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Hobbies

THE
FRETWORKERS' WEEKLY.
For All Amateurs & Craftsmen.

VOL. XXXIV. AUGUST 3, 1912. No. 877.

Hobbies
A WEEKLY JOURNAL for AMATEURS of BOTH SEXES

VOL. XXXIV. No. 877. AUG. 3, 1912.

THIS WEEK'S PATTERN SHEET.
OVERLAID PHOTO BRACKET.

THE design printed on the supplemental sheet this week is for an undeniably handsome bracket having three shelves and a central frame for a photograph. It will be embellished above the upper shelf with a striking copper overlay in relief, of a classic design.

This bracket will look additionally handsome if cut in a nice piece of dark walnut. In dimensions it is 12¼in. high by 15¼in. wide, while the greatest projection of the shelves is 2¾in. All parts will be cut from wood 3-16in. thick, with the exception of the photo. overlay and the spandril under the upper shelf, both of which will be cut from wood ⅛in. thick.

No. 877.—OVERLAID PHOTO BRACKET.
SIZE 14¼IN. BY 12IN.

The Cutting.

Most workers know that when cutting dark walnut they are handling a much harder wood than usual, and the result is that they should select a rather stronger and therefore coarser saw blade for the purpose than would be the case if they were cutting such a wood as satin walnut.

With the exception of one of the small side shelves, for every part required a pattern is printed on the design sheet, thus doing away with the necessity for tracing. In regard to the small shelf referred to, we suggest that when the first has been cut, it should be used as a templet or pattern from which to produce the second. A sharp-pointed pencil should be used for making the second pattern direct on to the wood.

As some fretwood varies in thickness, it is always expedient to cut all the tenons for the joints before the slots, in order that the size and position of the tenons may be tested against the slots before the latter are executed. One point in cutting out should be remembered, namely, that this is a wood with a strong open grain; there is, therefore, a liability that when the saw has cut across the grain and it turns to run with the grain, it will have a tendency to be guided by the grain of the wood, therefore special watchfulness is necessary to prevent this.

When cutting the circular opening for the photograph at the back, the hole should be drilled on the line, and the saw kept rigidly to the latter, as this section will need to be used for placing at the back of the photograph.

When all parts have been cut out, the whole should receive a good sandpapering, but in no case should the sandpaper be permitted to operate across the grain—always with the grain. When cleaned up, the question of finish has to be considered, and as we have so often pointed out, no more attractive finish can be adopted than French polishing. This

should be accomplished before the various parts are fitted together.

Construction.

The various parts will be glued together in the following order:—The two double brackets will be glued into slots *b* and *c*; next the single brackets will be glued into slots *a*, after which the ⅛in. thick spandril will be made to join up the two sides by halving at slots *h*. The three shelves will now have to be glued into position and lastly the overlay for the photograph opening.

The metal overlay, which may be obtained, together with the glass for the photograph, from Hobbies Limited, will be fixed by means of either fretpins or round-headed screws—copper preferred.

Fretwood and Fittings for this Week's Design.

FRETWOOD.—We supply a special parcel of DARK WALNUT throughout for 1/9 post free. (Weight 1lb. 10oz.)
COPPER OVERLAY:—No. 5406, 7½in. by 2in., price 1/-.
Clear Glass:—No. 5806, 3½in. circular, 1d. Postage on Overlay and Glass 2d. extra.

Orders by post to HOBBIES LTD., Dereham, or HOBBIES LONDON DEPOT, 166, Aldersgate St. Goods may be had at:
London: 166, Aldersgate Street, E.C.
" 147, Bishopsgate, E.C.
" 79, Walworth Road, S.E.
Glasgow: 326 and 328, Argyle Street.
Manchester: 10a, Piccadilly.
Birmingham: 9a, High Street.
Leeds: 15, County Arcade.
And of all HOBBIES Authorised Agents.

BRITISH SOCIETY OF FRETWORKERS.

A NEW COMPETITION.

THE British Society of Fretworkers announce a new competition for members and associates. Although the last date for receiving entries is not until October 19th, we are nevertheless making the announcement now in order that members and associates of the B.S.F. residing in British Colonies and Dominions across the seas may have an opportunity of competing. It will, therefore, be wise of such to enter this competition in good numbers in order to confirm this action of the officials of the Society on their behalf.

The Subject.

The subject selected for competition is HOBBIES Design No. 872—the Hand Mirror. This is ideal for the purpose, as it is small and flat, and can, therefore, be easily packed for travelling.

The Awards.

FIRST.—B.S.F. Silver Medal, and a Special Prize of an A1 Fretwork Machine presented by Hobbies Ltd.

SECOND.—B.S.F. Bronze Medal and 1 gross fretsaw blades.

THIRD.—B.S.F. Bronze Medal.

B.S.F. Certificates will also be awarded.

The Conditions of the Competition.

1.—The competition is open to members and associates of the B.S.F. only. Others desirous of competing can only do so by first joining the B.S.F.

2.—The hand frame may be executed in any suitable material.

3.—The work will be judged on the merit of the cutting and finish.

4.—The usual B.S.F. entry form should be used and forwarded with the entry, stamps and a return label being sent also.

5.—All entries must be received by the Official Examiner, B.S.F., Dereham, Norfolk, by October 19th.

Materials.

Hobbies Ltd., or their branches and agents supply the following for this Hand Frame:—

FRETWOOD.—Parcel of Dark Walnut and White Holly for the Mirror and Satin Walnut for the Match Bracket, price 1s. 8d., or post free (inland), 2s. (weight 1lb. 1oz.).

MIRROR.—No. 5730, Oval with Bevelled Edges, price 1s. 6d., or post free 1s. 9d.

Or as alternative materials for overlaying:

IVORINE.—Panels of Ivorine, 6in. by 12in., are supplied at 1s. 4d., or post free 1s. 6d.

BRASS.—Panels of Brass, 6in. by 12in., are supplied at 1s., or post free 1s. 3d.

Competitors in Australia, New Zealand Canada, India and Ceylon can obtain their materials through the post direct from Hobbies Ltd. The postage charges would be as follows:—

AUSTRALIA.—Fretwood and Mirror, 1s. 6d., or with Brass or Ivorine Panels, 2s.

CANADA.—Fretwood and Mirror, 1s. 2d., or with Brass or Ivorine Panels, 1s. 8d.

NEW ZEALAND, INDIA AND CEYLON.—One shilling will cover Fretwood and Mirror and also Brass or Ivorine Panels.

The Editor's Note Book

The Holiday Month.

THIS is the holiday month, and we are all anticipating, I hope, at least some short respite from the duties of our business life. People who indulge in hobbies are not of the class, usually, who consider holidays unnecessary. The indulgence in a hobby is almost as good as a holiday, if we look upon recreation as such, but apart from the indulgence in some handicraft, we all need what is called a "change of air" and scene. Enthusiastic amateurs will always find a way of indulging some form of hobby while on holiday. Some, for instance, will employ their cameras to good effect. Many will go in for one of the popular collecting hobbies, such as fossil-hunting, nature study, wild-flower collecting and pressing, etc., for every true holiday is not necessarily intended to be a state of laziness, but should be utilised in the direction of the increase of one's knowledge.

One of the most indispensable requisites is a handy note-book, in which to make jottings of various matters which come under notice. Apart from the information secured and stored in this manner, such a record would prove of considerable interest as a reminder of pleasant days spent. We wish the best of weather for all our readers when it comes to their turn to "go away."

INSURANCE CARD RACK.
Next Week's Fret Design.

Insurance Card Rack.

THE Insurance Act has now been in operation for several weeks, and we are all becoming conversant with its operation, as it affects ourselves and those around us. It becomes apparent that many insured persons require some definite place in which to keep their insurance cards and books, in order that they may not be lost. We have, therefore, designed a neat Insurance Card Rack, which may be produced in fretwork. It is illustrated in the centre of the page, and will make its appearance on the supplemental design sheet published with next week's HOBBIES. This rack will be especially suitable for those employed in small concerns where bulk stamping is not in vogue, and for the entire class of voluntary contributors.

SPEAKING of fretwork designs, we draw the attention of our readers to those designs illustrated on the centre two pages of this week's HOBBIES, and we advise those who are on the look-out for some striking and elaborate fretwork design to execute to go in for one of those illustrated. Hobbies Tram Car, especially, is extremely popular with all classes.

Photographic Competitions

THE subject of the Photographic Competition for August is Fruit, Flowers, or Still Life. We hope, well before the competition closes, to publish an article dealing with this subject, but it should provide excellent practise for the improvement of the work of many of our Photo-Students, especially beginners; for, in experimenting with the correct lighting of a still subject, they secure valuable experience.

While these monthly contests are exclusively for HOBBIES Photo-Students, there need be no bar for any reader who desires to enter, for it is a perfectly simple matter to join the circle by sending an application to the Editor of HOBBIES, accompanied by a remittance of 6d. The present competition will not close until the end of August.

WE call the attention of our readers to our Sale and Exchange page. The charges for advertising on same are extremely moderate, and without exception, those who use these columns find them a very profitable medium.

THE EDITOR.

A WIRELESS TELEGRAPHIC INSTALLATION

Hobbies Special

ITS CONSTRUCTION & WORKING.

2.—THE INDUCTION COIL.

THE word induction is used to indicate the electrification of a neutral body by bringing the latter close to an electrified body without touching it. In order to make the action of the coil quite clear a diagram is given at Fig. 1 in which the essential parts are shown. The soft iron core is indicated at *a*, surrounding it is a coil of

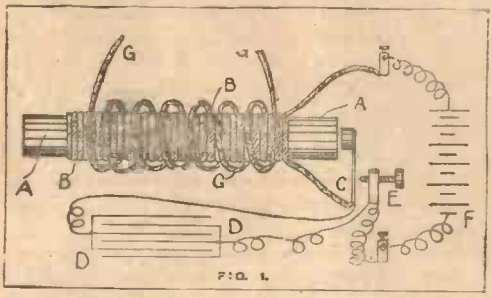


FIG. 1.

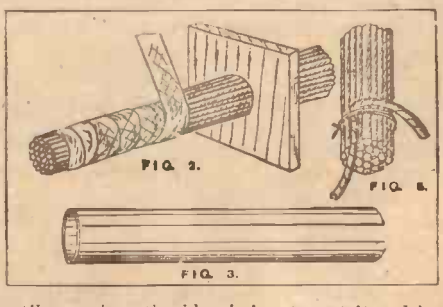
insulated wire as shown at *b*, one end of this coil, which is termed the primary, is attached to one portion of the contact breaker as indicated at *c*, and is continued to a condenser *d*. Continued from this portion the wire is attached to the other part of the contact breaker at *e*, and then a wire from *e* is attached to one terminal of a battery *f*, the other end of the primary coil being attached to the other end as indicated.

The action of the coil may now be followed, for when the two parts *c* and *d* are in contact the current from the battery will cause the iron core to become magnetised and draw the iron armature at the upper part of *c* to it. Turning our attention again to the diagram it will be seen at *g* that a second coil of wire is wrapped round the primary. This secondary coil has, directly the circuit is complete, an induced current running in an opposite direction to that in the primary, and this has the effect of weakening the current in the primary (for it is impossible for opposing currents to travel along this same wire without affecting one another). The result of this is to demagnetise the core, but immediately, owing to the construction of the contact breaker, the primary is again charged and the action is continuous while the battery is in action.

Directly the armature has been brought into contact with the core it will be seen that the circuit is broken, for the points at *d* are not touching. This is termed the break; and when it is touching it is said to "make." Another point to remember is that each single turn of the primary wire acts to its neighbour in the same way that the primary acts on the secondary, that is it induces an opposite current. Now it will be understood that at the instant of "make" the direction of the induced current in the secondary coil is in the opposite direction to that in the primary wire. It has also been shown that this is also the case in the primary coil, owing to the action of its own turns, so at "the break" the two currents flow in the same direction and become very much stronger. To reduce the effect of this stronger current the condensor *d* is brought into use, its main object being to store up the surplus current formed at the "break," and when the circuit is again made to augment the battery current.

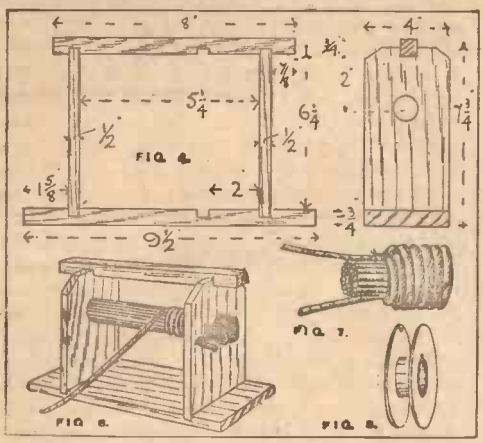
Making the Core.

As our coil is to have a ½in. spark it will be necessary to provide a bundle of soft iron wire; 6in. long and ½in. diameter. We shall need about 3½ozs. of No. 24 S.W.G. pure iron wire (which may be obtained from The Economic Electric Co., Twickenham, London, ready annealed), this being cut into the correct lengths and carefully annealed. This is done by tying it up and placing it in the reddest portion of a fire the last thing at night and leaving it



until morning, the idea being to get it red-hot and then let it cool very slowly. Another method is to place the wire in a short length of iron gas piping fitted with screw caps at each end, the piping is then heated in a charcoal fire and allowed to slowly cool. After the wire has been annealed each piece should be rolled between two boards so as to render them quite straight. There are now two ways in which the core can be completed, one is to place the pieces together in a piece of wood as indicated at Fig. 2 and bind them tightly together with tape, leaving a projection of 5-16in. at one

end and 7-16in. at the other. The other method is to make a paper cylinder as shown at Fig. 3 and fit the wire in it; this arrangement is simple and it also makes a very neat core.

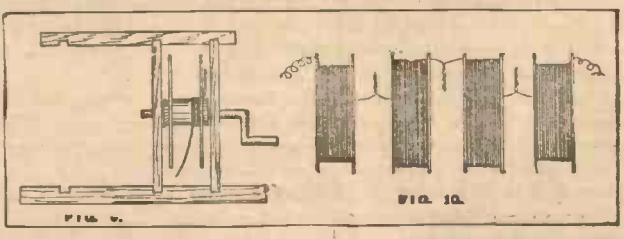


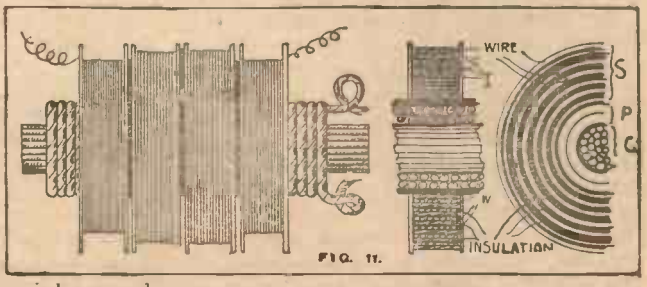
The best way to make the cylinder is to procure a perfectly round piece of wood or metal (tubing will do) about 8in. or 9in. long; next take a strip of fairly stout manilla wrapping paper just 5¼in. long. Roll one end of the paper round the cylinder until it is covered, and as the rolling is continued apply glue or shellac. The thickness of the walls of this paper tube should not exceed 1-16in., and when this amount is reached, the ends should be bound with cotton, and left to dry. When quite dry the pieces of wire may be inserted in the tube, leaving the stated amount at each end. As many lengths of wire as possible should be pushed into the tube, the last few lengths being oiled so as to facilitate this.

A bath of equal parts melted paraffin wax and resin should now be prepared, care being taken to melt it in a vessel surrounded by hotwater. The core should be held by means of two loops of cotton, dipped into the bath, and removed when the wax begins to solidify. It should then be suspended in a convenient place to dry and get thoroughly hard.

The core is now ready for the primary winding. For this we shall need about 18yds. of No. 18 S.W.G. double cotton-covered wire and a suitable winding device, as shown at Fig. 4. The latter arrangement may be dispensed with for the primary winding, but as it is essential for the correct winding of the secondary wire, a description of it at this stage will not be out of place. A piece of wood about 9½in. by 4in. by ¾in. forms the base, the two uprights are about 7in. by 4in. by ¼in. and fit into grooves cut in the base, so that they are 5¼in. apart inside. Two inches down in each side piece is the centre of a ½in. hole, and across the top is fitted a grooved cross piece as indicated. Prepare the core for winding by securely tying an end of the wire with thread as shown at Fig. 5, next place it in the holes in the sides of the winder and replace the cross bar. To form a handle take a 15in. length of stout wire and fold it round the projecting core, the ends should then be twisted until the core is held quite firm. A right-angle bend at the end will enable the whole piece to be turned round as shown at Fig. 6. The wire should be tightly wound on as evenly as possible, commencing about ¼in. from the end and continued to the same distance from the other end. At this stage both the handle and the wire should be secured so that they do not move, and the layer of wire coated with either shellac varnish or paraffin wax, and allowed to dry. Still winding in the same direction a second layer of wire should be run along, the coils being just as tightly and closely wound as in the first winding. Secure as before and coat in the same way, but in this case tie the end on the opposite side of the core to the other end as indicated at Fig. 7, and leave the ends projecting in the direction of the core as shown.

Before the secondary winding is commenced it is necessary to thoroughly insulate the primary, and this may be done in several ways. The easiest is to entirely cover the primary with a tube of ebonite, this will cost about 1d.





ILLUSTRATIONS.

FIG.
1. Diagram showing the different parts of the coil.
2. The method of binding the core.
3. Cardboard tube for an alternative method.
4. Front and side elevation of winder.
5. Tying the first length of primary wire to the coil.
6. The winder with primary winding started.
7. The method of completing the primary winding.
8. The bobbins to carry the secondary winding.
9. The winder with the bobbin in position.
10. The method of fastening the bobbins in series.
11. The coil with the windings completed, together with sections across and through.

per inch; another method is to cut a 30in. length of manilla paper calico, 5½in. wide, and wrap it very tightly round the primary winding, securing the last edge in the case of fabric by sewing it. Soak the whole thing in hot paraffin wax, and keep it immersed until there is no trace of a bubble anywhere, and then stand it on end to harden. When the core can be handled a paper cylinder should be made to fit it, this being made with manilla paper in the same way as suggested for the tube holding the soft iron core. Take off the tube to harden and cut four sections, each 1in. long, and fit on the end of each section a cardboard disc of 2¾in. diameter, securing them with glue. In this way we have provided four bobbins of the shape illustrated at Fig. 8, on which the wire for the secondary winding is run. About 3in. from the top of the sides of the winder bore a hole to take a piece of stout iron wire, also make another groove in the base and the cross piece just about 2in. away from one of the others. Fit a piece of cork at the ends of one of the bobbins and push the length of stout iron wire through them, thus forming an axle. The wire is now placed in the winder and one end bent as indicated at Fig. 9. With a red-hot needle equal in diameter to the wire used make a hole through the right-hand disc close to the cyclinder and another on the other side close to the circumference.

We shall now require about ¾lb. of No. 36 single cotton covered wire (silk covered is to be preferred, but it costs more than half as much again); this is the most expensive portion of the coil and will cost 3s. 2d. per lb. A few inches should be threaded through the small hole at the base, and then a layer of wire wound to the other side. Secure the wire and handle, cover the wire with paraffin wax and then with a piece of tough newspaper, which should also be coated with the wax. Continue the winding again until the first side is reached; again and again coat with wax and cover with paper, continuing this until the bobbin is filled up to within ⅛in. or so of the top. The wire should now be cut off, and the end threaded through the top hole, leaving about 6in. It will be seen that to allow the end of the wire to be finished at the left side an uneven number of layers have been turned. The other three bobbins should now be treated in exactly the same way, and when they are finished the four should be placed in the hot wax until they are thoroughly soaked and the wax has penetrated every part and formed each bobbin into a solid mass. It is considered an advantage to have a little more wire on the two middle coils than on the outside ones, but in a small coil it does not make very much difference. The small coils should now be placed on the primary winding in the position shown at Fig. 10, the ends of the wires bared and joined together as indicated. After being scraped and then soldered up, the joined portions should be covered with a little tape, covered with shellac and pushed in between the cardboard discs as they are closed up together towards the centre of the coil, as indicated at Fig. 11, which also shows sections across and through the windings.

The whole thing may again be dipped into the hot wax, but it is not essential. This completes the secondary winding, and its accuracy may be tested by connecting up the primary wires to a battery and holding the secondary wires about 1-16in. apart. If a spark results the work may be considered quite satisfactory.

The next article will contain full instructions on the method of mounting the coil and attaching the contact breaker and the condenser.

(To be continued.)

HOLDING FISHING ROD JOINTS TOGETHER.

THE addition of two or three screw-eyes properly placed in a jointed fishing rod of the ordinary type will prove decidedly worth while, as the joints will often pull out easily when they should not and stick tightly when they should pull apart.

Assemble the rod and bore small holes through the brass sockets into the joints as shown in Fig. 1 and place some screw-eyes into the holes. Mark the joints so that the holes in the joints and holes in the brass sockets will always be in the same position.

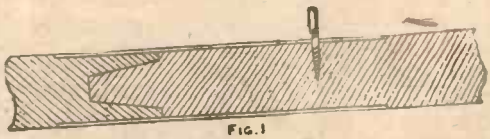


FIG. 1

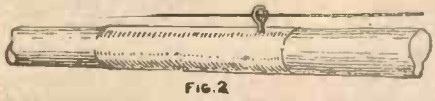


FIG. 2

The screw-eyes prevent the joints from pulling out when an effort is made to free the line from some object in which it has become entangled. They also act as guides for the line. Should the joints fit too tightly, scrape the ends until they slip easily into the sockets, as the screw-eyes will hold them properly, even if they fit a little loose after the scraping

Readers should remember that Hobbies Helping Hand is always stretched out to assist them with information.

COLLAPSIBLE GARDEN SHELTER - (Cost 8/6)

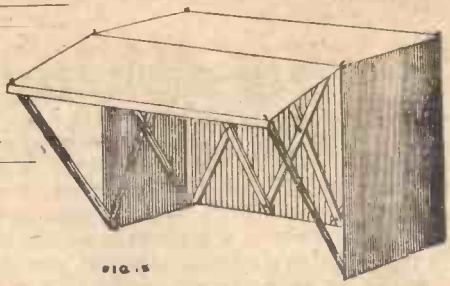
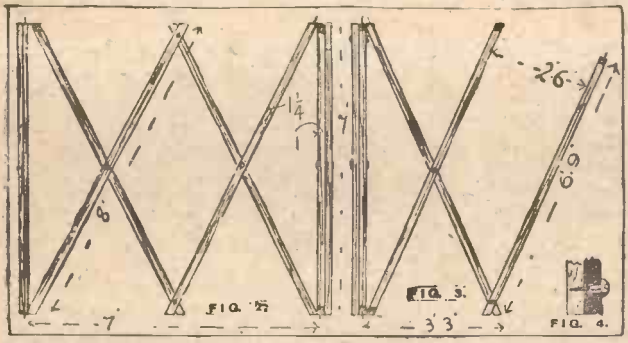


FIG. 1.

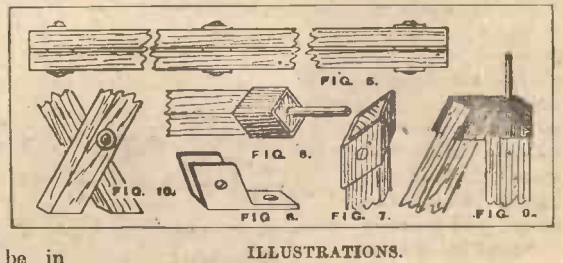
IT is not always convenient to have a summer-house in the garden, but a small shelter light enough to be carried about from one part of the garden to another will be found very useful. It will be seen at Fig. 1 that the shelter is composed of a trellis-like frame and covered with a suitable material, and as the inside dimensions are 7ft. by 3ft. 3ins. without counting the awning, it makes a very roomy place.

The method of construction is shown in the front and end elevations at Figs. 2 and 3, and it will be gathered that the woodwork is made up with 8ft. lengths of 1¼in. by 1in. batten, the



supports for the awning excepted, these being 6ft. 9ins. in length. The best way of providing the strips of wood is to purchase 42ft. run of 3in. by 1in. batten in 8ft. lengths, saw them down the centre and then plane up to the correct width. The lengths may be joined together with screws, as shown at the section given at Fig. 4. In this case it will be necessary to bore a hole in one piece slightly larger than the diameter of the screw in order to allow of free movement. A much stronger form of construction is to use rivets with thin washers, as indicated at Fig. 5; there is no possibility of the frame coming apart and the joint will be much stronger.

To mark out the pieces it will be best to place 8 lengths together and mark the middle of the wood distinctly so that the holes may all be in exactly the same position, a line should also be marked 3ins. from each end for the same purpose. Next bore holes in the positions required to take either the screw or the rivet, whichever is decided upon. The next stage is to prepare four plates, as shown at Fig. 6, these may be of thin sheet iron, or sheet brass, and are 3ins. long at the base with the sides about 1½ins. or 2ins. high. These pieces are screwed to the ends of two lengths, and to strengthen the ends of the pieces which are attached to them it will be necessary to make ferrules of similar material, as indicated at Fig. 7. In the end of these pieces drive a stout French nail and file the top off as shown at Fig. 8, this will give a strong hinge as indicated at Fig. 9. The several lengths may now be joined together, a detail of one of the lower joints is given as Fig. 10. The constructional work is so easy that further instructions should not be needed, so we may proceed with the covering. This part of the shelter need not be anything better than ordinary unbleached calico, and as it may be bought for 2¾d. per yard, it will not amount to much. The stuff should be joined up so as to make a complete cover for the frame, and it will be found that 22½ yards of 27in. wide calico will be sufficient. The outside edges should be bound with the same material, and at each of the six top corners the necessary holes should be strongly button-holed. The wood should not cost more than 2s. 3d., the calico will be about 5s. 2d., this will leave 1s. 1d. for the metal brackets and screws.



ILLUSTRATIONS.

FIG.
1. The completed shelter, showing an extra pair of pieces of wood to make a 10ft. long shelter which would not cost more than 2s. 6d. extra.
2. The front elevation.
3. The end elevation.
4. Section of screwed joint.
5. A stronger method of joining the frame by means of rivets.
6. The metal brackets.
7. The metal ferrules.
8. The wire nail on the ferruled end.
9. The hinge in position.
10. One of the lower joints.

MANY readers are spending their annual holidays at the seaside, and although in the exuberance of their joy at finding themselves in sight of the "briny," they find delight in watching the unwonted scenes on the shore, there comes a time when they are glad to have some "hobby" to occupy their attention. At the seaside they may revel among the common objects so profusely scattered about, all round our coasts. Some of Nature's treasures, freely bestowed, may have hitherto been passed with scarcely a glance, yet on examination most of them will be found full of beauty!

What There is to Collect.

These collectable curios include shells which may be picked up at one's feet, fossils which come tumbling down the crumbling cliff, little land shells on the chalk downs and amidst the sand hills bordering the coasts, seaweed radiantly beautiful with rich colourings as it floats in the rocky pools, choice little ferns growing between stones and on moss-covered banks, wonderful little creatures belonging to the animal kingdom which are only seen near the sea, and gulls and sea fowl affording healthy amusement for the boys who seek to collect their eggs. Girls, too, may share in the chase after gorgeously painted butterflies flitting about from bush to bush and flower to flower, and may net curious crabs and fishes in the shallows near the sea at low tide.

Nature teems with amusement and pleasure to the seaside excursionist and the holiday visitor who start with the determination to enjoy it.

What shall we collect? is naturally the first question heard when collectors' hobbies are mentioned. Some prefer to linger on the beach, others may choose a ramble on the downs, or some of the more adventurous may prefer to scramble over the rocks and investigate the deep-water pools and dripping caves at low tides. All can be satisfied and each one can pursue his or her own bent.

Those who take a walk along the shore when the tide has just turned, and a fresh ridge of weed or rubbish has been deposited at high-water mark, can always add to their collections. There will, probably, be found many beautiful shells, which will vary in form and strength according to the nature of the shore. The shells on such sandy beaches as Southport and Lytham on the Lancashire coast, are for the most part very fragile, for they are not subjected to rough treatment; hence there is no need for the fish to carry a stout shell like those required by the inhabitants of the beach on the opposite coast, where the rough waves dash over the stones at Blackpool. Then, again, round the north-eastern coast of England the shells, by no means numerous, are strong, quite different from the shells on the sandy beaches of the southern coast-line.

Even the most careless will have noticed that there are two distinct kinds of shells, known respectively as univalves and bivalves. The bivalves are formed in two pieces, hinged, opening and closing at the will of the fish. The univalves, all in one, are curious homes sometimes carried on the fish's back when it goes out of its retirement. Some of the shell-fish collectors hope to find do not go into deep seas and are easily secured at low water; others cannot be secured without a dredge, excepting when disturbed by strong winds and washed ashore by the incoming tide.

Local Differences.

What a contrast there is between the long spiral shells found on the Lancashire coast, and the curious little round trochus shells which in many different colours can be picked off the rocks covered with seaweed on the southern coast! Under bunches of weed beautiful tiny shells may be found, some of them brilliant in colour. They vary from white to dark red, some pink, others orange and crimson. There are many varieties with long names to distinguish them, but the collector at first may try to classify shells from their forms before he begins to learn their Latin names. Thus some have radiating lines from the hinge to the lip; others are scored in graceful curves all round. A dark green coating covers some, others are polished bright like the little cowrie shells of which there is only one variety in England, although very many in foreign waters. The varieties of oyster shells on the fishmongers' stalls may have been noticed, some of these belonging to the great family of pectens are coloured orange, red, white and dark purple, and quite a number of parasites, as they are called, adhere to them, including small specimens of the pearl-producing oyster, so irregular and curious in its form. The oddities of shells, and especially the "hunch-back" pecten, should be observed.

The habits of shell-fish are very interesting to watch; sometimes they can be seen carrying

(*Continued on page* 511.)

SHILLINGSWORTH

All articles described on this page may be made for 1s. *expended on material.*

A WOODEN FORM.

THE Wooden Form illustrated at Fig. 1 is most easy to make, and as only simple mortise and tenon joints are used to frame the parts together it could be confidently taken in hand by even a beginner in woodworking. An elevation of the form is shown at Fig. 2, a plan at Fig. 3, details of the legs are shown at Fig. 4, and the joints used in making the form are shown at Figs. 5, 6, and 7.

Deal is the most suitable wood to use, and the following will be required: One piece 4ft. long by 8in. wide by ⅞in. thick for the seat; two pieces 1ft. 5in. long by 8in. wide by ⅞in. thick for the legs; and one piece 3ft. 3in. long by 1½in. wide by ⅞in. thick for the rail. These pieces should first be obtained, and their edges should be planed up perfectly straight and square. The next operation will be to set out the joints between the rail and legs, and between the legs and seat. A simple mortise and tenon joint similar to that shown at Fig. 5 is used to frame the rail into the legs. The tenons should be cut the full depth of the rail, and be about ½in. wide, while the mortises are cut right through the legs. A double mortise and tenon joint similar to that shown at Fig. 6 is used to frame the legs into the seat. The tenons are cut the full thickness of the legs and are about 1¾in. wide, and the mortises are cut right through the seat. The dimensions to which the parts are framed together are indicated at Fig. 2. It will be noticed that the legs are 1in. wider apart at the bottom than at the top. This will make it necessary to cut the mortises and the shoulders of the tenons slightly on the bevel, and it will, perhaps, be found advisable to set out one end of the form full size upon a piece of paper so that the bevel may be obtained correctly. In cutting the joints, first cut the tenons with a tenon saw, after which the mortises should be cut, and the joints are fitted together. If the joints fit properly the seat, legs, and rail may be taken apart and cleaned up preparatory to being finally fixed together. The corners of the seat should be rounded as shown at Fig. 3, the edges should also be slightly rounded, and the edges of the legs should be shaped as shown at Fig. 4.


FIG. 1.

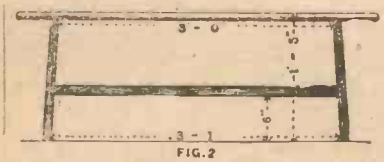


FIG. 2.

FIG. 3.

FIG. 4.


FIG. 6.


FIG. 5.


FIG. 7.

In finally fixing the parts together first fix the rail into the legs, after which the legs should be fixed into the seat. The joints should be glued and secured with wedges, which are driven into the ends of the tenons as shown at Fig. 7.

When complete the form may be stained and varnished, and this will greatly add to its finished appearance.

:: :: :: CRICKETERS SHOULD LOOK OUT FOR :: :: ::
"THE ART OF RUN GETTING," by MEAD, in "HOBBIES," AUGUST 17.

THE season of the race meetings has now been in full swing for some time. The recent outstanding events include the N.C.U. 100 Miles Championship (tandem paced) at Herne Hill. C. H. Bartlett, Polytechnic C.C., continued to display his wonderful form, and secured the race. He took the lead at 17½ miles, and remained in front to the end. He covered 50 miles in 1h. 44m. 56s., and the full distance in 3h. 43m. 25 2-5s. In the last ten miles Bartlett had a bad time, but recovered from it near the end, and beat the second man, Aaron Coe, Derby, whose time was 3h. 46m. 19 2-5s., by a mile and 250 yards. P. C. Gibbs, Spencer C.C., was third in 3h. 49m. 59 4-5s.; and F. H. Grubb, Vegetarian C.C., fourth, in 3h. 52m. 1-5s.

The Olympic Race.

English correspondents have not been very ample in their reports of the only cycling event in the Olympiad. Certain it is that the British team did not do nearly as well as we had been led to expect. The only two men out of the twelve who are supposed to have started who did themselves and their country credit were F. H. Grubb and L. Meredith, though the latter's unselfish action in staying 30min. on the road to attend to A. J. Stokes, who met with a serious accident, spoiled his chances. The South African, Lewis, who won the race, must be a rider of altogether exceptional merit, his time and his victory over such a fine rider as Grubb giving him a really remarkable standing, especially when it is remembered that he was out "on his own" for the whole journey, and never had the assistance of being paced. Nothing but unstinted praise can be given for such a performance. Grubb was second, only 9min. behind the winner, so that he did 30min. better than the previous best over one of the rockiest courses ever known in classic contests. The team race was won by Sweden, with Great Britain second, and America third.

Tandems.

Someone has asked if there is any special reason why in nearly every case the lady is behind on the tandem. It is not, as he suggests, because the man has the stronger nerve, and therefore is more capable of steering. There is a better reason than that. The steadiness and easy running of a tandem bicycle is greatly increased by having the heavier of the two riders on the front seat. When the reverse is the case, too much of the weight is on the back part of the machine, and the front is thus readily susceptible to any grease, and slips at the slightest provocation. With the heavier rider in front the weight is more equally distributed between the two wheels. It is this which causes the tandem with the lady behind to be in the greater favour, as, other things being equal, a steadier and easier-running pattern than that with the open front.

The Pedal Aeroplane.

Following so closely on the failure of the contestants at the Meeting at the Parc des Princes track in Paris to lift their machines off the ground at a height of 4in. to the distance of a yard, the success of Gabriel Poulain in propelling a pedal aeroplane of his own invention for a distance of 11ft. through the air is a feat that has scarcely received the publicity it deserves. On the failure of the many entrants for honours in the first contest critics took up the firm stand that human propulsion through the air was a thing to dream about, but was not in the realm of practical mechanics, and the rapid confounding of their pronouncement has had a very quietening effect on them.

One drawback to any considerable development of the Pedal Aeroplane is the fixed power-limit of a pair of human legs. While in the case of a mechanically-driven aeroplane the power can be increased to apparently any extent, the power generated by a pair of legs cannot be multiplied.

Cyclists' Census.

Revised official returns show that there are more than three million cyclists in France. The figures are reliable owing to the fact that each cyclist has to pay an annual tax of 2s. 6d. We have better means of raising revenue in Britain. Such a census is not possible in England, and any estimate of the number of English cyclists must be pure guesswork, with nothing definite on which to start guessing except the assumption, which may or may not be correct, that there are more cyclists in the United Kingdom than in France.

HOBBIES

Design 778-9. TRAM CAR. Price 4d.

Car 21½in. long by 12in. high. Standards 15½in. high.

Parcel Maple and Satin Walnut, etc., **3/6** Post free **4/-**

Fittings.—16 swing back fittings for seats, **6d.**, post free **8d.**; clear glasses (5819), for 14 windows, **8d.**, post free **11d.**; two brass rods, coil wire and screw-eyes, **3d.** Postage on all fittings, **4d.**

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Parcel of White Holly, **2/-** or post free **2/4**

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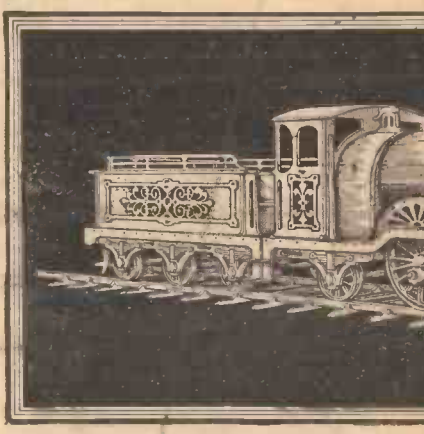

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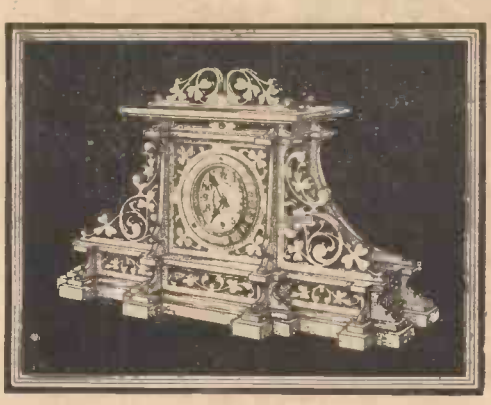

Design No. 838. CLOCK. Price 3d.

For this beautiful Clock we supply a parcel of White Holly and White Sycamore for base for **2/-** Post free **2/4**

Clock (5506), 30 hour, in Nickel Case, **2/9** Post free **3/-**

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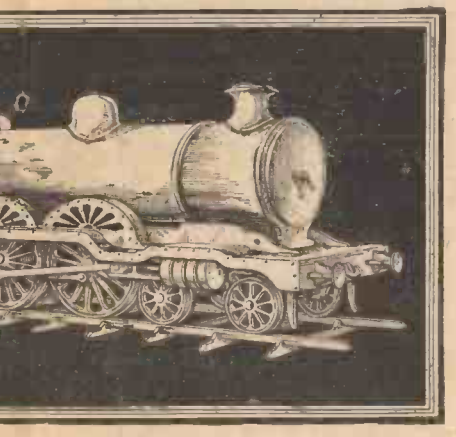
Fretwood—Parcel of Satin Walnut and Maple, **7d.** Post free **11d.** Two Bevelled-edged Mirrors (5707), and one Circular Mirror (5704), the set of **3, 9d.** Post free **10d.**



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parcel of selected Satin Walnut, turned wood Axles, for boiler, for **2/-** or post free **2/5.**

et, Smoke Funnel and Screws, 16 Wheels and Screws, eady for fixing for **5/-** or post free **5/4**

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OBJECTS.—To provide a systematic service for assisting its members with information and advice, the friendly and helpful criticism of members' work, to the end of increased efficiency and general improvement in the art. The services of an expert photographer have been secured on behalf of the circle, and all readers who are desirous of improving have their ideal chance here.

HOW TO JOIN.—The entrance fee will be 6d. Readers desirous of joining will fill up the form at the foot of this page and post it with a 6d. Postal Order or Stamps, to HOBBIES, Editorial Department, 125, Fleet Street, London, E.C., when their Card of Membership and Leaflet of instructions will be forwarded.

MONTHLY COMPETITIONS.—The Monthly Competitions, which have hitherto been open for every reader of the paper, will in future be open to members of the Photo-Students' Circle only.

PHOTOGRAPHY SIMPLY EXPLAINED.

8.—Chemicals and other Accessories.

HAVING a suitable dark room and a red light, one next requires chemicals with which to develop and fix the negatives and to produce the print. The things a beginner must have are developing and fixing solutions, dishes and a printing frame. Convenient accessories are a washing tank and a drying rack, but it is possible to do without these. As, however, they are not expensive, we strongly advise the beginner to have them.

The first item that needs consideration is the developer, and there are scores of different kinds, the most popular being hydroquinone, metol (singly or combined), pyro-soda, amidol and rodinal, also the ready-made trade solutions known as azol and certinal. Some prefer one, and some another; they work a little differently, but the negatives they produce are practically the same. If the beginner prefers to purchase his developer made up all ready for use, he cannot do better than obtain that known as metol-hydroquinone, also as M.Q., and metol-quinol, a developer which was fully described in HOBBIES, dated May 25. It is, however, cheaper to make up developers at home than to buy them ready for use, but if this work is undertaken a pair of scales and grain weights will be necessary.

The metol in the developer is expensive (half-a-crown per ounce), so when expense is a consideration the beginner cannot do better than use hydroquinone without the metol. The chemicals then required for making the developer would be:—Hydroquinone (about 8d. per ounce), sulphite of soda (4d. per lb.), carbonate of soda (4d. per lb.), and potassium bromide (3d. per ounce), the prices varying a little. Having the chemicals and the necessary scales and weights, the developing solution may be made up according to the following recipe:—

Sulphite of Soda	..	**2 ozs.**
Hydroquinone ..	..	**90 grs.**
Carbonate of Soda	..	**2 ozs.**
Potassium Bromide	..	**10 grs.**
Water to make	..	**20 ozs.**

Hot water should be used and the chemicals dissolved in the order named, sulphite first, hydroquinone next, and so on. When cold it is ready for use and may be used over and over again for scores of plates. We will, however, say more about it when the time comes to use it on a plate. We may, however, say now that the solution keeps good for a very long time.

Any spare chemicals should be carefully kept and labelled for future use. All the chemicals named above keep well in corked bottles.

There is only one other chemical required, and that is hyposulphite of soda, commonly

"HOBBIES" PHOTO-STUDENTS' CIRCLE.

APPLICATION FOR MEMBERSHIP.

To the Editor of "Hobbies," 125, Fleet Street, London, E.C.

Sir,—Please enrol me as a Member of the Photo-Students' Circle and forward Member's Card and Leaflet of Instructions. I enclose 6d. (Postal Order or Stamps).

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known as "hypo," which costs 2d. or 3d. per lb. Hypo is used for fixing both negatives and prints. It is sold in the form of crystals, and when required for use 4ozs. are dissolved in 1 pint (20 ozs.) of water, the mixture forming the fixing bath, the use of which will be described in a later chapter.

The above are all the chemicals one requires to produce a photograph by the simplest method, but there are several other chemicals which one will find useful, but as there is no need for them at the start, we will give their names and uses later on.

Dishes will be required for developing and fixing. Such dishes are of all shapes, sizes and materials. The amateur will do well to purchase two white porcelain dishes of the size required, and one dish of some other material, say vulcanite or papier maché, the latter being kept solely for fixing negatives, one white dish being for the developer, and the other for the prints upon paper. One might make shift with two dishes, or even one, but it is very unwise to use one dish for two entirely different solutions. Developing dishes should be used for no other solution, as they are rarely properly cleaned, and dirty dishes with traces of chemicals not wanted, produce failures in the shape of bad negatives and stained prints.

A printing frame will be required to hold the negative and sensitive paper while they are being exposed to light. As such frames are so cheap—from about 6d. upwards—the beginner had better have two or three. All the above are necessary in order to make photography easy.

Other accessories which are a convenience, but are not absolutely necessary, are:—A print trimmer, vignetting glass, negative box, exposure meter, glass measures, squeegee, mounts, all of which may be purchased as one progresses in the art of photography.

FACTORIAL OR TIME DEVELOPMENT.

DEVELOPMENT of negatives—not prints—by the time or factorial system may seem at first sight a little too difficult for the average amateur, and too scientific to be thoroughly understood, but it really is so very simple, that those who follow it cannot go far wrong when developing. It is the greatest assistance the photographer ever had offered to him, and it costs nothing. It was invented by Mr. Watkins nearly twenty years ago, and although it was at first looked upon with a little suspicion and its usefulness doubted, time has proved the method to be a very good one for all classes of photographers, more especially those who have little or no idea as to how long a negative should be developed. Developers and plates work differently, and temperature too is a prominent factor, but the factorial system solves most difficulties.

Explanation of the System.

The time or factorial system is based on the fact that there is a definite ratio between the time of the first trace of the picture after the developer is poured on, and the total time of development. That is to say, if one knows the exact time of appearance one can tell in a moment when development is complete without looking at the negative or taking it out of the developer. Developers all have what are known as factors, and it is necessary to know the exact factor number before one can develop by the system. Most plate-makers give the factors nowadays with their developing formulæ, if not there are other ways of finding out. One may, for example, ask us or even work it out himself. Now, suppose the factor of a developer one is using is known to be 5, it simply means that the negative must be developed for five times as long as it takes the very first trace of the picture—the highest light—to show itself. We take a watch having a seconds hand, and note the exact second the developer is poured on, we then note the time the image is first seen. Suppose it to be one minute, then the negative will be properly developed in five minutes. If the factor is 7 and the image appears in 30 seconds, then development will be complete in 210 seconds or 3½ minutes, and so on. Obviously the correct factor is very important. The factor holds good however much the developer may be diluted, provided the solution is weaked before it is applied to the plate, because increase in the quantity of water simply means delaying the time of appearance, and consequently increase of total time of development.

Some Factors.

It is possible to give factor numbers for some developers and the following may be taken as being approximately correct:—Amidol (2 grs. to the ounce), 18; adurol, 5; hydroquinone, 5; metol, 30; rodinal, 40; ortol, 10. Burroughs and Wellcome's "Tabloid" developers are as follows:—Pyro, 6; hydroquinone, 4½; metol, 30; metol-quinol, 14; and amidol, 10. The "Imperial" developers are:—Pyro-soda, 4¾; standard, 9; hydroquinone, 4½; universal, 30; and single solution, 20. Other well-known pyro-soda developers are: Barnet (no bromide), 16; Gem (with bromide), 4; and Paget (no bromide), 11. Formulæ with

bromide always have a lower factor number than those without it, and if bromide is added to a formula in which there was no bromide when the factor was calculated, the factorial system does not work. One must therefore be very careful about the exact amount of bromide given in a formula.

Working the System.

Let us now take a very simple developer and in imagination work the system. As numbers for pyro-soda developers appear to be the most difficult to get hold of we will take the simplest of the many formulæ, which has a number we know by a long experience to be quite correct. The formula is:—

(*a*)	Water	20 ozs.
	Pot. meta-bisulphite	15 grs.
	Pyro	72 „

Dissolve the meta-bisulphite in the water and then add the pyro. The meta-bisulphite is to preserve the solution.

(*b*)	Soda carbonate (or washing soda)	1 oz.
	Soda sulphite	½ „
	Water to make	20 ozs.

For use mix equal parts of *a* and *b*. The factor for this is 14, there being no bromide in it. If the worker prefers to use bromide, 20 grains may be added to the *b* solution when making it up, or 5 drops of a 10 per cent. solution may be added for each ounce of developer used. Thus for a 2oz. lot of developer composed of 1oz. each of *a* and *b*, 10 drops of bromide should be used. It is very important that the measurements of the bromide be accurate, and a beginner with the system will perhaps be safer in adding 20 grains to the *b* solution. The factor when bromide is used is 6. Thus one will see what a very important part bromide plays.

First of all let us develop without bromide. Place the watch against the dark room lamp where it can be seen. Note time and pour the developer on. Carefully watch the plate, and the moment the very first trace of the image appears note how many seconds have elapsed and multiply, mentally, or on a piece of paper, by 14, and the result will be the time of development which will give the best negative. Never mind how the plate looks, as the surface is no reliable guide. If the first trace of the image appears in 30 seconds development will be complete in 7 minutes; if in 20 seconds, complete in 4 minutes, 40 seconds; in 35 seconds, complete in 8 minutes 10 seconds, and so on, according to the simple multiplication of the appearance time by 14 which every school child can do.

As we stated above bromide causes the image to be longer in making its first appearance and with it the factor is only 6. Thus if the image appears in one minute the total time is 6 minutes; if in 50 seconds, 5 minutes; 70 seconds, 7 minutes, and so on. The factor of 6 is therefore a very easy one to use because it is so easily multiplied "in the head."

Negatives developed by the factor system may not always look to be of the best or alike to the eye, but the printing value will be the same and the prints will be as nearly alike as possible.

Altering the Factor.

The factor number may be altered to give various kinds of negatives, if desired. The numbers given above (14 without bromide and 6 with it) are for average negatives, but if thinner negatives are preferred 12 and 5 may be used, or if denser negatives are wanted, 15 or even 16 may be used for the no bromide developer, and 7 with the bromide. Although 14 and 6 are the average numbers we often use 12 and 5 for portraits, and 16 and 7 for landscapes. The more one increases the number, the more dense will the negatives be and vice versa. Those who have never used the system, however, had better keep to 14 or 6, until they become familiar with the system.

Where the System Fails.

It must not be imagined that the time system will produce a perfect result from every exposed plate, because it will not. No developer or system will give a good negative if the plate

(*Continued on page* 511.)

HOBBIES STUDENTS' MONTHLY PHOTO COMPETITION.

The following are the subjects set for competition during the next three months:—

AUGUST—FLOWERS, FRUIT AND STILL LIFE.

SEPTEMBER—BROMIDE ENLARGEMENTS, ANY SUBJECT EXCEPT PORTRAITURE.

OCTOBER—LANTERN SLIDES—ANY SUBJECT.

Conditions of the Competitions.

(1) All members of the Students' Circle are eligible. The prizes detailed below will be awarded to the senders of the best entries in each subject. The judgment of the Photographic Editor will be final.

(2) Two separate prints of different subjects or different aspects of one subject to constitute an entry. Each to have the name and address of the competitor clearly written on the back, and the two prints to be accompanied by a front cover of HOBBIES of the latest date obtainable.

(3) All entries to be received not latter than the 1st of the month succeeding the month of competition, and must be addressed to Hobbies Editorial Dept., Dereham.

(4) If a criticism of the work is required a stamped addressed envelope must be enclosed with entries.

(5) The Editor reserves to himself the right to reproduce any of the photographs sent in.

The Entries for the August Competition must be on Hobbies plates and papers, and label of the packet must be enclosed.

The Prizes.

The following Prizes will be awarded monthly:—

FIRST—Cash £1 1s. and Certificate.

SECOND—Cash 10s. 6d. and Certificate.

THIRD—Cash 5s. and Certificate.

Also First and Second Class Certificates.

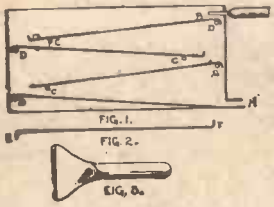
KINKS FOR HANDY MEN

The Editor offers a Prize of 2s. 6d. every week for the best paragraph submitted. In addition the sum of 1s. will be paid to all others whose paragraphs are printed. Address "Kinks" to the Editor, HOBBIES, *125, Fleet Street, London.*

The Prize this week is awarded to Mr. L. WILKINS, *Bilston.*

Photographic Washing Trough.

ALL that is required is a small tin box 2in. longer and the same width as the negative to be washed, a few pieces of sheet zinc, a piece of rubber and brass tubing. Fig. 1 represents a full length side view of the inside of the trough. Cut the zinc to form shelves *a b* the same width as the box, but 1in. shorter in length; these shelves are held in position by pins on which they rest *c d*. All the pins marked *d* are fixed to the inside of the box, those marked *c* are pushed through from one side of the box to the other, and can be removed so that the shelves can be taken out. The shelves should be turned up at one end and down at the other, as in Fig. 2. The turned down edge *e* catches on the pin *d* and prevents the shelf from slipping, and the turned up edge *f* prevents the negative from slipping off the shelf. The top shelf is not meant to carry a negative, and therefore requires no upturned edge *g*. A hole at the bottom of the box *h* serves as an outlet. A piece of brass tube if flattened at the end will make a good sprayer, as in Fig. 3. This can be connected to the tap with the piece of rubber tubing already mentioned, and the sprayer can be soldered to the box. If it is necessary to wash more negatives than in Fig. 1, the box can be made deeper and more shelves employed.—L. WILKINS, *Bilston.*



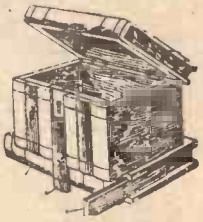
A Chain.

A VERY handy chain can be made for securing cycle dust caps to spokes, securing steam

engine valves, screws, etc., with a few eyes. Get an eye and open it out as shewn. Then fix them together by opening the loops, putting another loop into it and closing it again.—JOHN GUTHRIE, *Havelock Town.*

A Puzzle Box.

THE following diagram of a puzzle box will be found interesting. It originated in Japan, and the way to open it is to hold the back of books towards you (the top should be inlaid, and a title put on it), slide the bottom book to left, slide out end towards you, in the interior you will find the key. Close end of back, then push the bottom book away from you as far as possible, and slide down the centre book; this will disclose the keyhole. On unlocking and opening the lid, which is formed by the top book, one finds a most convenient and safe jewel casket. In making the box one should be careful in concealing the hinges, and the inside may be lined with velvet. It would look nice if made in a dark wood, polished, and with edges of books gilded.



Cheap Fretwork Hinges.

HINGES for fretwork or any small articles can be easily and quickly made from a couple of pins or wire nails. Put them in half (after first cutting off the heads), then bend and fit as shown in diagram. File the ends to be inserted into the wood.—F. BROWN, *Wareham.*

Converting Corks into Stoppers.

IN many wide necked bottles the corks are usually pushed right in which causes a deal of trouble when they have to be removed. To obviate this, take a cork to fit the bottle and a piece of tape about half an inch wide; glue

one end flat on the bottom of the cork and up the side, take it loosely over the top, and glue it on the opposite side and underneath letting this end overlap the other. When carrying the tape over the top enough must be left to allow the first finger to be inserted underneath, thus forming a handle with which to pull out the cork. Another method is to take a hair-pin, bend it into the shape of a staple about one inch wide, push it through the cork, bring the ends together and give them one twist together under the cork. Of course a space must be left above the cork in this case as in the last.—W. J. FIELDER, *Ilford.*

THINGS TO USE AND THINGS TO WEAR.

The "Kitchen" Milk Cooler.

WHAT a difference there is between the kitchens of to-day and those of a few years ago! Instead of hand labour being supreme, domestic machinery is obtainable for almost every purpose. Hygienic conditions, too, prevail, and scientific contrivances keep things cool in summer, and preserve food. A new milk and butter cooler just brought out is very welcome at this season; the outer compartment of terra-cotta is intended for water, the inner vessel of porcelain being a receptacle for milk, butter, or jellies. The principle upon which the cooler works is that the evaporation of the water from the surface of the porous outer vessel lowers the temperature of the interior much below that of the atmosphere, and consequently keeps the milk or other contents sweet. The "Kitchen" milk cooler, which is made in sizes ranging from 1 to 4 pints, is posted direct, carriage paid, by the manufacturers, Bilton & Co., Fenton, Stoke-on-Trent.

A Useful Coat Hanger.

A really useful coat hanger is an accessory of the wardrobe, equally acceptable to men and women. The "Elco" suit hanger, in fact, two hangers in one, has an upper portion for holding a coat, cloak or jacket, the lower a spring clip for a pair of trousers or a lady's skirt. Scientifically designed it holds the coat in perfect shape; the clamp, operating with one hand, being made of wood, cannot rust or mark trousers or skirt. This very useful appliance offered by The General Supply Co., of 84, Chancery Lane, is procurable from dealers everywhere.

Strong, Durable, and Attractive.

Many modern girls when making dresses, and women who make up their own children's garments, copy their great-grandmothers' days in using materials which although perhaps made under different names are not much unlike the cloths which were so serviceable then. There is nothing more durable than Scotch wincey, which can be washed and boiled, the colours remaining fast and fadeless. Of these the "Winc-a-deen," a material supplied by Patrick Thomson, Ltd., of Edinburgh, is subtle and drapes like a French voile, very suitable for underwear and sleeping garments. Self-coloured, it is sold in 41in. width, and striped up to 32in.

Useful Drawer Hook and Vice.

In almost all domestic operations there are times when the need of a "helper" is felt. Among all the useful contrivances for holding things and for making housework easy, certainly the drawer hook and vice, invented by the Third Hand Patents, Ltd., "takes the biscuit." It is a holder which is especially welcome in connection with a lady's toilet. It will hold the points of hairpins when curling the hair, forming a little vice which can be fixed in a drawer. In that position it is handy when brushing hair switches, both hands being free, one to manipulate the hair, the other the brush. It is also useful to switch on to the knob of a chest of drawers, as in that position it will hold a lady's skirt or any other garment which it is desired to free from creases. It is useful to men, too, in that it is a capital holder for a razor strop, as it can either be hooked on to one of the rails of a bedstead or fixed in a toilet table drawer. When cleaning watch chains it is handy, and very useful when threading beads, and making ladies' necklets.

"Vaseline" and its Uses.

The question is sometimes asked, "What is vaseline?" According to the pamphlet published by The Chesebrough Manufacturing Co., who are specialists in vaseline, it is obtained from crude petroleum, the process of its manufacture being due to a happy discovery by Mr. Robert A. Chesebrough nearly forty years ago. The result has been many preparations associated with the jelly of petroleum, or, as it is better known, vaseline. It is put up in convenient tubes and small jars useful alike for man and beast. Vaseline camphor ice is much in demand for allaying irritation of the skin and for sunburn. Vaseline cold cream is an excellent preservative, keeping the skin soft and in a healthy condition. The toilet soaps in which this preparation is compounded are delightful, leaving a clean and fresh odour after use. Indeed, there are many preparations well known to the public, for vaseline is no new thing, and is popular everywhere, being sold in convenient little bottles and tubes.

Skin Creams are Acceptable.

The "Rose and Lily" skin creams and soaps have become very popular for beautifying the skin, and for removing all roughness and blemishes. They are especially acceptable just now in view of the summer bathing season; the cream is considered a most delightful preparation for use after sea bathing, and much valued at any time in districts where the water is hard. In a similar way the soap acts upon the skin and prevents cracked hands and any other imperfections arising from outdoor or athletic exercises. These preparations are made by The London and Paris Perfumery Co., of 26, High Holborn, W.C.

SCOUT LIFE

WEEKLY NOTES BY "SCOUTMASTER"

Be Prepared

International Conference

AN international conference will be held this autumn to arrange for trips of scouts abroad, meantime the International Commissioner at Headquarters says that they are not in a position, at present, to arrange for the trips or exchange of visits.

Scoutmasters who contemplate visiting the continent should communicate with Messrs. Thos. Cook, who have undertaken to offer special terms to parties of scouts, accompanied by a Scoutmaster.

Scoutmasters taking parties abroad should provide themselves with passports, and consult consular agents of the countries they propose to visit to avoid any possible difficulties with the authorities.

Model Aeroplane Tests.

Those of our readers who have made model aeroplanes from instructions given in HOBBIES, will be interested in the competition to be held at the London Aerodrome, Hendon, on July 25. There is a special competition for Scouts for longest flight, open to all Scouts in the British Empire.

Programmes and full particulars can be had by applying to the Hon. Sec., Kite and Model Aeroplane Association, 27, Victory Road, Wimbledon, London, S.W.

How to distinguish the trees.

Every Scout is anxious to know the trees, their names and characteristics. The information is useful to all Scouts, and gives an added pleasure to the afternoon parades and week-end camps. I propose giving the distinguishing features of over two dozen of our best-known trees. Beginning with this present issue the series will extend over several weeks.

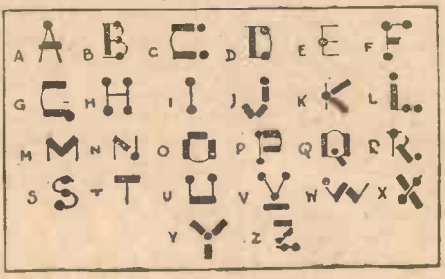
THE BEECH.—*Trunk* smooth, and solid; colour, grey touched with green. *Branches* spreading dome-like, and tapering at the extremities. *Leaves* limp and drooping when first unfolded; ovate, very smooth and polished, slightly notched and downy beneath. In winter, brown, lance-like, upward buds. *Flowers* of two kinds—the barren in drooping clusters, the fertile solitary—followed by prickly seed vessels, each holding two smooth, triangular nuts.

THE MOUNTAIN ASH.—*Trunk*, grey and brown. On rich land it is round and bushy; on thin soil it is straggling and pendent. *Leaves* are like the Common Ash, but narrow and more numerous. *Flowers*, small, greenish, white, in dense, erect clusters. *Berries* are heavy-rounded, in bunches of rich coral red. Commonly called the "Rowan tree."

Morse Memoriser.

To enable you to remember the composition of each letter of the Morse alphabet write out the alphabet shown in our sketch until you know the letters by heart. Learn the following sentence so as to know the letters. Make the initial letters with tapper or flags.

Enemy Is Secretly Hiding, Telegraph Morse Orders, erase; Albert Understands Varnishing, Nubian Dress Boots.



A MORSE MEMORISER.

Human Body & Motor.

Every Scout takes an interest in motors and how they work, and Engineer Scouts must have a general idea of the working of both motor cars and engines.

When learning about motors has it ever struck you that there is a similarity between them and the human body:

MOTOR.	HUMAN BODY.
a. Engine	*a.* Intestines.
b. Pump, water, circulation, radiator and delivery pipes.	*b.* Heart, blood, veins and arteries.
c. Carburettor, induction pipe and float chamber	*c.* Breathing, throat and lungs.
d. Body	*d.* Body.
e. Chassis or frame and universal joints	*e.* Frames or bones and ball and socket joints.
f. Steering wheel and steering gear	*f.* Head and eyes.
g. Wheels	*g.* Feet and legs.
h. Chains and live axle	*h.* Muscles.
i. Oils and grease	*i.* Marrow.
j. Electricity	*j.* Vitality.
k. Petrol	*k.* Food.

SALE & EXCHANGE.

TRADE.

ALL CYCLISTS should buy Cycles and Accessories at Wholesale Prices. Special Prices for Present Season: Covers, 2s. 6d.; Brakes, 10½d.; Chains, 1s. 6½d.; Bells, 2½d. Send for 112-page Wholesale Catalogue, post free. Send a post-card and see what we can save you.—Smarts, Ltd., Cycle Factory, Birmingham.

BEST Cash Price for all Old or Damaged Photographic Goods; any sort, cash same day.—S. E. Hackett, 23, July Road, Liverpool, E.

BOOTS.—Save nearly 50% buying from factory direct. AGENTS WANTED. Write for list, particulars.—British Boot Co., Portland Square, Bristol.

CYCLE TYRES & ACCESSORIES. Reduced Prices, commencing July:—Covers, 3s.; Air Tubes, 2s. 1d., guaranteed. Also Dunlops, Palmers, Clinchers. All kinds of Rubber Goods for Cycles. Saddles, Free-Wheels, Chains, Pedals, etc. Write for Catalogue, post free, mentioning HOBBIES.—Gorton & Co., Manufacturers, Wolverhampton.

DOLLS' HOUSES.—Make your dolls' houses realistic by using Hobbies Red Brick or Tile Pattern Paper, specially printed in sheets, 18in. by 4½in.—12 sheets, post free 4d., from Hobbies Ltd., Dereham.

DON'T THROW AWAY YOUR OLD ENVELOPES.—You can make money with them. Send 6d. stamps, or P.O. We will tell you how to make 1s. 8d. per 100 with them.—K. W., 42, Newton Cap Bank, Bishop Auckland.

FREE.—Pocket Rubber Stamp of your name and address, also particulars of splendid paying spare time Agency, easily worked.—N. Richford, Snow Hill, London.

HOW to Patent. King's Handbook on Patents and advice sent free.—Write King, Chartered Registered Patent Agent, 165, Queen Victoria Street, London.

MADISON Motors!! Littleover, Derby. Gas Engines, Oil Engines, Petrol Motors. For Cycle, Boat, Aeroplanes, Water Motors, Dynamos, Boilers, Propellers. Castings. Repairs, 20,000 Miniature Aeroplane Motors, ¼ h.p., part tooled. Per set 9s. 9d. Catalogue 3d.

MAKE your own Cigarettes with Osmans Patent Cigarette Maker. Perfectly simple. Simply perfect. Thousands sold. Ask at your Tobacconist, or send 4d. stamps for sample.—Osmans Patents, Ltd., Leytonstone, N.E.

MIRRORS, Plain or Bevelled, made to any size or shape; best quality, low prices.—Wellsbury, The Platts, Stourbridge.

MODEL AEROPLANES.—Send for complete aero list. Large supplies of model aeroplane sundries.—Hobbies Depot, 15, County Arcade, Leeds.

PHOTO Post Cards of yourself from any photo, 1s. dozen. Samples and Catalogues free.—Hackett's, 23, July Rd., Liverpool, E.

OAK Picture Mouldings, 1-in., 8d.; 1½-in., 10½d., per 12-ft. lengths; all kinds fancy mouldings. Speciality: mouldings mitred ready for joining. Complete catalogue of mouldings, pictures, etc., 4d. stamps. Booklet "How to Frame Pictures" free.—Watts, Dept. H. H., Eccles New Road, Salford.

TELEGRAPHISTS.—The Marconi International Marine Communication Company, Ltd., is prepared to receive applications from experienced Morse Sounder Telegraphists, between 19 and 24 years of age, for positions as Wireless Operators aboard ship. Special allowance to suitable operators during period of training.—Apply, letters only, giving particulars, age, and experience, Marconi House, Strand, W.C.

USE OUR PLATES.—Half-plates, 1s. 4d.; quarter-plates, 7½d. doz.; P.O.P. or Gaslight Postcards, 100, 1s. 4½d., mounts, backgrounds, etc.; samples and catalogues free.—Hackett's Works, July Rd., Liverpool, E.

YOU can earn 1s. per hour.—Full particulars of employment.—Apply W., 89, Aldersgate St., London.

64-PAGE Book about Herbs and How to Use Them, post free. Send for one.—Trimnell, The Herbalist, Richmond Road, Cardiff. Established 1879.

PRIVATE.

BARGAINS.—Model Bleriot Aeroplane, 3s.; cost 7s. 6d. Splendid Melodion, 8s. 6d., worth double. Gillette Safety Razor, new condition, 5s., cost 21s. Hobbies ½-Plate Camera, 4s. 6d.—Smith, 76, King Street, Alfreton, Derby.

HOBBIES Imperial Fretsaw, new, 25s. Exchange for Hand Camera. Anything useful.—J. Winterbottom, 521, Manchester Road, Shaw.

LENS.—½-Plate Lancaster's Rectoplat, 18s. 6d.—Stafford, 16, Ash Road, Stratford, E.

PET Singing Goldfinch, 5s. Canary, 2s. 6d. Housemoulted Linnet, 3s. 6d. Cage, 1s. 6d. Printing Outfit, 4s. for 1s. 6d. "Boy's Annual" Binding Case, 1s. 30 Coloured Comic Posters, 1s. Set inch Rubber Price Figures, 1s. 6d.—Smiddy, Springstone Avenue, Ossett.

SALE.—Hobbies A1 Fretwork Machine, 14s.; or Exchange anything useful.—Gregory, 21, Clovedon Road, Midsomer Norton.

SALE or Exchange, Hobbies Metal Mitre Shooting Board, adjustable angle. Mitre Trimmer for 4½in. Mouldings. "British Printer," Nos. 96-143 inclusive, unbound.—T. Hughes, 8, Mall, Waterford.

SALE or Exchange.—Fountain Pen, 14ct. gold nib, cost 6s. 6d.; also Auto-Harp, 6 bars, in good condition.—B. Lawrence, 8, Home View, Murston, Sittingbourne, Kent.

SALE.—No. 2 Brownie Camera, Developing Box, Accessories, 10s. 6d. Stamp for particulars of this and other things for sale and wanted.—S. M. S., 5 and 7, Grafton Street, Byker, Newcastle-on-Tyne.

WANTED CAMERA.—Full particulars and lowest price to W. H., 151, Capel Road, Forest Gate.

WILL EXCHANGE Hobbies Royal Fretwork Machine, perfect, for powerful Field Glasses.—C. Garland, 34, Grove Road, Leytonstone.

¼-PLATE Hand Camera, R.R. lens, F.8., speeded shutter, carrying case, dishes, etc. Bargain 21s. Send for list.—McCracken, St. John Street, Stranreard.

½-PLATE Camera, 30s. ¼-Plate, 12s. 6d. Cricket Bat, 2s. 6d. Particulars free.—H. Scales, West Butterwick, Doncaster.

2 SCOUT'S OUTFITS for Sale. Price 5s. each.—Stamps for particulars, 5, Chapel Terrace, Bean Street, Hull.

SALE & EXCHANGE FORM.

To HOBBIES, 166, Aldersgate St., E.C.

Must be received not later than Monday 1st post for following week's issue.

12 Words—Sixpence.
Each additional 2 words, 1d.

Name and Address

Write advert on above with sharp *pencil*, and send with P.O. or Stamps.

THE HELPING HAND

QUESTIONS *should be sent to Editor "Hobbies," Dereham, Norfolk, and marked "Helping Hand." When reply by post is required a stamped envelope must be enclosed.*

REPLIES SENT BY POST.

P. J. S., Newry; A. McK., Dunston; M. F. M., Dublin; E. H. B., Barbados (H.); A. B., Gospel Oak (J.); A. B., Manchester (B.); T.W. H., Clarendon Square (B.); A. J. M., Fareham; M. H., King's Somborne; S. J. H., London, N.E.; F. W. H., Huntingdon; P. S., Carlisle; E. C. D., Bournemouth; A. J., Widnes; E. R., Bristol; S. P., Durham; A. T. S., Hampstead; A. W. B., Stockton-on-Tees; W. C., Bolton.

Carriage on Royal Machine.—J. H. BROWN (Pensnett).—The carriage on a royal machine to your address would be approximately 2s. 8d.

Cycling Route.—J. F. (Tottenham).—Your route would be as follows:—Tottenham, Loughton, Epping, High Ongar, Chelmsford, Witham, Colchester, Ipswich, Woodbridge, Wickham Market, Saxmundham, Blythburgh, Lowestoft, Yarmouth. About 120 miles.

Aeroplane Pipe-Rack.—L. REID (Bushey).—Many thanks for your suggestion, which we are considering. It may be possible to do something of the kind.

Models of York Minster and Durham Cathedral.—CONSTANT READER (Gilksworth).—There are, so far as we are aware, no published designs for these, and if you have seen fretwork models, the maker must have produced his own designs.

India-Rubber Solution.—S. W. MOUNTAIN (Cape Town).—This must be made from unvulcanised rubber, cut into thin shavings with a sharp wet knife. After drying the rubber shavings, place them in a wide mouthed bottle and cover with coal-tar naphtha. After tightly corking, place the bottle in a warm place, and shake from time to time, adding more naphtha as required. 15 to 20oz. naphtha will be required for 1oz. of rubber.

Coins.—W. A. READ (Leyton).—The halfpenny you have, known as the "Brunswick" halfpenny, has on the reverse the shield of arms of the Duchy of Lancaster, and was one of many tokens circulated in the County of Lancaster at the close of the 18th century. Its value, unfortunately, is quite small, about 6d.—B.

Waterproofing a Tent.—J. CUNNING (Glasgow).—In the method to which you refer, the material is first dipped into a warm saturated solution of alum, and then into a cold saturated solution of sugar of lead. A very convenient method of waterproofing canvas is to coat it with a mixture of the three following solutions:—(*a*) One part of Gelatine dissolved in 60 parts of water. (*b*) Two parts of alum dissolved in 60 parts of water. (*c*) Two parts of soda soap dissolved in 40 parts of water. A much less troublesome method is to coat the material with boiled linseed oil.—H.

The Meaning of Pitch in regard to a Model Aeroplane.—T. RUDKIN (Westcliff).—Pitch is the name given to the complete revolution of a screw, that is the distance travelled at each turn. We cannot supply the materials you ask for as a complete parcel, but if you send to our Leeds Branch, 15, County Arcade, and ask for an Aero List, we think you will find that they can supply your requirements.—H.

Back Numbers of "Hobbies."—D. HERBERT (Llandrindod).—Back numbers may be obtained by ordering through your usual newsagent, or price 2d. each post free, direct from Hobbies Limited, Dereham. The presentation designs are not given away with back numbers.

SEASIDE COLLECTING—continued.

their little shells on their backs, at others opening their valves and taking in fresh air. The limpets and others of that class stick close to the rocks when the collector tries to raise them, and some of the bivalves quickly sink out of sight in soft sand or mud. Thus it will be seen that while some enjoy themselves on hard ground or rocks, others are only to be met with on sandy shores. Another time we shall have something to say about the different shells collectors must keep a sharp look-out for.

FACTORIAL OR TIME DEVELOPMENT—continued.

is terribly over or under exposed. The time system gives perfect negatives when plates are correctly exposed or very nearly so, and the more the plate is over or under exposed, the less satisfactory is the system. The reason will be obvious to most workers. Suppose for example the plate is very much over exposed, and the no bromide (factor 14) developer is used the image may flash up in two seconds, but 28 seconds would give an unsatisfactory negative, it would be thin and lack density unless developed for a longer time. In a case of under exposure the image would take a long time to appear. Say it took a quarter of an hour, then the total time of 3½ hours would be ridiculous, as the high lights would be hopelessly blocked up. When a plate is found to be grossly over or under exposed it is better to ignore the time system and judge the progress of development by the eye.

Conclusions.

Remember that altering amount of bromide changes the factor. The developer must be accurately compounded. Some developers have high factors and others low ones. The appearance of the highest light must be timed the moment it appears; don't wait until the image shows clearly, if you do the negative will be over-developed. An error of two or three seconds in timing the appearance makes a lot of difference as the error is multiplied by the factor.

SUMMARY OF WORK.	
Take Cuttings of Heliotropes, etc.	Sow Hardy Annuals for Spring blooming
Strike Cuttings of Euonymus, Aucubas, etc.	Thin out the young growth of Raspberries
Finish layering Carnations	Sow Winter Onions and Brown Cos Lettuce
Place Tree Carnations in their Flowering Pots	Sow Turnips and French Breakfast Radish
Sow Winter Spinach	

THE FLOWER GARDEN.

CUTTINGS of Verbenas, Heliotropes, Petunias, and soft-wooded plants generally, excepting Pelargoniums, should be taken without delay, and placed in pots or pans of sandy loam, with a sprinkling of sand on the top. Make the soil firm in the pots, and select healthy, young cuttings. They will pretty well all strike if placed in a close frame, and shaded from bright sunshine. Give air for an hour early in the morning to let out the damp which has accumulated during the night, and keep close for the remainder of the day till the cuttings are rooted; then ventilate freely to harden the growth. Pelargoniums root best in the open air fully exposed, even the delicate sorts root freely under such treatment.

Cuttings of Evergreens, such as Euonymus, Aucubas, Ivies, etc., will strike if planted under handlights on the north side of a fence. First put in 6in. of sandy soil, make firm, and water, dibbling in the cuttings at suitable distances apart.

Sow Hardy Annuals for Spring blooming.

Prick off Biennials.

Finish layering Carnations.

Hollyhock cuttings may be taken now. The side shoots which are thrown out by rigorous plants cut into single buds make good cuttings, and if planted in a prepared bed of sandy soil in a frame, there are very few failures. The plants may be potted up in September.

Commence the propagation of bedding plants taking the soft, tender things first, including Coleus, Iresines, Alternantheras, Heliotropes, Verbenas, etc.; these may be placed in frames.

TREE CARNATIONS.—Those intended for winter blooming should be placed in their flowering pots so as to get them well established early in Autumn.

Pick off flowers from Zonal Pelagoniums intended for winter blooming. These should be at once placed in the pots in which they are expected to bloom, and should be placed in a sunny spot to get the wood well ripened.

THE FRUIT GARDEN.

August and September are the chief wood-ripening months, and everything possible should be done now by keeping the young shoots thin to permit the air and sunshine to do their work. Trees which have been heavily mulched, and which are showing signs of renewed activity at the base, should have the mulch drawn on one side to let in the solar warmth.

Trap earwigs on Peach trees by placing pieces of hollow bean stalks, 8in. or so long, amid the foliage, and examine them daily, puffing out the insects into a pail of hot water. An immense number, when they are troublesome, may be cleared off in a short time if this plan is carried out persistently.

RASPBERRIES.—Thin out the young growths and cut the old fruiting stems as soon as they cease to bear. Autumn-bearing Raspberries are valuable for tarts. It may be necessary to support the fruit-bearing stems on some soils, but on dry, warm soils the growth is short-jointed and self-supporting.

STRAWBERRIES.—Cut away all runners from plants intended for another year's bearing.

THE VEGETABLE GARDEN.

Sow winter spinach now and again towards the end of the month; this crop is an important one in many gardens. Winter onions also should be sown now. The Tripoli section is usually employed for this purpose, but there is no reason why such kinds as the white Spanish and the late keeping sorts should not be sown towards the middle of the month, according to latitude and season for transplanting, or for drawing young in Spring. In places where the Onion maggots are destructive, *i.e.*, on dry porous soils, Autumn sowing and transplanting in February on well-manured land is recommended.

LETTUCE.—This is the best season for sowing the Brown Cos variety; recommended as best for standing the Winter.

Sow Turnips and French breakfast Radishes on rich land; there is an advantage in sowing in drills, as it permits of frequent earth stirring between the rows, during growth.

- MISCELLANEOUS ADVTS. -

NOTICES - AND - ADDRESSES.

Subscriptions.—HOBBIES will be forwarded by Messrs. Horace Marshall and Son, 125, Fleet Street, to any part of the world at the following prepaid rates: Twelve months, 7s. 6d.; Six months, 3s. 9d.; Three months, 1s. 10d. Binding Cases, with Indexes, 1s. 3d., post free; separate Index, 3d., post free.

Addresses.—All Editorial communications except "Helping Hand" letters, must be addressed to the Editor of HOBBIES, 125, Fleet Street, London, E.C.

Helping Hand Department.—All communications for this department must be addressed as follows: "The Helping Hand," Hobbies, Dereham, Norfolk.

The Hobbies Presentation Designs are not given away with back numbers. Additional copies may be had from Hobbies Limited, Dereham, price THREPENCE each.

Contributions.—While every effort will be made to return unsuitable contributions if stamps for that purpose are sent with them, the Editor does not accept any responsibility for their loss. Drawings should be sent FLAT.

Publishing.—Communications respecting orders for copies, remittances, and all general business letters should be addressed, "HOBBIES," 125, Fleet Street, E.C.

Advertisements.—All orders and letters respecting advertisements, inserts, &c., should be addressed ADVERTISEMENT DEPARTMENT, Hobbies, 166, Aldersgate Street, London, E.C.

Remittances should be by Cheque, Postal Notes, Money Orders, or International Money Orders, made payable to HOBBIES LIMITED. British Postage Stamps may be sent in payment of small amounts. On no account can remittances be accepted if made in COLONIAL OR FOREIGN STAMPS.

PHOTO-STUDENTS' CIRCLE COUPON.

One Coupon to be attached to each Question or Request for Information or Criticism. This Coupon is available until Aug. 10	Member's No.

HOBBIES AGENTS & SUPPLY STORES.

FOR the convenience of Fretworkers in large towns, we have appointed leading Ironmongers as our Official Agents for the sale of all the Hobbies Specialities. A list of the Agents already appointed is given below, and we shall from time to time add to their numbers.

HOBBIES AGENTS IN GREAT BRITAIN:—

Aberdeen.—Mr. Jas. Mutch, 21, Broad Street.
Abertillery, Mon.—Mr. Arthur Phillips, Church Street.
Accrington.—Messrs. Stephenson & Sons, 31, Blackburn Road.
Barnsley.—Mr. T. W. Brown, 30, Eldon Street.
Barrow-in-Furness.—Mr. J. Underwood, 67, Dalton Road.
Bath.—Mr. R. Membery, 37, Southgate Street.
Bedford.—Messrs. T. S. Carpenter & Co., 105, Midland Road.
Blackburn.—Mr. Robert Howson, 68, Darwen Street.
Blackpool.—The Blackpool Cycle Co., 181, Church Street.
Bradford.—Messrs. T. Underwood & Co., 9 and 10, Manchester Road.
Bristol.—Mr. Thos. J. Gardner, 3A, Narrow Wine Street.
Bromley, Kent.—Mr. F. E. Head, 32, High Street.
Burnley.—Messrs. D. & J. Dawson, 14, Yorkshire Street.
Cambridge.—Mr. H. S. Driver, 56, Hills Road.
Canterbury.—Mr. T. D. Goodman, 33, Burgate Street.
Cardiff.—Mr. John Hall, 31, Morgan Arcade.
Chelmsford.—Messrs. B. H. Harrison & Son, 65, High St.
Cheltenham.—Messrs. S. C. H. Dix & Co., 27, Bath Road, also at 1, Suffolk Road.
Chiswick.—Messrs. Lucas & Co., 390, High Road.
Coatbridge.—Messrs. James Barton & Co., 62, Main Street
Croydon.—Mr. L. H. Turtle, 6, Crown Hill, and 53, North End.
Doncaster.—Mr. G. P. Preston, 37, Station Road.
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Gloucester.—Messrs. Parsons Bros., 34, Eastgate Street.
Halifax.—Mr. E. A. Hirst, 52, New Crown Street.
Hull.—Mr. O. F. Walker, 17 and 18, George Street.
Inverness.—Mr. J. Chisholm, 14, Falcon Square.
Leicester.—Mr. Frank Berry, 3, Loseby Lane.
Lincoln.—Messrs. Musgrave & Co., Free School Lane.
Liverpool.—Mr. C. Lucas, 116, Dale Street.
Maidstone.—Messrs. Denniss, Paine & Co., 61, High St.
Margate.—Mr. G. E. Houghton, 19, Fort Road.
Merthyr.—Mr. E. M. Thomas, 18, Park Place.
Newark.—Messrs. Richmond and Son, Boar Lane.
Newbury.—Mr. H. Povey, 12, Oxford Street.
Newport, Mon.—Mr. John Hall, 77, High Street.
Oldham.—M. E. Bradshaw, 100, Huddersfield Road.
Oxford.—Messrs. Foort & Son, 47, Cornmarket Street.
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