

HOBBIES WEEKLY

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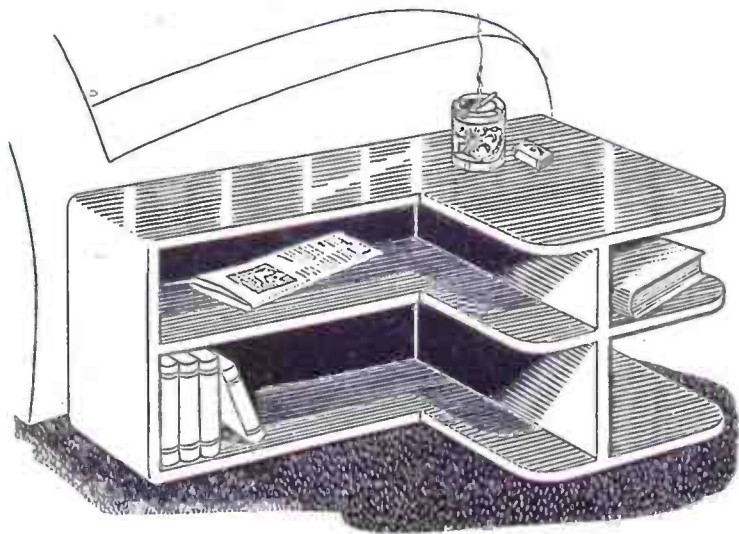
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★ *FREE Design inside to make this*

FIRESIDE TABLE AND BOOKCASE



THIS dual-purpose piece of furniture is admirably suited to the lounge or drawing room, as a fireside table and bookcase. The shelves are planned to carry books, papers and other reading material, while the top surface is an ideal table on which to put snacks and smoking requisites. A reading lamp or a bowl of flowers or bulbs could also be placed on the top to advantage.

It is of ideal height for placing at the side of an armchair, where everything will be immediately to hand. The design is modern and quite attractive and construction should present no difficulty to the average handyman.

It has been designed so as to use Hobbies standard panels throughout, and by carefully noting the measurements on the design sheet, it is an easy matter to plan the various shapes which go towards construction. Hobbies kit includes six panels of $\frac{1}{2}$ in. wood and one of $\frac{1}{4}$ in. plywood. The exploded view on the design sheet shows the general construction and the measurements given

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*For Modellers, Fretworkers
and Home Craftsmen*

4 $\frac{1}{2}$ "^D

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on the front view and plan, together with the detailed sizes of pieces 1, 2, 3 and 4, provide all the necessary information.

Make a start with the middle shelf, which consists of pieces 1 and 2. Note the provision of halving slots to take the partition pieces 3 and 4. Pieces 1 and 2 are dowelled and glued together and three dowels will be found to be quite sufficient.

The top pieces (8 and 9) and bottom pieces (5 and 6) are dowelled in a similar manner. It will be seen that pieces 6 and 9 are identical to piece 2, excepting for the halving slot. Pieces 5 and 8 are the same length as piece 1 (34ins.) but their width is 6ins. as opposed to 5½ins.

Partition Pieces

The two partition pieces (3 and 4) are cut to the measurements shown on the design sheet. These should be prepared for dowels at the top and bottom, and they also have halving slots.

The partition pieces can now be glued in position in the slots in pieces 1 and 2, and the top and bottom positioned and

OBTAIN A KIT

Kit No. 3200 contains six panels of wood for making the Fireside Table and Bookcase. Also plywood, beading etc. Price 65/9 from branches or Hobbies Ltd, Dereham Norfolk (post free).

marked off for dowelling. Note that the front edges of all pieces are flush. This leaves the centre shelf ½in. short at the back to allow for the insertion later of the back panel of plywood. When the dowelling holes in the top and bottom have been bored, these two sections can then be glued in position.

Now prepare the end piece (7), cutting the housing joints with a tenon saw and cleaning out with a chisel. The depth of the housing joints is ½in. Pin and glue the end piece in position, using panel pins.

The plywood panel should now be cut to fit the back, remembering that it will go inside the top and bottom. Glue and pin the back to pieces 1 and 3, and further strengthen with triangular fillet glued on the underside of pieces 1 and 8. (See exploded view on design sheet.)

Trim with beading

Trim the exposed edge of the plywood with a piece of ¼in. quarter-round beading, gluing and pinning it in place. The final appearance will depend a lot on the finish, and the worker is advised to take a great deal of care here. After a thorough smoothing down, staining and polishing or staining and varnishing is to be recommended, whilst others might like to paint the article to blend with other room furnishings.

If the worker is not too experienced with dowelling, panel pins can, of course, be used instead in construction. Also, in the case of side piece 7 the housing joints can be omitted and pinning used instead, measurements being modified accordingly. Glue should also be used if pinning.

How to Solve Codes

ANY reader who has seen or invented a code will know that the most common type is formed by substituting one letter of the alphabet for another. For example A=G, B=N, C=Z and so on. The best way to solve a code of this type is given in the hints

By J. G. Pollard

below. Study them carefully and then attempt to de-code the message which has been formed by substituting one letter of the alphabet for another.

TJ TS OIJ KPCY YJBTZVAJ JI
SLAKP ZIYPS TB RV EOID JQP
BPD STUGAP CVAPS FUY
SPJ FNIVJ TJ TO JQP DFR JQP
PHNPCJS YI.

Look carefully at this frequency alphabet:—ETSAIONHRDFLUWPM
YVCBKGQXJZ. From this it can be seen that E is the most common letter, T the second, S the third and so on.

Common words

The letter T is the easiest to discover because it is so common in two letter words and it is often followed by H. I and A are common in two letter words and S and C are other letters coupled with H. 'The' is the most common three

letter word. 'And' is also very common. Q, J, X and Z are rare. Q, the most common of these, is always followed by U. If two similar letters are together they are either OO or EE if vowels, and PP, SS, or FF if consonants.

With these points in mind examine the message in code and try to mark all the T's and E's, remembering that 'the' is the most common word of three letters and T is very common in words of only two letters. Next attempt to find the letter I by concentrating on two letter words. After finding T and E, H will be fairly obvious. Continue to solve the code in this manner, making use of the frequency alphabet and using your common sense. If you try hard enough you should manage to decipher the code, before checking with the decoded message below.

Decoded Message

The message given in code in the preceding column should read:—IT IS NOT VERY DIFFICULT TO SOLVE CODES IF YOU KNOW THE FEW SIMPLE RULES AND SET ABOUT IT IN THE WAY THE EXPERTS DO.

THE CODE USED WAS:

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
F	N	Z	Y	P	B	L	Q	T	X	E	A	U	O	I	G	N	C	S	J	V	K	D	H	R	W

I have always found that the ability to speak in code, fluently, is a great asset. You can speak to friends in great secrecy and at the same time mystify others.

The basis of this code is very simple, but when spoken quickly and fluently it sounds like Chinese, backwards! The key to the whole language is the syllable AIG. These three magic letters are placed before every vowel which is sounded. Simple examples to illustrate the method are: rAIGat — rat. swAIGing — swing.

A CODE LANGUAGE

Practise saying one syllable words such as these and short sentences like the old favourite 'The cat sat on the mat'. Two or three syllable words are equally simple: sAIGingAIGer — singer. fAIGishAIGermAIGan — fisherman.

Words which begin with a vowel are written and pronounced thus: AIGonAIGy — only. AIGanAIGimAIGal — animal.

Practise in your spare time, speak to your friends in the language and soon you will be able to speak, write and understand it with great ease. Try it yourself and see.

Our competition subject

Picturesque Stamps for Britain

JUST how many times have philatelists sighed over the fact that Britain does not issue pictorial stamps as some other countries do? Well, at last the plea is to be answered, for last year Dr. Charles Hill announced in the House of Commons:

"Her Majesty the Queen has graciously approved in principle the issue of new stamps in the 2½d., 4d. and 1s. 3d. denominations for Scotland, Wales and Northern Ireland, and a 2½d. stamp in Jersey, Guernsey and the Isle of Man.

"The basic design of the stamps will remain unchanged. The head of Her Majesty will continue to be the dominant feature.

"The border will bear symbols or designs appropriate to the places I have mentioned.

"I propose to invite committees representative of the cultural and artistic interests in these areas to advise on detailed designs for me to submit to Her Majesty for approval.

"The new stamps will be on sale only in the areas which they represent, but they will be valid for postage and revenue purposes throughout the British Isles".

England is apparently to continue selling stamps of the design at present in use. But, as the new stamps are to be valid throughout Great Britain it means that there will be a choice of seven different 2½d. stamps to use and collect plus four each of the 4d. and 1s. 3d. denominations.

Some of the British Commonwealth countries, such as New Zealand, do already have such committees as mentioned by Dr. Hill, and include on them experts in philately. Judging by the wonderful stamps these countries issue it is obviously a very good system.

In the past many schemes have been put forward in an effort to try to introduce new British stamps. Differing slightly, one scheme featured a pictorial representation of well known places such as Salisbury Cathedral, Westminster and Cowes, to be on sale throughout the British Isles. Another idea was to have separate stamps for each county, to be sold only in the respective county but useable anywhere in the British Isles.

Any new scheme introduced, which would result in a new issue of stamps for Great Britain, would be welcomed by philatelists the whole world over.

★ Tomorrow is the last day for receiving ★
★ entries in our January competition. ★
★ There will be another prize compe- ★
★ titition next month. ★



JUNIOR AWARD



SENIOR AWARD

Design a Stamp and WIN A WATCH

Ball-point pens will be awarded for the next best efforts

OUR competition this month, in which wrist watches will again be awarded to the winners, is based on 'Picturesque Stamps'. There are two sections — one for Seniors (16 and over) and one for Juniors (15 and under). A watch (as illustrated) will be awarded to the winner of each section and ball-point pens will be awarded to the six next best entries in each section.

RULES

1. The competition is to design a stamp for your own county or town. Choose as a subject anything that is representative of your locality. Photographs must not be part of an entry, and do not attempt to reproduce the head of Her Majesty the Queen.
2. Entries must be neatly drawn on plain paper. They must be received by the Competition Editor, *Hobbies Weekly* Dereham, Norfolk, by March 29th and cannot be returned.
3. Winners will be notified and prizes despatched by April 12th. Details will be published in a subsequent issue of *Hobbies Weekly*.
4. The name, full address and age of the competitor must accompany the entry.

5. An entry must be the unaided effort of the competitor. All entries for the Junior Section must be accompanied by the certificate below, or a similar declaration on plain paper, signed by a parent, otherwise the work cannot be considered.
6. Because of Customs regulations and the necessity to adhere to a definite closing date, entries are confined to those from Great Britain and Northern Ireland.
7. The judges' decision is final and no correspondence can be entered into.

CERTIFICATE (for Juniors)

The entry is the unaided work of _____ aged _____
Signed _____
Relationship _____
Address _____

For the man with a lathe

Modern Wall-Light

THE wall-light illustrated, fitted at the head of the stairs, was made to replace an existing ceiling light on the landing. Although the main function of this type of light must be to provide illumination where it is most needed, it does much to add interest to a decorative scheme.

In the light shown in the photograph, two of the parts were made on a lathe, but they can be easily modified if a lathe is not available. Beech was used in the original, and this is ideal for

By K. Blackburn

turning. For the back piece you will need a 9½ in. length of wood 2 ins. square. If this is not to be turned, it can be made from a length 2 ins. wide and 1 in. thick.

Plane the wood true to 1½ ins. square, and mark the centre point of each end. Then mark the ends as shown in Fig. 1, joining the lines along the length of the wood. Square lines across at the points shown in Fig. 2, and mark the mortise between them. Chop this mortise at least half-way through. If you wish to

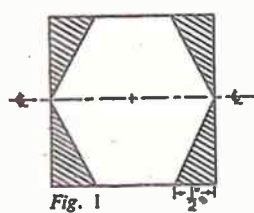


Fig. 1

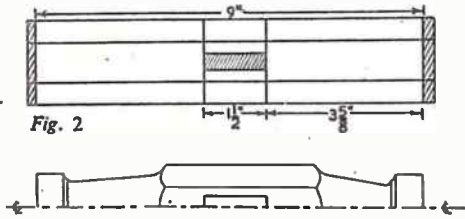


Fig. 2

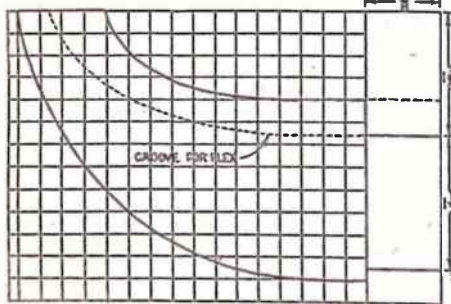


Fig. 4

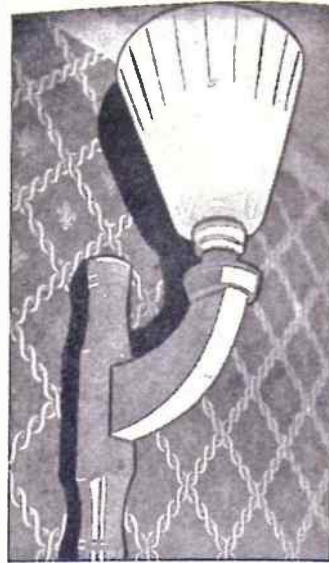
make a pair of wall-lights, cut the mortise right through, working from both sides.

The corners of the wood, indicated by shading in Fig. 1 are now planed off. Make a hole at the centre of each end

with a nail punch and mount the wood on the lathe. It will be noticed from Fig. 3 that the middle portion of the wood is left in the original hexagonal shape. The raised parts at the ends are turned down just sufficient to remove the flats. Smooth thoroughly with glasspaper, and part off at the ends to leave a length of 9 ins.

The wood is now sawn down the centre with a fine panel saw. The difficulty of planing the sawn surface can be overcome if a smoothing plane is held in the vice, blade uppermost, the wood is then pushed along the sole of the plane.

For the shaped bracket, a piece of wood 5 ins. by 3½ ins. by 1 in. is required. Plane it to a thickness of ½ in., and plane one of the edges flat. Square across from this edge a line ½ in. from the end (Fig. 4). This is the shoulder line for the tenon. Square down to the shoulder line the two lines shown in the illustration. Copy the drawing by dividing a piece of paper into ½ in. squares. Cut round the paper pattern and draw it on to the wood. Saw round the outline with a bow-saw — when sawing along the top curve, continue sawing to the edge of the



½ in. chisel. The waste can then be easily removed. Smooth off the bottom of the groove by using the chisel with a scraping action, working towards the top end of the bracket. The groove should finish level with the top edge of the tenon.

In the back piece, bore a hole just above the mortise so that the flex may pass through. Work a chamfer on the lower edges of the bracket, working towards the top end.

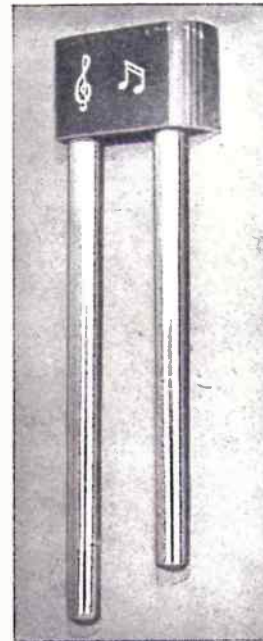
The circular piece to which the bulb-holder is fixed can be turned from a short length of wood mounted between centres, or it may be turned by attaching a piece of wood to a screw-chuck. It should be finished to 1½ in. diameter and ½ in. thick. A section of this piece is shown in Fig. 5. Bore a hole in the centre to take the flex. It is fixed to the top of the bracket with glue and pins.

Drill and countersink two clearance holes in the back piece to take a pair of 1½ in. No. 8 chromium raised-head screws. Clean up the three parts, and glue the mortise and tenon joint. The finished wall-light can be wax-polished or painted to suit the general colour scheme.

It should be noted that, where wiring already exists for a wall-light, care must be taken to ensure that neither screw penetrates the cable. It is important, therefore, to ascertain where the cable runs. It will usually be found to run in a vertical direction, and it should be possible to see the end of a conduit pipe where the cable emerges from the wall. If this is the case, the wall-light must be placed a little to one side of the table —

Continued on page 357

ASSEMBLING THE DOOR CHIMES



COMMENCE the assembly of the door chimes by fitting the gong support pillars, which are two lengths of 2 B.A. studding 2 ins. long secured to the baseboard by nuts and washers back and front. See that the rear nuts do not project beyond the rear surface.

The gongs are hung on these supports by threading short lengths of tinned copper wire of 18 S.W.G. through the ½ in. holes as when tuning, but the ends must now be wrapped once round the support studding. Clamp in position with two 2 B.A. nuts and washers, so that the gongs hang with ½ in. clearance to the baseboard.

Fixing the solenoid

Having threaded some insulated sleeving on the solenoid wires, thread them through the hole in the baseboard. Scrape the enamel from the ends and secure them under the terminal nuts. It looks effective if the wiring grooves are finally filled with paraffin wax (candle wax will do) and cleaned off with a knife.

At this stage the solenoid may be screwed to the baseboard between the gongs by the two soldered-on mounting brackets, using small round-headed wood screws.

Push the striker rod through the solenoid with the brass end to the right and the spring end to the left. Attach it to the special shaped washer (Fig. 4) by

means of a large-headed 6 B.A. screw and bend over the two tags to grip the end of the spring if not already done at an earlier stage. The striker rod should be free to oscillate in and out when pushed by hand, and should strike the

☆☆☆☆☆☆☆☆☆☆

☆ Last week we gave details of ☆
☆ making the various parts, and ☆
☆ conclude here with the assembly ☆
☆ Instructions ☆

☆☆☆☆☆☆☆☆☆☆

gongs radially. When at rest there should be a clearance of ¼ in. to the left-hand gong and ¼ in. to the right-hand gong.

Make a few trials by touching the terminals with a suitable supply voltage, and, if necessary, adjust the position of the striker by altering the tension of the return spring. The position of the gongs may also have to be slightly adjusted for optimum results, which is done by slightly bending the gong supports. Finally, a little light machine oil of a good quality on the striker will assist it in sliding freely.

Installation

The completed chime may now be hung on the selected wall site by means of two wood screws and Rawlplugs. The resistance factor of the wiring to the push-button and batteries must not be overlooked, and the length of wire, therefore, should be kept as short as possible, otherwise more than 9 volts D.C. will be required.

Continued from page 356

MODERN WALL-LIGHT

about 1 in. is the minimum distance. A short channel will have to be cut in the plaster to bring the cable to its new position, afterwards making good with new plaster. It need hardly be mentioned that the electricity must be turned off at the mains before anything of this nature is attempted.

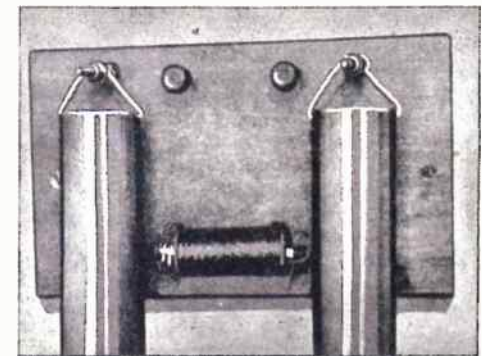
If an extension to the existing wiring is necessary, it is advisable to have it done by a contractor unless you are thoroughly familiar with electrical work.

As an alternative to the batteries, satisfactory results are obtained by supplying current from the secondary coil of a bell transformer connected to the A.C. mains, provided that a voltage of 10 to 12 volts is available. These circuits are shown at Fig. 1, as mentioned previously.

With the wiring completed and connected to the terminals, tuck the wires into the groove on the top edge of the baseboard and push on the cover.

Needless to say, the chime should be kept square and upright if the position of the gongs relative to the striker is not to be disturbed.

Referring to the circuits once more, it will be observed that a switch has been



The assembly with cover removed.

included in the circuit to disconnect the supply when leaving the house unattended. Some people desire to be able to switch everything off when they go out or away for a holiday.

Little maintenance is required with this door chime save for the renewal of batteries and the application of a spot of oil to the striker rod once a year. (R.M.)

MORE SWEET-MAKING RECIPES

SUCCESS in sweet making depends largely upon how the ingredients are boiled, and to refresh your memory it would be a good idea to read again the article on sweet making which appeared in *Hobbies Weekly* of February 6th, especially the section on sugar boiling.

Another important point to remember is to keep all the utensils absolutely clean. Then there is the rule not to over colour or over flavour any confections, and it is the attention you pay to these details which will ensure your success.

While on the subject of flavours, essences may be used for sweets which have not to be boiled to too high a temperature, but for toffee which needs

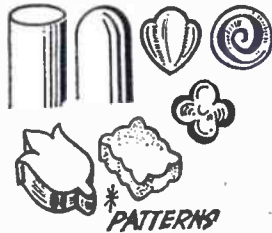
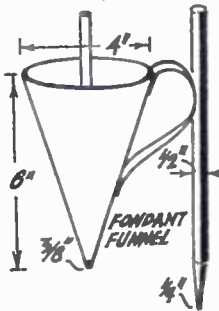
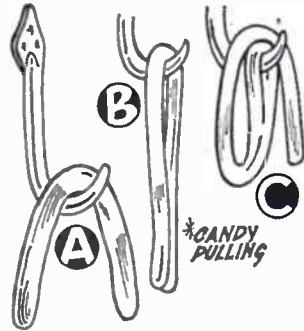
keep the sides of the saucepan clean by washing it down frequently with a brush dipped in hot water.

Place 1½ lb. granulated sugar in the saucepan with ½ pint water and nearly ½ teaspoonful of cream of tartar. Stir until thoroughly dissolved, then boil to 240° and immediately remove from stove. When the bubbles have subsided pour on to a clean marble slab or large china platter which has been moistened with water, but do not scrape the saucepan. When it has become luke-warm it can be creamed as follows.

With a steel spatula stir vigorously, turning the outside edges over and into the centre of the batch. It will soon appear cloudy and with continued stirring will set into a firm lump of white cream. Cover with a damp white cloth for an hour to mellow, after which it is kneaded with the hands into a soft creamy mass.

In this state it can be stored in a stone jar, if covered with a damp cloth, for quite a while; in fact it is better if left for two days before using it.

To mould the various creams you will need a fondant funnel which you can make from a piece of tinfoil similar to the illustration. Size is not important, say about 4ins. diameter at the top, and 6ins. long with the bottom hole ½in.



diameter. To regulate the flow of fondant from the funnel you need a stick 9ins. long and ½in. diameter, the bottom of which is tapered to fit the funnel outlet.

Melt some fondant by putting it in a cup or jug and standing this in hot water until you can pour it into the funnel. Then by lifting the stick the flow can be regulated to a nicety and the moulds can be filled without overflowing. All kinds of patterns can be moulded by sifting some cornflour into a tray to a depth of about an inch and then making a series of impressions in this with the patterns, some of which are illustrated.

These can be made from lengths of dowel rod, such as a flat or rounded end

for peppermint creams, or a pimple one for raspberry creams. All sorts of patterns can be carved on the ends. A knife handle or fancy buttons mounted on a handle make excellent patterns for moulding. Press them carefully into the cornflour to the depth needed and then fill up from the fondant funnel and allow to set. Remove and brush off any surplus cornflour with a clean brush and keep in a closed tin or jar.

By A. F. Taylor

The cornflour can be used over and over again, sifting it each time to keep it light and airy. Jellies are sometimes moulded by the same method and after allowing ample time for them to set they are rolled in castor sugar.

Flavour and colour are added to the fondant cream while it is being melted in the hot water.

JELLIES

Jellies, jujubes and similar confections are easy to make and are always popular. For jujubes soak 1½ ozs. sheet gelatine in about 7 (liquid) ozs. of water for an hour, then boil 1 lb. sugar and 1 gill water to 240°. Take off the stove, add the gelatine, flavouring and colour, and return to the stove for 1 minute, stirring all the time.

Pour into a shallow tin that has been moistened with water and allow to set till next day when it can be turned out and cut up. If you have difficulty in turning it out the tin can be placed in hot water for a second or two to loosen the jelly. Cutting up is done with scissors and the pieces rolled in castor sugar. Most fruit essences such as orange, lemon, lime, black-currant and raspberry suitably coloured are suitable for jellies and jujubes.

Fudge is a delicious sweetmeat. It should have a decided grain and be rich and crumbly. Here is a good recipe for brown fudge. Melt 2 level tablespoonsful butter in saucepan, stir in 2 cups of brown sugar, ½ cup of milk and a pinch of salt until the sugar has dissolved. Then boil, without stirring, to just under 240°.

Take it off the stove and allow to cool undisturbed, then beat it with a wooden spatula, during which you can, if you like, add ½ cup chopped nuts, or chopped raisins or preserved ginger either separately or in any combination. Put the mixture in a buttered tin or in the confectioner's frame to set, marking it into squares so that it can be cut easily.

CARAMELS

Caramels are more difficult to make than most other sweets, but with care you should be able to turn out a successful batch from the start. Try this formula for Vanilla Lady caramels.

Put 1 lb. light brown sugar in saucepan with ½ lb. glucose and 1 good gill cream or unsweetened condensed milk. Heat until all is completely dissolved, stirring all the time. Continue boiling to 240° stirring occasionally if necessary to prevent burning, but better results are obtained if this can be avoided.

Remove from the stove and pour out onto a dampened marble slab or china platter, add a few drops of vanilla essence and cream in the same way as stated for fondant until the whole batch is firm. Finally, press into the confectioner's frame and allow to stand for 24 hours, then cut with a knife into squares and wrap in waxed paper.

The glucose needed for sweet making is a heavy white syrup with very little taste. It is sometimes called crystal maize syrup or corn syrup and is used to prevent the graining of sugar. It is not

necessary to include it in the formulas, but it certainly produces a much better sweet and its use is recommended by the medical profession.

EDINBURGH ROCK

We are sure you would like to experiment with pulled candy, and this recipe for Edinburgh Rock is a good one to try. Dissolve 1 lb. sugar, a pinch of cream of tartar and half cup of water, and then boil to just below 265° without stirring. Add any flavour and colour you like and turn out onto a buttered marble slab. An old wash stand top is excellent for this purpose provided it is smooth and clean.

Allow to cool a little and then turn the edges into the middle with a buttered knife or steel spatula. Do this several times until it is cool enough to handle, but do not leave it too long. Now you are ready to dust your fingers with icing sugar and pull the candy until it turns dull.

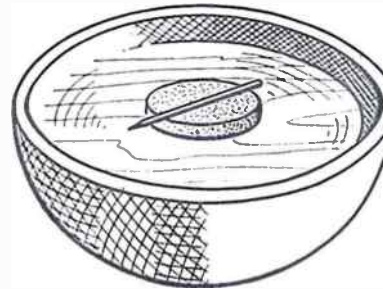
You will require a candy hook similar to the one shown or a large coat hook or even a butcher's 'S' hook will do quite well. Fix it securely about 4ft. 6ins. from

the floor. Loop the candy over the hook as at (A) and pull it out as (B). Now throw the end over the hook (C) and pull again. This lets air into it and should be continued until it turns from a clear to an opaque sweet.

You can now pull it into thin strips and cut it off into short lengths with scissors and store it in an air-tight tin or jar. An alternative method is to roll it out evenly on a marble slab in the form of rock and wrap in waxed paper. Candy should be pulled in a warm room and free from draughts so as not to chill it too quickly.

There should be no waste of materials when making sweets unless you unfortunately burn a batch, and this will not occur if you are careful and watch the processes closely. You may, however, make some slight mistake and the result may not be as expected or according to the formula, but you will have produced a sweet which is edible and probably quite nice. When you have gained some proficiency it is a good idea occasionally to make a deliberate mistake and try to evolve something new. (A.F.T.)

How to make a Simplified Compass



Lay the needle flat (as illustrated) on a ½in. thick slice of cork or, for greater security, pierce the float with it centrally across the diameter. The whole can then revolve freely until the treated needle is pointing directly north and south. Mark these two points on the edge or the inner rim of the container, if the compass is to remain in permanent use.

With the point of the needle indicating magnetic north, west and east must lie to left and right respectively and at

right angles to the north-south line. Mark these points on the rim. The diagonals of the imaginary cross thus formed should now be marked north-east, south-east, south-west, and north-west — starting top-right and continuing clockwise. Subdivide again to obtain north-north-east, east-north-east, east-south-east, south-south-east, south-south-west, west-south-west, west-north-west, and north-north-west. (C.L.M.)

A Pencil Box for School

THE box shown in the illustration is intended for school use and has therefore, been designed to take a minimum of room in the satchel. It will comfortably hold three or four average size pencils and the points will be protected from damage.

The top (A) and the bottom (C) are cut from ½in. wood. The sides (E) ½in. thick, are glued between these. In a

similar manner the cap, pieces (B) and (D) (½in.) and (F) (½in.) are glued together. The ends (H) (½in.) are glued in position as shown by the dotted lines.

The pieces (G) are cut from ½in. wood and are glued inside the box, with the ends projecting at the top, i.e., the curved portion. These projecting pieces go inside the removable cap but are not fixed. (M.p.)



FULL-SIZE PATTERNS ARE ON PAGE 367

RUNNING TOY RAILWAY by Regulator

ALMOST all model train motors have a permanent magnet, in the form of a 'U' as field magnet. Such electric motors can be reversed by reversing the polarity of the supply. This may be done at the battery, or anywhere between battery and model, so that it is not necessary to touch the train at all. This is a great advantage when running such a layout, as the train can be halted and reversed from a control switch situated at any desired point.

Boats and other models with a permanent-magnet motor can also be reversed in this way. Motors with a wound field-magnet will not reverse,

direction. Moving the two arrows downwards will give the circuit for the second position. Current then flows backwards through the train motor windings, reversing magnetic polarity, and thus changing the direction in which the motor runs.

Suitable switches can easily be made or purchased. The actual type of switch is in no way important, provided it has a double-pole, double-throw action. That is, it can change over both circuits.

Small mains-voltage toggle switches of this kind can be bought, and so can rotary and push-pull switches intended for radio receivers.

blades, moved together by an insulated handle. The connections to one set of fixed contacts are reversed, as shown. The switch will thus give forward

REVERSING THE MODEL

running in one position, and reversed running in the other.

Such a switch has an 'Off' position, with the handle upright. There is thus no need to use a separate 'On/Off' switch in the train circuit, as the one switch will provide this as well as reversing.

Toggle switches do not have an 'Off' position; nor do some other types of reversing switch. With these, it is best to stop the train by means of a resistance controller or separate switch, before reversing it. This is more realistic, and imposes less strain on both motor and battery.

Making a Switch

Various types can be made up, but the one shown in Fig. 3 is very easy to construct, and requires little except a few scrap oddments.

The base is of wood about $\frac{1}{4}$ in. thick, and will require to be about

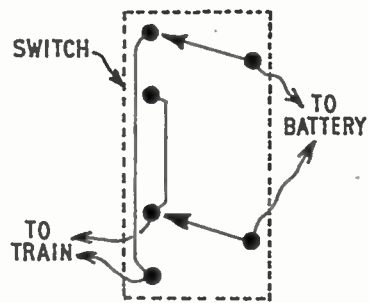


Fig. 1—How reversing operates

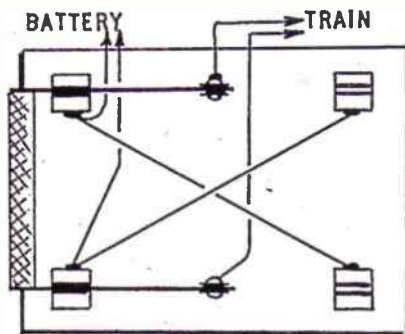


Fig. 2—Using a knife switch

however, and run in the same direction, irrespective of the polarity of the supply. Such motors do have the advantage that they will run from alternating current, but are not usual in trains.

Changing Polarity

Permanent-magnet motors require direct current (D.C.) and this can be provided by a dry-battery, accumulator, or mains transformer with rectifier. All such sources of D.C. have one negative lead and one positive lead. As it is not convenient to change over connections to reverse the model, a double-pole, double-throw switch is fitted for this purpose.

The circuit of such a switch is shown in Fig. 1. Here, the switch is in one position, so that current flows from the battery and through the train in one

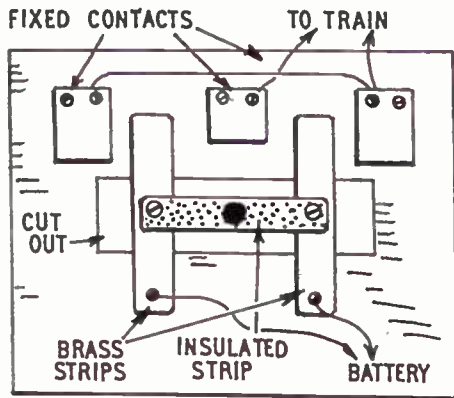


Fig. 3—Easily-made switch

Knife Switch

An easy switch to wire up is that shown in Fig. 2. This has two pivoted

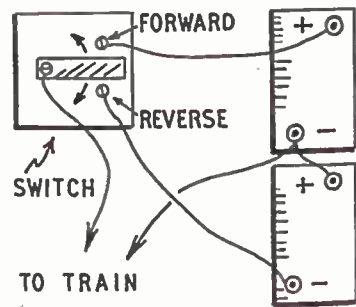


Fig. 4—Reversing with two batteries

2ins. by 3ins. for the switch alone. A larger base can be used if a resistance speed controller is also constructed upon it, as explained in the previous article.

Two brass strips are pivoted upon screws, washers being added so that they move freely. An insulated strip (wood or

ebonite) is fixed to the two brass pieces by means of pivot bolts, so that both strips move together. An aperture is cut in the wooden base to clear these pivot bolts.

Other small pieces of brass are screwed to the base, and the moving strips are slightly bent, so that good contact is made. The battery and train connections are then made as indicated.

When the switch rests as shown, the circuit is disconnected, and this is the 'Off' position. With both contact strips turned to one side, the model will run in one direction, this being reversed when the strips are turned to the other side. A small knob on the insulated strip will make the switch easy to operate.

Another method of reversing, extremely easy to fit up, is shown in Fig. 4. Two batteries are required, one providing for forward running, and one for reversing. This does not in fact much increase the cost of batteries, because only one battery is in use at a time. A

somewhat discharged battery will suffice for reverse running. Or, with two new batteries, they may be changed over occasionally, so that the one giving forward running is not unduly exhausted.

The reversing switch for this circuit is extremely simple, as shown, since only a single-pole change-over action is necessary. But this method is not feasible for accumulator or mains running.

Wound-Field Motors

As mentioned, motors of this kind cannot be reversed merely by changing the polarity of the supply. They can, however, be made to reverse by changing the polarity to either the field-winding or the armature (not both). This can prove useful when the motor is employed in almost any type of model.

One of the double-pole, double-throw switches described can be used for reversing. If the motor is examined, two leads will be found going to brushes which bear upon the rotating commu-

tator. Two other leads will also be found, going to the fixed field-magnet winding, which replaces the permanent magnet in per-mag motors.

Either the field-winding leads, or brush leads, may be taken to the reversing switch, whichever are most convenient. The switch now needs to be near the motor, and it is connected so that it changes the polarity of field or brushes.

When field and armature are in series, the 'Off' position of the reversing switch may be used, as no current will then flow, but if the motor has field and armature in parallel, it is necessary to use a separate switch in one battery lead, to prevent current drain.

These difficulties do not arise with a permanent-magnet motor. Nevertheless, the motor with wound field has its uses, as it will run directly from alternating current, such as a transformer secondary. Even when so used it can be reversed by wiring the switch as explained.

AN EXPANDABLE BOOK RACK

THIS is an inexpensive, easy-to-make fitting with a use in every home. Materials required are only a 9in. by 7in. panel of $\frac{1}{4}$ in. or $\frac{1}{2}$ in. ply (or solid stock, if available) and about 4ft. of $\frac{1}{4}$ in. diameter dowelling.

The end shape can be drawn on the ply, scaling up the pattern given. The position of the $\frac{1}{4}$ in. holes is not critical, although all four must line up on a true right angle, as indicated by the dotted line. It is suggested that one end be drawn out on to ply and fretted to shape. Smooth the edges with glass-paper and use this as a pattern for marking the second end. Pin or clamp the two ends together and drill simultaneously to get exactly matching hole

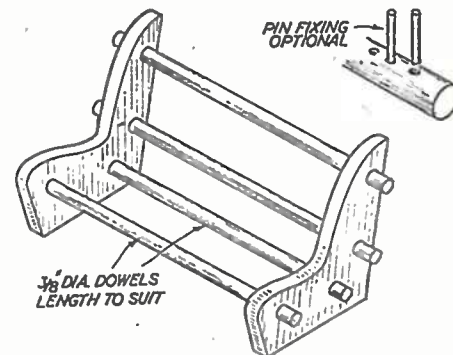
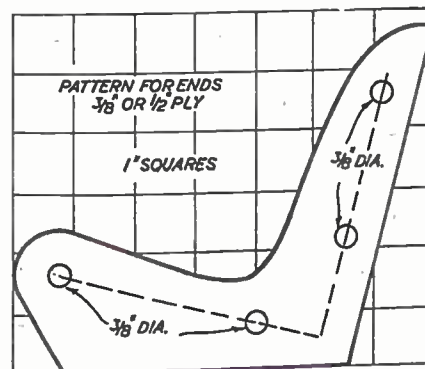
positions. If you have no drill or bit larger than $\frac{1}{4}$ in. diameter, drill to this size and either use $\frac{1}{4}$ in. dowels or ream out the holes to full diameter with a suitable tool, such as the tang of a heavy file.

By R. H. Warring

The four dowels are cut to identical length, this length being the size of book rest required. 12ins. is recommended, although the rack can be made longer if

desired (but not with $\frac{1}{4}$ in. dowels, as these will tend to sag under the weight of the books). Smooth the ends of the dowels and assemble the two ends on them. If the holes have been drilled so that the dowels are a snug fit, just pushing the dowels in place will give a rigid assembly. The distance between the two ends can be adjusted by sliding one or both ends inwards.

As an alternative, looser fitting dowels can be used and locked to the ends with wooden pegs or metal pins (e.g., copper rivets) passed through holes drilled in the dowels — see detail sketch. A row of such holes in each dowel will provide for 'expanding' or 'contracting' the rack at will.

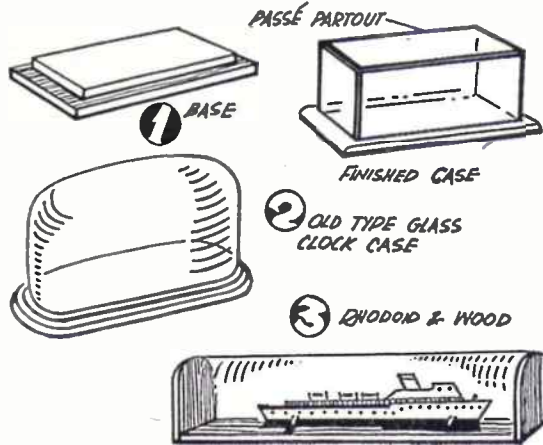


MAINLY for MODELLERS

ONE of the problems we have with miniature models is that of keeping them free from dust. Our galleon model for our seaboard presents no problem. This was solved by arranging a system of periodic cleaning. Every week the dust is gently blown off with a small spray gun. I find the small

the two sides and the two ends. I give no measurements because each case must be made to suit the size of each individual model.

The glass case is made to be a tight fit over the upper base to exclude dust; it can be left just fitted over or can be cemented in place.



model maker's spray gun supplied by Messrs. Hobbies Ltd., ideal for the purpose. It is not too powerful a blast of air and thus does not displace rigging lines, flags, etc.

For small models (my Miniature History series, Hobbies miniature galleons and waterline models of modern ships) I have found that the easily built cases I shall describe in this article serve the purpose excellently, and without the 'museum' look that is unavoidable when we have to build a case for a large model. For large models I keep several large glass cases, one wood framed and the others metal framed. These hold the models when they go on show, as they frequently do for exhibition and publicity purposes.

For our Miniature History and Hobbies miniature galleons I use a simple case made of picture glass as in Fig. 1.

Make the base first in a nice quality wood and polish to a fine finish. If you cannot cut your own glass a local glass merchant will do it for you, but make sure you give the exact measurements by finding out the gauge of your glass and allowing for the ends to be cut shorter by twice the thickness of the glass, to allow them to fit between the sides. The top piece must be cut to fit flush over

warships, liners, etc.

Again no measurements are given. Design the size of your case to fit the model for which you intend it.

The case is shown in Fig. 3. First make the base and ends and assemble them. The edges of the ends can be left plain or can be rabbeted to take the glass substitute. Polish the woodwork nicely and mount the model in position. In the case of waterline models, the sea can be modelled direct on to this base instead of the ordinary base. In the case of full hull models like Hobbies paddle wheel steamer model of the 'Royal

SHOWCASES FOR SHIPS AND GALLEONS By 'Whipstaff'

Eagle' the supports can be mounted direct on to the base of the case. In passing, the 'Royal Eagle' was the first model I mounted in a case of this type and is still in perfect condition although the model must be over seven years old.

For the case proper I recommend Rhodoid as supplied by Hobbies Ltd. It is firmer than celluloid, and if well cleaned before attaching in position, is very clear. It can be glued in position, if a contact glue like Evostik is used. There will be no difficulty in placing in position, as contact glue will avoid the trouble usually encountered with the celluloid or Rhodoid springing. After the material is glued in place the ends can be finished with passe-partout or a thin strip of veneer polished to match the base and glued in place over the ends.

An alternative method of fixing, although needing patience, is to groove the ends to take the Rhodoid, first fixing only one end on the base, the glass substitute being placed in position and the second end being then screwed into place. This allows the removal of the model at any time.

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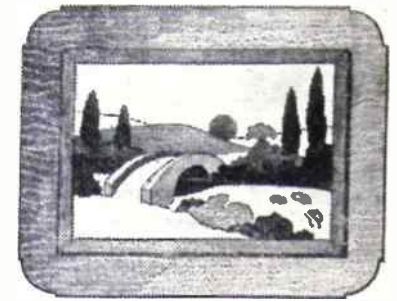
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'Kilchurn Castle' (Kit No. 3008)
New designs for Fretsaw Inlay are published from time to time in this magazine. Make sure not to miss them.



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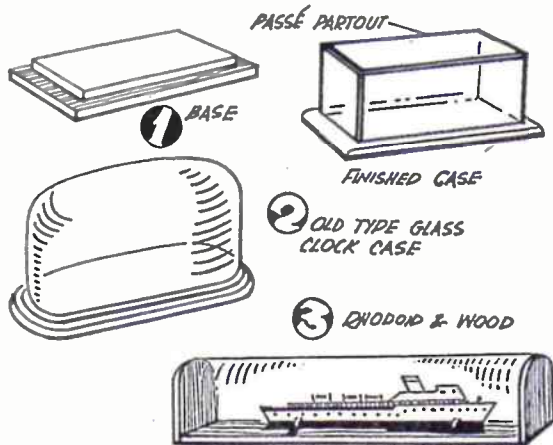
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MAINLY *for* MODELLERS

ONE of the problems we have with miniature models is that of keeping them free from dust. Our galleon model for our sideboard presents no problem. This was solved by arranging a system of periodic cleaning. Every week the dust is gently blown off with a small spray gun. I find the small

the two sides and the two ends. I give no measurements because each case must be made to suit the size of each individual model.

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An improvement if you have the tools for the job is to groove the base to take the glass. The glass case is assembled with passe-partout at the edges, and you will find that it makes both a firm and clean looking case.

For housing small models there is one ready-made case that looks very well and unusual. Watch the second-hand and junk shops for one of the old glass clock cases. They are usually domed at the top as in Fig. 2 and in various sizes. If you can pick one up and make a model to fit the case nicely, they make an excellent ornament.

And now for our second case, one to house our Hobbies waterline models of

warships, liners, etc.

Again no measurements are given. Design the size of your case to fit the model for which you intend it.

The case is shown in Fig. 3. First make the base and ends and assemble them. The edges of the ends can be left plain or can be rabbeted to take the glass substitute. Polish the woodwork nicely and mount the model in position. In the case of waterline models, the sea can be modelled direct on to this base instead of the ordinary base. In the case of full hull models like Hobbies paddle wheel steamer model of the 'Royal

SHOWCASES FOR SHIPS AND GALLEONS By 'Whipstaff'

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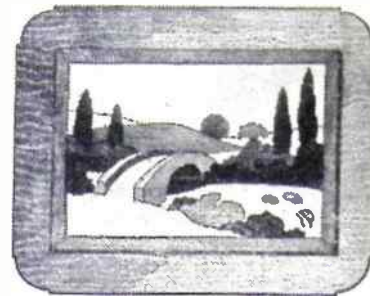
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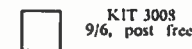


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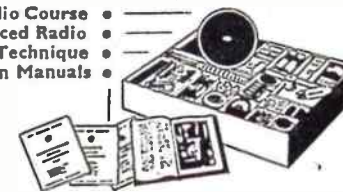
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IT is now more than thirty years since I first became interested in fretwork and woodwork: I was about 12 years of age at the time, and can recall the many hours of great enjoyment I spent with my favourite hobby, sitting at the kitchen table with my fretsaw and a piece of plywood, making either birthday or Christmas presents for my parents or sisters or friends.

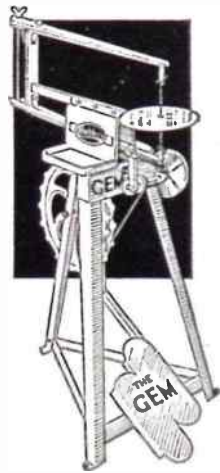
As I grew older so my interest in woodwork in general became greater, and it was during the 1930's that I started supplying some shops with my work.

By W. G. Galer

Now these many years later, I am still as great an enthusiast as I was that time ago, and I am never so happy as when I am making something in wood.

Naturally, *Hobbies Weekly* has been of tremendous help to me in the way of designs and items of general interest, but I have always endeavoured to develop my own ideas, and, therefore, in the course of time I have prepared many drawings for articles that I wished to make in woodwork.

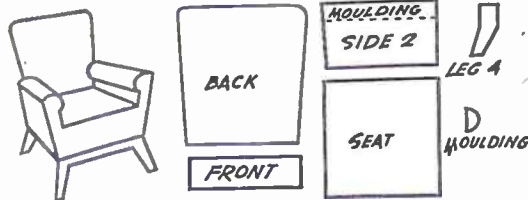
For instance, one easy way to keep up-to-date with the design, say, of dolls' house furniture, is to look through newspapers or periodicals to watch the



A 'factory' in the home for £5-17-6. Hobbies Gem Fretmachine obtainable from branches and stockists or Hobbies Ltd., Dereham, Norfolk (carriage paid Gt. Britain)

trend and new styles of household furniture and so, from these illustrations, prepare one's own drawings for small models.

I imagine there is as much desire today among fretworkers to sell their products, as there was when I first started. But I would advise anyone who may be thinking of selling their work to



Example of parts required for doll's house furniture

shops, that it is very necessary to give careful thought to this project as, having introduced oneself to a potential customer, it is absolutely vital to give good service in the way of workmanship and delivery if one hopes to keep that customer.

Really it is necessary to own a Hobbies Fretmachine if it is desired to turn articles out in any quantity, and believe me, from my own experience I can thoroughly recommend them as a first class job and moneymaker. As a good example of this I need only say that I am still using my Gem Fretmachine which I purchased from Hobbies Ltd., nearly thirty years ago.

But if only a hand fretsaw is available, I would suggest that, say, two or three (or more if possible) fretworkers get together and decide upon a plan of campaign in procuring as large an output as possible. This, of course, is a situation where the Scouts or Boys' Clubs could help their organization by a united effort, and I have no doubt that club funds could stand purchasing one or two fretmachines.

Having planned what you would like to do and also having arranged how you think it could best be carried out, the next step in my opinion is to produce several sample pieces of work which can then be shown to prospective clients. See that best workmanship is put into these pieces and also pay particular attention to the finish of the articles. This makes all the difference, for it is the initial effect that one makes on people that will either make or lose a customer.

There are quite a number of things that might interest local shopkeepers, i.e., model furniture, money boxes, toy

radio and TV sets and countless others.

Whenever I am travelling around I always make a point of looking inside shops to see the class of article they are selling and the prices they are fetching, and then from this visualizing, how I can make something better at a competitive price.

Only just recently I was visiting the

toy section of a London store and was surprised at the amount of dolls' house furniture they had on display, and I was immediately convinced from what I saw that I could produce a much finer article that would more than compete with the factory made things.

Of course, one must be prepared for certain disappointments, in that not everyone you show your work to will want to buy, but with perseverance and determination, there is no reason at all why anyone should not be able to build up a small connection in a moderately short time.

If one can afford it, it is an exceptionally good plan to have some small business cards printed. With a card, or better still a letter heading, one person can always pass this on to other people, and thereby circularize your name and products.

Now, having determined to find a market for your work and made all necessary arrangements with friends if they are participating in the venture, you must finally keep a record of all you buy and sell, so that at any time you may check up to see just how your business is progressing.

For a start (and without delving too deeply into the principles of book-keeping) all that you will need is really a couple of exercise books, one to make a note of everything you buy — such as fretsaws, wood, nails, glue, etc., and the other one to record every sale you make, together with the purchaser's name and address.

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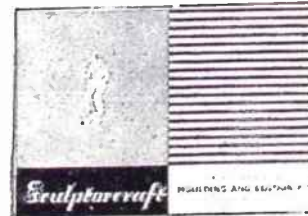
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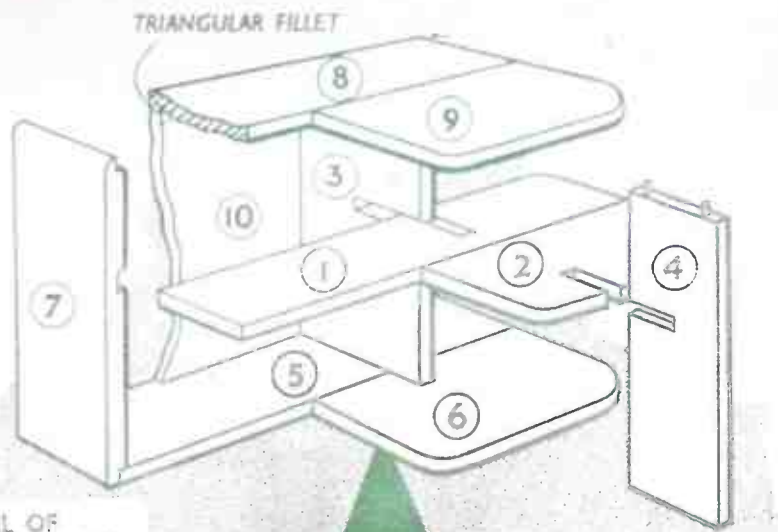
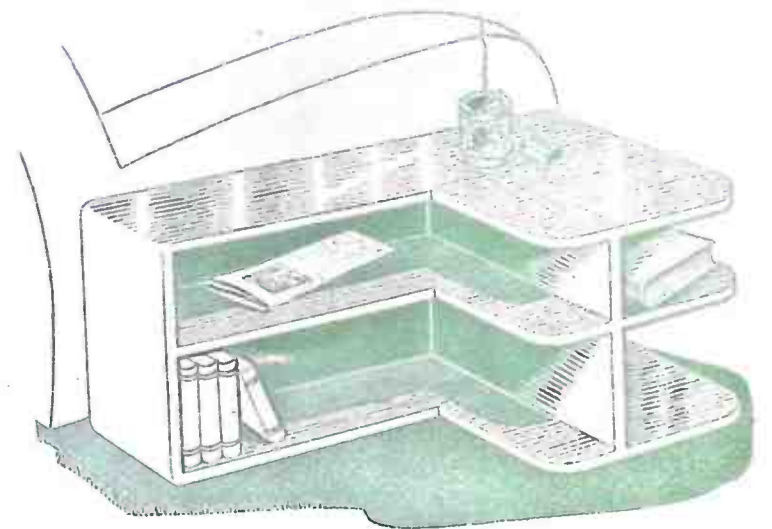
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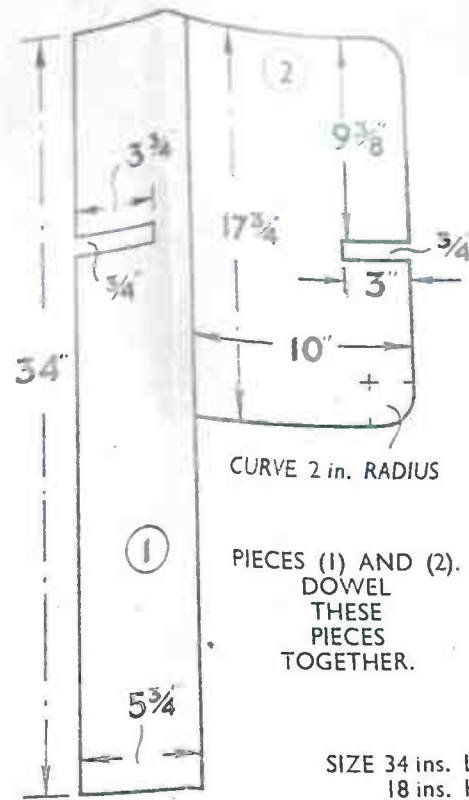
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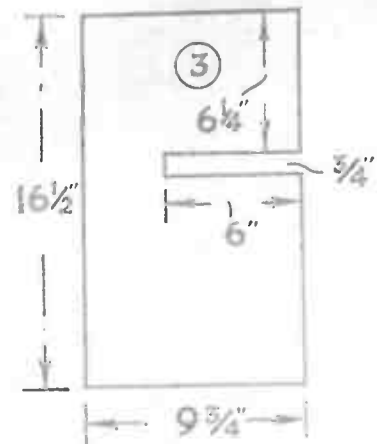
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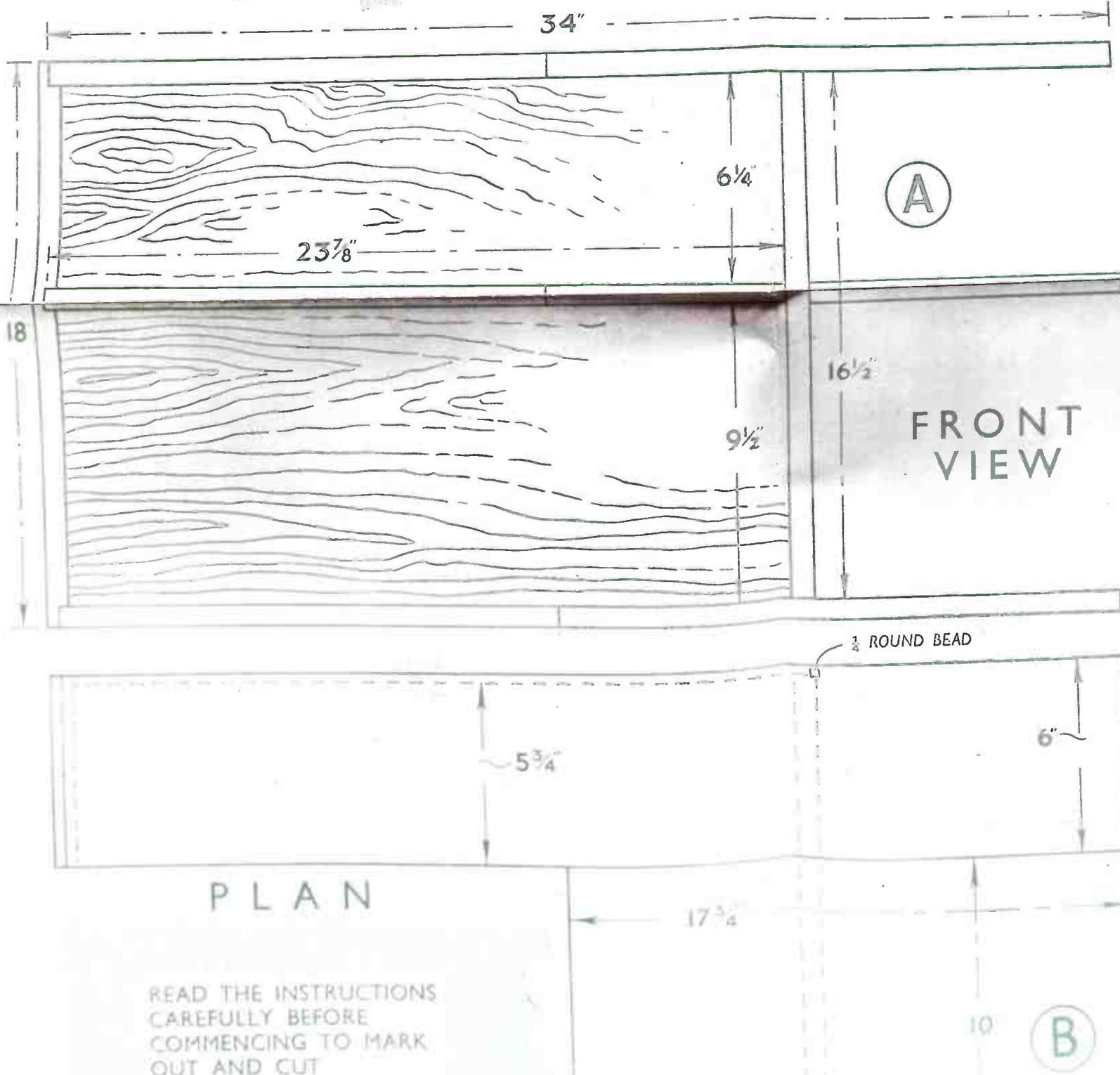
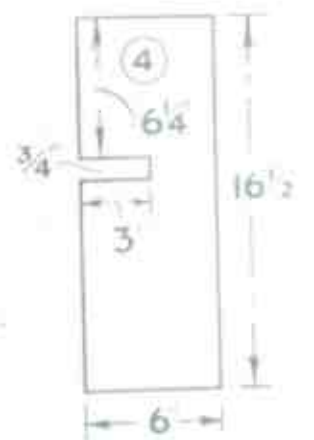
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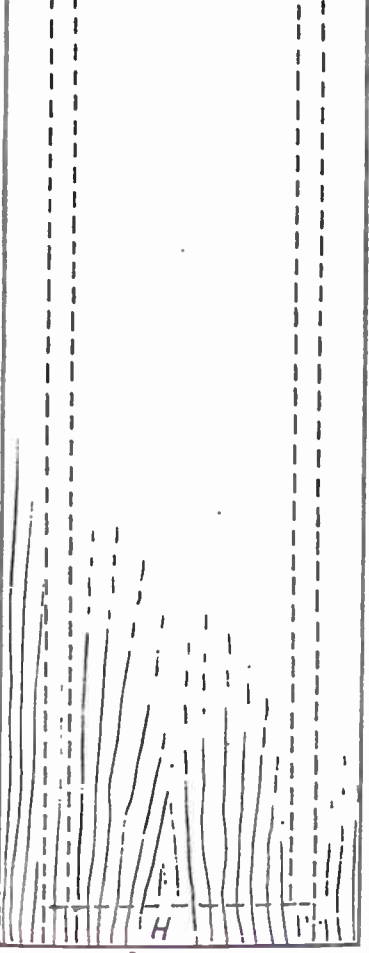
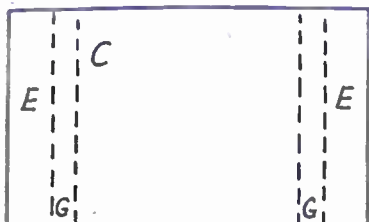
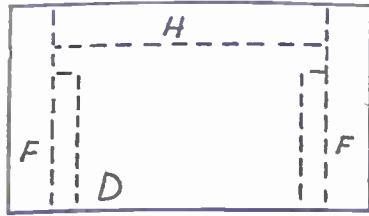
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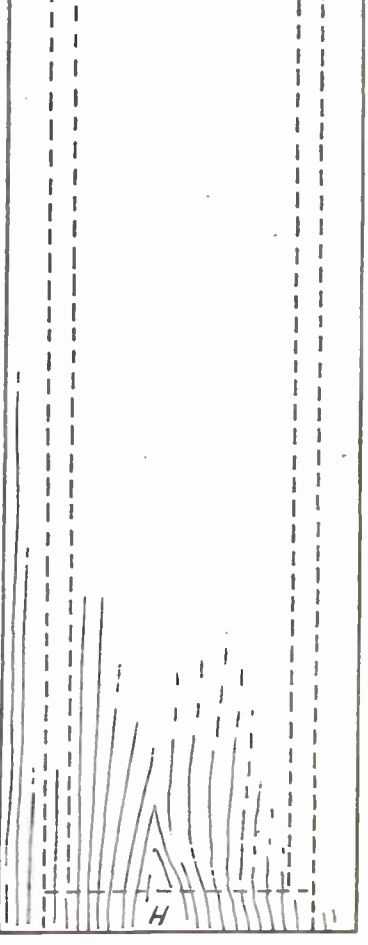
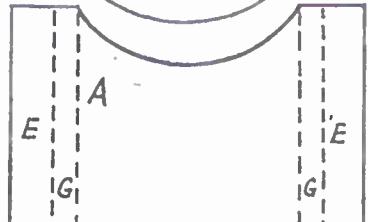
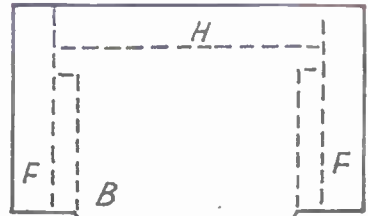
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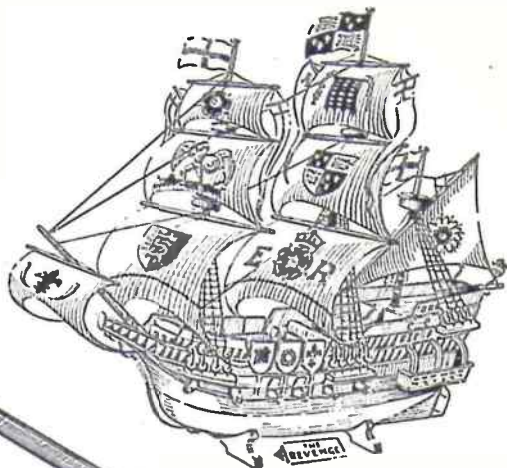
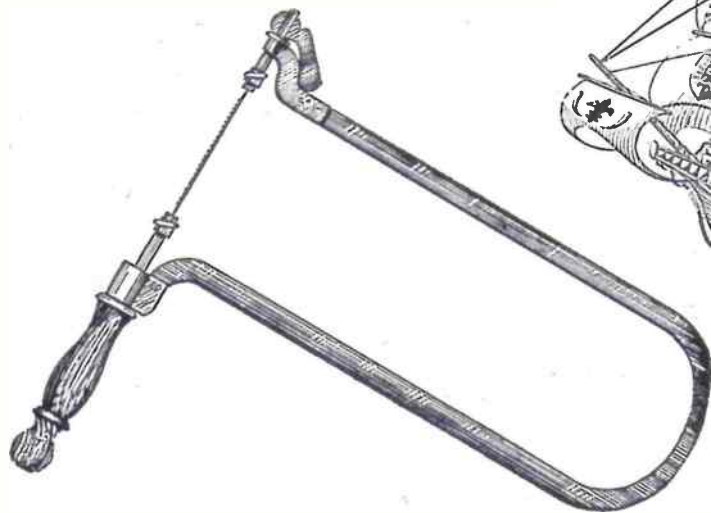


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See page 359

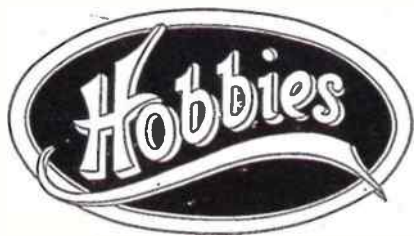


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