Hobbies WEEKLY

June 13th, 1945 Price Twopence Vol. 100. No. 2591

Some helpful notes about SAWS AND SAWING

THERE is, as most woodworkers know, a purpose for every saw—*not* a saw for every purpose. A craftsman, in order to possess a complete kit of tools, should have about eight or nine *different* saws, such as a rip saw, panel saw, tenon saw, dovetail saw, bow saw, pad saw, coping saw, hack saw and fretsaw.

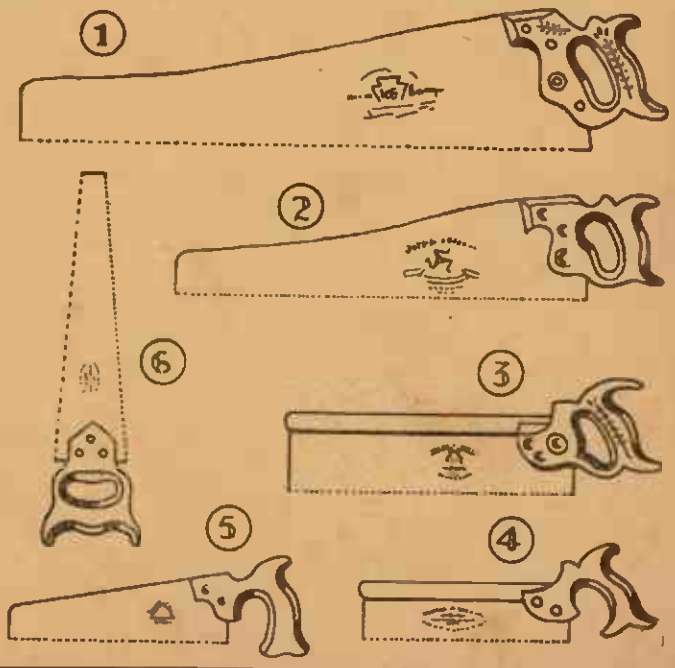
The Ripping Saw

The largest woodworking saw is the ripping saw, frequently confused with the cross-cut saw (Fig. 1) which resembles it in size and shape—almost! The chief difference is in the set and shape of the teeth, being rather coarser (four teeth to the inch) in the ripping saw. The latter is ideal for cutting along the length of boards and can also be used for cutting across the grain, which is the chief purpose of the cross-cutting saw.

A cross-cutting saw has usually a "skew" back, i.e., it is slightly curved, whereas the ripping saw has a straight back and is somewhat wider at the handle end. Ordinary, straight backed handsaws are "household" implements, for general use only.

There are two ways in holding a ripping saw in order to use it. The common method is holding the handle in the right hand, with the forefinger extended along the blade near the top to steady and guide it, the sawing being done with long, even, steady strokes over a stool or trestle.

A less back-breaking method is to grip the handle in both hands, with the blade hanging downwards, tilted away from the body, so the teeth are foremost. The board to be cut is clamped to the edge of the bench so it projects a foot or so. Having made a "starting" cut, the teeth are set



chapters of general information.

The book of Westland Aircraft covers a similar field for Westland Aircraft Ltd., with plans for 29 machines including, such war-proved veterans as the Whirlwind and Lysander. Both books are beautifully printed and bound, and the full size plans provide, side front and plan view, with all essential instructions for building realistic and beautiful models.

(*Published by Harborough Publishing Co. Ltd., Newarke Street, Leicester—Miles Aircraft*, 10/6 ; *Westland Aircraft*, 12/6).

One Man Show

by W. A. Bagley.

MOST fellows, sometime or other, have an urge to be an entertainer either in the home circle or on the semi-professional stage of local concerts. Here is the very book to bring that idea to fruition. It is written easily and illustrated profusely by an author whose work has appeared from time to time in these pages, and who writes from personal knowledge. The details also show, in many cases, how the handyman can make his own apparatus as well as giving hints on how to obtain engagements and the fees to be expected. It covers conjuring, music, juggling, rope spinning, ventriloquism, impersonations, monologues and even a Punch and Judy Show. Altogether a very worthy book for the would be amusement caterer.

(*Published at 3/6 by Vawser and Wiles, Walthamstow, London E.17*).

Model Air/Sea Rescue Launches

by A. C. Hardy B.Sc. and D. A. Russell, M.I.Mech.E.

MR. Russell is an acknowledged expert on models and this book is the outcome of his two years intensive work and research on the subject. Four types of similar boat are described, whilst in connection with the models to be constructed large blue print plans are available showing full size parts and diagrams on an area measuring 20ins. by 20ins. The models are for the experienced worker, are built ½in. to the foot, measure over 2ft. long, and can be fitted with petrol engine, rubber, clockwork or electric. The book itself contains large helpful photographs, instructions and an interesting introduction of Air/Sea Rescue work by Commander A. C. Hardy. Those who are anxious to and capable of making a large floating model of a type of boat which has done marvellous work can be recommended to get this excellent book. The 3-Sheet set of plans are extra.

(*Published at 3/-, by the Drysdale Press, Merton Lane, Highgate, London, N.6*).

Make a Clock

HERE is an intriguing manual which will appeal to many of our handymen. The book contains very complete details and over 50 illustrations for making what is called a "Flip-clock." It has no hands, but shows the hour by a large figure in a circle, and the minutes through another slot bearing the correct number. The mechanism is of the usual cog and escapement, with weight for winding, similarly to a grandfather movement. The material and tools used are such as found in any home with special instructions given for hardening and cutting cardboard to make suitable cogwheels, discs, etc. Every need is dealt with—how to make suitable and simple jigs and tools—as well as diagrams of how the parts fit together. Care, patience, and precision are undoubtedly required, but our readers usually have all three of these virtues.

(*Published at 3/6 by Modelcraft Ltd., 77 Grosvenor Rd., London, S.W.1*).

Keep your soft drinks in the proper place in

A BOTTLE HOLDER

WITH pre-war and other usual drinks hard to get many people are making greater use of lime, orange, grapefruit and similar cordials and here is a neat and simply-made holder for the bottles in which these drinks are supplied to the public. If carefully constructed and 'finished' the holder will not disgrace any sideboard or 'occasional' table.

The bottles in which the cordials come are generally 3ins. in diameter —this seeming to be a standard. The circular openings through which the bottles pass in the holder are cut therefore to a diameter of 3¼ins. which just holds them nicely without too much play.

Simple Construction

The general construction and method of assemblage is made quite clear by the diagrams. The base (D) is cut to 10ins. diameter from ½in. material and on it is marked two diameters at right angles for the positioning of the uprights (A) and (B).

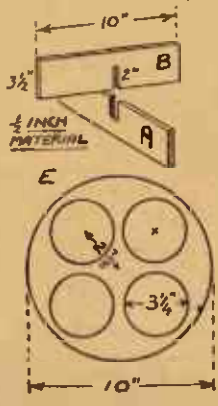
These uprights are also cut from ½in. material so that they will take the screws from base and top comfortably without danger of splitting, and each is 10ins. by 3ins. At the centres of these pieces cut slots 2ins. by ½in. as per top sketch, to form a solid half joint.

Drill four holes in the base along the marked diameters and inverting over (A) and (B) continue drilling for a little distance. Finally secure with suitable screws after glasspapering the parts well.

Top Circle

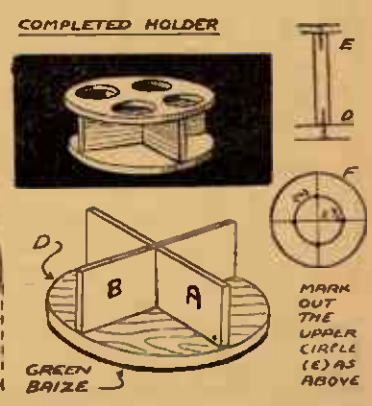
Next cut the top section (E). This is from ¼in. plywood. Mark first the outer circle (see sketch F) of 5in. radius and then draw two diameters at right angles. Upon these scribe the circle (a). The inter-sections of this last circle and the diameters give the positions of the centres of the circular openings. These are 3¼ins. diameter, or 1⅝in. radius.

Having marked these out, remove the circles with a fretsaw. After glasspapering and general cleaning up, this top section, which should be as the bottom lefthand sketch, is centred over the uprights. After drilling, as with the base, secure with two screws in each arm of the diameters.



A Suitable Finish

The holder should now be stained and polished or finished in any particular manner desired. Finally a 10in. diameter circle of green baize should be glued on the under side of the base to make the holder suitable for standing on a polished surface.



For garden use or in the house this is a useful

LIGHT TEA TROLLEY

HERE is a type of tea trolley that is a little out of the ordinary and one that would be suitable for any home. In fact it is really a light table on wheels. It must be understood, however, that the trolley shown here is not intended to take the place of an ordinary trolley or wagon, as its lack of width and the fact of it having only two wheels instead of the usual four make it quite distinctive.

It will be seen from the sketch of the finished trolley that it would not do to load it unduly because it has to be lifted slightly at one end before the wheels come into use.

General Size

The measurements suggested here are convenient for the small home, but of course if a larger trolley is wanted it would be quite simple to calculate the sizes to get the proper proportion of the various parts.

If it is not possible to buy ready-made wheels then two may be cut from ¾in. wood, 4in. in diameter and rounded off at the edges with the rasp and file finishing with glass-paper.

The whole trolley may be made of deal and stained. The two front legs A should first be marked out and cut from ¾in. stuff 22½ins. long by 2ins. wide. Round off the four corners and clean away the sharp edges with glasspaper.

Decorated Leg

Next make the single wide rear leg. This is 21½ins. long by 4ins. wide by ¾in. thick. It is on this leg that the fretworker can try his skill at setting out and cutting a simple decoration to add to the appearance of the article.

The decoration is so simple that no detail need be given here beyond the one shown in the sketch at Fig. 1. On the top of this leg a tenon is cut to fit snugly into a mortise in the top shelf C.

Both tenon and its mortise are seen in the detail Fig. 2. The tenon should not exceed 2½ins. in length so the shelf is well shouldered down. The top shelf measures 20ins. by 9ins. by ¾in. and its two forward corners are checked out 2ins. by ¾in. to allow the front legs to fit in flush as seen in the detail Fig. 3.

The mortise for the single leg tenon is made 1in. in from the edge and 2½ins. long centrally in its width. The lower shelf measures 19ins. long by 9ins. wide by ¾in. thick, and the two forward corners in this are cut as the shelf above to fit round the legs.

The other two corners, as well as those of the shelf above, are rounded off with the fretsaw to a neat quarter-circle, see C and D in Fig. 2.

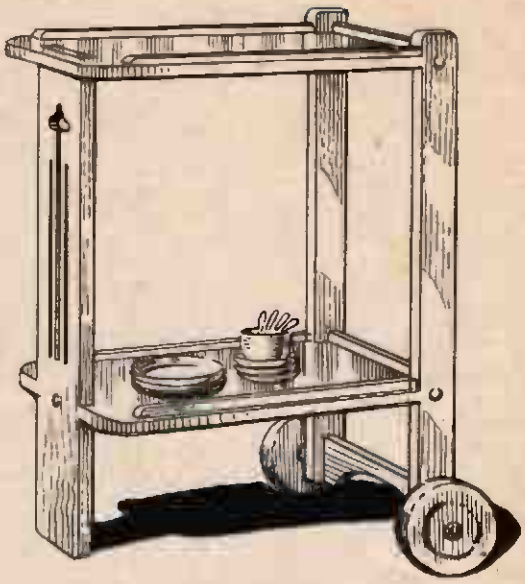


Fig. 1—The completed two-wheel runabout

Shelf Work

Next cut a recess in the rear end of the lower shelf to take the width and thickness of the single leg. Now bore two holes in the single leg 7½ins. up from its bottom edge to take the fixing screws which run into the end of the lower shelf

Fix shelves C and D to the single leg, gluing the tenon neatly and putting in two countersunk brass screws into the lower shelf through the leg.

Front Leg Fixing

Now take in hand the two front legs again, and after clamping them together, bore holes for the fixing screws which again go into the shelves.

The lower shelf holes must be drilled 1in. up from the bottom edges while the holes for the top shelf are made 1½ins. down from the top. Countersink all the holes on the outer faces and then fit the shelves in place and run in the four brass fixing screws adding glue at the back of the legs.

The rail E which forms the axle bar for the wheels is next cut and fitted between the front legs as seen in Fig. 3 and again in Fig. 4. This rail is 7¾ins. long by 2ins. wide by ¾in. thick and its underside is cut with the fretsaw to the gentle sweep shown in Fig. 3. At its centre the rail must not be less than 1in. wide.

A couple of brass angle plates may be included to screw on between the legs and the rail E as additional stiffening. To stiffen the single leg at its lower extremity a short shaped rail F is added.

The rail measures 6½ins. by 1½ins by ¾in., and should be glued and screwed to shelf and

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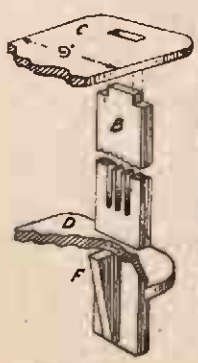


Fig. 2—Top and shelf fixing

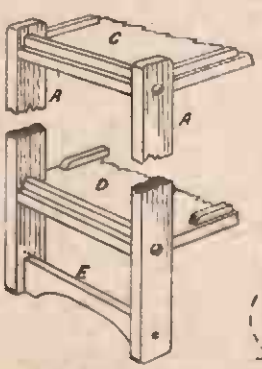


Fig. 3—Details of trays and legs

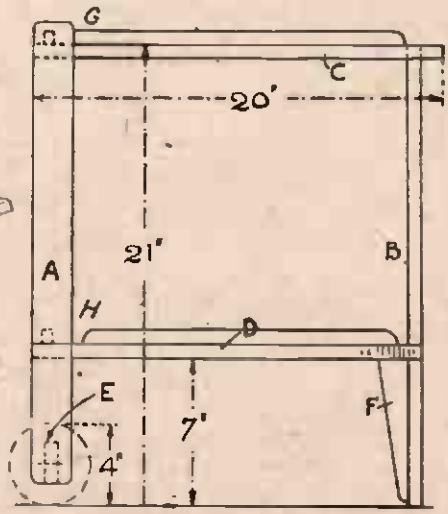


Fig. 4—Side elevation with dimensions and parts

How to get substitute films is a good suggestion in PHOTOGRAPHY SHORTAGE

ORDINARY roll-films are extremely hard to obtain at the moment, in fact practically impossible to get in some localities. There are, however, two types of negative material that can be procured readily—(1) rolls of 35mm. cine film and (2) R.A.F. rejected material.

The first, of course, is for use in a camera using the 35mm. film or one having an attachment for it, and it is interesting to note that outfits have recently appeared on the market which adapt any V.P. or 3¼ by 2¼ cameras to take this material. These outfits, together with one or two cartons of film cost about £3.

Rejected Film

The R.A.F rejected film—which is perfectly sound from an amateur's point of view, being perhaps only a little under specified speed or have some such 'fault'—is sold in rolls of 5½ins. to 9ins. wide and in lengths of 15ft. upwards. It can be obtained from several of the camera marts which advertise in the photographic press.

To use, this film has to be cut and placed in a backing paper, but this is not hard to carry out even by the least experienced if the details as below are followed.

Providing a Backing

First let us notice how a film bought from the dealer lies in its cover of paper. Study Fig. 1 which is looking down on the two spools as they fit in a camera. The right hand is the new spool which is taking up the film, being rotated by the key (on the camera) which fits in the slot shown on top. The left-hand is the roll as bought.

The celluloid is located in the middle of the backing paper, emulsion side up, and is secured at the leading end by a strip of adhesive material which holds the film tightly to the paper without creating any degree of thickness. At the trailing end the film is left loose—an important point to remember.

Having noted these conditions let us now consider cutting the R.A.F. film and placing it in a length of backing paper; which of course you must have.

First from this backing paper measure the length of film required, that is from the front edge of picture-space No. 1 to the further edge of picture-space No. 6 or 8, as the case may be. Then allow 2½ins. more.

Measure the width also. Having obtained these dimensions prepare a piece of wood to this size to act as a template, giving the sides a smooth and very true finish.

Next, in the dark room, spread several sheets of soft paper on an old table or board upon which cutting can be done without causing damage. On these (in the total dark if possible or with the smallest amount of safe-light) unroll a sufficient length of the R.A.F. film and fasten it, emulsion side down, with four drawing pins.

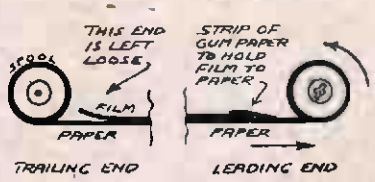


Fig. 1—Fixing the backing paper

Fig. 2—Jointing Parts

The emulsion side can be determined in the dark by being slightly rougher than the plain celluloid. Also it is on the inside of the natural curve of the material.

Next take the piece of wood and lay it very gently on the film, aligning it exactly with the edge of the film. This will be quite easy to do by touch alone.

Finally press down heavily on the piece and run a razor blade along the inner edge, cutting through the celluloid. Use a rigid blade of the one-sided type (e.g. Ever-ready) which can be guided by wood without slicing pieces out of it. Cut along the end also and the desired length of film is free.

Here is the procedure needed to insert in the roll. First, in the light, gum a strip of material to the inside of the backing paper at a position about ½in. further along than the trailing edge of the last picture. This is to act as a marker which can be felt with the finger nail in the dark.

Also get a strip of gummed paper (or gummed linen is the best) at least 1in. wide, for securing the leading end of the film to the paper. Cut this in readiness to the width of the film in question.

Re-winding

Back in the dark-room start rolling the backing paper on to a spool, working from the reverse end, i.e. so that the last number, 6 or 8 will roll on first. Keep winding till the gum marker is felt, then lay the R.A.F. length on top as Fig. 2(A) and with this now feeding inside, continue to roll without fastening the end.

Wind tightly and with a firm touch and continue to do so till the further end of the film is reached Fig. 2(B). Holding the part-loaded spool tightly in one hand to prevent loosening, fasten the now exposed leading end of the film down to the backing paper with the strip of prepared gum paper.

Make sure the joint is really good, as there will be endless trouble if this gives way when pulling the film through the camera. The joint also must be made as flat as possible.

Finally continue winding till all the backing paper is on the spool. Secure with another strip of gum paper and the roll is ready for the camera.

The whole process is really quite simple, although it may sound a little complicated. The main points to bear in mind are to handle the film as little as possible, and never the emulsion side. Also if the material is panchromatic (and it probably will be) it must be worked in total darkness or with a faint green safe-light. As many of the popular-sized films were in this material, however, most readers will be acquainted with this.

Tea Trolley (*Continued from previous page*)

leg. Round it well at the lower part where it meets the leg (see Fig. 4).

Around three sides of each shelf there must be fixed some suitable edging to form an efficient ledge to keep plates, etc. from falling off. Some wood about ¾in. by ¾in. in section would answer well for these and in the detail Fig. 3 they are shown cut in and fixed.

Each ledge could be put on flush with the edge of the shelves, but for appearance sake we suggest that they be kept in about 3/16in. The ledges, too, may be carried right up to the forward legs (as at G in Fig. 4) or they may stop off short and be rounded (as at H). This latter arrangement facilitates easier brushing down and cleaning.

In putting on the wheels be sure and use screws of sufficient length to run well into the rail E. Round-head screws must be used, and suitable brass or iron washers put on each side of each wheel.

Regarding the finish to be applied to the wood, this will depend upon the kind of wood used. If deal, then two coats of ordinary oil paint would be best, or the surfaces could be well cleaned and given a coat of varnish over one of stain of desired depth and colour.

It should be mentioned that the heads of the screws which have been well countersunk should be covered by gluing on small discs of wood cut out with the fretsaw.

The second article in our new series of home-made

RADIO COMPONENTS

HERE is the second of our series whereby the amateur wireless enthusiast can make many of his own parts and save money as well as find much of interest.

Tuning coils and high frequency chokes for the broadcast band receiver are not difficult to make, and details of a suitable form of construction are given here. Short wave coils may easily be made also, and a complete table of the number of turns required is given, so that coils may he made up to cover any short-wave band it is desired to tune.

For the usual type (Fig. 1) of set tuning coils may be wound upon tubing 1in. in diameter. Ebonite tubing can be obtained, or gummed brown paper wound round a former and removed when dry. Cardboard tubes should be varnished to prevent them absorbing moisture. With the short-wave coils, a slight advantage will be gained if a ribbed former is used, as this reduces losses.

Each coil former will need to be about 2ins. long. Small brackets are screwed to the bottom to enable the coil to be secured, or the former can

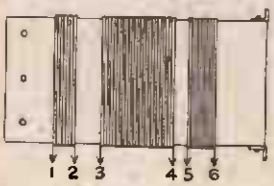


Fig. 2—Winding the coil

be pushed over a disc of wood screwed to the baseboard of the receiver.

Although terminals can be fitted for connections when the coils are to be used in experimental apparatus, with a permanent hook-up it is best to take the ends of the coil windings direetly to the various parts in the receiver, anchoring them by passing them through small holes in the former. Especially is this so in a short-wave receiver where all losses should be avoided.

All the windings should be in the same direction, and Fig. 2 shows how the ends of the windings are to be connected up—e.g.—1 to Earth, or H.T. plus when the coil is used for inter-valve coupling; 2 to Aerial, or the plate of the high frequency valve in inter-valve couplings; 3 to the fixed plates of the tuning condenser; 4 to Earth; 5 to reaction condenser, and 6 to plate of detector.

When a coil is used in the high-frequency stage, the reaction winding will not be required. The coils are of small dimensions, and so their fields are small. This enables them to be used without screening in a set with high-frequency amplification.

The coils should not be close together, however, and to assure that no interaction will take place one should be fixed on its side so they are at right-angles.

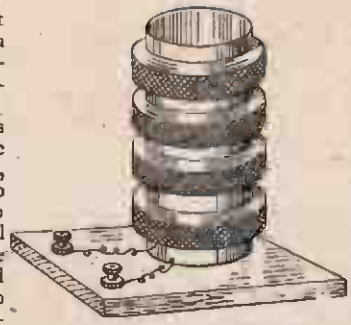
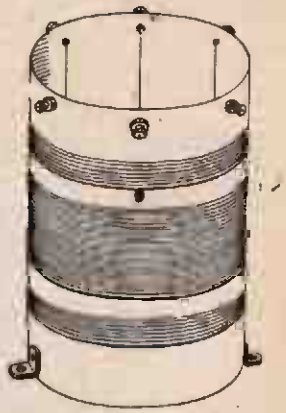


Fig. 1—A Broadcast Band Choke, and (right) a Tuning Coil



The number of turns to be used depends upon the wavelength to be tuned. The coupling winding (points 1 and 2) should be one-third of the central winding, and the reaction winding (points 5 and 6) two-thirds. Approximately ¼in. should be left between the central winding and coupling winding, and also between the central winding and reaction winding.

The following are the turns for various wavelengths, 22 S.W.G. wire being used, and each turn being spaced by about the thickness of the wire from its neighbour.

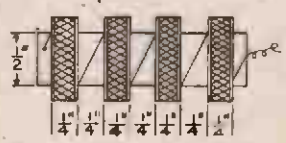


Fig. 3—Details of the choke spacing

Wavelength.	Turns.
15—27 metres	9
20—36 metres	13
24—44 metres	18
27—50 metres	22
32—60 metres	28

Reaction and coupling windings are of 26 S.W.G. wire, with no spacing between turns.

For a medium-wave coil, 90 turns of 32 S.W.G. enamelled wire are required. 70 turns of 28 S.W.G. wire on a 2in. diameter former can be used when size is of no importance and will give a very slight increase in efficiency.

The wavelengths given for the short-wave coils are those obtained with a .0001 mfd. tuning condenser, which is the best value for short-wave reception. A .0005 mfd. condenser should be used for medium-wave reception.

Broadcast-band Choke

Figs. 1 and 3 show the construction of a high-frequency choke for the normal broadcast-band receiver. Such a choke must have a high inductance and low self-capacity, and this is obtained by dividing the winding into sections.

A small ebonite base about 1½in. square is needed to hold the two terminals, their heads being countersunk into the bottom of the ebonite. The ¼in. diameter tube upon which the choke is to be wound can easily be mounted by drilling a ¼in. diameter hole in the base, so that the tube is a push fit into it. When finally fixing, the tube can be glued into the hole.

Eight cardboard washers must be cut, 1in. in diameter and with a ¼in. hole in their centres. These may be easily and accurately made with two centre-bits, cutting out a 1in. diameter disc with a 1in. bit, then removing the centre piece with a ¼in. one.

Push the discs upon the tube, spacing them at ¼in. intervals as shown. They should then be painted round with glue and allowed to adhere to the tube.

Winding the Wire

When dry, the space between pairs of discs should be filled with 40 S.W.G. wire, as shown. It is not necessary to count the turns, merely winding until the sections are full. All sections must be in the same direction, and the wire taken into each new section when winding by making a slit in the cardboard washer.

If this is not done, the wire at its point of entry to each section will be sandwiched beween the washer and the winding in that section, giving a capacity detrimental to the performance of the component.

One end of the winding is taken down the centre of the tube and out through a small hole to connect to the terminal. The wire from the lower section goes directly to the other terminal.

Write to the Editor of any special article you would like him to put in these pages

Books to Read!

Here are reviews of some of the recent books published of interest to our readers. They can be purchased from booksellers or direct from the addresses mentioned.

Toys from Scrap

by W. Lee.

THE question of what toy you can make for a youngster's birthday has been solved by many of the articles in these pages. It can also be solved by the several suggestions in this book also, particularly as the materials needed are usually odds and ends of scrap found about the house or workshop. There are no less than 20 different models to make—all quite simple and requiring but little material. Whilst not so accurate in detail as our own models, they form a ready toy for the youngster—either to pull along on wheels, or to work at as a stationary piece of mechanism. Both drawings and instructions are clear and plain, suitable for the very beginners to follow.

(*Published at 3/6 by Useful Publications, 37 Aldwych, London, W.C.2*).

Mechanical Engineering

by James T. Cooper.

IF you are thinking of taking up engineering as a career, or have any leaning towards it as a hobby this is certainly the book to get and study. Not that it is a terribly technical tome of uninteresting pages —rather does it deal plainly and easily with the elementary needs and beginnings. It has chapters on all operations the beginner is likely to need —reading, drawings, tools required, templates, taps and dies, working metals, soldering, lathework, gear trains and so on. Being well printed and bound the book can take the frequent handling likely to be called upon by such a useful manual.

(*Published at 5/- by Vawser and Wiles, Guardian House, Walthamstow, E.17*).

British Journal Photographic Annual

THIS hardy annual loses none of its fascination for anyone at all interested in photography. Its contents are principally technical for the keen professional, but its 388 pages are certainly packed with information, instruction and interest. A prophetic editorial deals optimistically with the Field of Photography Tomorrow and shows what marvellous strides science has made, and what the public will expect and receive as a result. New methods, processes and gadgets for the varied branches of photography are described in "Epitome of Progress" whilst in the glossary are explained chemical and photographic terms in current use.

(*Published at 3/6, by Henry Greenwood and Co. Ltd., 24 Wellington Street, Strand, W.C.2*).

Commercial Model Making

by P. R. Wickham.

SOME time ago we pointed out to our readers some of the opportunities there are in the field of commercial model making. This new publication extends that field of thought and covers in a practical and helpful manner the many interests which must develop for any keen reader. There is undoubtedly much scoop for the enthusiast, and a worth while hobby could even be turned into a profitable business from a study of the suggestions put forward. Chapters deal with block models, card, wood, and clay as a medium and covers the need of scenic interior, display, exhibition, windows, etc., with a clarity made greater by practical and simplified drawings. There is no doubt the clever and capable model maker in these materials and fields could find a lucrative career. Imagine the demand for such work amongst architects, municipal authorities, rail and shipping companies, industrial concerns and estate development. The book should be the means of providing wider knowledge in a profitable sphere to anyone who desires to make it such.

(*Published at 5/- by Vawser and Wiles, Walthamstow, London, E.17*).

The Book of Miles Aircraft and the Book of Westland Aircraft

compiled by H. A. Lukin.

THERE are not many of our readers who do not know the joy of model aeroplane making; the popularity of our designs is proof of that. But this new series of books, edited by that well-known expert D. G. Russell, produces a new idea we can put before them. Why not make a range of models of the planes produced by one firm and so show the progress and change from pre-war days? Take the two books mentioned. The firm of Miles Aircraft Ltd., have since 1933, produced over 20 different types of plane, including many record breaking aircraft and some of the best-known trainers in the country. The book is large in size, and has complete scale planes, with clear photographs of each of these machines, in addition to interesting

Model Yachts on the Lawn

HERE is a novel suggestion sure to appeal to readers, for which we are indebted to S. W. Nobbs of Norwich. He took the photograph, which almost explains itself, on the lawn of Lt. Col. P. W. Daniel. It provides an entertaining wind roundabout quite easily made. The centre pin, seen between the two model yachts, rests within a hollow spindle which is driven into the supporting post. The whole revolves in the breeze, a change in the direction of the wind causing the sails to swing over with realistic effect. During inclement weather the plank can be lifted, complete with model yachts, from the supporting post and stored under cover.

in the kerf and the blade thrust downwards. It is then drawn upwards and pushed down again (always with both hands, these also pressing the teeth against the wood) until the sawing action proceeds smoothly and rhythmically.

The Panel Saw

A panel saw is the "wee brother" of the ripping saw. It, however, can be used with the grain and across it. Such a saw (Fig. 2) is, as the name implies, used only for cutting thin panels of wood, such as plywood panels, etc.

Panel saws have twelve teeth to the inch. The blade is thin and flexible, enabling one to almost cut wide curvatures in boards. Such saws are ideal for cutting across ¾in. thick wood particularly if a nett length is desired; there is an absence of a splintered, raggled edge, this resulting if the ripping, or cross-cut saw is used.

The panel saw is held the same as a ripping saw. The sawing should always be almost vertical with the work. An acute angle will mean that, in a ¾in. board, you are actually cutting through 1¼in. to 2ins. thick stuff. Never "dig" a panel saw into wood, especially thin wood; the teeth are inclined to be forced through the wood instead of cutting through so that the blade becomes firmly wedged.

The Tenon Saw

There are various sizes of tenon saws, the blades ranging from 8ins. to 14ins. A 12in. tenon saw is shown at Fig. 3 the blade having twelve teeth to the inch. Such saws are generally used for cutting wood held in a vice or on a bench-hook. They are also handy for cutting mitres in mouldings.

Owing to the steel (or brass) back, it is impossible to use tenon saws in the same way as ripping saws and panel saws. The stiffened back keeps the blade dead straight—a feature highly desired when cutting shoulders and tenons, or in making a butt-joint, grooving, etc. The tenon saw is also handy when coarse dovetailing is wanted in work.

The Dovetail Saw

The dovetail saw needs hardly any comment, except to say that it is much finer and smaller than a tenon saw. One can cut dovetails with it in the thinnest wood. When "sinking" hinges in the edge of lightly-constructed doors, the dovetail saw (see Fig. 4) will be found more suitable than a tenon saw.

The saw at Fig. 5 is not to be confused with the dovetail saw, nor is the saw at Fig. 6 to be coupled with the panel saw. These two implements are saws designed for the needs of plumbers who often have to cut away floor boards and cut slots in joists. The panel type of saw is double-sided, one having fine teeth, with the other side coarse.

At Figs. 8 and 9 you see examples of "dovetail" saws used mainly by electricians. One (Fig. 8) is a metal-cutting type, whereas the other has an extended front which enables the teeth to cut up close in awkward corners.

The Padsaw

The padsaw, often referred to as the keyhole saw, belongs to the "piercing" group. Its contemporary is the combinating saw at Fig. 7. Of the two, the latter is the best, as all kinds of jobs can be undertaken.

When using the padsaw, the work should be held in a vice so the handle can be firmly gripped with both hands. As the thin, tapered blade is easily buckled, care must be taken not to force the blade too much. Above all, the blade must be a tight fit in the handle, whereas the teeth must be quite sharp to prevent undue pulling and pushing.

In internal cutting, a hole—taking the widest end of the blade—should be bored. Never force the blade to cut tiny circles; this tends to put a twist in the blade, obviously.

Try not to overheat the blade through severe friction. This invariably occurs when cutting in tough woods and the heat is inclined to "soften" the temper of the steel which, incidentally, is already rather soft to prevent the blade from snapping in half when bent.

A padsaw holder and sawblade is shown at Fig. 10. The same holder is also suitable for holding hacksaw blades, as you can see.

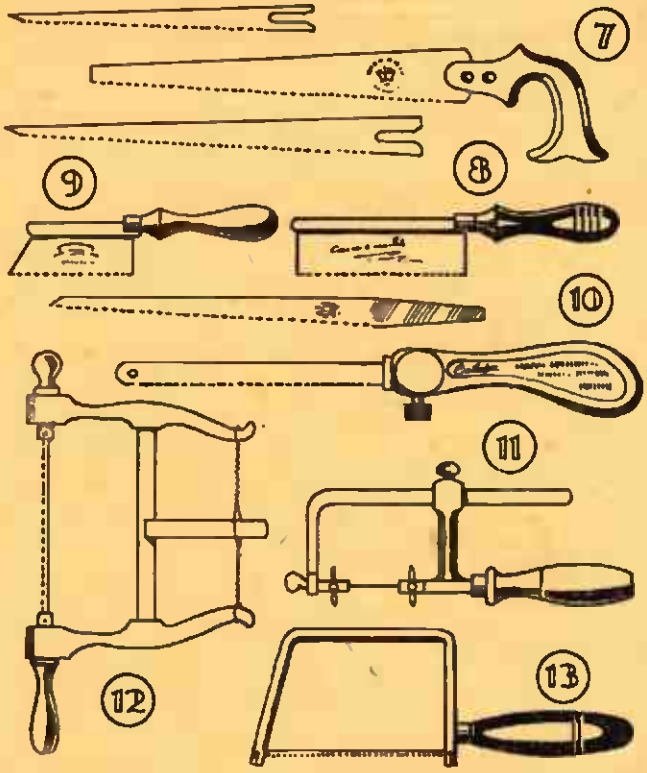
The bow saw is shown at Fig. 12. Its blade, unlike the pad saw blade, is hard-tempered and thus easily broken. As you may know, a bow saw consists of a handled wooden frame, the ends of which support the thin, narrow blade. Tension is obtained by twisting the cord by means of the small bar of wood, this going against the cross-piece to prevent the cord unravelling.

The bow saw, in use, is operated much in the same way as a padsaw. It is possible to "twist" the blade to suit the convenience of the user. It is usual to clamp the work in a vice so the bow-sawing can be executed on a horizontal plane.

The bow saw, indeed, is not unlike the fretsaw handframe. It can be used much the same, but while the work can be put over a stool, to project, with the knee (or foot) to support the work, both hands cannot be brought into use too well and it is sore on the back to keep sawing for any length of time. Far better—and easier—to clamp the wood to be shaped in the vice.

A piece of candle (not wax) rubbed on the teeth of a bow saw blade facilitates its action in the wood should the going become stiff. This also applies to padsaws. The saw at Fig. 13 is a scroll saw, or coping saw, which is used in the same manner as a bow saw. It is lighter and easier to handle than the bow saw.

The other "piercing" saw (Fig. 11) is a metal-cutting type which takes a fine blade like a fretsaw blade. It can be used as a fretsaw handframe, being adjustable in the length only.



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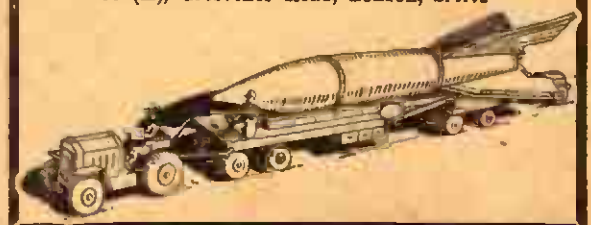

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