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All correspondence should be addressed to the Editor, Hobbies Weekly, Dereham, Norfolk

**CLOSED — IT'S
A HANDY
TABLE**



**LADY'S SEWING
'COMPANION'**

321

*Make this
charming piece
of furniture
from FREE
design inside*

THIS well designed piece of furniture has practical use as a lady's work-box to hold all sewing and mending materials. When closed, it serves as a handy occasional table. Inside, the well is padded, and there is a removable tray, which will hold small items such as pins, cottons, etc. The centre portion of the table is hinged to form a lid which lifts to reveal the interior.

There are no difficult joints in its construction, and the contemporary legs, which are also easy to apply, give the table a modern appearance. If care is taken with the finishing, it would make an excellent gift for the lady of the house, and there is a great saving on cost, as an article of this type could not be purchased for less than £9 ready made. The overall measurements are, width 30ins., depth 17½ins., and height 20ins.

On the design sheet there are shown the end and front views together with the relative measurements, and the shapes of the ends of the front and back (A) are given full size.

**FOR ALL HOME CRAFTSMEN
Over 60 years of 'Do-it-Yourself'**

World Radio History

4 1/2^D

Hobbies kit for making the lady's 'companion' contains the panels of wood and legs, etc., but does not include materials for padding the interior. If you are using a Hobbies kit, make sure to cut out the various parts economically from the ½ in. panels of wood provided. For example, one piece (A) and one piece (B) will be cut from a full-sized panel.

Hobbies Kit No. 3278 for making this handsome Lady's Sewing 'Companion' contains wood panels, hardboard, contemporary legs, hinges, etc. Kits obtainable from Hobbies branches, stockists, etc., or post free from Hobbies Ltd., Dereham, Norfolk, price 65/-.

Note that all pieces to be cut measure 10ins. wide, which is the standard width of a Hobbies panel, and this eliminates the necessity for a lot of cutting. However, owing to a natural tendency for wood to shrink slightly in width, it may be found that the full 10in. measurements are not possible to obtain. But this will make no difference to the make-up of the table if adjustments are made accordingly.

Make a start by marking off the panels to the measurements of the various parts given on the design sheet. Pieces (A), (B), (C) and (D) are of ½ in. wood. After making sure that all have been accounted for on the panels, cut them out with the handsaw. The shaped portions of the ends of pieces (A) may best be cut with a fretsaw, using a heavy grade sawblade.

The assembly

In commencing assembly, the front and back (pieces A) and sides (pieces B) are fixed together by means of the corner posts shown in the sketch on the design sheet. These consist of ½ in. square stripwood through which ¼ in. countersunk screws are inserted into the sides and back. For added strength, these corner posts should also be glued in place.

Pieces of stripwood (F and G) are glued inside pieces (A) as shown in the sketch. Pieces (F) form runners for the tray, and pieces (G) are fixing rails to which the hardboard floor will later be added.

The two pieces (C) and piece (D) which together form the table top are next prepared. Round off the outside edges as seen in the picture of the finished table. Piece (D) forms the lid and pieces (C) are the fixed 'wings' of the top. The lid is framed to prevent warping, and this is shown on the design sheet. This framing will not be seen as later on it will be covered by padding. The framing consists of 1½ in. by ½ in.

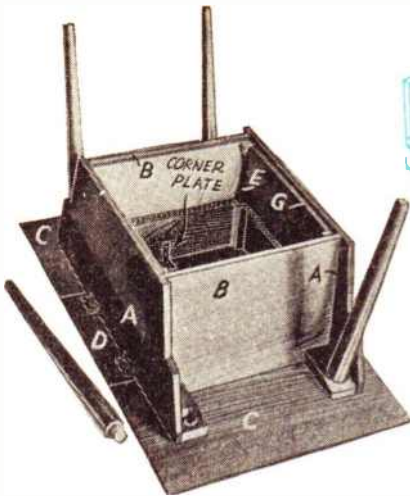


Fig. 2

strips halved together and glued and screwed in place.

Now firmly glue the leg blocks into the corners between pieces (A) and (B) as seen in Fig. 1. Screws may be inserted into the blocks from the inside through pieces (B) to give further strengthening.

Pieces (C) of the top can next be glued in position, and screws inserted through the holes provided in the leg blocks. Small brass corner plates are also screwed on the inside to pieces (B) and (C) as shown in Fig. 2.

Cut the bottom (H) to size from hardboard, and drill it ready for the fixing screws which will go into the lower ends of the posts (E) and into the rails (G). Note that this bottom piece of hardboard goes inside the frame structure.

The tray is made up from ½ in. wood to the measurements shown in Fig. 3. Glue all pieces together and clean up with glasspaper when the glue is dry.

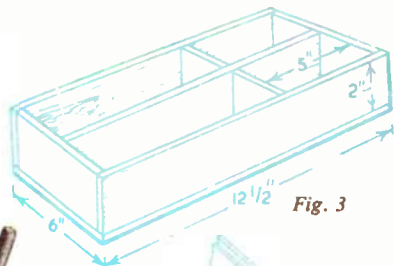


Fig. 3

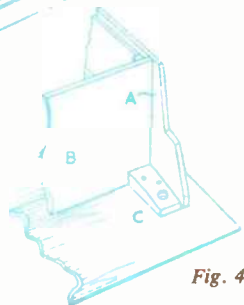


Fig. 4

At this stage, all wooden parts of the table, including the contemporary legs, should be finished as desired. Staining and polishing will probably be the most attractive choice for a piece of furniture of this type.

The interior of the table from the bottom up to the runner (F) is padded with cotton wool and covered with a suitable material. The bottom and lid are similarly covered and the edges trimmed with ½ in. gimp. It may be that the assistance and advice of the lady of the house can be sought in this operation.

Finally hinge the lid in place and screw in the contemporary legs (Fig. 2).

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★
★ A leaflet showing how to get a
★ professional finish to your work ★
★ can be obtained from Hobbies Ltd., ★
★ Dereham, Norfolk, price 6d. (in- ★
★ cluding postage). ★
★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Handicrafts Exhibition

THE 6th International Handicrafts and Do-It-Yourself Exhibition, which is taking place at the Empire Hall, Olympia, London, September 4th–20th, will be the largest and most comprehensive since its inception.

In the International Section there will be an imposing array of colourful handicraft work from all quarters of the globe, and craftsmen and women from many of the countries will be seen working on their native craftwork.

The 'Inventors Section', where brainwaves submitted by British inventors are displayed, will again have many new and original features.

Youngsters will be catered for in the junior do-it-yourself section where they will be able to view demonstrations of many ingenious constructional kits, and Hobbies stand, No. 14A, will be a popular rendezvous for young and old alike. If you visit the exhibition do not fail to see Hobbies grand array of kits, tools and materials, etc.

FINE ENLARGER FOCUSING

FINE focusing of some types of negatives can often be very difficult calling for an aid of some kind. These include fairly dense negatives and those where detail is very small, as in flower pictures. On the other hand, architectural studies are often easy to focus due to the lines formed by stone-work.

By *S. H. Longbottom*

Quite a recent development in enlarger designing is the inclusion of a method of split image focusing, operating in a similar fashion to some rangefinders and eliminating all guesswork. These are only fitted to the more expensive enlargers of course, but we can make our own accessories at practically no cost whatever — even the split image type.

No doubt the easiest method of overcoming the difficult negative is to focus

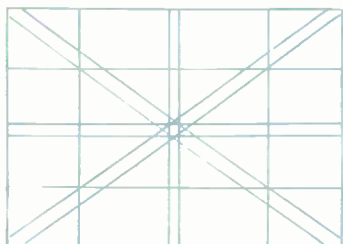


FIG 1

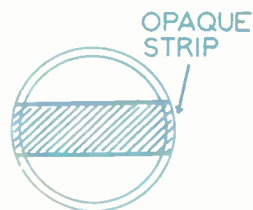


FIG 3

with one that you know is really sharp, exchanging, and then proceeding with your enlargement. But you can make your own enlarging negative.

Fine definition

Select a fairly dense, old negative which is of no further use, and pin it on to a piece of card, emulsion side upwards. With a needle carefully scratch lines in directions similar to those shown in Fig. 1. You will note that these lines branch out in all directions, reaching the

corners and that the centre ones are closer together — a further aid to rapid, fine focusing. Careful examination on a sheet of plain paper laid on the enlarger baseboard should show the same fine definition throughout the entire length of the lines.

Such a negative will only take a minute or so to prepare but if carefully preserved it will save considerable time in checking your focusing.

Using a feather

Another extremely useful aid is a small feather extracted from a down quilt. The feather should be quite small and the quill scraped sufficiently so that it will lie perfectly flat between the glass negative carriers of the enlarger. The negative to be used is focused for the size of enlargement required, removed and the feather replaced to determine accurate focusing. It is then an easy matter to replace your negative and proceed with the exposure. Fig. 2 shows a feather so used, the left half only of the picture being in focus.

The other aid is of the split image type, equally as effective as the others, but calling for a little more preparation. It should be mentioned that this type functions better with thinner negatives since some of the light from the enlarger is necessarily obscured.

We need some kind of cap to fit on the enlarger lens and you may use either an empty pill box with the bottom pushed out, or prepare a small, narrow tube by rolling a strip of thin cardboard round and round until you have a cardboard ring of suitable diameter. Now refer to Fig. 3.

In the diagram you will observe that

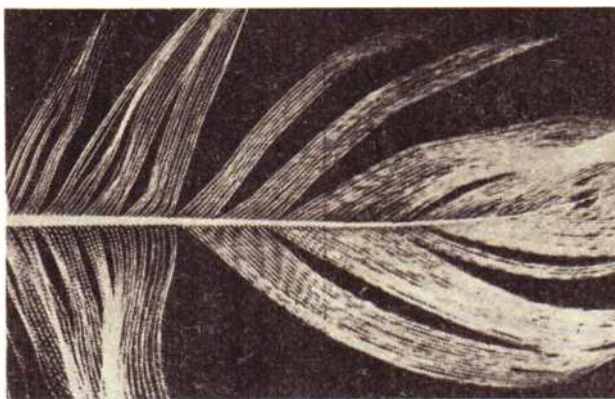


Fig. 2—The left half is perfectly focused but it will be seen that the other half is blurred

a narrow strip of opaque material has been attached to the cardboard lens cap. You may use black paper, thin cardboard, insulating tape or anything which is really opaque, but before attaching it will be necessary to determine the correct width. This strip should be approximately equal to one third of the diameter of the enlarging lens and fitted centrally on to the cap. Measure the lens, preparing a trial strip accordingly, modifying as necessary.

Two images

The prepared disc is slipped on to the enlarging lens and if made correctly there will be two distant images in the middle of the picture on the enlarger baseboard. At the point of fine focusing the two images merge into one when the device can be removed and the enlarging can proceed.

Here you have three different methods of ensuring finer focusing and one, if not all, will help you to produce better enlargements. Remember that dirty lens particularly the back element of the lens, or a dirty condenser can be the cause of blurred results.

★★★★★★★★★★★★★★★★★★★★
★ Next week's issue will contain ★
★ patterns for making 'Woody the ★
★ Woodpecker' — a novelty for ★
★ children. Also other handyman ★
★ projects, radio and other features. ★
★ Make sure of your copy. ★
★ ★★★★★★★★★★★★★★★★★★★★★★

THE USE OF GRADIENTS

A MODEL railway layout without some difference in level loses a good deal of interest. Many line owners, however, avoid grades like the plague, because they are considered to be power wasters, and the cause of trains stalling before the end of their runs are reached. But if grades are carefully put in they can be made to give all the advantages with little on the debit side.

Gradients are a marked feature of full-sized railways, but they are not always used just to take a line up the side of a hill. Thus they are found in marshalling yards where trucks are propelled on to an artificially made slope down which they run by gravity to one or other of a grid of sidings. This is spoken of as 'hump' shunting.

Ends of sidings, too, are often finished off with an up grade to help check the trucks as they run towards the buffer stop, while on some underground systems the tracks leave stations on a

slight down grade and enter on a rising one. This is to help quick acceleration and checking, and the lines are laid on a gentle switchback principle to bring this about.

By H. A. Robinson

At one time, too, it was a practice to cut ordinary railway tunnels through hills, so that they sloped a little in the direction of travel. The diagram shows how this was done by dividing the up and down lines and raising one above the other, so that a slope in both directions could be obtained, the idea being to prevent engines having to work hard in the confined space, indeed, they could almost coast through with shut throttles. It also meant that if power failed in a tunnel, the tendency would be to run out.

Travellers on the line south from Shrewsbury to Hereford will see a very good example of this layout at Dinmore Hill.

Now about grades and the model line. These have to be most carefully watched when clockwork is the motive power. Electricity on the whole can manage hills much better.

A major point to be borne in mind about grades is that for any given variation of track level the actual slope to secure that difference can be halved if the lower line drops as the upper one rises. This being a principle that can often be introduced when making 'fly-over' crossings.

Grades can be made much steeper if only to be used by a limited amount of stock at any particular time. Thus the hump of a model marshalling yard can be made quite short and steeper than actual practice, as your engine need only take up two or three trucks at once to give an impression of gravity shunting.

A grade into a raised locomotive depot can be steeper than average, as only engines running light will have to work over it. Raising an engine depot is a very good way of bringing a variation of level into your layout, as all the advantages of the variation are brought in without the disadvantages.

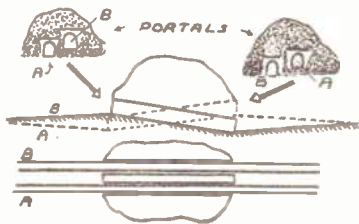
Speed evened out

To prevent a grade having an adverse effect on running when on a main line, much can be done if you work in a compensating grade, that means a grade in the opposite direction. This can be done with the line either going down into a hollow or going over a crest. In both cases the train speed is evened out and there is little loss of power. This is particularly noticeable when the layout is a down grade followed immediately by an up, for a train obviously increases speed and gains momentum on the down run which takes it well up the ensuing rise.

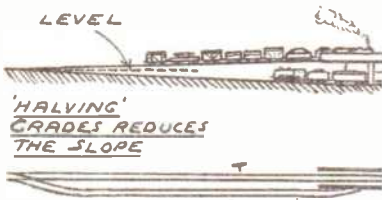
If possible have compensation on straight lengths of track for a sharp curve at the foot of a grade can be a source of danger.

Grades on a full-sized track are given as a ratio between unit rise and the distance travelled through to get it, 1 in 25 being 1ft. rise for every 25ft. along. America and other countries work to a percentage method when all grades are considered as to what would happen in 100ft. of length. 'One in twenty-five' would be described as a 4 per cent grade as 4ft. would be climbed in every 100ft.

● Continued on page 325



TUNNELS MADE TO SLOPE IN THE DIRECTION OF TRAVEL



'HALVING' GRADES REDUCES THE SLOPE



'HUMP' SHUNTING



WRONG



HOW TO PUT A STATION ON A GRADE RIGHT



TYPICAL GRADE BOARD

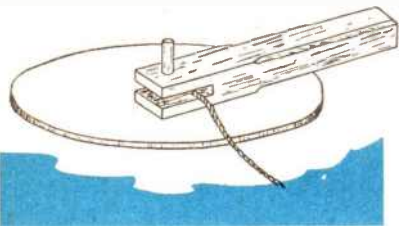


COMPENSATING GRADE



A GOOD WAY TO BRING IN DIFFERENCE OF LEVEL - A RAISED LOCO DEPOT.

A SIMPLE SPINNING TOP



WHIPS and tops have always been popular toys for children, but for those unable to manipulate them, perhaps, other forms are sometimes more suitable, especially when they are gaily coloured. Here we have a top that can be used by a small child, yet is quite easily made from plywood and cardboard.

First requirement is a disc of wood $1\frac{1}{2}$ ins. in diameter prepared from $\frac{1}{2}$ in. material and with a hole in the centre to accept a $2\frac{1}{2}$ ins. length of $\frac{1}{4}$ in. dowel rod for a spindle. The latter is sharpened at one end to produce the spinning point.

Circles of cardboard or plywood, each 6 ins. in diameter, are prepared to fit on top of the smaller disc, and these can be coloured as may be desired. A suitable material is $\frac{1}{2}$ in. plywood, which can be easily cut out with a fretsaw. The circumference edge should be carefully glasspapered to ensure a smooth edge, and it is preferable that this edge be slightly rounded. A hole is drilled in the centre for the spindle, and the complete assembly is as shown in Fig. 1.

With such a disc prepared it is a simple matter to make similar ones of white paper, merely by running a pencil around the edge, and such may be coloured with water paints or crayons to make attractive toys. You may either colour opposite corners in different colours, such as red, yellow and blue, or make a number of concentric rings all round.

The smaller disc is forced on the spindle, so that it is $\frac{1}{2}$ in. from the point, and then the larger disc glued on top. A smaller hole $\frac{1}{4}$ in. in diameter should be drilled through the spindle above the upper disc, so that it is 2 ins. from the pointed end and for the purpose of threading the string which spins the top.

We now come to the preparation of a handle which holds the top steady while set in motion by the string.

Take a piece of 1 in. square section 6 ins. long, drilling a hole $\frac{1}{4}$ in. in diameter on the centre line at a distance of $1\frac{1}{2}$ ins. from the end. Now remove the waste as shown in Fig. 2 by two vertical sawcuts each $\frac{1}{4}$ in. from the side, smooth-

ing off inside with a file. Now turn the material round one quarter to permit drilling of a $\frac{1}{4}$ in. hole for the spindle, noting that this should be on a centre line and 1 in. from the end of the square section. It is most important that this hole is bored vertically, or the spindle may bind.

Each corner of the handle should be chamfered and smoothed to remove the sharp edges, and it is also a wise precaution to round off the end. This completes the handle and all that is necessary

pushing the spindle through the hole in the handle as shown in the diagram, when one end of the string is threaded through the small hole and wound round and round by revolving the disc. A sharp pull of the free end of the string will set the top revolving, and if the handle is lifted a little, the top will drop freely on to the floor or table. It will be realised that the hole in the handle, prepared for the spindle, must be quite smooth inside and, if possible, a fraction larger than the diameter of the spindle.

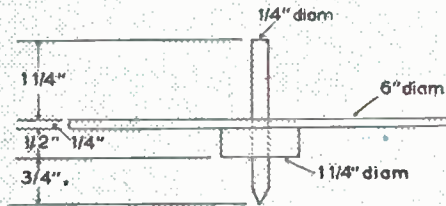


Fig. 1

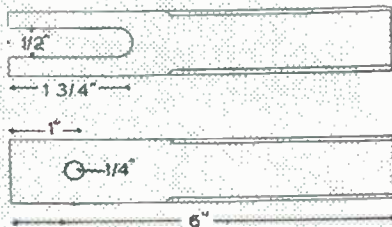


Fig. 2

to set the top spinning is a piece of string.

You will require a piece of strong thin string about 2ft. long. Take the top,

Should the latter be inclined to stick, you are recommended to rub the spindle with fine glasspaper, followed by an application of french chalk, although normally you will find the top works freely after a little while.

It should be mentioned that the plywood used for the larger disc must be free from knots or the balance may be disturbed and if you do not wish to go to the trouble of making a supply of separate paper discs, it is an easy matter to paint the disc. First apply a coat of white paint, followed by circles of differing bright colours. Similarly, the handle should be painted in a gay colour to produce an attractive appearance.

(S.H.L.)

● Continued from page 324

The Use of Gradients

In England enginemens are shown the grade they are travelling on by boards of one sort and another, a usual type being as shown in the figure. This being a good prototype for modellers to follow.

Station platforms that come on a grade should never be sloped, but the line for the length of the station be brought level, even though it means a little stiffening of the grade either side. This again is in accordance with full-sized practice.

Grades on a model line as well as

making the whole layout more lively and intriguing in appearance can bring in some very interesting train operation. A heavy train may well have to be double-headed or loads over the grade restricted to a certain number of coaches. Or again, if running up into, say, some high-level terminus, trains of a limited size may well be only able to make the ascent, but quite long trains can come down, the redundant locomotives then coming down 'light' to the lower level.

CHEMISTRY IN THE HOME

WE learned in our article on benzene that it is the raw material for the production of the important nitrobenzene, and also how nitrobenzene itself is made from it. In this article we shall see how nitrobenzene is converted into chemicals useful to science and industry.

An early use for nitrobenzene itself was as a perfume for cheap soaps on account of its almond-like odour. For this purpose it was sold under the name of essence of mirbane. This use was discontinued when it was later discovered that it has toxic properties.

Its chief use is for the manufacture of aniline, the source of a great many dyes. To bring about its conversion into aniline acid reducing agents are used. A preliminary small scale test will show its method of formation.

Mix in a test tube 1 c.c. of water and 2 c.c. of hydrochloric acid. Add 5 drops of nitrobenzene. Note that the nitrobenzene sinks to the bottom without dissolving. Weigh out 1 gram of zinc dust and add it in small portions to the mixture in the test tube. Effervescence occurs with evolution of hydrogen and the nitrobenzene gradually disappears. When all the zinc has been added, pour off the upper liquid into a second test tube and dilute it with 5 c.c. of water.

Preparation of aniline

You will note that the odour of the nitrobenzene has entirely disappeared. The solution, in fact, now contains aniline hydrochloride and zinc chloride. Add sodium hydroxide solution gradually until the gelatinous precipitate of zinc hydroxide, which first forms, redissolves. Now smell the liquid. The peculiar characteristic odour of free aniline will be noted. If your sodium hydroxide was rather strong some of the aniline may separate as oily drops. Aniline may be confirmed by adding a few drops of a filtered solution of bleaching powder (chloride of lime) or one of sodium hypochlorite. A fine violet colour appears.

To prepare a specimen of aniline we can replace the zinc dust by the cheaper iron filings. Into a 1-litre round bottomed flask put 30 grams of iron filings and 40 c.c. of water. Warm the mixture to about 60 degrees Centigrade by immersion in a water-bath. 20 c.c. of nitrobenzene will be needed in the re-

action, so measure this out. Add to the flask 1 c.c. of nitrobenzene and 2.5 c.c. of strong hydrochloric acid, swirling well to mix the whole.

The mixture becomes hotter and should be kept between 80 and 90 degrees by immersion in cold water or by heating on the water-bath as may be necessary. Add the rest of the nitrobenzene 1 c.c. at a time, swirling well after each addition.

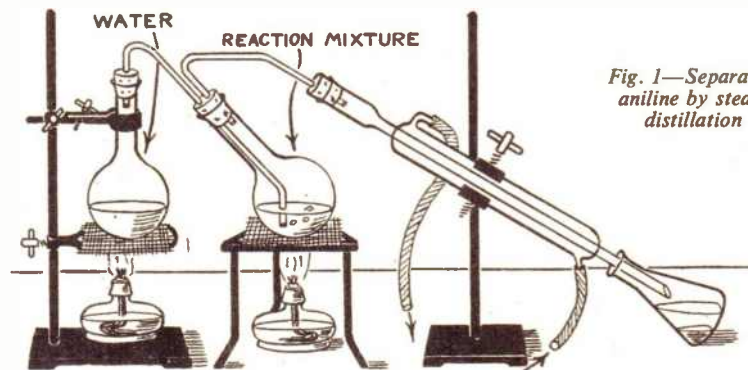


Fig. 1—Separating aniline by steam distillation

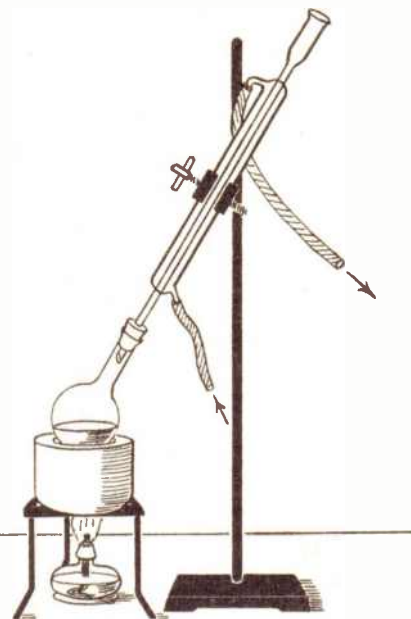


Fig. 2—Making azoxybenzene

NITROBENZENE EXPERIMENTS

This addition should occupy about 30 minutes.

Now smell the mouth of the flask. If the odour of nitrobenzene has disappeared the reaction is probably complete. Confirm this by diluting a small portion with dilute hydrochloric acid. A solution free from oily drops should be obtained. If these tests are not passed, heat the flask on a boiling water-bath for half an

hour with occasional shaking.

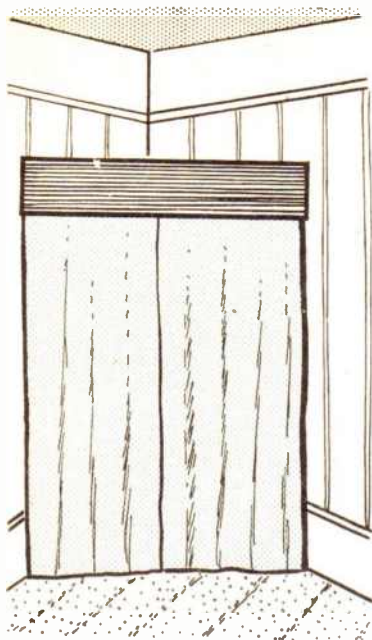
The aniline formed may now be separated by making the mixture alkaline by adding slowly about 5 grams of soda ash (anhydrous sodium carbonate) and steam distilling in the apparatus shown in Fig. 1. When the condensed water which passes over is no longer turbid, transfer the distillate to a separating funnel and run off the lower layer of aniline into a small distilling flask.

Fit a thermometer and air condenser and have two receivers at hand. At first a little water usually distills. Reject this and change the receiver when the temperature reaches 180 degrees Centigrade. Collect all which distills at 180 to 186 degrees. This is nearly pure aniline and is colourless or very pale yellow.

Note its peculiar odour. It darkens on exposure to light and air and therefore should be kept in a well closed bottle protected from light by several turns of brown paper reaching slightly above the level of the aniline and kept in place by a dab of gum or by a label.

A small specimen of the well known dye aniline black may be made by dissolving 1 c.c. of aniline in just enough dilute hydrochloric acid, adding 0.5

Continued on page 327



By Finlay Kerr

THE corner wardrobe illustrated makes a very handy fitment for a small room where a solid wardrobe would take up too much space. The fitment is first made as a unit and then screwed in position in a convenient corner, and can therefore be easily removed at any future date, if required.

The construction of the framework is shown in Fig. 1. The two side members are made from 3in. by ½in. planed timber and are cut so that each arm measures 2ft. 3ins. long. Note that the end of one arm is housed into the end of the other arm at the corner. The front rail is obtained from a piece of 2in. by 1in. planed timber and this is housed into the outer ends of the arms as shown. The main purpose of this front rail is to give greater strength and rigidity to the framework. Once the ends have been trimmed off to the proper angles, assemble the two arms and front rail. In the majority of cases the framework should be made perfectly square but if a particular corner is found to be off-square then of course the framework must be made to suit.

The next job is to nail the top boards in position. The top is best made from ½in. thick tongued and grooved flooring. Secure the boards to the framework with 1½in. nails and punch the nail heads below the surface.

To give a 'finished' look to the fitment a plywood or hardboard pelmet should be nailed on the front. This should be

Easy to fit

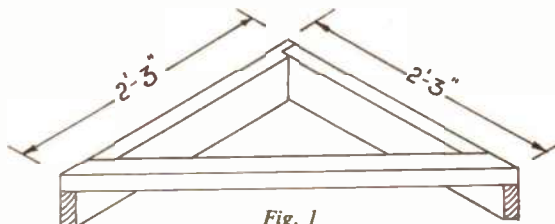
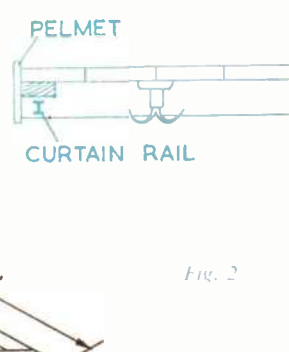
A CORNER WARDROBE

cut about 5ins. deep and may be left plain or cut to a decorative shape as desired. After this, obtain a suitable length of brass curtain rail and fix this to the underside of the front of the framework to carry the curtains.

The garments may be hung up by two methods. Firstly, if the wardrobe is intended to be used casually for everyday clothes then a three-sided swivel hook will be found suitable as shown in Fig. 2. These special hooks are obtainable from any large ironmonger's store in various sizes and only require to be screwed

coat-hangers. Once again these attachments can be purchased from any ironmonger's store, for a few shillings.

To complete, fix the wardrobe in position by screwing to the walls at the



to the top of the fitment. The second method is by screwing a sliding wardrobe attachment to the top boards to carry

desired height using plugs to make a firm fixing. Finish off by painting to suit the existing wall decorations.

● Continued from page 326

Nitrobenzene Experiments

gram each of potassium chlorate and anhydrous copper sulphate and finally 0.4 gram of ammonium chloride and 25 c.c. of water. A small conical flask is convenient to use for this experiment.

Warm up a water-bath to 70 degrees and put the flask into it for 10 minutes. The liquid darkens and a black precipitate of the dye appears. Filter it off, wash well with water and dry it. Aniline black is mostly used in calico printing.

A specimen of azoxybenzene is readily prepared direct from nitrobenzene. Dissolve 9 grams of sodium hydroxide in 50 c.c. of methyl alcohol by warming in a reflux apparatus (Fig. 2) on a water-bath. Turn out the flame and add slowly 6 c.c. of nitrobenzene. Now drop in two or three tiny pieces of porous pot and boil the mixture for two hours on the water-bath.

Rearrange the apparatus for distillation and distil off as much as possible

of the methyl alcohol on the water-bath. Then pour the residue into 400 c.c. of cold water, stirring well. A yellow precipitate of azoxybenzene separates. Stir in enough dilute hydrochloric acid to make the liquid slightly acid (a drop turns blue litmus paper red) and then filter off the azoxybenzene, preferably with the aid of a filter pump. Wash it well with cold water. Let the substance dry at room temperature, for, owing to its low melting point of 36 degrees, drying by heating it would cause it to melt and be absorbed into the filter paper.

Dissolve a small portion (about 1 gram) in warm ligroin or methylated spirit and pour the filtered solution into a small evaporating dish to crystallise. As the solvent evaporates lovely golden needles of the compound separate.

Azoxybenzene is used for making yellow, orange and red dyes for wool and cotton. (L.A.F.)

THE CARE OF COLD CHISELS

MOST home handymen keep at least one cold chisel in their tool kits for doing heavy duty work such as cutting brickwork, concrete, stone and thin metals. Although this tool is made of solid steel it still has to be properly looked after and maintained if good service is to be expected from it.

The constant use of a cold chisel soon causes it to become blunt and when this happens the cutting edge must be re-sharpened. This is done by grinding the cutting edge from both sides on a fast revolving emery stone. When grinding a chisel, it is most important not to allow it to get overheated and get burnt. The reason for this is that overheating removes the temper from the steel and makes it brittle. To prevent this happening, keep dipping the point into cold water during the process of sharpening.

Readers who do not possess a power-driven emery stone can have their chisels sharpened by the local blacksmith for a small fee.

As with wood chisels, a cold chisel which has been sharpened many times eventually becomes too thick at the end to be sharpened properly. When this happens, the chisels must be taken to a blacksmith who will heat them and 'draw out' the steel thus making the chisels longer and thinner at the ends. This job does not cost much and you will receive your chisels back sharpened and ready for use.

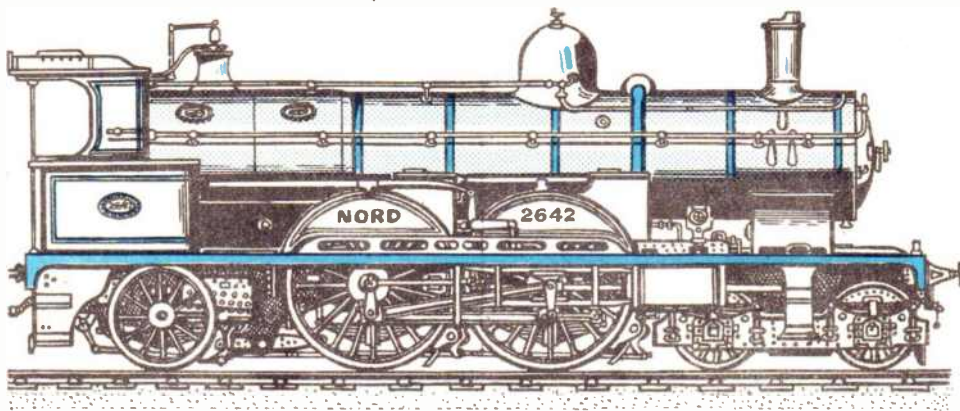
Choice of hammer

When working with a cold chisel don't use a light hammer otherwise you will find that the hammer head will keep bouncing off the chisel without making

much impression on your work. Also, striking a chisel with a light weight hammer could easily chip the hammer head and ruin it. A bricklayer's mash hammer is the best type to use.

If you use your cold chisel a lot you will find that the top part will eventually 'fan out' due to the constant bashing. A chisel with a flattened head like this is dangerous to use. Sometimes a chisel may be knocked into your work-piece more quickly than expected and the projecting jagged pieces of steel around the head could easily cause a nasty wound in the hand. Furthermore, small jagged pieces of steel are liable to get hammered off and these could injure someone standing by. To prevent any mishaps, therefore, it is better to remove the burrs with the aid of an emery wheel as soon as they appear. (F.K.)

Interesting Locos – No. 11



OUR subject this week depicts one of the celebrated Four cylinder compound 'Atlantic' 4-4-2 locomotives built in the early 1900's on the De-Glehn system for the Chemin de fer du Nord railway of France. Around the period 1903 this type of engine was attaining some remarkable instances of high speed running with heavy trains in France and at the same time showing a marked economy in fuel oil and water consumption.

The economical and successful working of these engines induced the Great Western Railway to try one of them.

In 1903 Mr G. J. Churchward, the locomotive superintendent, obtained one from France. This engine which was similar to the Nord engine shown was given the name 'La-France' and numbered 102. It was immediately put to work on the main London-Bristol line and Mr Churchward ran it in trials with a two cylinder 'simple' Swindon Atlantic No. 171 'Albion' which had previously been altered to the 4-4-2 type from a 4-6-0.

The tests may have resulted somewhat in favour of the French engine at the time, because two years later Mr

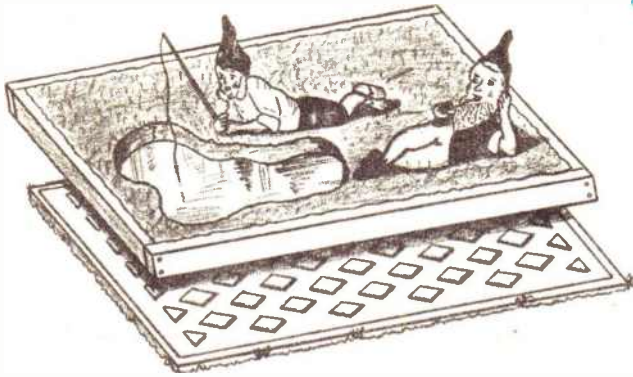
Churchward obtained two more of the type from France. These were Nos. 103 'President' and 104 'Alliance' delivered in 1905. They carried larger dimensions and several modifications over the first engine and were of the larger Paris-Orleans type. The engines had 6ft. 8½ins. diameter driving wheels.

Although these three engines appeared to give satisfactory results in service, the compound system never really found favour on the G.W.R. and the type was not perpetuated. The French engines were finally broken up in the 1930's.

(A.J.R.)

Jobs for the handyman—

IN THE GARDEN



Cover that Cover

ARE you one of those unfortunates who has a drain cover spoiling what would otherwise be a perfect lawn? The chances are ten to one that you have to tolerate this monstrosity.

Don't despair however, for you can change the position to your advantage. What's more, once you've made a simple galvanised tin bottomed tray from $\frac{1}{2}$ in. thick timber with a 2 in. by 1 in. frame

your children will probably want to do the rest.

Make the tray to the exact area occupied by the drain cover. Fill in with a layer of soil and finish off with a top layer of moss. If it is going to take a long time to gather sufficient moss, plant grass seed.

Make a 'lake' by fitting in a large handbag mirror and construct an irregular bank around the lake as shown. Finally, afford two of those cute, gnome, dwarfs and place in suitable positions. If you are able, a small bridge can be made of timber to cross the lake.

On the very rare occasions when the drain cover must be removed for some reason or other, the gnome garden can be easily slid away. (E.C.)

IN THE HOUSE . . .

FLOORS which creak every time they are trod upon are not uncommon these days. This is mainly because a great deal of poorly seasoned timber has been used in house building since the war years. It is surprising, however, the large number of people who suffer the annoyance and do not attempt to cure the noises. Shrinkage of timber is probably the main cause of creaking floors.

Before attempting to cure the noises, make a thorough inspection of the floors first. Remove the carpets and lino, and then walk slowly over every part and locate the noisy positions. When you do find a squeaky part, mark it with chalk and continue with your inspection.

If the floorboards have not been properly seasoned before being laid they will shrink, and in some cases, distort afterwards, and this spoils the flat seating on the joists as shown in Fig. 1.

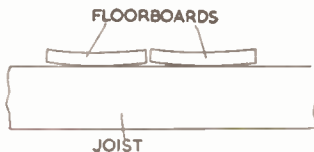


Fig. 1

It may also be found that, perhaps, nailing has been missed in some parts. When this is the cause of the creaking, the remedy is simply to nail the boards firmly to the joists; use two nails on each board at every joist. The heads of the nails should afterwards be punched below the surface.

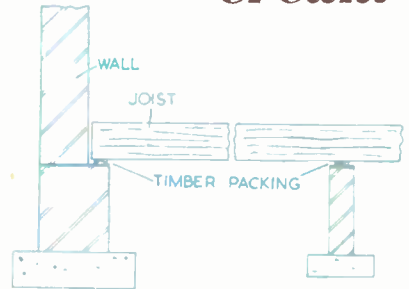
If the boards are only slightly warped you will find that nailing is sufficient to

secure them to the joists. In cases where the warping is more severe it is advisable to use wood screws instead of nails, because these have a greater pulling force. Floorboards which are split should be replaced by new ones.

When floor joists are laid in position they are normally packed up on the supporting walls, so that they are all level and fully supported. Sometimes these packing pieces fall out, which causes the floor to creak and sag. In such a case the joists must be repacked and the best material to use is slate. If the space underneath the floor is large, then this job is best tackled from below. (F.K.)

Stop that

creak!



. . . OR AROUND IT—Security!

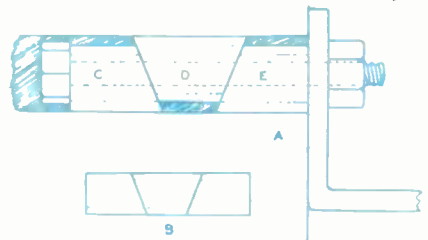
WHEN great security is necessary for bolting something to a brick wall, here is just the thing. It is immensely strong and can have lots of uses. As the nut is tightened up, the pressure in the hole is greatly increased, thereby making it impossible to withdraw. By simply undoing the nut, however, the entire assembly may be taken out with ease.

Reference to the drawing (A) will explain its working. Let us assume that a hole has been drilled in the wall 1 in. in diameter and about 3 ins. long, and that we are using a $\frac{1}{2}$ in. bolt. We shall, therefore, need a piece of iron pipe $\frac{1}{2}$ in. diameter, with walls about $\frac{1}{4}$ in. thick and 2 $\frac{1}{2}$ ins. long.

With a hacksaw make two diagonal cuts as shown at (B), file the edges quite smooth and finish off with emery cloth.

This will enable them to slide over each other easily which is so essential.

Now place them over the bolt, put on the bracket or whatever is to be screwed to the wall, and then put on the nut. Place in the hole as far as it will go and tighten up the nut, which will force pieces (C) and (E) downward, while piece (D) will move upward to grip the sides of the hole and hold secure. (A. F. T.)



Wynes to Cure ye Illes

THE drinking of a glass of wine is a very pleasant way of taking medicine. Going back some four hundred years to the days of Queen Elizabeth I, the majority of people used nothing else but home-made medicines to cure their various ailments. Many of these were in the form of wine, and even today a surprisingly large number of people have absolute faith in their effectiveness. This is particularly noticeable in the rural areas where wine making has always been their hobby.

Auto-suggestion plays quite an important part in curing one's ills, and the will to get well has put many persons on the road to recovery. Even so, the medicinal value of home-made wine must not be lightly dismissed.

Elderberry

Elderberry is, undoubtedly, the best known and most used of nature's remedies, and many gallons of wine are prepared each season to be used solely as a medicine. It is still believed by many people to be the finest and, perhaps, pleasantest cure in the world for our worst enemy, the common cold. A glass of hot mulled elderberry wine taken at bed time when you feel a cold coming on will generally effect a cure. An old book says it will 'sweat out a cold' if drunk very hot when in bed. It also makes a very pleasant warming drink when taken before going out on a cold winter's day.

Dandelion

Next in importance is the dandelion, and this is one of the finest tonic wines. For liver sluggishness, clearing the kidneys and certain types of indigestion, it is reputed to be extremely good. The very best dandelion wine is made with the yellow petals only, but owing to the vast amount required, it is usual to use the entire head.

The leaves, too, make an excellent tonic wine, and it is a good idea to plant a few roots in the garden, as they are so much better than those picked by the roadside. The young leaves eaten as a salad are extremely beneficial, while the roasted root makes a really nice coffee. Recipes for both elderberry and dandelion wine appeared in *Hobbies Weekly* for May 9th, 1956.

Sage

Most culinary herbs make excellent wines, and a glass drunk before dinner will aid the digestion. One of particular interest from a medicinal point of view is sage, which is valuable for anaemia

and other blood disorders. It is regarded as the most strengthening of all home-made wines and here is a good recipe.

2 quarts Sage Leaves
3½ lbs. Sugar
1 lb. Raisins
1 gallon Water
¼ oz. Yeast

The leaves should be freshly gathered and picked from the stem and chopped up roughly. Put these in a bowl with the chopped raisins, pour over the hot water and allow to stand for ten days, stirring each day. Then strain, add the sugar and yeast, and put to ferment for about fourteen days, after which it can be strained and bottled, but not corked too tightly at first.

By A. F. Taylor

Double the quantity of sage can be used if you like the flavour, or if not you may like to try it with 1 quart to the gallon of water. Likewise the amount of raisins can be doubled and also demerara sugar used instead of granulated.

It need hardly be mentioned that both orange and lemon wines are excellent tonics, and may be taken before meals as an appetiser, so also can grapefruit wine. Orange in particular is so good, it can be made at almost any time, and, therefore, should be drunk more.

Chickweed

Chickweed is boiled and used by the gypsies as a vegetable to clear the blood and improve the complexion. Try this recipe for chickweed wine, and even if you are dubious about its medicinal properties, it is still a good drink.

1 lb. Chickweed
3½ lbs. Sugar
1 gallon Water
1 Orange
1 Lemon
1 lb. Pearl Barley
¼ oz. Yeast

Boil the chickweed, barley and grated rind of orange and lemon in water for fifteen minutes. Strain, add the sugar, juice of orange and lemon, and yeast, and put to ferment for fourteen days. Bottle as usual.

There are many wines reputed to be good for coughs and colds. Besides elderberry already mentioned, black-

currant and cowslip drunk hot or mulled are excellent to 'sweat out a cold'. To ease a cough you can choose between coltsfoot, lemon and yellow rattle, while blackcurrant and raspberry are good for a sore throat, and would, no doubt, also help a cough.

Beetroot

Beetroot, one of the finest medicinal wines, deserves a place in every wine store and as a blood purifier it is equalled only by nettle wine. Many recipes have been concocted for beetroot wine, and here is a very good one, which will bring out all the goodness in the root.

4 lbs. Beetroot
2 Oranges
2 Lemons
3½ lbs. Sugar
1 gallon Water
½ oz. Whole Ginger
½ oz. Yeast

Wash the beetroot and cut it up quickly in small pieces directly into the water, add the well bruised ginger, and after bringing to the boil, simmer gently for about half an hour. Strain, add the sugar, juice of oranges and lemons and yeast while still lukewarm, and put to work for ten days. Then strain again, bottle and cork lightly.

Cowslip

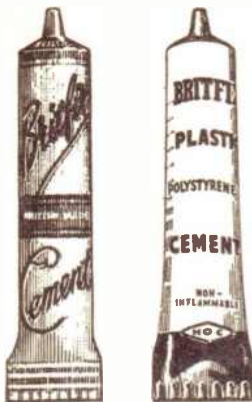
Besides being useful for curing a cold, cowslip wine is supposed to be good for insomnia and as a cure for jaundice. For a very long time every part of the celery plant, including the seed, has been recognised as a sure relief of rheumatism and gout, and the same applies to the wine. A good recipe was given in *Hobbies Weekly* of December 4th, 1957.

Most wines have a tonic effect, but a few are exceptionally fine for this purpose. Among these we specially recommend blackcurrant, orange, tansy and cherry. As a morale lifter a glass of home-made wine will generally work wonders.

As laxatives prunes made into wine and to a somewhat lesser extent parsnip wine have been tried, but their success will depend to a certain extent on the person. The remedies quoted here may suit some people and do their work very efficiently, but may have no effect whatsoever on others.

Finally there are some wines that are not remedies at all, and of these rhubarb is the most important. It is considered to be very bad for rheumatism and kindred complaints.

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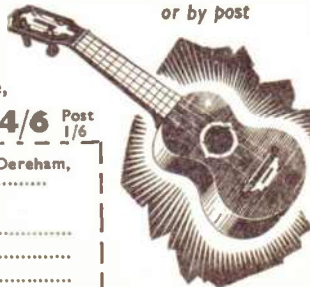
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BREWERY LABELS —By R.L.C.

But deal with one brewery at a time. Start with bottle labels and continue with other interesting items like drip mats, ash trays, house labels and photographs. Do not forget 'interesting facts for your album', which may be gained first-hand during holiday periods, or by

writing to the management (but always enclose S.A.E.).

I began with the issues of Mitchells and Butlers Ltd., which are very popular with overseas enthusiasts.

These covers offer much thematic pleasure. Take for example, the 'M & B' trade mark — 'Deer's Leap'.

There are many species of deer. They are found in all parts of the world except

Australia. These graceful animals are noted for their shyness and fleetness. The males have branching horns, which are cast off yearly, new ones growing in their place. The female deer generally have no horns. The shape of the horns, or antlers, differs much in the various species of deer, some being round with many branches, and some flat and broad. Deer's antlers are not hollow horn, like the horns of cattle, but a bony substance which is really a part of the skull.

The deer is one of the most useful of the wild animals. Its flesh, which is called venison, is excellent for food; its tanned skin, commonly called buckskin, is valuable for many uses; its sinews furnish the Indians with bow-strings and cords for many purposes; and its horns are made into handles for knives, etc.

In England the materials employed in beer-making consist of malt prepared from barley, water containing certain inorganic matter in solution, a ferment to convert the sugar into alcohol, and hops; which supply the necessary flavour. Some mild beers contain an exceedingly small proportion of hops, while bitter beers contain a larger proportion.



Valuable Roman Coins

THE *Denarius* was the principal silver coin of the Romans. It originally contained ten asses and was worth about 8½d. of our money. It bore various devices: the head of Jupiter, of the twin brothers of Castor and Pollus, of the goddess Roma, with a helmet and a two or four horse chariot on the reverse.

These coins are rising in price. The following specimens are worth securing now.

'Depicting M. Antony as priest holding lituus, catalogued at 17/6d. With Capricorn holding globe, and rudder and bearing cornucopieae on back — 25/-. With two captives seated beneath trophy — 15/-. With Salus feeding serpent rising from altar — 18/6d.'

The *Sesterius* was worth two asses and a half, the fourth part of a denarius, and equal in value to 2½d. of our money.

It belonged originally to the silver coinage but subsequently was made of brass. Some interesting specimens:

'Depicting Pax holding branch and cornucopieae — 30/-. With Pallas fighting — 18/6d. With Fortune seated at left — 35/-. With Concord seated at left — 18/6d. With Genius of the Senate within distyle temple — 55/-. With Fecundity at right holding sceptre and child — 18/6d. With Victory at right erecting trophy to right, Britannia standing facing, with captive at her feet — £7.10.0.'

The following silver coins are scarce:

Libella — containing the tenth part of a denarius, and, consequently, equal in value to the as.

Sembella — equal to half the libella, or the twentieth part of a denarius.

Teruncius — the last and smallest division of the denarius, containing three-twelfths (uncia), or one-fourth of

the as, and thus equal in value to the copper quadrans. It seems incredible that so small an amount should have been coined in silver, although it is enumerated amongst the silver pieces.

Bigatus — a silver denarius and one of the earliest Roman coins. It bore the device of a biga, or two-horse car, on the reverse, from which it received its name.

Quadrigratus — a silver denarius, so termed from its having the impress of a quadriga stamped on the reverse.

Roman gold coins are very valuable. Keep the following details handy in case you make a find.

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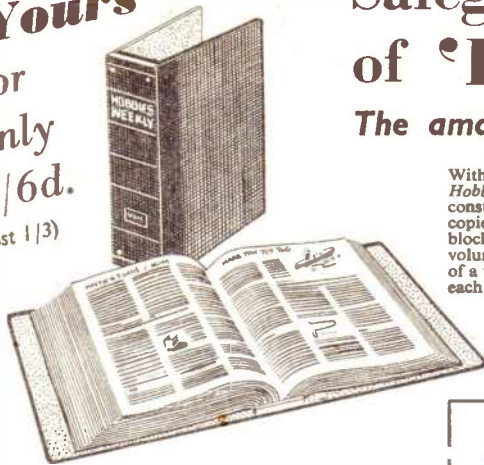
Scrupulum — a scruple. The smallest gold coin, weighing one-third of the denarius. It is distinguished by the head of Mars in a helmet, and an eagle with the word Roma on the reverse.

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Rock Climbing for Adventure

CRAG and hill-climbing sounds like hard work. It is certainly rather strenuous, and only to be undertaken by those who are physically fit; but the rambler who is strong and athletic, sound of wind and limb, need not fear to tackle a moderate hill climb.

If, however, hill-climbing is not to be one of those pleasures that fail in the realisation, one must bear in mind a few details which may appear trifling, and yet mean so much, for there is no joy if your feet, for instance, are giving you trouble all the time. For hill work the climber needs the stoutest of boots, well-greased — a pair of mountaineering boots, which carry hobs and side nails necessary in such foot-wear. Climbing boots should be well studded with large tacks, and well nailed, in order to withstand the hard wear and tear.

Prudence is essential

The scenery alone is ample compensation for essaying a stiff climb into the hills. Ruskin, in one of his books, remarks that 'mountains are the beginning and the end of all natural scenery'. Climbing is adventurous work. Recent hill happenings confirm the risks that await the young climber; for climbing the crags is a somewhat hazardous form of 'hiking', being a sort of modified Alpine mountaineering, and as such is decidedly fascinating. Recent unfortunate accidents, many of them avoidable, remind us that there is much truth in the warning:

'Climb if you will, but remember that courage and strength are naught without prudence, and that a momentary negligence may destroy the happiness of a lifetime.'

You should take a length of rope with you — good sound rope by the way, as your life may depend upon it — to connect with your team-mates when climbing difficult and dangerous pinnacles and ridges. When a team or party of chums are intent upon negotiating some formidable ridge, pinnacle or 'chimney', a length of rope should be taken along — in case — and the party roped together when the dangerous ascents are reached, for a slip from a knife-edged piece of rock might mean a fall of several hundred feet sheer down the crag face, with disastrous consequences.

On most of your more formidable hill-climbs the leader, at least, of the team should be an experienced climber, who carries the rope, and who will know when and where its use will be required. It is foolish for a novice to go mountain-

earing or crag climbing with no other companions than mere tyros — there should be at least one really well-experienced member in the party.

However, apart from the risks involved, there is much fun to be had in

By A. Sharp

scrambling up rough steep slopes, and negotiating narrow ridges or scaling pinnacles. There may be a formidable peak to master, or a tricky 'chimney' to conquer, but the amateur climber, unless absolutely foolhardy, should experience little risk and trouble. There is always some danger, of course, and crag-climbing calls for nerve and coolness, hard work and skill. It is, remember, inadvisable to attempt a stiff climb over dangerous places alone. The best way to secure the rope, if you are an end man, is to put a bowline round your waist; if you are a middle man, make an open-handed loop.

The rope should be sensibly used; on rotten rocks it is risky to use, but it may be useful. On really difficult rocks it saves time, as the second man can come up with freedom and speed. On ice and snow it is no special trouble, and is rather a safeguard than otherwise.

On mountains an axe is required often; this should be of light steel of the best quality.

'Claws' are useful, especially on rocks glazed with ice and are of help on screes. The spikes go through the skin of ice and take a firm bite on the rock beneath.

Some tips

The solitary climber is nearly as safe as any other; only sometimes he has to turn back. The solitary man has to look at every step, and take no risks. This makes him slow.

But, in order to learn, the hesitations, delays, and stoppages are the exact things needed by the beginner. On the other hand, over most rocks the single man is much faster than two men roped, says the expert climber.

You should get a good pair of 'claws' or 'crampons' fitted to your boots, and a small light ice-axe when mountaineering. See that the head and spikes are of the finest steel, and that the stick is sound and reliable. The axe has usually a 'pick' point, but a chisel edge $\frac{1}{2}$ in. wide has certain advantages. You will need a light rucksack, some warm clothing, gloves,

snow-spectacles, and puttees, also a convenient hat, with a wide brim of felt, and a warm woollen cap to cover the ears.

Oscar Eckenstein, in giving advice to young climbers, recommends the beginner to take his 'claws' and axe, go to the nearest ice-fall, and learn his job. Begin with an easy slope of about 15 degrees. Walk about at first on this and afterwards on steeper slopes until you can walk safely, without claws. Find your limit for different conditions of ice.

Tramping up hills is hard work, and scrambling over lichen clad boulders, or beating one's way through thickets of bracken, gorse, and bramble, makes one ready for a rest when the top has been reached. Resting after his exertion, the climber finds reward in the magnificent and picturesque scenery, and in the strange brooding silence of the wilds. Far below, fields and grey stone farmsteads and cottages, woods and coppices winding streams and hamlets dot the landscape; all very impressive, in its 'solemn glorious sublimity'.

Zig-zag on slopes

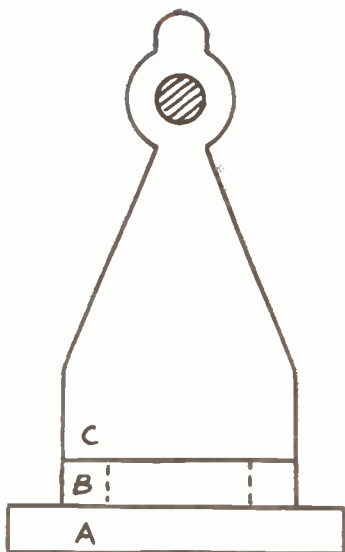
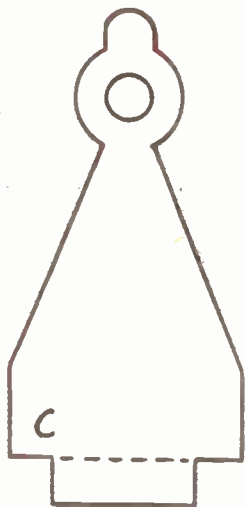
When hill walking set a steady pace and keep to it. Too many rests make you more tired than a number of easy spells. Zigzagging is easier on steep slopes than making a bee-line for the top (this applies to coming down as well). Never start running down a slope unless you can see every foot to the bottom, and you are certain there are no loose rocks or pot-holes.

Do not forget your compass. Make a point of recognizing the landscape on the map. A map measure compass combined is most helpful, for determining exact distance on maps of any scale.

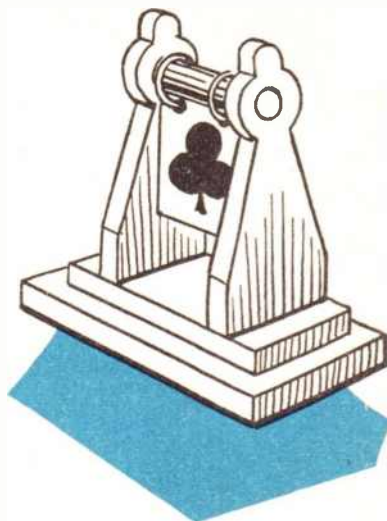
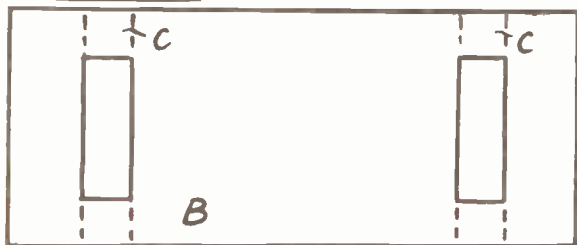
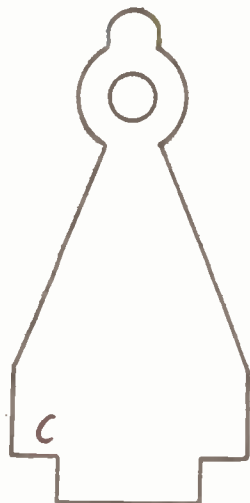
Many mountain-climbers in these days use nylon ropes, which have advantages over ordinary ropes. They are of light weight, of special strength and good flexibility, and coil easily.

When hill-climbing you will be advised to go along with a small party or with just a good friend. It is much nicer to have a pal, in whom you can find cheerful company if a mountain mist suddenly shuts you in on a dangerous ridge. Take a good map (Ordnance Survey one inch to one mile) with you; a pair of binoculars; a compass; your hill boots well studded with large tacks or studs, and correctly nailed and your rucksack loaded as lightly as convenient, and slung, with a view to the greatest ease and comfort as possible in carrying.

A TRUMP INDICATOR



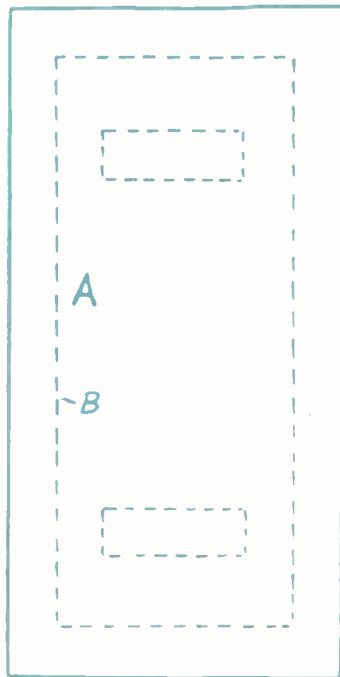
END VIEW



ALL pieces of this trump indicator are cut from $\frac{1}{4}$ in. wood. The two uprights (C) are connected by a piece of $\frac{1}{4}$ in. diameter round rod and are then glued into piece (B), but remember to put the indicator in place before fixing the round rod permanently.

Piece (B) is then glued to piece (A) and the construction is complete. All that remains is to clean up with glasspaper and carefully paint. Choose a pastel shade for the paint so that the 'trumps' are shown to the best advantage.

Trump indicator leaves, complete with rings can be obtained from Hobbies Ltd, Dereham, Norfolk, price 1/6d. per set, postage 3d. (M.p.)



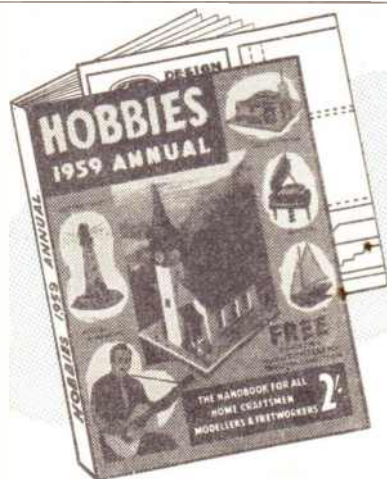


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