Two charming tea trays can be made from Hobbies kit No. 3192 at very little cost. The bases measure 15 in. by 10½ ins. which is quite a handy size, and they make an ideal pair.

Of quite modern appearance, the trays are easy to assemble when the pictures have been glued on to the baseboard and polished. The handles consist of dowelling let into shaped pieces of wood attached to the corners, and permit easy handling and cleaning. The base is consequently left completely open, thus allowing for a wipe over to clean. With normal trays, pieces of waste food invariably congregate in the corners, and this design will obviate that.

There is enough material in Hobbies kit to make two complete trays, and the motif for each will be the same. There are alternative designs — the wild geese as in the illustration, and a Scottie dog which is shown by the dotted lines on the design sheet.

Write to the Editor, Dereham, Norfolk for a free copy of the leaflet 'Making Pictures in Wood', which describes fretsaw inlay.

The pictures are made up from the two coloured inlay panels provided, using an O0 fretsaw blade to ensure close fitting joins when the pictures are glued on to the baseboard. The two different-coloured wood veneers give contrasting pictures for the trays. One will be in dark wood and the other light. For instance, on one tray the geese, if this is the motif chosen, will be of dark wood set in a light wood, and the rest of the colouring of the base as in the illustration. On the other tray these colours will be reversed for each section.

First select the design to be incorporated — the birds or the dog. Transfer the outline of this and the background on to the light wood veneer in the kit. Incidentally the veneers are the exact size to cover the base of the tray. The light wood panel is placed on top of the other inlay panel, and the two held...

All correspondence should be addressed to The Editor, Hobbies Weekly, Dereham, Norfolk.
securely together by Sellotape placed round the edges as shown in the inset (A) in Fig. 1. This will enable the two to be cut together to give identical sections.

In cutting out, always remember to keep the saw upright so that the various parts interlock together closely. Start cutting from the outside edge in the left-hand bottom corner, continuing to complete the arc, and then cut out the parts of the circles. Continue with the centre piece, to start which a small hole will need to be drilled to insert the fretsaw blade. Do not go completely round the circle, but take out the figure piece by piece thus ensuring that they are held together until the cutting of this section is completed. Now finish the cutting with the right-hand arc and circles.

Piece the pictures together in their different shapes, and glue on the plywood base step by step starting at one end and gradually moving along. When the glue is thoroughly dry, clean up the picture surface with a scraper (a piece of glass will do), and glasspaper until a smooth surface is obtained all over. Then finish with wax polish working it in with the finger tips. Give several applications and rub down with very fine glasspaper after each. After the final application, polish with a soft duster. Now we turn to the handles, the makeup of which is shown in Fig. 1. The corner pieces (2) are shown actual size on the design sheet, and dowelling is cut to the measurements indicated. Note that the holes in the end pieces which will hold pieces (3) are drilled, and those for pieces (4) can be cut with the fretsaw. Accurate drilling and cutting is, of course, essential.

Assemble the handles and rails by first fixing two corner pieces in which have been inserted dowel (3). The corner pieces are glued and screwed from underneath. Drill first before screwing and countersink the screws. Then add the other corner pieces and dowelling.

**BOOKS TO READ**

**Woodworking Tools**
by Alfred P. Morgan

This is one of the best books on its subject we have had the pleasure of reading. From driving a nail to smoothing and finishing, all stages in the correct use and care of woodworking tools are carefully explained in lucid style considerably helped by hundreds of drawings. Additional chapters on glass cutting, gluing and cramps complete a work which should be available on the workbench of every apprentice and in the hands of all amateur woodworkers. Published by Phoenix House Ltd., 38 William IV Street, Charing Cross, London—Price 15/-.

**How to be a Winner at Chess**
by Fred Reinfeld

The author, a player of many years' experience, with a profound sympathy for the legion of 'middle class' chess players has deliberately set out to make this work not only a simple guide to all the many sided aspects of the game but an entertaining, sometimes most amusing, aid to better playing. He has succeeded in smoothing out the wrinkled forehead of the beginner and in a most unusual approach to the treatment of a subject hitherto almost alarming in its academic severity, has put fun into his teaching without losing any of the thrills of this fascinating game. Published for 'Wireless World' by Messrs. IIiffe and Sons Ltd.—Price 2/6.

**Guide to Broadcasting Stations 1956/7**
Compiled by the staff of 'Wireless World'

This up-to-date compilation giving the operating details of over 3,000 broadcasting stations of the world will prove of great interest and assistance to the wireless enthusiast, especially as it includes nearly 2,000 short-wave stations with their call signs, arranged geographically and in order of frequency. Operating details of nearly 400 v.h.f. broadcasting and 170 television transmitters are also included. This is an excellent handbook at a modest price. Published for 'Wireless World' by Messrs. IIiffe and Sons Ltd.—Price 2/6.

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**ROYAL PRINCE**

A magnificent 22in. model of Hobbies Royal Prince made by Mr. L. Brown of Bradford. Kit No. 247 special for making this galleon costs 62/6 from branches etc. or Hobbies Ltd, Dereham, Norfolk.
A Word in your Ear

From the Editor

HAPPY NEW YEAR TO ALL OUR READERS — and may everything you undertake during 1957 meet with success. That is the sincere wish of the Editor, his staff, and all the contributors to the columns of Hobbies Weekly. Whatever your hobby we shall endeavour to give you bright and original ideas on projects to undertake, informative articles which we hope will enable all to enjoy their leisure hours in a most profitable manner.

During its 61 years of publication our magazine has introduced thousands of new designs and given details of projects for the handymen and hobbyist to go to work on, but we realise that there is ‘nothing new under the sun’ and that there are, perhaps, many good and original ideas lurking in the inventive brains or on the workshop benches of our readers. And that is why YOU can help future issues of Hobbies Weekly to be even more interesting.

Pet ideas

How about that pet idea for a model — or a gadget — or a piece of furniture? Send it along to the Editor at Dereham, and if it is considered that the majority of our readers would be interested then an article will be prepared so that all can share your ‘brainwave’.

Come to think of it, it wouldn’t be a bad idea if we stipulated that each query received by our experts asking for information should be accompanied by an idea for a Hobbies design! But, seriously, we are pleased to give all the help we can with this free service, even though sometimes it involves no little research and no little expense.

It would be appreciated, however, if readers taking advantage of the knowledge of our experts would enclose a stamp for reply and confine their queries to the subjects covered by our magazine. We once received a list of about twenty queries covering a host of subjects from a reader in Dublin. Irish blarney? Anyhow we did our best!

Big surprise

RECENTLY I had pleasure of seeing what a woman can do in the way of model-making — and I was in for a big surprise. Women, of course, do make up our designs and some of them make a really good job of it. But what surprised me in this instance was the subject chosen.

Miss M. E. Ransome of Scole, near Norwich, had chosen our trawler, which is the design given in Hobbies 1957 Handbook, to make up and enter in a Handicrafts Exhibition. You will gather how successful she was by the fact that her entry was awarded 100% marks by the judges.

Intriguing model

This trawler is a replica of those made by Messrs. Richards Ironworks at Lowestoft, and Miss Ransome had taken the trouble to go to this seaside resort in order to perfect the details on the model. It was a really excellent model and would have put the efforts of many a man to shame. Miss Ransome told me that she had made up the model completely with the aid of a Hobbies fretmachine, and that it had had many a successful run on pond, river and boating lake. She was full of praise for the design, buoyancy and endurance of the trawler, and said she was now looking forward to another working model from Hobbies.

Incidentally Miss Ransome had not done any work of this kind for about fifteen years until she was thumbing through the pages of Hobbies Handbook on a bookstall and became interested in the picture of the trawler. She says ‘The trawler intrigued me, so I bought the Annual and for several days studied the plan. At first sight it seemed a bit complicated, but that only stimulated my interest and I decided to “have a go”. It was really a challenge, and out came the fretsaw’.

Miss Ransome adds that she had enormous enjoyment out of making the boat, which also provided her with considerable educational value, as she learnt many things about trawling and drifting. She finally adds that possibly the chief ingredient for making this type of model is patience. As we have always pointed out — ‘a thing worth doing is worth doing well’ and a model to be proud of gives a very satisfying feeling.

Hobbies 1957 Handbook contains a free design and instructions for building this motorised trawler, costs only 2/-. from newsagents, etc. or 2/3 post free from Hobbies Ltd., Dereham, Norfolk.

New branch

JUST before Christmas, Hobbies Ltd., opened their 12th branch, at 42 Dean Street, Newcastle-on-Tyne, to serve the needs of all hobbyists and handymen in this very populous area in the north east of England. As in their other branches, all Hobbies kits, tools, designs, and, of course, copies of Hobbies Weekly will be available, and the manager, Mr. Derek White has spent a considerable time at the headquarters of Hobbies Ltd. in Dereham, Norfolk, and is well acquainted with the difficulties and problems to be encountered, as he is himself a keen modeller and fretworker. His aim, he says, is “to help the beginner and interest the expert”, so I advise all readers in that area to make their way to 42 Dean Street, and take advantage of Mr. White’s knowledge.

Competitions

A COMPETITION to test readers’ ability at designing and fretcutting will be published in our issue of January 23rd, and we hope to offer similar competitions monthly. Timex watches will be awarded for the best design and execution — one for juniors and one for seniors — and there will be ball point pens for the runners-up. Look out for full details in our January 23rd issue.

Next week we shall publish a Crossword Puzzle for amusement only, and we hope readers will find much interest in solving this. The solution will be given the following week.

Short-cuts

We frequently receive letters from readers asking the price of Hobbies kits in order to make up that particular week’s design. This is always given in a panel in the instructions for making, which are printed in the magazine. We thought everyone had noticed that!

Good news for canoe enthusiasts and those who are contemplating making their own craft this year. P. W. Blandford, an expert on such projects, is designing a new model for publication in Hobbies Weekly during the spring. More details later.

Thousands of Hobbies Fretwork Outfits were found in the stockings of lucky youngsters this Christmas. Perhaps you were the Good Samaritan who provided the start to such a satisfying and lifelong hobby. Why not carry on the good work by ensuring that the lucky lad gets a copy of Hobbies Weekly every Wednesday? We can send each issue by post — 28/6 for a year or 14/3 for six months. A New Year present which will last for a long time.

NEXT WEEK

Many readers have expressed interest in building their own radio-gram and next week we shall give details of making the cabinet. Subsequent articles by F. G. Rayer will describe the circuit, power pack, etc.

L. White will always be pleased to see readers and give helpful advice.

Mr. White has spent a considerable time at the headquarters of Hobbies Ltd. in Dereham, Norfolk, and is well acquainted with the difficulties and problems to be encountered, as he is himself a keen modeller and fretworker. His aim, he says, is “to help the beginner and interest the expert”, so I advise all readers in that area to make their way to 42 Dean Street, and take advantage of Mr. White’s knowledge.

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The culprits responsible for this notion and do need handling with care. They are waiting for the chance to do you harm.

Very handyman and chemist, and so non-scientific folk, naturally, get the idea that all acids must be the same.

Few corrosive

Nothing could be farther from the truth. Of the legion of acids known to chemistry only a few are corrosive. The great majority are inoffensive, many of them being solids. Lemon juice is good for you and every time you drink some you are drinking the citric acid to which it owes its sharp flavour. Vinegar is diluted acetic acid, tea contains tannic acid and a sour apple owes its sourness to malic acid.

Chemistry cannot get along without acids and it is most interesting to prepare at least some of them for oneself, for the experiments take one into all fields of the science.

Hiding under the innocent name “boracic powder” in many an unsuspecting housewife’s cupboard we have one of these sinister acids. Boracic powder consists of orthoboric acid. Generally, it is referred to as boric acid. It is easy to make from borax, for this consists of sodium pyroborate. By adding an acid to its solution, pyroboric acid is set free, but this immediately changes to orthoboric acid.

In 100 c.c. of boiling water in a beaker dissolve 25 grams of borax. Measure out 20 c.c. of concentrated hydrochloric acid in a small measuring cylinder and stir this into the borax solution. Let the liquid cool overnight. White crystals of boric acid separate out. Filter off the acid, wash it with a few c.c. of cold water, and then let it dry on a porous brick until the smell of hydrochloric acid has gone.

To extract citric acid from lemons, the filtered juice is neutralised with precipitated chalk (calcium carbonate). This forms insoluble calcium citrate which is removed and treated with sulphuric acid. The latter sets free soluble citric acid and forms insoluble calcium sulphate. On filtering off the calcium sulphate, a solution of citric acid is obtained.

Acid from lemons

Heat the juice of four lemons not quite to boiling and filter it. Boil the filtrate and add precipitated chalk little by little until a blue litmus paper dipped in the mixture turns purple. Efervescence occurs during this process owing to carbon dioxide being set free from the carbonate, so use a vessel large enough to cope with the foam. Note the weight of the chalk used. By weighing out a quantity of chalk before the neutralisation and weighing it again after, the amount of chalk used is easily found by subtraction.

Filter off the calcium citrate, wash it in the filter several times with boiling water, transfer it to a beaker and stir with about four times its bulk of cold water. To decompose the calcium citrate there must be added a weight of sulphuric acid equal to the weight of chalk you used to neutralise the juice. If you wish to measure instead of weighing the acid, you can base the quantity needed on the fact that 10 grams of concentrated sulphuric acid measure 5.4 c.c.

In grape juice

Add the acid slowly with constant stirring. If the beaker becomes warm, let it cool before adding more acid. Next heat up the mixture in a water-bath, filter off the calcium sulphate formed, fill up the filter several times with water, so as to wash adhering citric acid into the filtrate, then evaporate the filtrate to dryness on a water-bath. Citric acid remains in the evaporating basin.

Tartaric acid is present in grape juice. When the juice is fermented to make wine, the acid separates in the form of a dark coloured solid known as argol. Chemically, argol is impure potassium hydrogen tartrate. When this is purified we have the household cream of tartar. From this you can prepare the free acid.

Chalk added to a solution of cream of tartar produces insoluble calcium tartrate (which is filtered off) and soluble potassium tartrate. On adding calcium chloride to the filtrate, potassium chloride is formed and more insoluble calcium tartrate (which is filtered off and added to the other portion). On treating the latter with sulphuric acid, soluble tartaric acid is set free and insoluble calcium sulphate formed. On filtering, a solution of tartaric acid is obtained and evaporated.

To 150 c.c. of boiling water add 20 grams of cream of tartar and boil and stir until it has dissolved. Now add precipitated chalk in small portions until a final addition causes no more effervescence. Again allow for the carbon dioxide produced foam by using a large vessel. Filter off the calcium tartrate.

To the filtrate add calcium chloride solution until no more white precipitate of calcium tartrate forms. Filter this off.

Continued on page 229
**COFFEE TABLE**

**In Plywood**

Furniture made entirely or almost entirely of plywood is quite popular, and very attractive. It can be, too, designed and carefully made. It is strong, easy to cut and fit together, and quite light in weight.

Plywood can be obtained in a very wide variety of woods and in many different thicknesses. The grain of some of these is really handsome, and when made up and nicely polished, will produce an article you can be proud of, and one that will last for many years.

Plywood is most economical to use and it is often possible to design and make furniture with very little waste. A very good example of this is this coffee table which is, in fact, made entirely from a single square of wood. From a piece 24ins. square you can cut a top 20ins. in diameter, and also the four legs each 12ins. high.

Although 3/4 in. wood is thick enough for this size table, it would be better to use 1 in. or even 1 1/2 in. without making it too clumsy. Choice of wood will largely depend upon the finish it is intended to give, and must be left for the maker to decide.

Fig. 1 shows how to mark out the 24ins. square of plywood. Draw the circular top in the centre of this with a radius of 10ins., then the outside portion is divided into four to make the legs, each side of which will be 12ins. long.

Plywood up to 3/4 in. thick can be cut quite well with a fretsaw, using a stout blade provided the work is not forced and the saw allowed to take its time, which will prevent overheating of the metal.

The edges of both top and legs can be left square, but most people prefer to round these, or at least to remove the sharp edges. Only the outside edge and the curve of each leg need be rounded, leaving the other straight edge quite square for fixing to the table top.

Glasspaper is probably the best medium to use for rounding the edges of the ply without chipping off any of the layers and spoiling its appearance. Fraying can also occur when using too coarse a saw or trying to cut too fast, and it is, therefore, best to use a medium cut saw, even though it will take longer to do.

The underside of the table is shown in Fig. 2, which gives the position of the legs, together with all necessary measurements. Although it is not essential, it is certainly an advantage to fasten the legs to a block of wood 5ins. square and about 1in. thick, which is shown in the centre.

Provided the legs and block are well glued to the table top, no other form of fixing is necessary, but extra security can be obtained with fine panel or veneer pins, or triangular corner blocks may be glued and pinned in position. Small brass angle brackets screwed on to the legs and top is another form of fixing which can be used if desired.

Well smoothing with fine glasspaper will get the ply into the right condition for whatever finish you intend to use. Clear varnish or French polish are quite good either on the natural wood or after it has been stained. Painting or enamelling are equally suitable, but it is advisable to size the wood first and rub down lightly with a piece of worn glasspaper before painting.

The table can be made in other sizes, and provided you keep to the same proportions, it will be quite strong. You may also like to try making an oval table on the same lines from a piece of wood, say, 36ins. by 24ins. The feet may need placing in other positions, depending on the proportions of the rectangle, but that can be easily arranged when you have cut them out. One side of the legs will be long and the other short, and this will enable you to make either a tall or a short table.

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**Chemistry — making acids**

through the filter containing the first lot of calcium tartrate. Wash this with hot water until one washing shows no precipitate with silver nitrate solution — indicating that the potassium chloride adhering to the precipitate has all been washed out.

Transfer the moist precipitate to a beaker. Dilute 6 c.c. of concentrated sulphuric acid by slowly stirring it into 50 c.c. of cold water, with pauses for cooling when necessary. Add the diluted acid to the precipitate and heat up the whole in a water-bath. Filter off the calcium sulphate, run two or three lots of water through the filter, and evaporate the filtrate to dryness on the water-bath, when solid tartaric acid will remain.

Acetic acid is produced when sulphuric acid acts on sodium acetate. Rig up a distillation apparatus (see diagram) and in the distilling flask place 22 grams of sodium acetate crystals. Pour on to the sodium acetate 40 c.c. of accumulor acid — which is, of course, sulphuric acid of specific gravity 1.25. Swirl the flask gently to mix the contents, reconnect to the condenser and leave the whole for about fifteen minutes.

Now distil the mixture. Carry on heating until the mixture in the flask is semi-solid. The colourless liquid which distils into the beaker is dilute acetic acid.

(L.A.F.)
The best way to ensure a long life for your gramophone records is by making a special album for storage. This not only keeps them dust free, but safe from scratches and breakage.

Making an album is neither difficult nor expensive, and if your record cases are reasonably substantial, you will be able to use them. Alternatively, you may purchase a new set of record cases, made from lightweight card, at almost any record shop. These are much better than some of the paper cases given with the records. In addition, you will need some more lightweight cardboard, of similar quality to the cases, and here you are recommended to buy either manilla folders, or stiffeners, sold by stationers for filing correspondence. The only other requirements are a good quality carton, perhaps obtainable from a shopkeeper, some linen adhesive tape and suitable fasteners for binding. The latter will be mentioned later.

The method is to make several 3ins. strips from the manilla folders. These are folded in half, lengthways, to make fly leaves and ultimately attached to the cases by the adhesive tape, but not before they have been punched for the fasteners. Cut the strips to the same length as that of the record cases and you will require as many as there are records in the album.

Laying the fly leaves at one side, applying light pressure to the latter until the difference in depth is noted. Balance this by adding spacers, which may then be distributed of various points among the leaves. It is better to have the depth of the leaves plus spacers a little greater than that of the pile of records.

We may now turn to the making of the cover.

Here we have one oblong piece of card cut from the carton, measuring 12½ ins. by 11 ins., scored at one end to make a hinge as shown in the diagram. The underpart wraps round the open end of the record cases, forming a flap on the top cover, and measuring 16½ ins. by 11 ins. These measurements provide for a ¼ in. overlapped each edge, for protective purposes, and for the popular size of 10 ins. record. Some slight modification must, of course, be made for those albums required to take the 12 ins. records, or the smaller, new long playing variety.

The wrap over on the underpart of the cover allows for 1½ ins. in depth, to accommodate twelve records, and a 2½ ins. flap. The card should be scored accordingly, and reinforced inside by paper gumstrip. The flap may have a small press stud fitted or a strap, with a buckle on the other part of the cover. Straps may be fastened to the card by means of bifurcated rivets.

We now have to determine the means of fastening together the covers, fly leaves and spacers. Your stationer will be able to assist here. There are some small, tubular screw bolts available, normally used for fastening together loose leaf files and the like. They are made in many sizes, and you will have to decide which is suitable according to the finished depth of your album. These bolts may be recommended as being quite suitable, but you also have the choice of patent fasteners which are adjustable and both are inexpensive.

With the screw bolts, holes may be drilled at any convenient point, but an exact position must be determined if patent fasteners are preferred. The holes may be made with a suitable paper punch, or you may bundle the whole of the leaves, spacers and covers together for drilling with a twist bit. If you do this, remember to lay a protective piece of plywood on both sides of the bundle for protection against any mark caused by cramping.

This completes the preparatory work.

Continued on page 231
Ideal for photographers

The Kitchen as a Dark Room

The kitchen makes an ideal dark-room, and is probably used by the amateur photographer more than any other room in the house, and a great deal of really excellent work is constantly being turned out from such humble surroundings. A small cupboard, such as the dark one under the stairs, might be used, but the absence of running water and bad ventilation makes this a bad choice.

There is generally quite a small window in the kitchen which can be easily blacked out, and as the dark-room is mostly used in the evenings, this should not present any difficulty. When much photography is undertaken, it is a good plan to make a light wooden frame to fit the window, and cover it with one or more sheets of stout dark paper. For occasional use, however, a piece of thick curtain may be pinned round the framework. A thick curtain hung over the door is usually sufficient to cover any cracks which may let in the light.

There is one drawback, however, in using the kitchen as a dark-room, and that is the problem of temperature. The amateur photographer knows that the correct temperature for his solutions during development is between 60° and 65° and it is quite easy to maintain them at that level during the summer months.

In winter, however, when freezing point is often reached it is impossible to turn out satisfactory work at so low a temperature, and some means is needed to increase it.

By bringing the gas cooker into service we have easily solved this problem, and are able to carry on with the good work all through the year. There are many points in favour of this arrangement which should appeal to all home photographers.

Check thoroughly

The oven is lit up and the regulo adjusted to maintain the correct temperature. With the door shut there is little fear of light leaking out, but if you are working with panchromatics, have a thorough check up before starting operations. Some gas stoves have an open bottom, and this could cause serious trouble by light reflected from the floor. In most cases a sheet of tin or aluminium can be cut to fit, and will solve the problem. An alternative method is to box in the bottom of the stove down to floor level.

A large tray placed on the top of the stove as shown makes an excellent bench for the dishes of solutions which will be warmed up to the correct temperature by the heat from the oven and kept constant by the regulo. The height of this bench on the average oven is just right for comfortable working without having to reach up or bend over the dishes to watch the progress of the various operations.

Be careful not to let the solutions rise above 65°, as this will cause other trouble. Most ovens are capable of maintaining this heat, but if you find it gets too warm on the lowest setting, it is better to turn it out for a time and relight it again after a while. Once warmed up; however, the oven should maintain its heat for quite a time without further attention.

An oblong metal tray that fits right over the gas rings will hold several dishes comfortably, and if it is of fairly heavy gauge enamelled iron, it will keep warm for quite a while. Additional heat may be obtained by placing the dishes under this tray right on top of the oven, but care is needed so that overheating does not occur.

Instead of using a tray it is a good idea to get a piece of asbestos sheeting cut to fit the top of the oven. This should be about ½' thick, and it is excellent for maintaining the heat for quite a while.

By A. F. Taylor

If there is a plate rack over the oven, this is a good place for the dark-room safe light, where it will light up the dishes below. The white enamelled back plate will act as a reflector and help to distribute the light more evenly.

Some photographers prefer to tilt the light so that it shines on to the plate and illuminates the dishes by reflected light only. For fast films this is a splendid idea and is well worth trying. Another source of reflected light can be obtained by turning the lamp upwards to shine on the ceiling, which in most cases is white or cream, and this is an even better method when working with ultra-sensitive material.

An important point to remember when using the kitchen as a dark-room is that other people may enter when you are in the middle of developing an important picture and switch the light on. Safeguard against this by either fitting a lock or bolt on the inside of the door, or by taking the bulb out of its holder.

Continued from page 230

An Album for Records

and the fly leaves may be attached to the record cases. A piece of adhesive tape is attached on both sides, the fly leaves being fitted so that the folded part meets the edge of the record case. It should also be noted that these fly leaves are attached to that side of the case opposite to the open end. Moreover, although linen adhesive tape has been specified for the job, there are some types of paper gumstrip available which are exceedingly strong and which may do the work equally well. The ‘pages’ are now ready for fastening between the covers.

It should be mentioned that carton cardboard has not only been specified because of its cheapness, but mainly because it is flexible. This has been decided after the consideration of the possible use of hardboard, but the flexibility of cardboard will prevent any damage to the records which could be caused by the harder material. For a really smart finish the cardboard must be given some treatment.

There is the choice of two coats of gloss paint, or some imitation leather paper obtainable from a handicrafts store. The paper is pasted on and turned over on to the inside at least for 1in. A suitable lining paper is then applied, to cover the score reinforcement strips, and leaving a nice margin of the outer binding.
Winter projects for gardeners

LAWN AERATOR

WHEN a lawn, through continual rolling, mowing and normal foot traffic, has become consolidated on the surface, the grass begins to thin and pale, indicating the need for some attention. Aeration is a good way of improving the condition, and here is a simple tool to help you.

Spiked wheels, drawn by small motor tractors are used on large sports grounds. There are also special hollow tined forks, but one made from wood is equally effective. You need two pieces of 1 in. shelving measuring about 10 ins. by 4 ins., a broom handle and some 4 ins. nails.

The upper portion, of the same size, is attached by means of angle brackets to the underpart already fitted with tines made with the aerator have a similar effect to hoeing cultivated soil, by permitting air to get to the roots. But that is not all, for drainage is improved.

There may be no apparent immediate benefit since the combined action of air, water and fertiliser is usually a slow process, and it will be necessary to repeat the entire operation at intervals if a healthy sward is desired. (S.H.L.)

Flower pot soil Firmers

WHEN sowing seeds in flower pots or seed boxes greater success is generally achieved if the soil is in the proper condition to receive them. Making the soil firm and even is more important than some of us realize, yet a few with 'green fingers' can get anything to grow in any oldway.

For the gardener who loves to do everything exactly according to the book we have designed a set of soil firmers which, as the name implies, make the soil firm and of a more even texture than can be done by ramming it in with the fingers.

Soil that is rammed too tight will restrict the drainage, and when the water cannot get away easily, it is liable to rot the seeds before they have a chance to germinate. On the other hand, if the soil dries out badly, there will be greater difficulty for the water to reach solid lumps of consolidated soil.

What is wanted is a certain degree of firmness, but with an open texture, so that the air can penetrate the soil and this can be achieved by using the right firmer. For a flower pot the firmer is round and the most popular sizes are 3 ins. and 4 ins. diameter, while for a seed box it should be about 4 ins. square.

A small pot will need an equally small firmer, but in order to achieve its object efficiently, it should not be less than 2 ins.

Oak, ash or similar hardwoods are most suitable, and should be from 3 in. to 1 in. thick. Drill the central hole about three quarters of the way through for the handle, which can be dowel rod or a piece of broom handle 3 in. diameter and about 6 ins. long. See that it is upright, and is a good tight fit, and it is better not to use glue if you can secure it without.

It may be easier to drill the hole right through, push the handle through the firmer and smooth off level. A better idea however, is to face the end with a tin lid. Choose one with a right angle side and cut your block to fit nicely into this, so that when the handle is fixed, you just push the lid on and fix secure with a few fine pins round the edge.

The same idea can also be applied to a square firmer by cutting a piece of tin about 4 in. larger all round and turning over the edges and tacking on as before.

Round off the top of the handle and well glasspaper all the woodwork. A coat of paint will help to preserve the tool and improve its appearance, but this is not a necessity. (A.F.T.)
For the angler

A FOLDING CHAIR

A CHAIR of this type is useful for fishing expeditions, and is also handy in the garden. Now is the time to get down to jobs like this when the long winter evenings provide time for constructive work.

The chair consists of a stool portion and a folding back. The stool or seat is made up from two separate folding parts shown in Fig. 1. All necessary measurements are shown and it should not be difficult to cut the various pieces to size. Make sure when assembling that you allow enough clearance for paint or polish on pieces (A).

Pieces (A) are cut from 1 1/2-in. by 1/4-in. wood and are 22ins. long. They are tenoned at the top and let into mortises in the pieces (B) and (C) which are both cut from 1-in. square wood. Piece (B) is 15 1/4-ins. long and (C) 17ins. The two sections are pivoted by means of screws or rivets.

The two bracing pieces (D) for the front are 17 1/2ins. long by 1-in. by 1/4-in., and those for the back are 16ins. long.

The chair may be finished off by staining and polishing or by painting.

Simple Barometer

A SIMPLE barometer can be made from an empty vinegar bottle, a glass jam-jar and some water coloured with red ink. Half fill the bottle with the coloured water. Place the jar upside-down over the bottle. Then reverse, so that the jar is standing upright with the bottle standing in it upside-down.

The coloured water will flow into the jar until the level of the water in the bottle is about 2ins. above that in the jar.

By the rise and fall of the water in the neck, the weather may be fairly accurately foretold. Fine weather will cause it to rise, while a drop may presage rain or rough weather. A ruled card fixed behind the jar enables the rise or fall to be seen more easily.
DURING the winter season stamp auctions are taking place all over Great Britain and when a stamp fetches a good price, it is invariably reported in the daily Press. As a result of seeing one of these notices, some people recall that they have some foreign stamps tucked away in a drawer. They fetch them out and wonder if theirs are as valuable as those reported upon as a result of the auction, but the difficulty is to find out.

If the desire is to sell the stamps, then there are two easy ways of solving the problem. Either the stamps can be sent to one of the reputable stamp dealers with a note asking them to make an offer, or they could be sent to one of the auctioneers, asking them to put the stamps in their next sale.

Perfect condition

Two things should be remembered, first, all stamps must be in perfect condition, a torn stamp, even only very slightly torn is valueless and should not be sent; and if the stamps are unused, then they must have all the gum on the back and be perfectly clean. Secondly a stamped addressed envelope should be sent in case the stamps are not good enough to be put into an auction, or in case the firm does not wish to buy them. If the stamps are sent to an auctioneer then it will probably be about ten weeks before the money is received — the stamps have to be entered in the sale catalogue, this has to be printed, etc., and these factors have to be taken into account when the price of the stamp is fixed. If you happen to have a stamp priced 1/- in the catalogue and you wish to sell it, it would be ridiculous to expect 1/- for it. To begin with it is doubtful if the condition is as good as the condition of the specimen priced, secondly, you have no room, shelf, or stock book to provide, yet the firm has quite a lot of money to pay out after buying the stamp, before it is sold again.

We mentioned above about learning to use a catalogue. The point is that there are so many stamps of exactly the same design but having either different colours, watermarks, perforations or even thickness of paper. Each of these factors may have a bearing on the price of the stamp, so the user must be able to classify a stamp before he can find out the value.

Lastly, one must mention fashion. It may seem remarkable that one must talk about this in connection with stamps, but it is a most important factor if one wishes to sell them. Some countries are popular while others are not. Great Britain, for example, will always be popular, but stamps from some of the foreign countries are far less likely to sell.

Health stamps

Mr. G. L. Donaldson of Auckland, New Zealand, has again been most kind in sending specimens of the 1956 Christmas Health stamps. Not only has he sent an official first day cover clearly stamped 24th Sept., he also sent the most interesting cover shown here. The design of the three health stamps issued this year is taken from a photograph by Mr. J. F. Louden, the grandfather of Graeme and Peter Wilson, the two boys who are depicted in the photograph. The envelope also bears the signatures of the two boys. As can be seen, the cover was postmarked at the Pakuranga Health Camp.

It seems likely that the sales of these stamps will be a record this year. For example, at Tauranga on the first day £835 worth of stamps was sold, £132 more than was taken at the correspond- ing first day last year, and Graeme and Peter Wilson helped with the sale. In the Auckland District the total was £4,018 against £3,726 last year. This design is a really nice one.

Graeme and Peter Wilson, Tauranga, Pick N.Z. Apples

Mr. G. Donaldson, Canadian Pacific Railway Company, P.O. Box 1350, Auckland.

A REPRODUCTION FROM THE DESIGN-WINNING PHOTOGRAPH BY J. F. LOUDEN, TAURANGA, WHICH WAS USED TO PRODUCE THE 1956 HEALTH STAMPS.
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Keep the cold away

A DRAUGHT EXCLUDER

With the winter days we begin to seek means of preventing cold draughts as we sit around the cozy fire. And probably some of the worst draughts enter from beneath the door which cannot fit exactly to the floor, especially when the thickness of the carpet has to be considered.

Door draughts can be easily remedied by means of a simple excluder made from a roller and a small piece of some of the rubber backed, felt carpeting now on sale.

Use a broom handle

A broom handle, or something similar, should be cut about 1\frac{1}{2} ins. shorter than the width of the door and the ends carefully smoothed off with rasp and glasspaper. The next part of the job is covering the material. This may be rolled on quite simply and fastened either by glue or tacks, but it is far better to spend a little more time on the job, rolling the material round the rod in strips. An average door measures 2ft. 6ins., and the diameter of the roller will be approximately 1in. Allowing for a little overlap to trim away at the ends, you will need a small strip of material 5ins. by 30ins., which should be quite easy to buy as a remnant from any carpet store. This strip is cut into two, making two strips each 2\frac{1}{2}ins. wide. Needless to say, a suitable colour should be chosen to match the other furnishings.

The strips must be carefully cut so that the edges are perfectly straight, for in winding round the roller we wish the edges to fit perfectly, so that there are no gaps.

Make a preliminary trial of the angle of winding, then fix one end with a tack. This is shown in the diagram. Keep the strip in position by additional tacks at various points or by attaching with some suitable rubber solution. If the latter course is adopted, it is better to apply the solution to the rod and back of the carpeting, as the work proceeds. When the first strip, which should reach the centre, is fully wound, commence with the second strip, winding round the roller until the end. Trim the ends and the roller part is complete. You will appreciate that it is better to use only one strip of material, but this would involve buying one piece 24ins. wide by 60ins. long, and it is doubtful whether your carpet store would supply.

We now come to the problem of fixing to the door.

Bore a hole in each end of the roller with a gimlet, fixing stout round-headed screws, but leaving the shank visible. Lay the covered roller on the floor against the outside face of the door, carefully marking the position for two screw eyes which fit into the door and engage with the shanks of the screws.

Once fixed, these excluders will last indefinitely, and it is quite a simple matter to remove them in summer time for cleaning. Should there be any squeaking in operation, a drop of oil will remedy, or a little touch of grease.

It should be remembered that the excluder is fitted to the outside of the door. In some instances a door may open towards a wall, in which case it would not open fully if the excluder were on the inside.

R. H. Warring says

MAKE LOW-LEVEL STEPS

To save straining yourself trying to reach the top of a wardrobe or a high shelf, make a pair of 'low level' steps to place alongside. Build up from stout wood to the pattern shown, screwing or nailing all joints. Fitted in back panels will give the assembly rigidity. Mount the whole on a ply or hardboard base.

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