange colour. Now wash the paper in several changes of water until the water is no longer yellow and let the print dry. The leaf is obtained in permanent form as a pale image on a brown background.

The brown background is due to formation of another unusual chromium compound, namely chromium dioxide, CrO_2 . Light and organic matter (in this case the paper) cause the potassium dichromate to split into brown chromium dioxide, potassium chromate and oxygen, O :

$$2\text{K}_2\text{Cr}_2\text{O}_7 = 2\text{CrO}_2 + 2\text{K}_2\text{CrO}_4 + \text{O}_2$$


A walking toy

ROBBY THE ROBOT

By

T. S. Richmond

A NOVEL mechanical toy needing no motor or batteries for its motive power is shown in the walking robot illustrated, which will give much amusement to its maker and the young members of the family.

Carefully constructed in wood, the mechanical man will walk down an inclined board, or, by means of a tow string, he will walk on a level floor, his body swaying and arms swinging as he goes along.

A reduced-scale diagram in Fig. 1 shows front and side views with full measurements of the complete toy. The box-like 'body' is made up of two side pieces A, and top piece B, of $\frac{1}{4}$ in. plywood and front and back pieces C, of $\frac{1}{2}$ in. plywood. Drill a hole in each side member for the wire pivot (positioned vertically above the centre of gravity) and a $\frac{1}{4}$ in. hole in the top piece for the 'neck' rod.

Glue and nail the parts together, but leave off the back

piece for the moment. The $\frac{3}{8}$ in. thick piece for the head D, can be cut from balsa or softwood. A piece of $\frac{1}{4}$ in. rod is glued into a hole in the block for the 'nose', and another piece of rod is glued in a hole drilled for securing the head to the body.

The arms E, are cut out of $\frac{1}{4}$ in. wood and a pivot hole drilled through each. The legs, also $\frac{1}{4}$ in. thickness, are best drawn first on paper to correct proportions, then transferred with carbon paper to the plywood. Note from the front-view drawing that the legs spread outwards at 85 degrees to give the requisite lateral stability.

Separate the legs where they join at the top when cutting out with the fretsaw. Put the parts in a vice and carefully drill a fine hole in each at the top. This 'pilot hole' can then be made wider for the wire pivot, without risk of splitting the plywood, by burning a heated length of medium gauge wire through.

Insert the wire through body, legs and arms, adding a small metal or wood washer between the pivoting legs, and bending down the ends of the wire outside the arms. With the parts moving freely, the back piece C, can be glued on.

The feet G, cut from $\frac{1}{2}$ in. softwood, have a 75 degree angle cut at the heel where they are glued to the legs. They are slightly curved at the toe, and this can be adjusted when putting the figure to the test, by paring or filing away some of the toe sole.

The square-cut edges of the model should be cleaned up with a fine-grade glasspaper on a block, and any sharp wire ends removed before painting. Silver paint will give a metallic look to the robot, and other parts such as the feet can be painted, say, red.

Bore two holes in the front of the standing figure for fixing the stabilising wire. Bend the ends of the wire for attaching to the body, and where it touches the floor. Adjust the angle during tests by slightly bending the wire up or down, to obtain the best walking action, both on the carpet and down an inclined board.

A realistic robot appearance is given by painting in eyes, mouth, ears to the head, and control knobs, dials, etc. to the body with a fine brush. Thin, flexible wires, with small beads added, are glued into a hole bored in the head for the antennae.

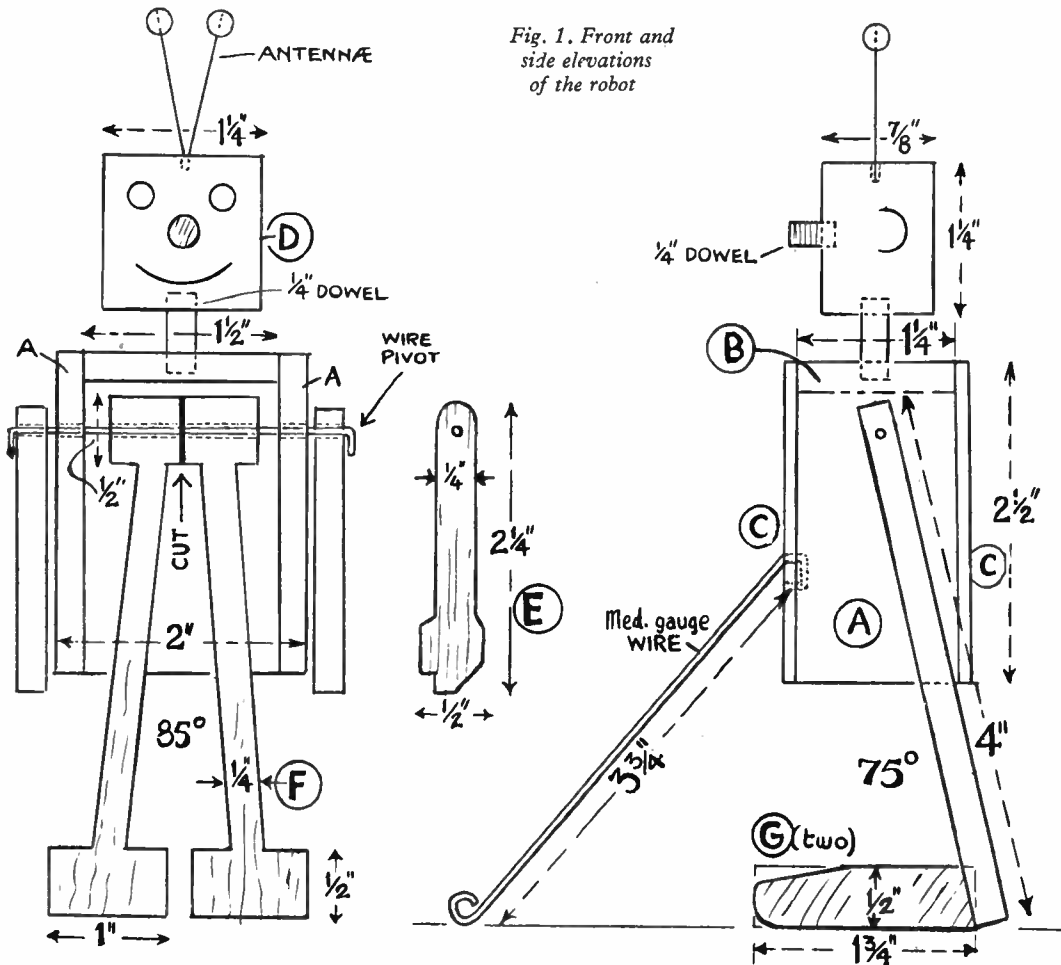
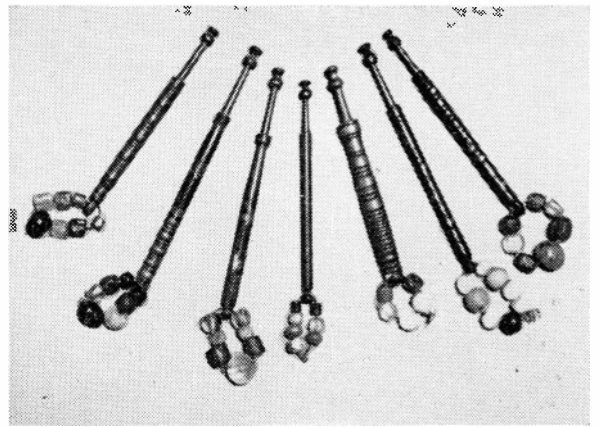


Fig. 1. Front and side elevations of the robot

Old-Fashioned Lace Bobbins

By S. H. Longbottom



ALTHOUGH lace making was extremely popular at one period it is perhaps true to say that it is now a dying craft only practised by enthusiastic members of Women's Institutes and a few odd workers. No doubt the invention of machinery which made fine lace both quickly and cheaply was responsible for the decline of the hand-made product, apart from the changes in fashion. As a result we find that lace bobbins have now entered the realm of antiques and in time they may acquire high values.

These little bobbins were necessary to hold the thread and were deftly moved hither and thither by the quick fingers of the worker. Every bobbin has a few beads at the bottom, mainly for weighting but often to help recognition as a 'worker'. It was also the practice to inlay some of the bobbins with pewter or lead for similar reasons.

While the majority of bobbins you may see in the shops are made from close-grained woods such as rosewood, ebony, blackthorn, cherry and apple, there are specimens in bone, glass, gold, silver and brass. Moreover, some bear quaint inscriptions and names while the basic design may have become ornamental.

One old lady of Lavendon in Buckinghamshire was the head of a lace school and she not only taught the craft but also composed inscriptions for the bobbins. Topical subjects were always popular and these included elections, murders, executions and transportations.

Hangings recorded

For example, the hangings of Joseph Castle and Sarah Dazeley were recorded. The former murdered his wife and was ultimately traced with the aid of a bloodhound. He was executed in March, 1860 and on that very evening the friends of his wife held a ball, presenting each guest with a lace bobbin suitably inscribed 'Joseph Castle, hung 1860'. Sarah Dazeley murdered her husband at Wrestlingworth, Bedfordshire by dosing him with arsenic. She was suspected of having murdered her first husband and to have boasted that she would have seven husbands in seven years. Bobbins commemorating her execution were also made.

Bobbins were also a popular gift in Devonshire on St. Valentine's Day when an ardent swain might carve a set and throw them in his sweetheart's door. A set of 24 was necessary — this being the number required for local lace patterns — and if the number was less he was considered a

laggard in love. Bobbins were also used to commemorate christenings, marriages and deaths. The bridegroom would present his wife with a set on their wedding morn. They might read thus:

'I'll buy the ring'.

'A present for Mistress Bride'.

'When this you see remember me and bear me in your mind'.

'Let all the world say what they will speak of me as a find'.

These spindle-like tools were machined on a lathe and when to be inlaid were placed in a stone mould with another on top. Lead or pewter was run into the crevices and the surplus trimmed away when released along with any charring of the wood. Mottoes and inscriptions were added with the aid of tiny drills. Coloured bands were made by dropping the bobbins into a dye and then removing some of this by returning to the lathe.

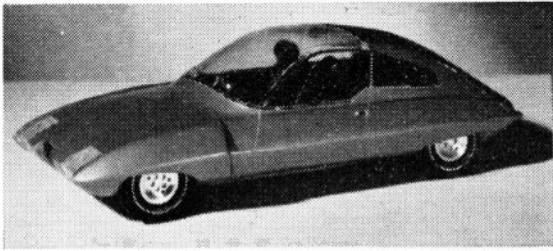
Bone bobbins were regularly made for commemorative purposes. At the Bedfordshire village of Renhold it was the custom to remove a bone from the ham at the wedding feast for making into a suitably inscribed bobbin.

Most of the English bobbins were made in the large lace making centres like Honiton in Devon but it is possible to find bobbins which were made in other parts of the world. The craft itself was introduced to this country by Continental refugees, most of whom settled in Buckinghamshire, Devon and Bedfordshire, and we may thus expect to find that most of the bobbins were made in these parts.

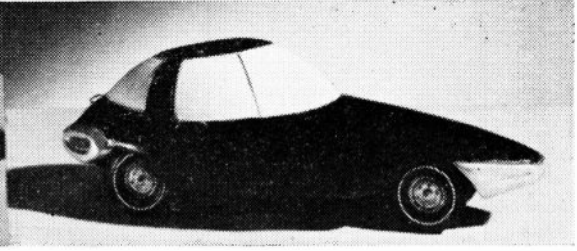
Fine specimens

Some foreign bobbins may be of bone or horn; some honeycombed like birdcages with spaces holding coloured beads. While some of the foreign specimens are examples of fine workmanship, the bone ones made in Buckinghamshire are truly artistic and probably the work of Huguenot refugees. There is a 'church window' variety with up to twelve windows; others are threaded with small coloured beads; or there may be one decorated with gold and set with rubies. It was quite common for a tiny bone bobbin to have the child's name engraved for a presentation after a christening.

● Continued on page 41



This futuristic entry was placed third



The first prize-winner in the Vauxhall 'pilot' scheme

A CHANCE for teenagers to express their views on the design of British cars of the 1980's and win substantial awards for their efforts comes with the formation of the Vauxhall Craftsman's Guild, which was officially launched throughout Britain on August 24th after a small-scale pilot scheme earlier this year.

DESIGN YOUR CAR OF THE FUTURE

The purpose of the Guild, which is sponsored by Vauxhall Motors Ltd., is to encourage young men aged between 14 and 20 to use their imaginative powers creatively by designing and building model cars.

Vauxhall believe it will help to identify talented youngsters who may later work for the company as styling designers and craftsmen. They hope it will also promote an appreciation and awareness of good design for its own sake among the car-owners of the future.

The Guild competition, in which the entrant has to construct the model car he has designed, is believed to be the first of its kind in Britain. The winner of the 1965/1966 competition will receive an award to the value of £250, together with an all-expenses-paid ten-day trip to the United States.

Those placed 2nd, 3rd and 4th will receive awards to the value of £150, £75 and £40 respectively, and up to 25 consolation prizes of comprehensive tool kits for woodworking and modelling will be presented.

To encourage the younger entrants, awards worth £25 each will be made for the best models from Guild members in the 14- and 15-year-old age groups, provided their entries are not placed among the top four in the competition. Any young man within the prescribed age group can join the Guild — as long as he is resident in Britain. Membership is entirely free, with enrolment taking place annually.

The design-and-build competition for 1965/1966 will close on 9th April next. Detailed information and guidance on design and construction techniques is contained in a

comprehensive manual supplied free to all Guild members.

Wheels for the models — which must be built to one-twelfth scale — are supplied free of charge when cars are nearing completion. There are three classes in the competition in order to allow competitors a wide choice of design:

Class A: Saloons, convertibles and estate cars.

Class B: Small cars and sports cars.

Class C: Open class — to cater for the unconventional design, and for 'space-age' vehicle concepts.

A Guild member may submit as many models as he wishes, but only one will be eligible for an award. The panel of judges will include two design experts from Vauxhall Motors' Styling Department.

Before giving the go-ahead to the nation-wide promotion of the Guild, Vauxhall Motors ran a 'pilot' scheme earlier this year. Enthusiastically received by almost 1,000 Vauxhall apprentices, friends of factory-workers and dealer workshop apprentices, this resulted in many model cars of interesting design.

Twenty awards were made. The winner, 20-year-old Terence Kirk, from Luton, received an award to the value of £100 and a trip to the U.S.A. Awards to the runners-up were worth £75, £50 and £25 respectively, and the remaining prizewinners received tool kits.

● **Continued from page 40**

LACE BOBBINS

Fine specimens of old lace bobbins are to be seen at the Victoria and Albert Museum in London. There is a small collection at the County Museum in Aylesbury and another at Cowper's Museum, Olney. It is also possible to see some examples in travelling exhibitions which visit different local museums on occasion.

But the collector of lace bobbins should be on guard when purchasing. One may find wooden bobbins in some antique shops priced at 7s. 6d. each and yet which are readily available at about 4s. 6d. per dozen! At the same time it is difficult to place a value on lace bobbins and it is probably true to say that very, very few — if any — are being made to-day.

When making a purchase one must consider the basic material i.e., bone or wooden, the workmanship, pattern, inlays and the inclusion of precious stones — other than glass. It could well be that in the not too distant future these little bobbins may acquire a greatly enhanced value. (S.H.L.)

AIDS TO BETTER OILING

ALTHOUGH looked upon by many people as a simple job, oiling is really quite an art, and needs a considerable amount of care in order to achieve success. Anyone can cure a creaking door with a spot of oil applied with a feather, but the same treatment meted out to a wrist watch would be disastrous.

There are so many different kinds of oils, but each has a specific use, and choosing the right one can be most difficult. Equally important, too, is the correct amount which should be applied to each job, so that it may perform its allotted task in an efficient manner.

Generally, oils may be classified under several groups, the chief ones being drying, non-drying and volatile.

Certain oils will absorb a lot of oxygen from the air, and it is this exposure that tends to harden them and make them resinous. These are the drying oils, and are largely used in the manufacture of paints and include linseed, poppy and walnut oil. Most artists' oil colours made in this country are mixed with linseed oil but in France poppy oil is preferred.

On no account should these drying oils be used for lubricating any form of machinery, especially if it is very small. In spite of this warning, however, there are quite a few people who apply linseed oil to their watches, thinking that any oil will do.

The volatile oils, which are mostly obtained from plants, are only used for making perfumes or for flavouring and therefore, have little other use.

Lubricating oils

It is the remaining group of non-drying oils which is used for lubricating purposes, and it is a mineral oil of some kind which forms the base of most of the members of this group. A few of these may thicken very slightly or become rancid and sour, but they never solidify. Unlike the other groups they have only a slight scent and very little taste.

A good lubricating oil should remain fluid at all temperatures, should not gum up after being in use some little while, and be absolutely free from any acidity. Some oils affect certain metals on account of the acids they contain, but pure mineral oils do not damage them in any way.

Much research has been done in recent years, and it is now possible to buy very high class lubricating oil in a large variety of grades for all purposes. See that you get the

particular type of oil which has been specially prepared for the job, and do not be put off with something 'just as good'.

Store your oils if possible in a temperature that is neither too cold nor too hot. The containers, too, need to be kept perfectly clean and well stoppered. Before applying new oil it is advisable to remove as much dirt and old thick oil or grease as possible, otherwise a lot of this may mix with the new oil and probably do serious damage to the mechanism by grinding away some delicate part.

The method of applying oil has a lot to do with the ultimate success of the job. Oil cans in various sizes are quite satisfactory where the job is not too small, and even a fountain pen filler can be very useful, but for delicate mechanism very great care is needed and special oilers can be made for the purpose.

Half a dozen oilers made from pieces of wire will be extremely useful, and will amply repay the time taken. Brass or copper wires are best, and the drawings show how to make them.

Hammer out the end of the wire as at A, and make a loop at the other end for hanging up. When just placed in a bottle of oil, a drop will cling to the end of the oiler, when it can then be transferred to the job. It is best to use a fairly small oiler and apply several drops, rather than to add too much by using a large one. Too much oil will run away and will help to collect dust.

It is a good idea to file the wire somewhat thinner just behind the end blob C. This keeps the oil on the blob instead of seeping along the wire, which it might otherwise do, especially if the blob is not large enough in proportion to the wire.

The oiler shown at B, is the type used by the watchmaker for oiling very small parts, and can be made in several sizes. Into a wooden handle is fixed a small brass tube, and it is this tube which holds the tiny oiler.

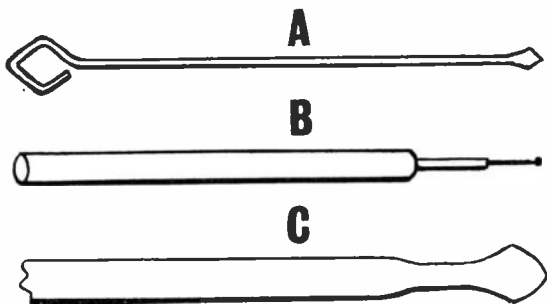
For the larger sizes it may be a piece of steel wire with a blob made as before, and fixed into the tube with a spot of liquid glue or with shellac. Nothing could be better for the very small type than a human hair pulled out of the head with the root attached. The tiny blob on the end is quite large enough for oiling such as a wrist watch, and is fixed into the brass tube with about $\frac{1}{2}$ in. of hair sticking out.

Application and grade

Having discussed the oils and oilers, now let us see how and where to apply oil to various articles, and the proper grade to use.

The lock on a door or drawer is probably the most neglected piece of mechanism in the house and an occasional oil will not only enable it to work easier, but will perhaps, add, years to its life. The only way to do this properly is to unscrew the plate and apply a good machine oil but it is well worth the little time taken to do it. If you cannot remove the lock, a little oil on the bolt and also on the key should improve matters.

A heavier grade lubricant is used for all bearings of the lawn mower, and besides this, all the metal parts need well greasing to prevent them from rusting. This treatment is



very necessary when the machine is put away for the winter.

Sewing machines usually have the oiling points well marked with the word 'oil' near the small hole. It is best to give a little frequently rather than swamp the mechanism at long intervals, and do not forget the several moving parts underneath the machine which also require their ration. Never put oil on the shuttle or needle; a very lightly oiled rag may, however, be applied here occasionally. A light machine oil of mineral origin is the correct grade for sewing machines. All the fluff which accumulates from the various materials used on the machine should be carefully removed before further oil is applied. No special instructions are needed regarding the oiling of a mangle except that a fairly thin oil applied frequently is better than a thick oil.

Most people know how and where to oil a cycle, and provided a good lubricant is used little harm can be done. Periodical cleaning is necessary to keep as much grit as

possible from getting into the bearings when new oil is applied.

A typewriter wants rather more care, and should have all dust and grease removed before any oil is applied. If the machine is used a lot, then regular oiling, say once a week, is the rule. Use good quality thin oil specially prepared for a typewriter and apply it very sparingly. Carriage bearings and spring drum require most oil, while other moving parts can do with much less. The type bar bearings, for instance, only require a minute quantity about every six months.

Clocks should only be oiled with a highly refined oil, specially made for the purpose for the bearings and escapement, and too much oil can be just as bad as none at all. Mainsprings may have a slightly heavier grade, but the teeth of wheels and pinions never require any oil or grease.

(E)

KEEP FIT WITH THESE BAR BELLS

KEEP yourself physically fit during this winter with this set of bar bells, and build up your body at the same time. Make them yourself and add weights as you become fitter and fitter. Thus while exercising you have the added pleasure of knowing that the bells have been made by your own hands.

All you require is a piece of round iron bar 1 in. diameter and 3 ft. long with the ends screwed up for about 3 or 4 in.; 2 nuts to suit, a 2 ft. 6 in. length of 1½ in. bore tube and of course the weights. All these items can be obtained from your local scrap dealer for a few shillings.

The weights are flame cut to size, complete with a 1½ in. diameter hole in the middle, from ¾ in. thick steel plate, and here again your scrap dealer can usually assist. Your local garage will most probably be able to step into the breach

should you have any difficulty with the flame cutting. For a beginning you should obtain 2 discs each of 5½ in., 8 in. and 11 in. diameter. These will weight approximately 5, 10 and 20 lbs each respectively.

With various combinations of these 3 weights you will be able to exercise successfully with 5, 10, 15, 20, 25, 30 and 35 lb. weights on each side of the bar. Now this is quite sufficient for a beginner. Don't try to lift more than you can easily manage or you will only succeed in straining yourself, tearing a muscle, or rupturing your abdomen.

If any real difficulty is experienced in obtaining the ¾ in. thick steel plates then make your weights with concrete. The blocks require to be octagonal and the same size as the steel disc but 2¼ in. thick, and the bar will need to be 3 ft. 9 in. long.

Make a wooden mould for each size from a 1 in. base board and 2¼ in. timber. Fit each removable part with one or two dowels as shown and drill holes to suit in the base board. Glue the dowels in the 2¼ in. timber triangles. Line the inside of the moulds with wax paper to make the removal of concrete easy.

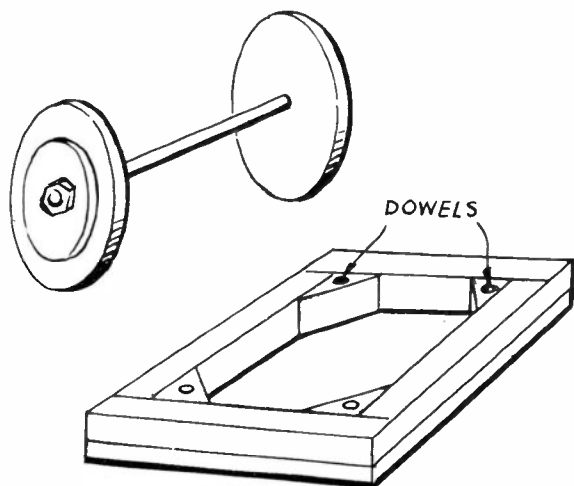
Make the cement with 4 parts of broken stones or brick, 2 parts of sharp sand and 1 part of cement all by volume. Use only sufficient water to make the concrete into a stiff mixture. Fill the mould and smooth off the top after making sure there are no air holes in the underside by tamping well with a stick.

If a screwed bar is not obtainable then to keep the weights falling off the end of the bar, just drill a ⅜ in. diameter hole in each end of the bar, slip on a washer and fit a split pin firmly in the hole. Don't open out the ends of the split pin or removal for changing weights will be difficult.

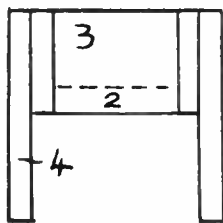
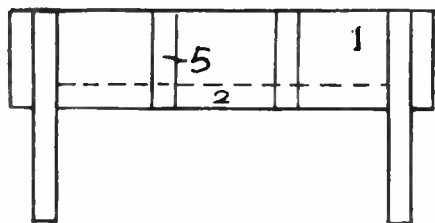
Always have the same weights on each end of the bar because an unequal lift will only strain your back. Take it easy. Don't attempt to lift the full 70 lb. at the first go but exercise with the 5 lb. weight for a week or so before starting with the 10 lb. weight. And then progress in weekly or fortnightly steps with each successive 5 lb., till the full weight can be easily lifted.

Bar bells are a wonderful body and muscle developer when properly used and their regular use can result in a much increased vitality and general health, but DON'T OVERDO IT.

(E.M.)

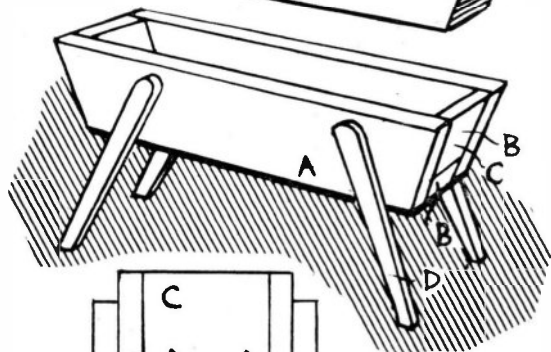
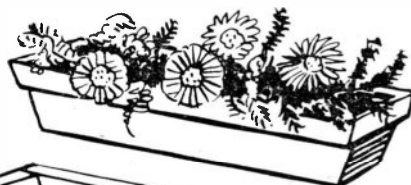
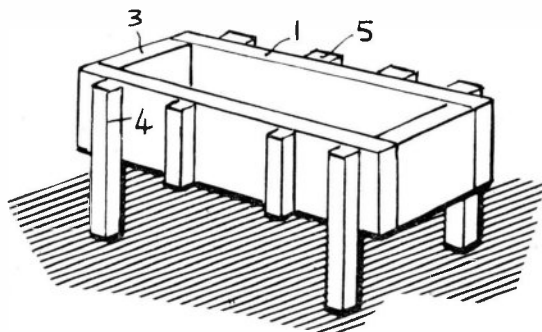


DOLL'S HOUSE PLANT STANDS

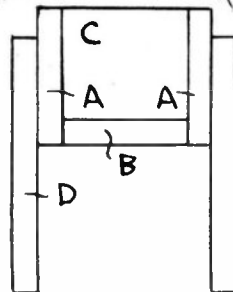
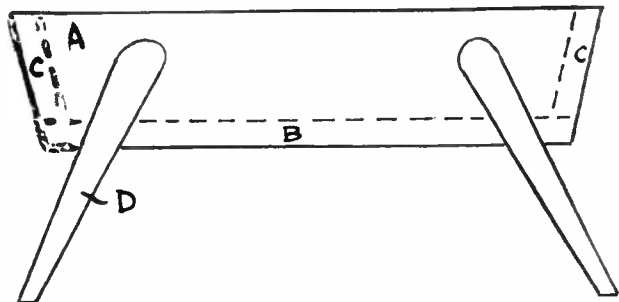
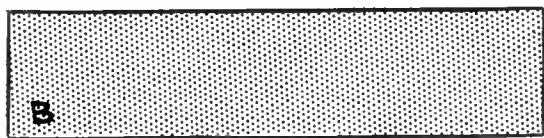


THESE two miniature plant stands are made entirely from $\frac{1}{8}$ in. wood, cut out with a fine grade fretsaw. The parts are assembled by gluing them together, and the order of assembly will be obvious from the diagrams.

The little plant stands are designed to take the flower boxes obtainable from Hobbies Ltd., Dereham, Norfolk, or from branches. The larger one is No. 477, costing 2s. 6d., post 4d., and the smaller one No. 477A, costing 2s. 3d., post 4d. Both of these are charming little miniatures of flowers and foliage set in an earthenware box. (M.p.)



CHARMING MINIATURES CUT WITH A FRETSAW





INSTANT SUCCESS
OF FREE-FLOWING
CASCO
SUPER
CONTACT
ADHESIVE

Manufactured by
LEICESTER, LOVELL & CO. LTD.
North Baddesley, Southampton
Telephone: Rownhams 2131



EXCEPTIONAL COVERING INSTANT SPREADS VIRTUALLY NO STRINGING CAPACITY POWER EASILY NO STRINGING COVERING VIRTUALLY
VIRTUALLY NO STRINGING CAPACITY POWER EASILY NO STRINGING COVERING VIRTUALLY
SPREADS EASILY SPREADS VIRTUALLY EXCEPTIONAL INSTANT POWER ADH
INSTANT POWER SPREADS VIRTUALLY EXCEPTIONAL INSTANT POWER ADH
EXCEPTIONAL COVERING EASILY NO STRINGING CAPACITY

Have you made contact gluing jobs easier for yourself with CASCO Super Contact? Every day, more and more builders, joiners and home handymen are doing just that.

If you have not already tried CASCO Super Contact, make sure that you, too, use it for your next job. You'll be amazed how easy it is to spread, how free it is from

irritating "stringing", how far even a small tin goes, how strong a joint it makes. Once tried, you'll stick by sticking with CASCO Super Contact.

Available from Builders' Merchants, Ironmongers, Do-it-Yourself Shops and Stores:

In tins: $\frac{1}{2}$ pint 4/3d.; 1 pint 8/-; 1 quart 14/6d.; 1 gallon 52/- . Also in large tubes 1/9d.

3-WAY ROLLS Pad Saw

With one metal-cutting and one wood-cutting blade

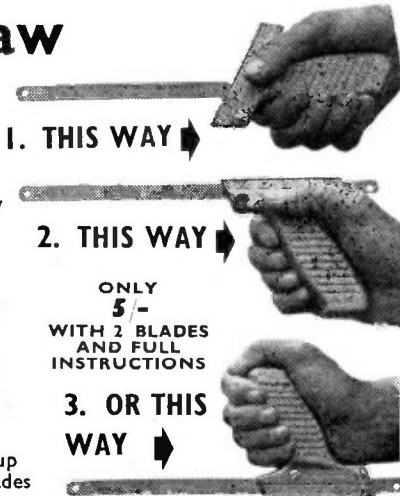
ROLLS — the only Pad Saw with the three-way handle.

Can be used as a (1) straight handle

or as a (2) pistol grip

or may be (3) set upside down which brings the blade close to the floor or sides.

Rolls Pad Saw uses up broken hacksaw blades

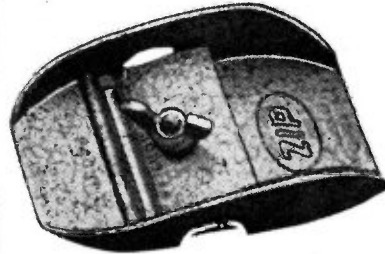


ONLY
5/-
WITH 2 BLADES
AND FULL
INSTRUCTIONS

3. OR THIS
WAY

Use the green blade for all metal cutting, plastic, fibreglass, asbestos, etc. Use the wood saw for interior frets and scroll cutting, tree pruning, floorboards, etc. AND FOR 1001 OTHER JOBS IN THE WORKSHOP & AROUND THE HOME.

'ZIP' RAZOR BLADE PLANE



ONLY
3/6d.
COMPLETE
WITH HEAVY
DUTY BLADE
AND FULL
INSTRUCTIONS

This remarkable plane is not a toy, it is a versatile plane which uses old razor blades as its cutting blade. Saves all re-sharpening costs — when the blade is dull just throw it away! The compact size of the plane enables it to be used in confined spaces. The heavy duty blade, supplied free, adds to the versatility of the plane.

For trimming and shaping models in wood, plastic, etc., cleaning up woodwork, plaster and paintwork. The ideal tool for balsa — trims in an instant. AND FOR 1001 OTHER JOBS IN THE WORKSHOP AND AROUND THE HOME.

Ideal tools for the practical handyman, hobbyist and modeller.

OBTAINABLE ONLY FROM WOOLWORTHS



A LITTLE while ago we gave a suggestion for anyone who wished to make a complete collection of stamps to concentrate on the Health Stamps of New Zealand. Other countries also issue these charity stamps at Christmas and one European country in particular has made a speciality of them. This is Switzerland, and the stamps are known as the Pro Juventute.

Actually the idea of asking people to help charity by paying just a little more for the postal service at the festive season started in Switzerland (before it did in New Zealand) in 1913, but at that time and until 1937 no premium was shown on the stamp — it simply had its postal value. But premiums were 2c on a 3c postal charge, 5c on all charges up to 20c, and 10c for the 30c and 40c postal charges.

PRO JUVENTUTES

By L. P. V. Veale

Although the premiums were not marked it is quite simple to pick out the charity stamps as they had the words 'Pro Juventute' on them, and from 1918 they all had the date on them. This should very materially assist anyone in arranging a collection.

While as a general rule stamps of the British Colonies or from the British Commonwealth of Nations are more popular than those from foreign countries some readers may well have visited Switzerland and that may easily tilt the scale; while another point that may weigh in their favour is the cost. Since the issues started in 1913 there have been over 200 different designs and of these only two stamps have a catalogue value of more than £1. As one normally expects to pick up an average copy at about one third of the catalogue value then these Swiss stamps should prove popular for collectors with limited means.

Exchanging with penfriends

Just a few words about pen friends and philately. A friendship may be formed between people of similar tastes and if you choose someone who lives in Switzerland who is also a stamp collector then you should be able to arrange to help each other. But you should certainly come to an understanding if you want mint stamps. Find out the rate of exchange, then if a new issue is coming out send whatever money you want to spend to your friend and ask him to send those stamps. If we have a new issue here then your friend should send the money for them. If you both have sufficient money to be able to do it then it is very nice to send all the new issues to each other without counting the cost. Used stamps should not require payment either way.

Now the Swiss authorities do seem to have issued their Pro Juventute stamps in a methodical manner, at least after



1. Arms of Neuchatel
2. Women's dress in the Canton of Uri
3. Portrait of J. H. Dunant
4. One of the insect types, Red Admiral Butterfly
5. One of the flowers, the Thorn Apple

1917. For the first ten years they issued designs showing crests of the various Cantons (roughly our counties). Around these crests they placed small items of interest. For example look at the illustration of the 20c showing the arms of the Canton of Neuchatel and around the shield you can see small watches, indicating where watches are made. Again, the 7½c of the 1920 issue shows the arms of Schwyz. This is a very plain shield but the surround is decorated with gloves, again indicating a local industry. Possibly a magnifying glass is necessary to see these items but no philatelist will be without one of these, and he will use it frequently.

Starting in 1927 in each issue at least one value had a portrait as the subject of the design, and in that particular year they chose to depict Johann Pestalozzi on the centenary of his death (1746-1827). A Swiss who considered that the education of children was not being conducted on the right lines, he opened a school and two of the 1927 Pro Juventute stamps show pictures of orphans and two have portraits of him. The next year was the centenary of the birth of J. H. Dunant and his picture appears on the 30c (illustrated).

Notice that there is a cross and a wounded soldier, indicating how Dunant achieved fame. It was as a result of his vivid description of the horrors of the Franco-Austrian war in his 'Souvenir de Solferino' that a meeting was called at Geneva and the Red Cross Society was agreed upon provisionally.

Native costumes

From 1933 girls in the native costumes of their Cantons were shown. H. G. Nageli (1773-1836) is one of the musicians that appears on these stamps. He was a composer, author, teacher, and music publisher who was born near Zurich. It is recorded that when he published one of Beethoven's sonatas he added four bars of his own, much to the composer's annoyance.

The Swiss Girl types continued until 1942 and then in 1943 they changed to alpine flowers. They still continued with the portrait, but if you are intending to make a speciality of these Pro Juventute stamps then it would be preferable to keep the portraits and the flowers separate. The gentlemen may be noted for their works, but they cannot compare with the beauty of the flowers.

By 1950 the supply of Cantons had run out and they changed to showing insects. Here a tribute must be paid to the way in which these were reproduced, the colouring being

exceptionally good. Also in 1950 they added to the stamps in the set one portrait and four insects. The number of stamps Switzerland issued each year may be taken as a measure of the success of the scheme. In 1913 they started with one 5c stamp, the next year they had two, a 5c and a 10c, in 1916 they increased to three although they changed the values. The increase to four was not until 1922 and they remained at that number until 1950. The insects continued as the designs for seven years and was then changed to flowers.

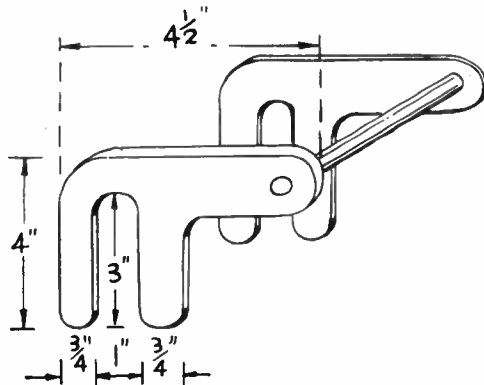
Now if one tried to summarize the stamps that have been issued as these Pro Juventute the summary should help in the way of arranging the collection. A complete collection would have at the start eight children, then there would be about 40 showing arms of cantons, there would be ten views and then a rather odd set, the 1932 issue. This had a portrait and three athletic designs — flag waving, wrestling and putting the weight. Next there would be some 40 Swiss girls in costume, 20 flowers, 30 insects, and lastly the wild flowers. Among all these there are the portraits, about 36 of them.

Well, you are not likely to have all those at once. The thing to do is to plan the way you are going to arrange them when you get them. The golden rule is 'do not crowd'. Put one stamp on a page and it will be looked at very carefully; put 30 on the same size page and they will only be glanced at.

CLOTHES AIRER

OCCASIONALLY one requires some small article aired and a simple portable airer that fits over the central heating radiator answers the problem very nicely.

All that is required are 2 pieces of $\frac{1}{2}$ in. thick wood, preferably plywood; cut as shown in the diagram with a 20 in. length of $\frac{3}{8}$ in. diameter dowel glued in place. The airer is small and light enough to pack into a suitcase. But make certain of the inside length of the suitcase first, and make the airer just $\frac{1}{2}$ in. less. Leave plain wood but glasspaper well to prevent damage to fine fabrics. (E.M.)



Miscellaneous Advertisements

PRINTED ADDRESS LABELS! Gummed, your name and address. 11/- roll of 700. C-S., 2 Sutton Avenue, Biggleswade, Beds.

PENFRIENDS home and abroad, all ages. S.a.e. for details — European Friendship Society, Burnley, Lancs.

FRENCH penfriends, all ages under 21. Send S.a.e. for free details. Anglo-French C.C., Falcon House, Burnley.

UNDER 21? Penfriends anywhere — details free. — Teenage Club, Falcon House, Burnley.

INTRODUCTIONS to interesting new friends, trial free. V.C.C. 34 Honeywell Road, S.W.11

Wonderful packet of **50 FREE** to all requesting my fine Discount Approvals. Enclose 4d. for postage. The Wolf Club, 3 Talbot Street, Newry, Co. Down, Northern Ireland. Please tell parents.

PEN-PALS MAGAZINE! Latest issue now available. Price 2/6. C-S., 2 Sutton Avenue, Biggleswade, Beds.

ONLY 4d. PER WORD

Classified advertisements on this page are accepted at a cost of 4d. per word prepaid. Use of a Box No. is 1s. extra. Send P.O. with advertisement to *Hobbies Weekly*, Advert. Dept., Dereham, Norfolk. Rates for display advertising on application.

IT'S GOING FAST

Hobbies 1966 Annual is selling fast at newsagents, branches, etc. Price 3/6 for this super edition. Can be posted to any address from *Hobbies Ltd*, Dereham, Norfolk, for 4/3 (including postage).

GET IT NOW!

Printed by **BALDING + MANSELL, LTD.**, London and Wisbech, and Published for the Proprietors, **HOBBIES LTD.**, by **HORACE MARSHALL & SON, LTD.**, Distribution Centre, 25, New Street Square, London, E.C.4. Sole Agents for Australia and New Zealand: **Gordon & Gotch (A'sia) Ltd.** For South Africa: **Central News Agency Ltd.** Registered for transmission by Canadian Magazine Post.

READER'S REPLY
HW OCT.
1965

MICROSCOPES

FOR A LIFETIME OF INTEREST

Compact, strong, accurately engineered instruments with rack focusing for sharp definition. Black lacquered and plated. Good optical systems which will show cells, cell structure and cell division. Easy tilting for comfortable working. Suitable for the amateur botanist, entomologist, biologist, chemist and for general studies.

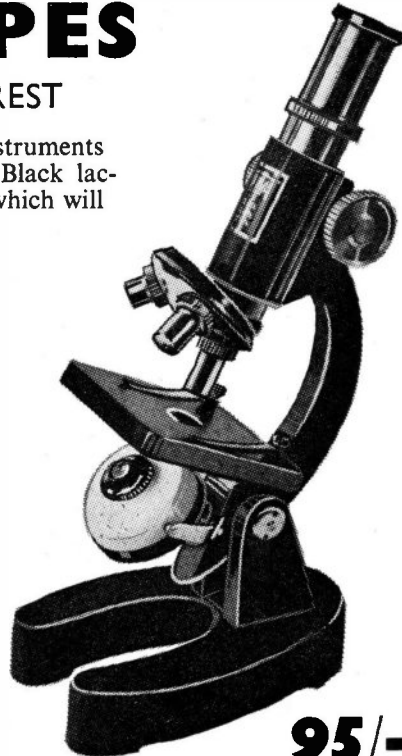


75/-

(post free)

No. 3

3-objective turret. Magnifications: 100x, 200x, 300x. Illumination by plane mirror alone or in conjunction with built-in illumination using 2 No. U7 dry batteries. Handy switch in base. Height 8½ in. Base: 4½ in. by 2½ in. Stage: 2⅜ in. by 2⅜ in. Complete with specimen slide and spare slides.

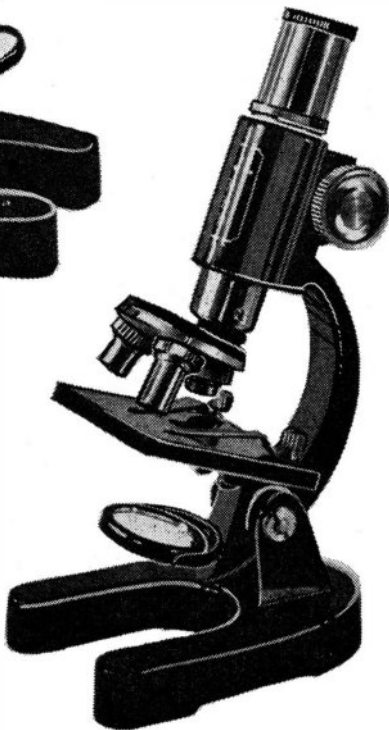


95/-

(post free)

No. 4

3-objective turret. Magnifications: 150x, 300x, 750x. Illumination by plane mirror or by built-in illumination using 2 No. U7 dry batteries. Reversal of the mirror automatically switches on a powerful spotlight. Height: 8½ in. Base 4½ in. by 2½ in. Stage: 2⅜ in. by 2⅜ in. Complete with specimen slide and spare slides.



47/6

(post 2/-)

No. 2

Swivelling 3-objective turret. Magnifications: 50x, 100x, 200x. Illumination by plane mirror. Height: 6½ in. Base 2⅜ in. by 3½ in. Stage: 1⅞ in. by 1⅞ in. Complete with specimen slide and spare slides.

★*These instruments, of Japanese origin, have been fully tested by a laboratory expert, and are claimed to be superior to similar types on the market. At these prices they are real value for money. In high quality presentation boxes with red 'velvet' insets containing instructions for operation and range of experiments.*

Obtainable from Hobbies branches or stockists, or by posting coupon below.

TO HOBBIES LTD, (Dept. H83) DEREHAM, NORFOLK

Please send me Microscope No. for which I enclose

Name

Address

.....

BLOCK Letters please