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HAPPY IN THE SUN

Make this

SANDBOX FOR THE KIDDIES

KEEP the youngsters happy this summer with this easy-to-make sandbox and shade. The sand will provide hours of fun and the shade will keep off the direct rays of the sun. The shade is adjustable for angle so that the maximum amount of light and protection is provided. A bottom is not shown, but this can easily be inserted if required. A piece of $\frac{1}{4}$ in. hardboard will be quite suitable.

Commence by making up the box as shown in Fig. 1. Use $\frac{1}{2}$ in. or $\frac{3}{4}$ in. wood for the sides and ends, and 3in. by 3in. square material for the corner posts. Sides and ends can be about 9ins. high.

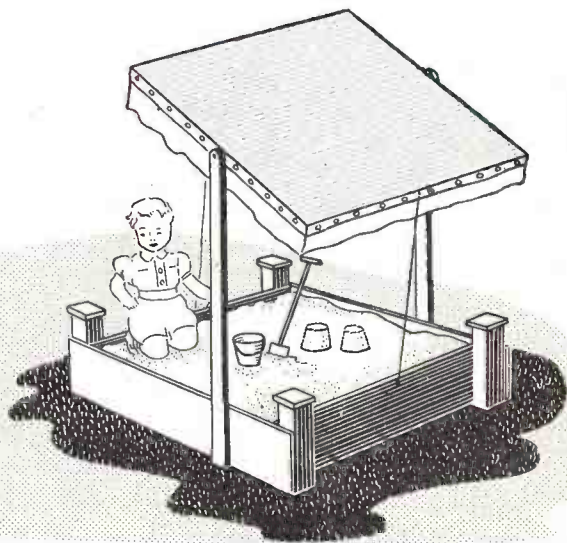
The overall size of the box can be increased as required but approximately one yard square should be sufficient. The corner posts are later capped by square blocks as indicated by the detail in Fig. 1.

Next erect the two uprights as shown in Fig. 2. They are cut from 2in. by $\frac{1}{2}$ in. wood and are about 42ins. high. They should be screwed securely to the sides of the box, about 12ins. from one end. If they are placed nearer to one end than

the other the shade will be more effective.

The framework for the shade is made from 1in. by $\frac{1}{2}$ in. wood and measures 36ins. square (Fig. 3), the pieces being butted together and secured with glue and screws. Use waterproof glue if the box is likely to be left outside.

The frame is secured to the uprights by means of two roundhead screws which act as pivots. The position of the shade is determined by two cords (Fig. 4), one



STUDY THE DIAGRAMS ON NEXT PAGE

at each end, which can be adjusted for length. Four screweyes or Cuphooks can be used for securing the cords. It is preferable to use a stout picture cord rather than string.

Before fixing the frame in position it must be covered with material as indicated in Fig. 5. The material should not be heavy; any lightweight material

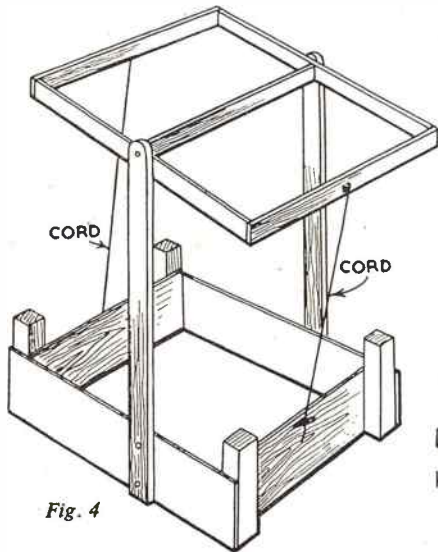


Fig. 4

will provide shade. A valance and a strip of tape should be pinned round the outside after stretching the top covering in place.

The finish consists of one coat of wood preservative, not creosote, but the trans-

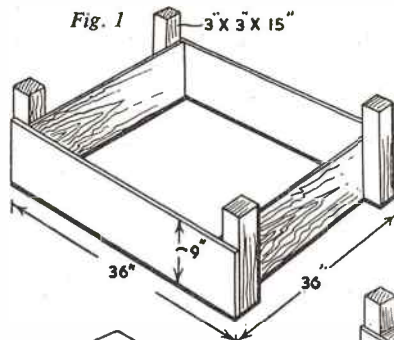


Fig. 1

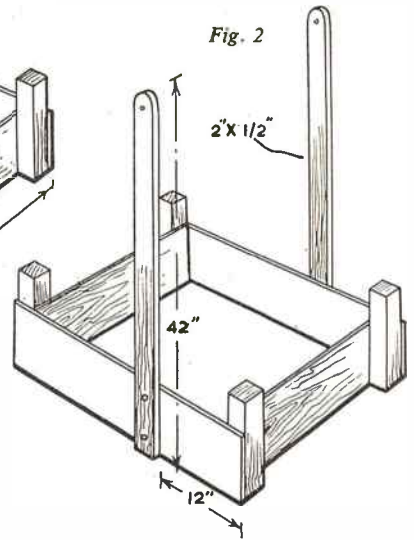


Fig. 2

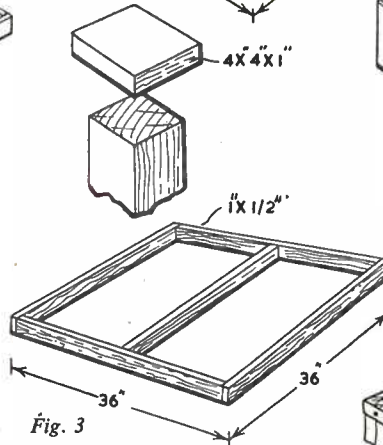


Fig. 3

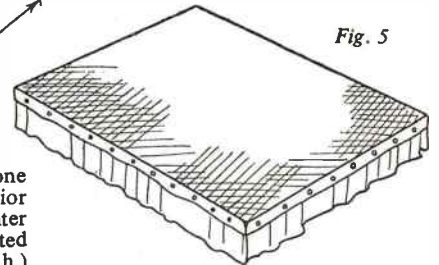


Fig. 5

parent type. Over this, when dry, put one or two coats of paint suitable for exterior decoration. When stored for the winter the box should be well dried and painted before putting it away. (M.h.)

● Continued from page 147

The Chinese Puzzle

trisection was employed — a further step in instruction. This new plan consisting of fifteen pieces is shown in Fig. 5 and was originally known in China as ch'i-ch'iaa t'u, and, having more pieces, there is considerably more scope in preparing designs, shapes, pictures or figures, the circle permitting the illustration of wheels, sun, moon and heads was round instead of square.

To prepare this second pattern use a piece of plywood of the same size, observing Fig. 5 most carefully where you will find that the major divisions at A, B, C and D are actually one third of the length of the side when measured from the nearest corner. The same principle is used throughout and it will be possible for you to make the puzzle without further instruction if the design is carefully measured. The fretsaw may be the best tool for cutting here, especi-

ally since the circle has to be cut. To give a pleasing effect, paint the pieces in gay colours.

It may be mentioned that ch'i-ch'iaa t'u will allow you to make pictures of birds in flight, using the circle for the head, hundreds of puzzle shapes, and

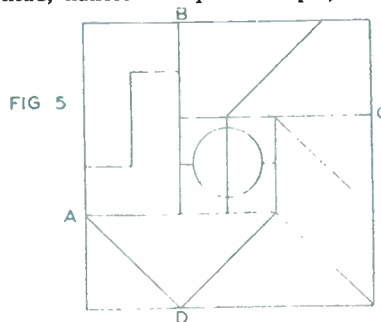


FIG 5

even designs as in Fig. 6.

When using both puzzles it will be found better to adopt the principle of employing every piece, but remember there are no hard and fast rules about this. It is advisable to record all the patterns you make in a book for the correct position of each piece is easily forgotten. See if you can make some really teasing puzzles with the two plans given, then try them on your friends.

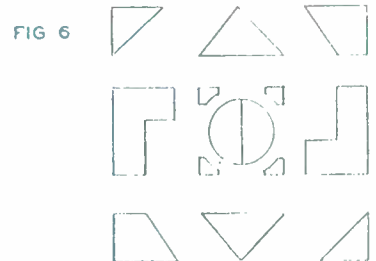


FIG 6

14 PIECES USED

CH'I-CH'IAO

THE title appearing above may seem a little odd to you and quite out of place in these pages, but the translation from the Chinese will soon make it clear for it refers to 'the seven ingenious plan'.

This plan was devised some 4000 years ago, long before theories of geometry as we know them to-day, and is probably the oldest puzzle in the world. It is believed that the plan was originally invented to be both instructive and entertaining, for not only can we make a puzzle but also the seven resulting pieces can be used to form hundreds of different puzzles. And we can add that Napoleon constantly toyed with one of these puzzles during his exile on Elba.

First we will deal with the construction of the plan and then suggest various modifications for your entertainment.

Reference to Fig. 1 will reveal that we need a square, preferably of plywood,

Originally, the Chinese made these puzzles, sometimes called tangrams, in ivory or wood, each section being beautifully worked by hand in open floral patterns not unlike our own fretwork. And needless to say they were greatly treasured by their owners. You

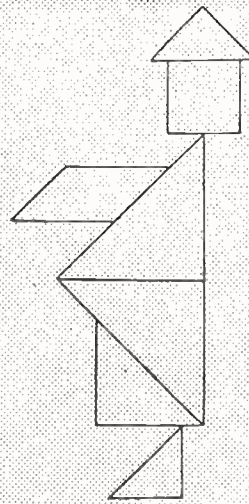
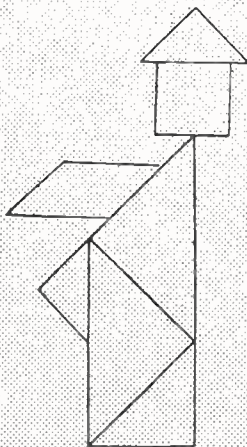
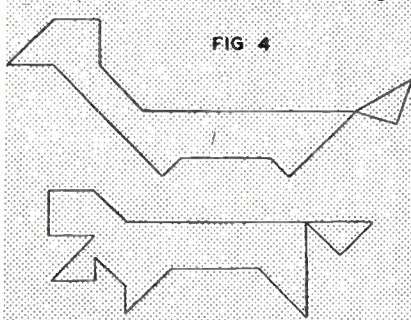
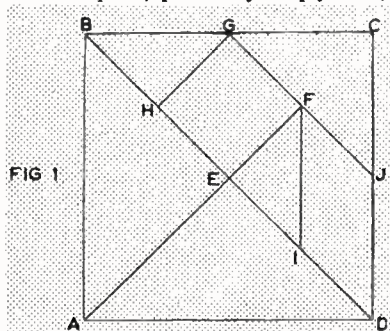
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*By S. H. Longbottom*  
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may make plain puzzles, painting them or working on them if you wish but it will be understood that the ornamentation does not affect them as puzzles. We can mention that although 4000 years

So much for the geometric construction and the instructive part of the plan, but no doubt you will find the production of shapes and figures far more entertaining and quite fascinating.

Peculiar things happen when you try to arrange the shapes in a set order and for your guidance Figs. 2 and 3 reveal a boy, but in the former the seven pieces have been used without being able to provide a foot. In Fig. 3 the two larger triangles have been re-arranged and consequently the smaller triangle remains for us to provide the necessary foot.

You are warned that the manipulation of these triangles is extremely im-



cut into seven divisions as shown. The ingenious part of this plan is that the seven parts are cut on the geometric principle of bisection and although no special size is demanded it is suggested that you measure out on a piece of wood four and a half inches square. Incidentally, you are recommended to cut out a few of these puzzles at the same time so that you may play games with your friends.

have elapsed since the first tangram was made, there has been no change in the pattern and there is no possibility of improvement.

Returning to the diagram and to reveal the geometric precision of the plan we may quote from the original Chinese: 'In a square ABCD, join BD, bisect at E, join AE, continue to F, mid-point of EC. From H, mid-point of BE, draw HG parallel to EF, which meets BC at G. Join GF, continue to meet CD at J. Draw FI parallel to BA, meeting ED at I.

This produces two large triangles, one intermediate triangle, two small triangles a square and a parallelogram.

These seven pieces are quite difficult to fit together again to restore to the square shape, but you may also make different sets of triangles, squares or parallelograms by using some of the pieces in turn.

portant in making many shapes. Fig. 4 shows the outline of a dachshund and a retriever — using a little imagination of course — but you can prepare an almost limitless number of similar puzzles of common objects. For example, can you fit the pieces together to make the two dogs? When you have made a new shape it is a sound plan to make a record in a book of the correct positions of the pieces and then try the puzzle on your friend. Or you may play a game of exchanging puzzle problems, each trying to find a solution to a puzzle set by the other. A fine game for a wet day and the pieces are easily carried in the pocket if you want to take them on holiday.

You will probably have observed that although we have three geometric shapes in this puzzle the circle is missing, but another pattern was also invented to include this and when the principle of

● Continued on page 146

CHEMISTRY IN THE HOME

EXPERIMENTS WITH ZINC Part 1

THERE is a great deal of zinc wasted in the form of the casings of exhausted dry batteries. Chemists have one thing in common with efficient housewives — they hate waste. By recovering this scrap zinc the home chemist can do a lot of interesting experiments, as well as stock his laboratory at low cost with zinc compounds.

It is rather a messy job, so spread out a big sheet of newspaper on the bench. Strip off the zinc from the batteries, squeeze or fold the strips into compact pieces and then melt them in a deep tin lid, one edge of which is bent into a lip. Grip the tin firmly with pliers and pour the zinc into a bucket of cold water from a height of about 6ft. The zinc solidifies in the water in the distorted form known

merely sheet steel coated with a thin film of zinc, and the same applies to buckets and other galvanised ware. Galvanising is done in two main ways; by electro-deposition, or by dipping in the molten metal. We can easily and interestingly carry out the second method on a small scale.

Cut a small sheet of tin from a can, heat it in the fire until the tinning has burnt off, cool it and clean it with emery cloth. 'Pickle' the metal to obtain a clean surface by dipping it for a few

The zinc coating becomes itself covered with a film of basic zinc carbonate due to the action of atmospheric moisture and carbon dioxide and is thus protected from further action.

Silver nitrate is an expensive chemical. By means of zinc you can make it from silver foreign coins or broken silver jewellery for which you have no further use. The silver will not exist as the pure metal in these. It is usually alloyed with copper.

Dilute strong nitric acid by stirring it into an equal volume of water. If you get any of the acid on your fingers, wash it off with water and rub in a paste of sodium bicarbonate and water. Put your scrap silver or coins into a beaker in the open air in a safe place and pour on some of the dilute nitric acid. A vigorous reaction occurs with evolution of reddish fumes — these are harmful if breathed in any quantity and this is why the operation should be conducted out of doors.

When the reaction slows, add more acid from time to time until nearly all the metal has dissolved. Filter the solution (which will be blue if copper is present) and add a solution of sodium chloride until no more white precipitate forms. This is silver chloride. Filter it off and wash it until the water running through is no longer acid — that is, it does not turn blue litmus paper red. By this means the silver is separated from the other metals present in the alloy.

Put the washed silver chloride into a beaker, add a few pieces of granulated zinc and then just cover the whole with dilute sulphuric acid. The white silver chloride at once starts to blacken near the zinc. This blackening gradually spreads throughout the whole mass. This is due to the formation of metallic silver, which in this finely divided form is black. When the whole has blackened, remove the remaining zinc and leave the reaction mixture to stand about fifteen minutes. Then filter off the silver, wash

● Continued on page 149

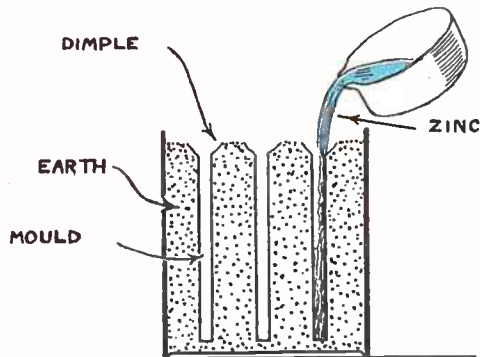


Fig. 1—Casting zinc into rods

as granulated zinc and which is so universally used in the laboratory. A laboratory furnisher charges about 4/- per pound for this, whereas you can make it for nothing.

Zinc rod is dearer. This form is frequently useful for experiments, and so a few rods should be cast, using the simple mould shown in Fig. 1. Simply fill a tin with earth, ram it well down, make a few dimples with your finger to act as funnels and then make the moulds by inserting and removing a pencil in the centre of each dimple. Pour molten zinc into these slots and leave for an hour or two to cool. Alternative moulds, which cool the metal quicker, can be made by pressing a pencil horizontally into the surface of rammed and smoothed earth.

So-called zinc sheeting for roofing is

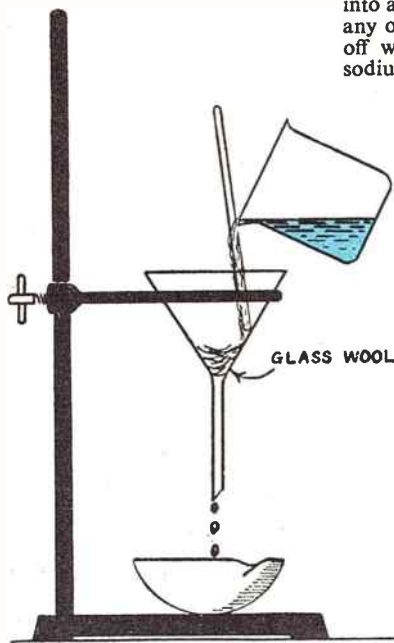
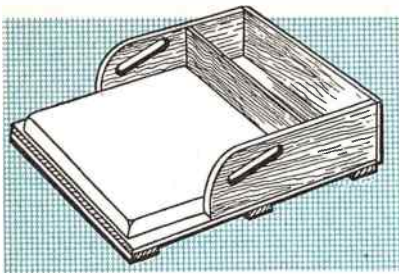


Fig. 2—Filtering silver nitrate solution

moments into dilute hydrochloric acid (1 volume of the strong acid to 2 volumes of water). Rinse it with plain water and dry it by holding it above a blue gas flame or before the fire. Dip one end of the clean metal into melted zinc for a moment or two and then remove it.

A bright surface of zinc will be deposited on the metal. You will have noted that moderately old galvanised ware becomes dull with time, but no rusting of the underlying steel occurs.



By A. F. Taylor

SOWING seeds, planting out and the weeding of the seedlings can be very tiring work, especially when carried on for any length of time. Kneeling is, undoubtedly, the most comfortable pose, but even this can cause considerable annoyance, particularly if the ground is hard.

By making this kneeling tray the gardener can really enjoy doing these odd jobs without getting sore knees. The soft pad made of foam rubber should make the gadget appeal especially to those ladies who are keen gardeners.

$\frac{1}{2}$ in. plywood is used to make a good foundation on which to build up the tray and this is cut 16 $\frac{1}{2}$ ins. long and 15ins. wide. To lift it off the ground slightly and also to give added support, three strips of wood are fixed on the underside. About 2ins. wide and $\frac{1}{4}$ in. thick will be sufficient for the purpose, and oak or a similar hardwood is most suitable.

KNEELING TRAY FOR GARDENERS

The front part of the tray consists of a shallow compartment to hold tools or materials needed for the job in hand. Packets of seeds, stakes or raffia for tying, or plants ready for setting out will all fit in here and save a lot of time and trouble.

The sides of the compartment have been extended with slots cut in them to

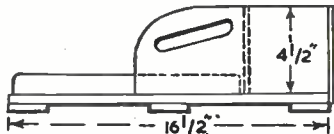
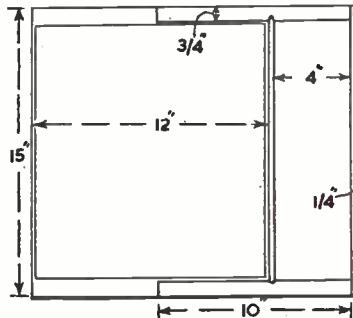
form handles for easy carrying. Cut two pieces of wood 10ins. long, 4 $\frac{1}{2}$ ins. wide and $\frac{3}{4}$ in. thick. Shape as shown and cut a slot in each large enough to get the four fingers into easily — say, about 4ins. long and 1 $\frac{1}{2}$ ins. wide. Well round off the edges of the slot, so that it is easy to carry with no sharp corners.

Secure these sides to the plywood baseboard with substantial screws from underneath. Three or four on each side is not too many. The piece of $\frac{1}{4}$ in. plywood for the front of the compartment is 15ins. long and 5ins. wide, and is tacked to the sides and ply base with panel pins.

The back piece is also plywood $\frac{1}{4}$ in. thick, 13 $\frac{1}{2}$ ins. long and 4 $\frac{1}{2}$ ins. wide, and is just slid into position in V-shaped slots cut in the side pieces.

A piece of $\frac{1}{4}$ in. plywood 13ins. by 11 $\frac{1}{2}$ ins. forms the foundation of the kneeling pad. Cut a piece of foam rubber which can be obtained at most multiple stores to fit this board. Then cover with a piece of stout material such as canvas or leather cloth turning over and fastening on the underside.

The pad is just laid on to the tray and there is no need to fasten it in any way. Two coats of good paint will give the woodwork an attractive appearance and help to preserve it from our varying weather conditions.



Continued from page 148

Experiments with Zinc

with water until the waters are no longer acid and dry the metal in the oven.

It now looks olive, but if you rub it with a glass rod the familiar gleam of silver appears. To make silver nitrate from it place it in a beaker and just cover it with nitric acid diluted with its own volume of water. The now familiar reddish fumes once again appear and so the operation should be conducted out of doors. When action stops, add more acid from time to time until only a little undissolved metal remains. Filter the solution from undissolved matter by letting it run through glass wool (Fig. 2) into an evaporating basin. This filtration through glass wool is necessary for a pure product, for filtration through paper is apt to cause some separation of

silver. If you have no glass wool, use a small loose plug of cotton wool instead. Heat the basin on a boiling water-bath until all the water is driven off. White silver nitrate remains in the basin, which you can bottle for your stock.

Zinc will also deposit metallic silver from solutions of silver salts. Why then, you may ask, did we not do this with the solution from the dissolved coins and save ourselves the trouble of first making silver chloride? Because zinc throws several other metals out of solution as well as silver. We should have obtained a mixture of metals similar to the original alloy. Try this out with copper sulphate by putting into its solution a piece of granulated zinc. A powdery deposit of copper appears on

the zinc. Cadmium, tin and lead are similarly deposited by immersion of zinc into solutions of their salts.

With the help of zinc, economy in the home laboratory can be pushed further by saving all solutions containing silver, provided they do not also contain mercurous mercury or lead salts, for these also give insoluble or sparingly soluble chlorides. Keep a bottle for the purpose and when it is full shake up any precipitate and remove the whole to a beaker, let the precipitate settle and then add sodium chloride solution gradually until no more white precipitate forms. Filter off the solid and wash and recover the silver from it as you did with the silver chloride from the coins.

In a second article details will be given for further useful and interesting things to do with zinc.

Over 200 years old

FAMOUS MUSICAL NOVELTIES

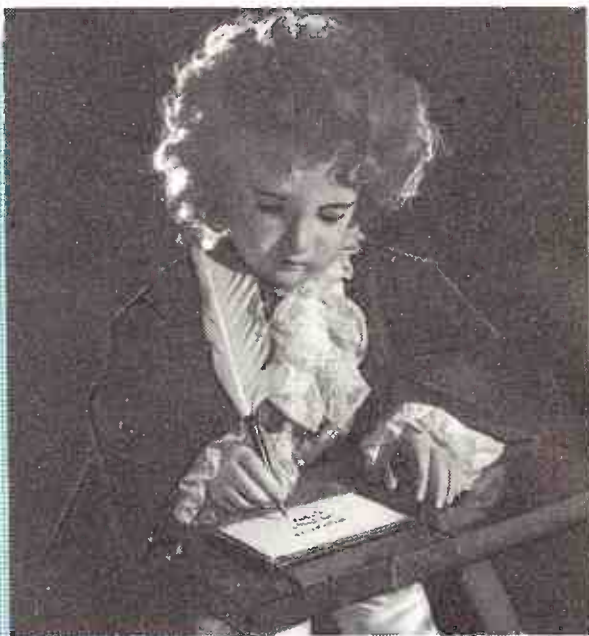
WE have become accustomed to associate musical movements with Switzerland, and now from that country comes a story which tells of the making of musical novelties over 200 years ago, novelties more ambitious than anything undertaken by the average modern modelmaker. We feel sure that all readers of *Hobbies Weekly* will be interested and intrigued in the life story of three Swiss dolls now in the Neuchatel Museum.

Although created and put together by a Swiss watchmaker, Jaquet-Droz over 200 years ago, these three amazing dolls or automats are still working to-day as wonderfully as ever.

The trio is composed of a musician, a demure blonde, with her hair in the style of Catherine II; an artist, a small boy with blue eyes, not unlike our own little Lord Fauntleroy; and a writer, a handsome little fellow dressed in the fineries of the 17th century.

To fully understand the amazing degree of skill attained by their creator, it is necessary to give in detail what each doll contributes to a mechanical performance which, by modern standards, would impress even the most hard-bitten onlooker of this nuclear age.

The musician, illustrated below, opens the performance with recitals of fairly difficult music on a real organ. She plays the clavichord by the pressure of her fingers on the keys, otherwise she is quite unconnected with the instrument. As she



plays her five melodies she breathes deeply, her bosom rising and falling with her breathing, her eyes following the movement of her hands on the keyboard, but turning occasionally for a glance at the audience. Her piece finished, she sits back confidently, folds her hands and cocks her head slightly to listen for the applause which follows from an admiring audience.

The artist, when his turn comes, works quickly with sure bold strokes or with gentle touches of shading. Seated behind a small desk he draws a portrait of Louis XV of France, of Louis XVI with Marie Antoinette, a picture of a dog, and so on, actually leaning forward now and again as he draws to blow on his paper pad to clear it of dust!

The third member of this fantastic family, (above) works with a long feathered quill, dipping it into an inkwell and shaking off the excess drops before neatly inscribing any message he is adjusted to write. He can write any message up to 40 words.

We are indebted to the Swiss Federation of Watch Manufacturers for supplying us with details here recorded. They have given us yet another example of the fine craftsmanship we have come to expect from Switzerland — an example which loses none of its brilliance even in the bewildering light of the latest satellite.

HOW TO CREATE PICTURES

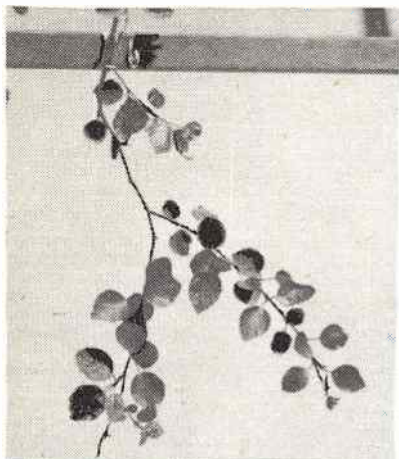


Fig. 1

THIS —

THE technique of double printing enables us to convert plain, simple scenes into entirely different pictures, achieving what is normally impossible by means of the camera by including both near and distant objects, yet both in sharp focus.

Many exhibition pictures are made in this way, using a basic negative for one part of the print, and one, or more, specially prepared negatives to add other interesting features.

Fig. 3 shows the result of this manipulation, using a leaf pattern to break the background and frame the duck. You will probably notice that the upper portion where the leaves appear is much lighter in tone although on reference to Fig. 1, showing the original photograph taken in a park, the same area is dark. In making these composite pictures the top half was shaded during printing by holding a piece of cardboard between lens and paper for approximately two thirds of the full exposure time. The card is kept moving a little to prevent too clear a cut-off.

The picture of the leaves was taken separately as shown in Fig. 1. A small branch was tied to the top rail of a clothes maiden, arranged so that all shadows were omitted on the white background placed behind. Moreover, the camera was quite near to the subject to produce a 'close-up' effect, resulting in full, clear detail in the leaves and branches. The finished negative prints nothing but the leaves, leaving a white background as shown, and it will now be appreciated that when used in conjunction with any other negative for

double printing, all that is necessary is skilful combination of the positions of the subjects to create a new picture.

It is a good plan to make a test of the new picture in this manner. Place a piece of drawing paper on the enlarger baseboard, equal in size to the proposed print, focusing the basic negative as though for printing. Sketch in the position of the first subject in pencil, for example the duck, and any other little details as may be desired. Exchange the negatives, manipulate the enlarger so that the second image is in the right

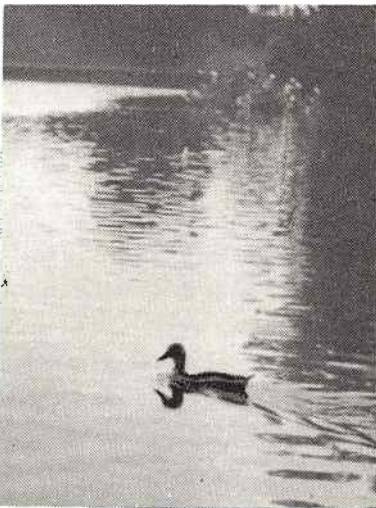


Fig. 2

—PLUS THIS —

position on the prepared sketch, pencil in and you have some idea of the ultimate effect. Although the leaves hang downwards in this instance they could have been printed in from either side, or you may reverse the negative if you wish, but when making the test sketch you should also note the degree of enlargement required for each subject.

Such a preliminary sketch should be laid aside until the final operation, along with notes on the enlarging as stated, but now a few notes on the actual control are necessary, using the example given.

A test exposure is made of both negatives at the correct degree of enlargement, and this is where your sketch will prove useful for it is no use guessing. You must also notice the stops used on the lens.

For the production of Fig. 3 the duck negative was first printed, a card shield-

ing the rays of light from the enlarger in order to lighten the tones of the upper portion. The card should be held about half way between the lens and the paper and kept gently moving so as to avoid any harsh lines. Your original test exposure will reveal the length of time necessary to produce a light tone.

Before exchanging the negative, or moving the printing paper, the position of the duck was marked by placing a small disc of black paper over the image seen with the enlarger safelight in position while the image is projected. Switch off the light, exchange the negatives and with the safelight still in position, the paper can be manoeuvred on the baseboard until the desired position for the leaves is found. This routine was followed, the paper disc covering the position of the duck removed and the exposure made. It will be appreciated that the disc of paper plays an important part in this process, being the position of subject number one, and the second subject, in this instance the leaves, must combine. The disc, therefore, must not be dislodged in any way if you have to move the paper about.

The method has many variations as will be realised, and providing the basic negative can be controlled to give a pale background, almost anything may be overprinted. (S.H.I.)

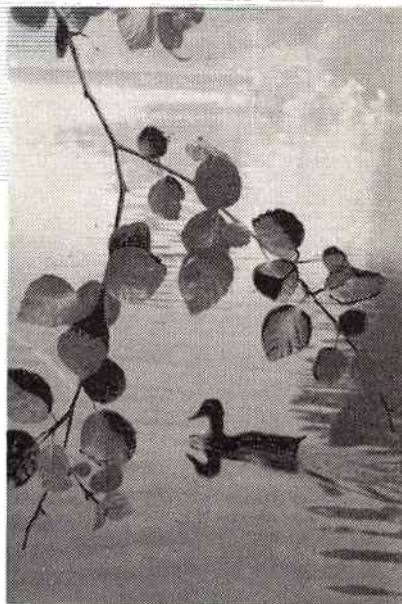


Fig. 3

— MAKES THIS

THE 1904 DARRACQ

THIS 'old crock' model car, based on the design of the 1904 Darracq which was featured in the film 'Genevieve' can be built up by the keen model maker from pieces of $\frac{1}{4}$ in. and $\frac{1}{8}$ in. plywood, tin plate, metal rod and dowel rod, etc., and has motor drive powered from a pocket lamp battery housed under the seat and spare tyre cover.

The photographs show the prototype model with positions of its special features indicated, including battery connections and motor. Miniature motors giving about 10,000 revs., such as the 'Mighty Midget', for use with a $4\frac{1}{2}$ volt battery are obtainable from Hobbies Ltd. and branches. Rear wheel drive is obtained by linking the motor pulley to the larger pulley wheel attached to one of the car's rear wheels with an elastic-band driving belt.

Start with the 'chassis' base piece, to which are glued the two sides. The bonnet and radiator are built up in the 'bread and butter' manner, as shown in the inset drawing. Positions of wheels, axle rods, rear switch and motor to the underside of the chassis, are given in the top plan and side elevation diagrams.

Both front and rear wheels revolve on metal rod axles, the front ones having a pivoted steering bar, and the rear axle running through 'fixed' bearing supports. A more conventional form of front wheel steering could be incorporated by the experienced worker, if desired. A $1\frac{1}{2}$ in. diameter wood or metal pulley is secured to one of the back wheels, the motor being conveniently screwed in alignment to the underside, as shown in the side view diagram.

When the running gear has been completed, the metal switch strip is

screwed in place, and battery connection screw correctly placed. The battery fits on the base between the two sides, and adjustments are made to connections and switch while the motor is tested out. The two wires from the motor, one of which goes to the contact screw and the other to the switch pivot screw, pass through the hole marked 'X' in the top plan.

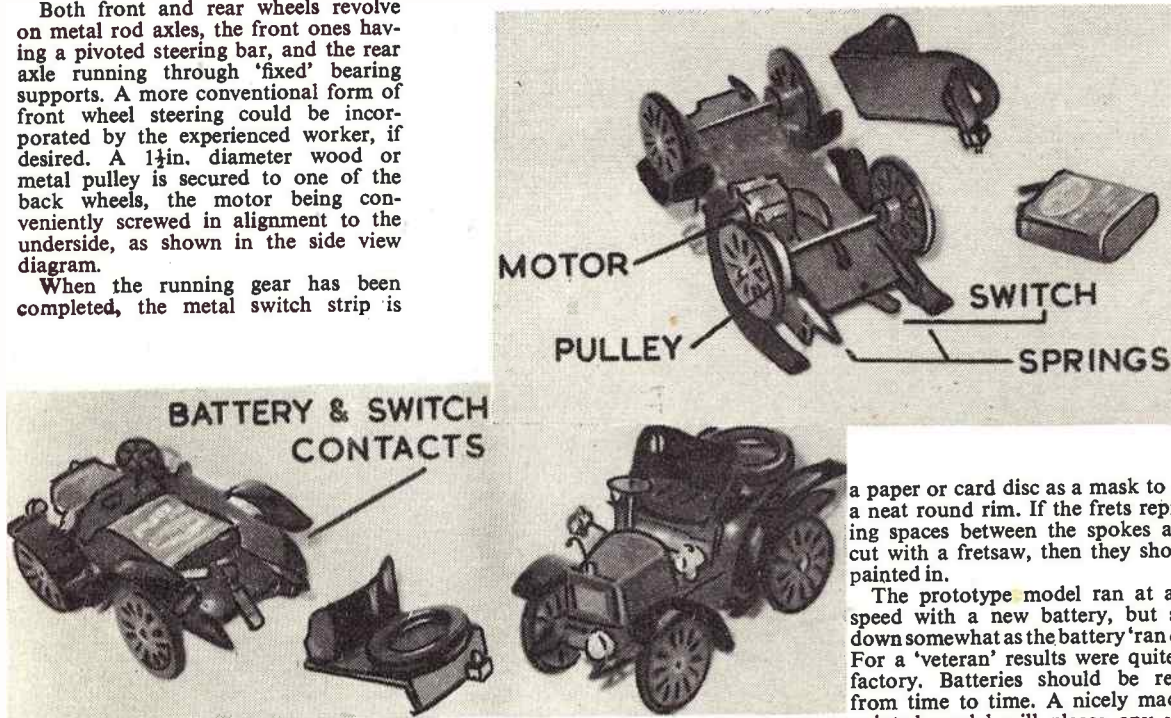
HALF SCALE PLANS ON FACING PAGE

The driver's seat consists of wood seat and metal back shaped to top and side elevation drawing, and is glued to the front end of the cover piece. The end piece, which is glued to the cover, has a rear lamp attached, and has a slot to allow movement of the switch. Spare tyre discs of wood of same diameter and thickness as the car wheels are glued behind the seat. The complete unit fits neatly over the battery. Mudguards for

front and rear wheels are cut from tin plate, and fashioned to the proportions shown. They are soldered to fret-nails driven in the sides of the body and bonnet. The steering column and wheel are made from a disc of thin wood glued to a wood rod, the rod being glued securely into a hole drilled into the instrument panel.

Further details, such as the brake and gear shift and the front and side lamps, are made up from oddments of round rod and wire, but not added until painting of the car body is completed.

Clean up all parts of the body with glasspaper, and apply the first coat of paint. Bright red is the main colour, with the mudguards painted black. Use good enamels. The seat and spare tyres are also black, and steering wheel and wheel springs may also be this colour. Lamps are added when paint has dried, and these are painted yellow to represent brass. Print in indian ink on a piece of white card, D1904, or other desired car registration number, and glue this as shown to the front winding strip. Tyres to the wheels are painted in black, using

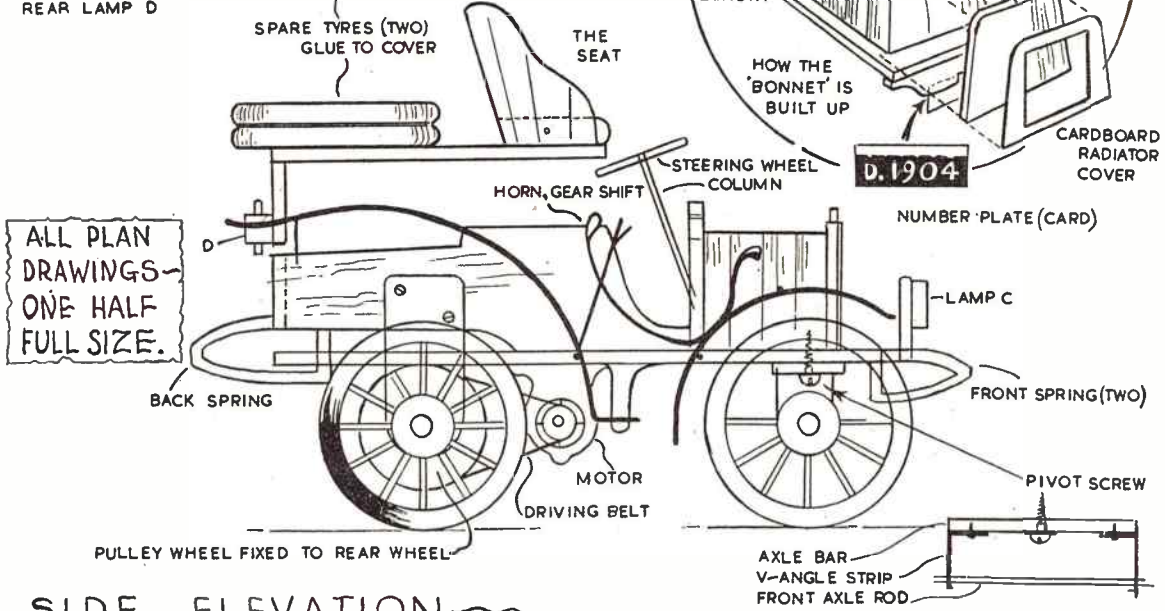
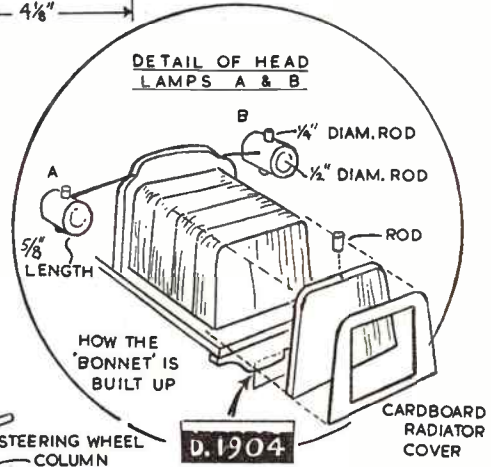
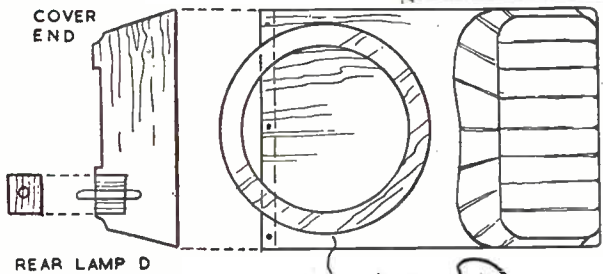
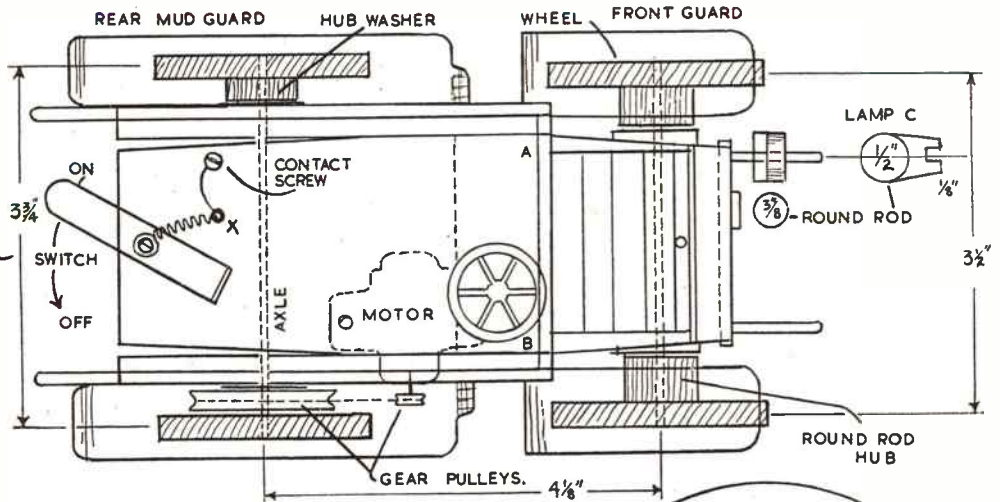


a paper or card disc as a mask to obtain a neat round rim. If the frets representing spaces between the spokes are not cut with a fretsaw, then they should be painted in.

The prototype model ran at a good speed with a new battery, but slowed down somewhat as the battery 'ran down'. For a 'veteran' results were quite satisfactory. Batteries should be replaced from time to time. A nicely made and painted model will please any veteran car lover, whether the car is in motion, or used as a 'static' display piece. (T.S.R.)

WORKING MODEL CAR

TOP PLAN



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SIDE ELEVATION



SPANIARDS are fond of keeping religious festivals. On great days they make grand and gorgeous processions through the streets of their chief cities, far exceeding in magnificence and splendour those of many other countries. Holy Week is kept with much solemnity and display. Seville has grander ceremonies at this season even than Rome. The people are fond of pilgrimages to holy places and shrines.

These facts are well illustrated on Spanish and Spanish Colonial stamps. 'Spain. 1940. (A) Postage. 15c.+10c. lilac — Procession of the Rosary — 5d. mint. (B) Air. 25c.+5c. slate — Prayer during bombardment — 8d. mint. 50c.+5c. red — Image of the Virgin — 9d. mint. 90c.+20c. red and brown — The Assumption — 1/3 mint. 1953. 25c. brown (air) — Girl and Angel — 3d. mint. 1935. 2p. blue — Autogyro over Seville — 8d. mint. Spanish Morocco. 1952. 25c. blue and red — Monastic Procession — 2d. mint.'

Most colourful

Christopher Columbus who, with assistance from the Spanish Court, discovered America in 1492, has received world-wide philatelic honour, but Spanish issues are probably the finest and most colourful of them all.

Collectors with a limited purse will find the complete issues beyond their scope. But the following items will prove adequate for the 'Spanish Story'. 1930. 1c. brown — 'Santa Maria' — 3d. mint. 25c. red — 'Nina', 'Santa Maria' and 'Pinta' — 10d. mint. 30c. brown and blue — Departure from Palos — 10d. mint.

1930. 'Columbus' air stamps (for Europe and Africa). 5c. red — Monastery of La Rabida — 3d. mint.

1930. 'Columbus' air stamps (for America and Philippines). 4p. blue — Columbus and the brothers Pinzon — 2/6 mint.

At one time a great deal of the American continent belonged to Spain. The Spaniards ill-treated the Indians, causing them to slave in the gold and

silver mines, until they died off by hundreds of thousands. All Spain cared for was gold. The Spaniards did not trouble themselves about cultivating their magnificent possessions, and one by one all the countries under their rule were wrested from them. In Mexico, and the greatest part of South America, the cities and towns have Spanish names, and the Spanish language is spoken, showing what the power of Spain once was.

SPAIN

—By R.L.C.

Spain may roughly be divided into three distinct parts.

The north is chiefly mountainous. It is the dairy country of Spain. The climate is temperate. The inhabitants are hardy and industrious.

Central Spain consists of high tableland. This district is exposed to the fierce heat of the summer sun, and the cold winds and storms of winter, there being no trees to break the force of the storm, or to give shelter from the heat. Rain very seldom falls. Immense herds of sheep are fed in this district, one breed, the Merino, being famous. This district grows magnificent corn.

The southern district is of a tropical nature. Sugar, cotton, rice, olive, lemon, and the date, grow in rich profusion, as the country is plentifully supplied with water. The Andalusians, who inhabit this region; are like the Irish in many respects. They are lively and full of fun. They dress in bright gay colours, and are passionately fond of singing and dancing. Inhabitants of other parts of Spain speak of them contemptuously, as 'half Moors'. The Moors once inhabited this district.

'Spanish Morocco. 1948. 90c. green — Head of Moor — 3d. used. 1949. 90c.+10c. green and red — Moorish horsemen — 1/- mint.'

Madrid, the capital, is a large modern continental city. The streets are wide and clean. But it is disappointing at first sight, for there is little that is Spanish about it. It is an unhealthy place to live in; the death-rate is double that of London. It is either terribly hot or fearfully cold.

'Spain. 1931. 1p. violet — G.P.O. Madrid — 9d. mint. 1938. 45c.+2p. blue — Defence of Madrid — 9d. mint.'

Between France and Spain are the Pyrenees; Maladetta (11,426ft.) is the highest peak. Along the north, the range of mountains is continued under the name of the mountains of Asturias.

Along the south coast is the Sierra Nevada, a peak of which, called the Cerro Mulhacen, is the highest mountain in Spain — 11,650ft. From the summit you can see the blue Mediterranean with steamers and merchant vessels. All around are ragged mountain heights. To the west stands up the defiant rock of Gibraltar; to the south of this is the faint outline of distant Africa.

'Spain. 1930. (B) Air. 5c. brown — Plane over mountains — 5/- mint. Spanish Morocco. 1938. 25c. red — Gibraltar — 3d. used.'

From a quick catalogue glance collectors will see that Spanish stamps are full of interest. Those who follow up this brief introduction are in for an exciting time.



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FRAMES FOR MARQUETRY

THE beauty of a marquetry picture is seen to better advantage if the frame is of a quality on a par with that of the picture itself.

To achieve this happy result a little more good work is worthwhile. Frames of many designs may be used, all of which are in keeping, one with another. This is the method I have devised and used to good effect.

By M. W. Hughes

Take two pieces each, of a light and dark hardwood. Let the woods be of contrasting colours, or the effect will be lost, and the result, therefore, disappointing. Ash or whitewood for the light, and walnut or a dark mahogany for the dark are suitable. I have used ebonised blackwood, which is ideal for the job, but may be difficult to get. The strips must be exactly a $\frac{1}{2}$ in. thick. Glue them together alternately and under pressure. (Fig. 1.) Use a good glue, not to do so is false economy. When the glue has set, take off the pressure and plane one edge, keeping it perfectly square.

Draughtboard effect

Now cut into strips of $\frac{1}{2}$ in. thick, so that you have strips made up of the two colours. Glue these together, again under pressure, with each alternate strip reversed, so that the end has a draught-

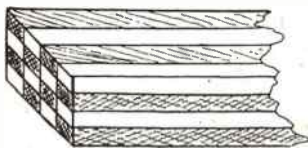


Fig. 2

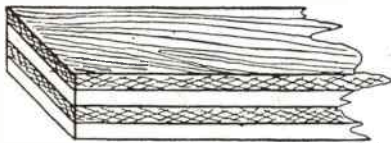
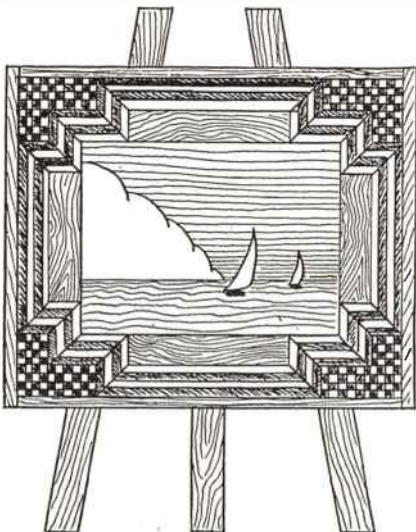


Fig. 1

board effect. (Fig. 2.) When the glue has set cut one end perfectly square, and proceed to cut $\frac{1}{2}$ in. sections from this end. If you have a small circular saw unit, the strip cutting is turned into a precision



operation. The end grain sections will appear as in Fig. 3.

For my pressure unit I used an old letter press bought for a few shillings in a saleroom. A point which cannot be over emphasized is that you cannot hurry the glue. It will set in its own good time and you should not proceed with the next operation until it has done so.

The baseboard for the picture is 4 ins. longer and wider than the picture itself,

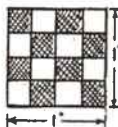
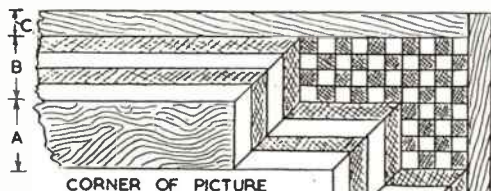


Fig. 3

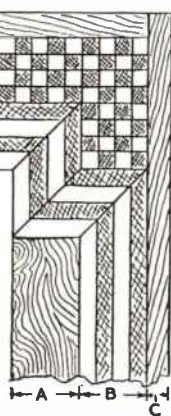


Fig. 4

so that when mounted there is a 2 in. margin all round. True the edges of the picture and cut away any glue which may have squeezed out in the fixing process. Select four pieces of hardwood

measuring 1 in. by $\frac{1}{2}$ in., of distinctive grain and colour. Cut two pieces approximately two thirds the length of the picture, and the other pieces two thirds the width. The word 'approximately' is used because a multiple of $\frac{1}{2}$ ins. must be left at the ends. This is to accommodate the draughtboard section which is made up with $\frac{1}{2}$ in. pieces. The selected hardwood pieces are marked 'A' in Fig. 4 and are fixed centrally as in the finished illustration.

Finishing touches

The strip marked (B) is a piece cut from the edge of the two coloured block as in Fig. 1. These strips must be carefully mitred so that no long corners show. The rest of the corner is made up of the draughtboard sections. All the pieces which make up the picture surround are glued in position under pressure, but don't be too ambitious by trying to do too much at a time. As each piece is glued in position be careful to see that there is no hard glue from a previous operation which will prevent a good clean joint being made. Keep the strips, (B), and the draughtboard sections in such positions that the colours are symmetrical.

When the surface has been completely covered, plane the edges perfectly square. To these edges glue $\frac{1}{2}$ in. border strips of a dark wood to complete the frame. (C, Fig. 4.) Clean off the entire surface, using a finely set smoothing plane and finish off with the finest grade glasspaper. Don't use a plane which has no check-iron, as this will tear the wood out instead of cutting it.

The easel effect is obtained by fixing strips of hardwood $\frac{1}{2}$ in. by 1 in. Hinge the centre piece to a fixed strip to limit its opening distance. The wood used for the easel should be the same as the border, the darker the better. Complete by polishing in the usual way.

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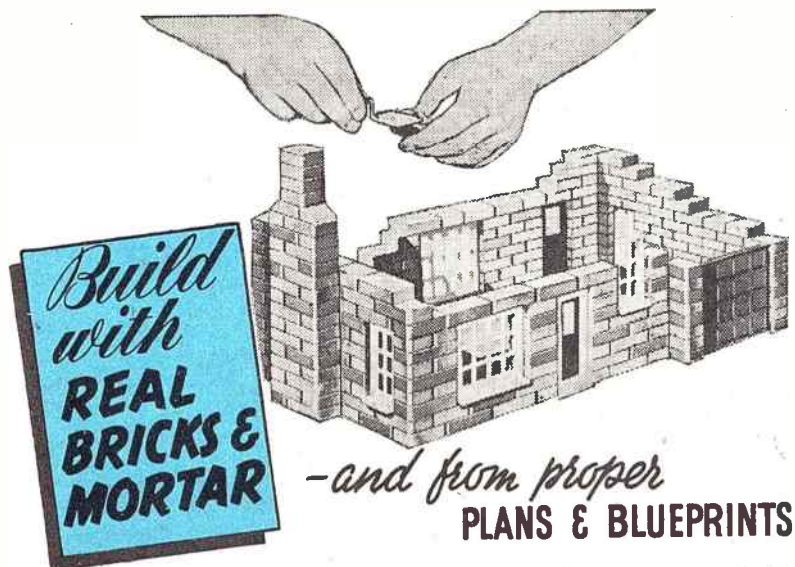
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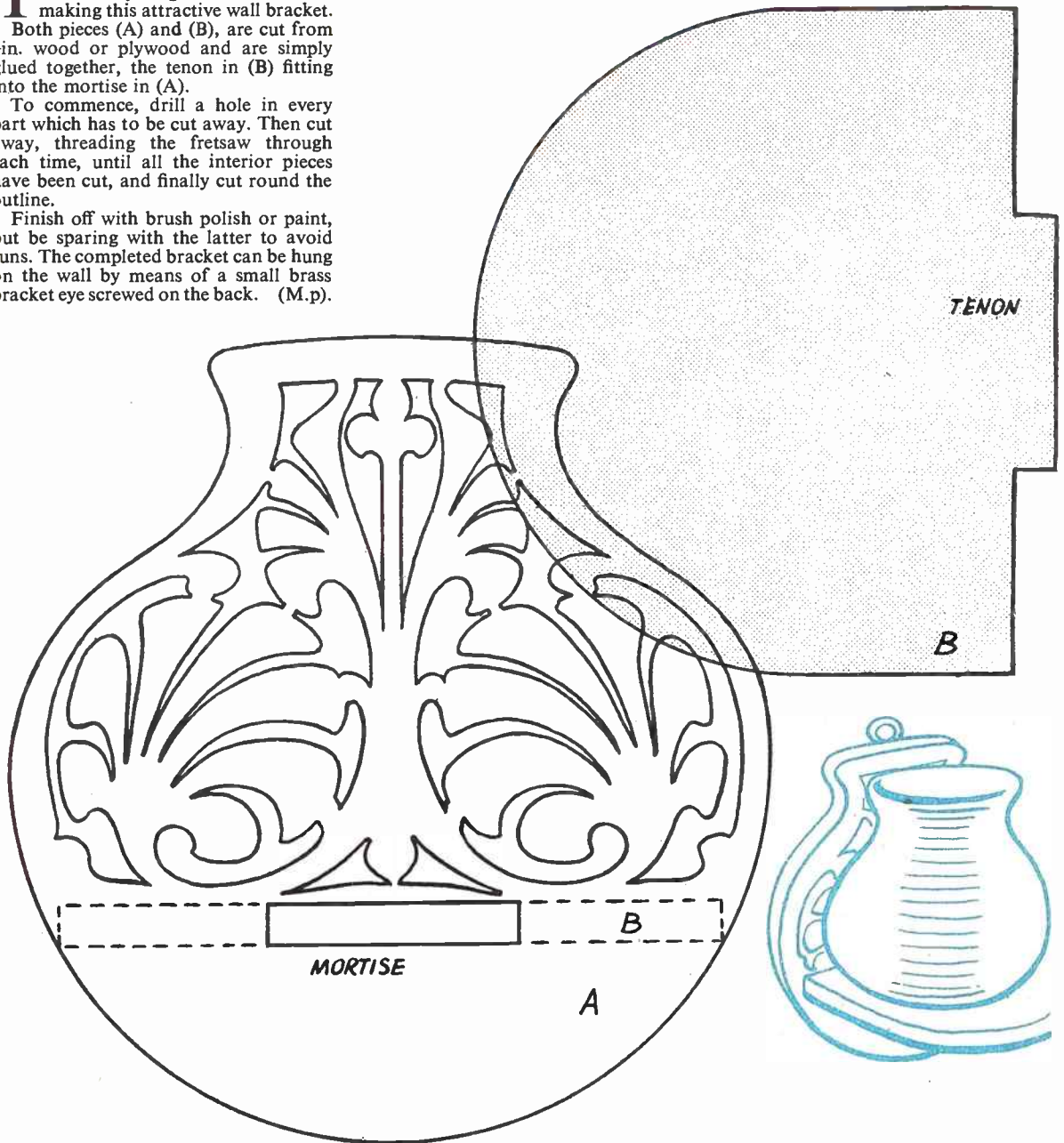
A SMALL BRACKET

THERE are no difficult joints to deter the young fretworker from making this attractive wall bracket.

Both pieces (A) and (B), are cut from ½ in. wood or plywood and are simply glued together, the tenon in (B) fitting into the mortise in (A).

To commence, drill a hole in every part which has to be cut away. Then cut away, threading the fretsaw through each time, until all the interior pieces have been cut, and finally cut round the outline.

Finish off with brush polish or paint, but be sparing with the latter to avoid runs. The completed bracket can be hung on the wall by means of a small brass bracket eye screwed on the back. (M.p.)



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