WITH WINSTON CHURCHILL PHOTO FRAME DESIGN FREE



Patterns and details for making **REPEATING PISTOL**

Y pressing the special trigger of this novel pistol, a series of sharp clicks can be heard. Each report can be obtained singly, merely by pressing the trigger slowly; if a sudden, louder, single report is wanted, the trigger is pressed rather quickly. Each little click thus combines to make a sharp, clattering report.

The trigger, you see, is a toothededged disc having three equidistant finger holes. Inside the pistol body is a thin lath of wood which presses against the trigger disc. It is the clapper, for as the teeth of the trigger pass by its end, it "claps" against every tooth.

Clapper Noise

The body of the trigger, particuarly the interior, is so arranged as to allow the clapper to work freely. In order that the slight noises will not be baffled, special louvres are cut in the outer covering pieces, near the top.

Now, the reason for three finger holes in the trigger disc is this : once the trigger disc is drawn backward with the finger, the disc-on account of the clapper-cannot be returned to its original position again. So, once the trigger is pressed backwards its maximum, a fresh finger hole appears automatically. You merely grip this new hole with your finger each time. Could anything be more compact and easy to operate? All necessary shapes for making

the pistol are provided on the pattern page (on coveriv) The centre parts, consisting of an inner pistol shape and the trigger disc, are cut from lin. fretwood.

Cover Pieces

The cover pieces, which are cut from in. stuff, consist of two inner and outer shapes. The inner shape is outlined on the pattern page, the dotted lines on same giving the outlines of the outer shape. So that you can more readily distinguish one from the other, both shapes are

shown at Fig. 1. Having cut out all five pieces, select an inner cover and glue the centre shape upon it, doing so evenly all round. The trigger disc is prepared by forcing a wire nail, or piece of wire in. long, through its centre to project evenly at each side. If a wire nail is used, its head must be



removed to leave a stem in. long.

Alternatively, a thin, roundheaded carpet nail could be inserted through the pivot lug on the cover piece. The disc, having a central hole which



Fig. 1-Shape of inner and outer covers

receives the nail projection with some amount of freedom, is then set on top.

Fitting the Clapper

The clapper is then made and glued in its aperture as shown at Fig. 2. The clapper is best cut from a hardwood 1/16in. such as oak or birch. In respect to the latter wood, a good clapper could be made from birch plywood, using one of the plies, or even thick veneer could be used, including a piece of steel corset rib including a

The business end of the clapper should not project over the teeth tco much. As the end rises on one tooth, it must be free to click down on the next approaching tooth and so on. Have the clapper glued in its slot only. It must not be adhered against the "shoulder" shown. This shoulder gives tension to the clapper when presed back with a tooth and the clapper must be free for the forward clicking action.

When you have the clapper working

satisfactory, glue on the other inner cover piece. The edges of the outer cover pieces need to be chamfered as indicated by the dotted lines at Fig. 1. A clear view of the work is shown at Fig. 3.

Having bevelled the edges, glue the outer covers in place. If desired, the bevelling of the edges could be done after the outer covers have been glued on and the glue allowed to set properly.

Shaping the Barrel

The barrel of the model pistol has to be rounded neatly to **\$**in. in diameter. Before doing so, level the nose





Fig. 2—Two covers removed to show mechanism

end and centre it. Make a guide hole with a bradawl, then drill a zin. hole lin. deep.

The barrel is then pared with a pocket-knife and trimmed up, then filed and glasspapered smooth. The fore-sight is made in. thick (see full-size detail on pattern page). As the grain is short, pare the sight down carefully. Should you break it off accidentally, never mind—the pistol looks just as good without it.

If the sight proves to be troublesome in the shaping up of the barrel, it may be cut off altogether and a fresh one glued on afterwards. In this case, cut the sight from $\frac{1}{2}$ in. wood. To ensure strength, a mortise could be cut for it in the barrel; this mortise, of course, should be made $\frac{1}{2}$ in. wide and $\frac{1}{2}$ in. deep, by $\frac{1}{2}$ in. long. The sight, as a result, needs to be $\frac{1}{2}$ in. deeper.

The Best Finish

Having cleaned and smoothed all joints, the best finish for the model is ebony black. Therefore, brush on a coat of black stain all over, using a spirit stain, for preference, such as lamp black powder mixed with methylated spirit.

A spirit stain has the advantage of not causing the grain of the wood to swell. When the stain has dried, burnish the surface by rubbing briskly with a clean, dry piece of canvas. The work is then given a thin application of ebony polish; a second application is given to the gun body structure only. The trigger disc, including its toothed edge, should not be coated with polish, unless you apply a very thin coat and



allow the part exposed to dry before bringing a fresh portion into view and coating it.

Too much polish on the trigger disc and its teeth is sure to make it work stiffly. Besides, the polish on the teeth will also "deaden" the noise of the clapper to some extent. If desired, the pistol, after staining; could be burnished with a rag, then waxed with soft lino cream and finally rubbed over with a clean, soft cloth. The waxing will help to lubricate the trigger, rather than stifle its action.

Repolishing a Dining Room Table

AM anxious to re-polish a diningroom table, and would be pleased if you could let me know the best method of removing several coatings of old varnish, much scratched, also whether spirit or water stain is preferable and amount of shellac in relation to meths. (N.N.—Carlisle). A S your dining-room table is

AS your dining-room table is ary to take off the whole of the polish and varnish of the previous surface. They may be removed either by using a varnish solvent obtainable from an ironmonger, or by soaking a piece of rag in methylated spirits and applying this to the surface of the work. The polished surface may then be scraped off with one of the special steel scrapers, or a piece of an old table knife blade will serve. Keep the surface wet with spirit, wipe off as much of the polish as is taken away. Leave the bare work to dry and harden, then glasspaper down quite smooth and flat and, of course, quite dull. Patent polish removers, by the way, have a tendency to darken oak, and it might have to be bleached again. You will probably have to fill in the wood now before polishing, and after this has hardened a coat of brush polish can be applied with an ordinary mop brush. Put aside again to harden, then glasspaper the work smooth, and wipe free from dust. This bodying-up process may be continued until the pores are quite filled and then the work of polishing up can be undertaken. In reply to your question—about 6ozs. of brown shellac to 1 pint methylated spirit would be the quantity for an ordinary brush polish. It is now, of course, difficult to obtain shellac and methylated spirits in any quantity, but as you probably know, there are readymade polishes which would serve.

It is helpful to know how you can undertake FOUNTAIN PEN REPAIRS

VEN if restrictions for making pens have now been taken off, they are still in short supply through scarcity of labour. If you cannot get a new one, why not try repairing your old pen ? It is much easier than you may suppose.

Take a look at it first and try to get at the cause of the trouble. Does it leak? Well, the odds are that you are not filling it correctly. If it is an ordinary lever self-filling pen, plunge it into a fairly deep ink bottle and slowly raise the lever. Then close the lever just as slowly and leave the pen in the ink for about eight seconds.

The Final Suck

The last part is important, for it is just this that most people fail to do and so the pen does not draw up enough ink. The whole process must be taken quite slowly, otherwise air gets into the sac (the rubber partition inside your pen) and this is a primary cause of leakage.

Even if your pen is of the stud-filling, or plunger type, the same thing applies, the action must be slow and time allowed for the ink to draw up.

To test for air, let the ink out in the normal way. If it oozes out evenly, all is well, but if it comes out in bubbles, then you know the cause of the leakage. You can easily put that right—just fill the pen again in the correct way.

Flooding Causes

Flooding can, however, occur for other reasons. The sac may be at fault. To test, empty the pen and unscrew the section just above the nib. Or, if yours is that kind of pen, slightly pull the section and there you have nib and section adjoined to sac (or rubber tubing) in one hand, and barrel and cap in the other hand. If the parts refuse to become detached by this method, try unscrewing from the top. A few pens are taken to pieces in this way, but they are in the minority.

Twisted Sac

Whichever method is successful you should now be able to view the sac quite clearly. If it is twisted, then that is the cause of the leakage. Just turn into position and replace the parts in barrel. But if there is a hole in the rubber, however minute, you will have to have a new sac.

Again this is quite simple to fix for yourself. First scrape off every bit of old sac from section. Then measure new one to the size of barrel. Should it be too long, a little can be snipped off from the open end. Next smear the section with a little good adhesive and quickly slip on the new sac.

Use Small Tweezers

This is best done with a pair of tweezers (ordinary eyebrow tweezers will do). Leave a couple of minutes to dry and then replace barrel. Fill the pen with ink and all should be in order.

But the nib may be the cause of the leakage. Is it straight on the feed ? (the feed is the long black stick under the nib). This should be directly centre under nib. If out of order, nib is easily replaced by holding section firmly but gently in left hand and pushing back nib with the right hand.

To Prevent Flooding

More serious if the nib is too small for your pen, one of the commonest causes of flooding. Well, providing it can be obtained, you can fit the right size yourself. But, you must be careful or you may cut your hand over the process.

Assuming you can get the right size nib and wish to try, then,

clasping section firmly in closed left hand, holding hand sideways level with your chest, with right hand hold nib, with duster for protection, and gently but firmly coax nib from side to side. If you have the knack, it should work its way out.

Next place the new nib so that the shoulders (sides of nib which stick out) lie just over the feed where this begins to broaden. Holding both nib and feed in position, firmly push into section.

Fitting the Nib

If the nib is at all inclined to wobble about, you have probably placed it too high or low on the feed and will have to begin again. Once you are satisfied with the position, fill pen with ink and all should be well.

Avoid an assortment of coloured inks as they are inclined to rot the sac. It is wiser to keep to the same colour.

To prolong your pen's life, clean it at frequent intervals. Do this in the same way as the filling already described, but, of course, using water instead of ink.

Try your hand at solving this SIMPLE CROSSWORD PUZZLE

MOST readers like a little occasional mental relaxation as a change from using their hands. This Puzzle should not be too hard for anyone —it has straightforward clues with everyday words as the answers. There are no prizes awarded, the puzzle is purely for recreation. You can check up whether you are right (or fill in any blanks l) from the solution which will be given next week.

17. 19.

ACROSS

- Shy. Alternating Current (abbr.). It fires lead pellets. A writing liquid. Same relationship. Childish thanks.
- 10. 12. 13. 14. 15. 17. 18. 19. 21. 22.

- Childish thanks.
 A big one on each foot.
 Small bole for lace or cord.
 The indefinite article.
 One from two.
 Cultivated on submarines.
 To append.
 Surali U.S. car.
 Years of your life.
 A Years of your life.
 Knock Out (Abbr.).
 Essential for life.
 A mild beverage.
 A lubricant.

DOWN

- 3.

- JWN Used in fishing. Purpose of. An exclamation. A dog is a true one. Not beautiful. A male name. Goods are packed in it. Aiways before us. Behind a locomotive. A vein of metallic ore.

Air Raid Precautions (abbr.). Your cycle needs one. Short for "Avenue." Partly open. Name for a golf ball. To proceed. Small heap of sand for golf balls.

- 20. 21. 23.
- 25.
- 26.
- balls. 27. A mike's a mechanical one. 29. Helium (abbr.).



The amateur radio enthusiast should make his own RADIO COMPONENTS

COME radio parts are not easy to obtain these days and the constructor who can make them for himself is at an advantage. The home-made components are by no means to be regarded as inferior to those bought, for while it is true some parts cannot be constructed, others are so simple from the mechanical point of view that it is possible to make an item quite equal to the commercial product. Apart from the fact that home-made items can be constructed very cheaply there is the interest of making them.

The two parts described here are the simplest, yet most-used com-ponents of the short-wave receiverthe high-frequency choke and trimmer, or padding-condenser. Constructional details of further components will be given in future issues.

Short-Wave Choke

A choke of some sort is necessary with all kinds of short-wave receiver, and it is not difficult to construct a suitable component. The choke here described will be suitable for all wavelengths between 15 and 50 metres, so it is quite satisfactory for inclusion in the average short-wave receiver.

The former is approximately $\frac{3}{2}$ in. in diameter and a little over $1\frac{1}{2}$ in. long. A glass phial is the ideal thing to use, or as an alternative an ebonite or paxolin tube.

If a cardboard tube is used it must be well varnished before use, or in damp weather it will absorb enough moisture to prevent the component working properly. The winding is in four sections

(see Fig. 1) each about in. long and



Fig. 1-Wiring space and details

separated by in. gaps to reduce the self-capacity. Enamelled wire 40 S.W.G. is used, and it is not neces-sary to count the turns, provided each is kept close against its neighbour.

The ends of the winding are secured by being passed through small holes, or bound with cotton in the case of the glass tube. The choke is mounted upon a small piece of ebonite about lin. by 2ins.

Two small terminals are used for connections as shown. Their heads

are sunk into the base by drilling a larger hole half-way through the ebonite from the bottom. The choke winding is secured to the base by means of a good adhesive. A pair of small holes in the unused corners of the base enable the completed part to be screwed down in the required position in the receiver.

As with all types of H.F. choke, the component should be fixed well away from the tuning coil, or with its axis at rightangles to the axis of the tuning coil it it needs to be at all close, to prevent interaction and consequent erratic results.

Trimming Condenser

The trimming condenser shown has various uses in receiver design. In multi-valve sets with more than one tuned circuit it is used to compensate for stray capacities in wiring so the tuned circuits will gang together correctly.

In a short-wave set, such a condenser is generally included in series



with the aerial lead-in to lessen the damping which the aerial imposes upon the tuned circuit. The capacity most useful is about .00005 mfd. maximum, and if the dimensions given are followed the part described has approximately this capacity.

The small base is made from paxolin or ebonite, and can be quite thin since such a condenser is usually suspended directly in the wiring. Two plates are screwed to it (Fig. 2). The lower one lies flush with the ebonite and is a fixture, while the ATE ADJUSTABLE upper one has a TOP PLATE ADJUSTABLE

BOTTOM PLATE

FIXED

rather longer porjection to it, bent in the form of a

ADJUSTING SCREW Spring. The location of

the plates will be Fig. 2-Details of trimming condenser seen from the

diagram. In the centre of each one is drilled a hole and a zin. long screw terminal passes up through the base and lower plate, and through the hole in the upper plate. An insulating washer is placed upon the screw, and then a small terminal-head.

The Plates

- 1" --

The screw should be a tight fit in the base, and so, by screwing the terminal head up and down, it is possible to vary the distance between the two plates.

The plates are best made from brass, as this is sufficiently springy.





Home-made high-frequency choke



A simple trimming condenser

Tin plate can be used if nothing else is available, although it is generally better not to use ferrous metals in radio parts.

A slip of insulating material must be placed between the plates, a small hole being made in it through which the screw is to pass. The purpose is to prevent a short-circuit when the top plate is screwed tightly down against the bottom one. A small piece of celluloid is suitable.

Points to Note

If the condenser is used for coupling a high-frequency stage take care that the plates really cannot touch each other, for this would short-circuit the high tension supply. It is also necessary to see that the holes in the centres of the plates are large enough so that the condenser is not short-circuited by the adjusting screw.

The capacity of the condenser will be at a maximum when the plates are closest together, and will lessen as they are parted.



A really sensible job you can undertake is this FRETWORK BENC

URING the long winter evenings many readers may find the table illustrated a handy contrivance, as fretwork can be done by the fireside or other convenient place, instead of being restricted to the kitchen table.

It is quite a simple contrivance, easy enough to make and requiring no special fittings. The feet (Fig. 1) are made up of lin. by 3in. wood, halved together at the centre. Glue this joint.

The ends can be nicely rounded off for appearance' sake if desired. For the leg, a reasonably stout piece of wood is desirable, say 11ins. to 2ins. square. Its length should be about the height of an average table, say 2ft. 4ins.

Bracket Pieces

Cut the ends square across and fix to the feet with glue and a single long screw in the centre, the screw being well countersunk so that its head does not scratch the floor.

Some wooden brackets are fitted to this leg, as in Fig. 2. Those at the base are cut to size given and care should be taken to get each one a true right angle. Fix in place with glue and nails at the spots shown by the dotted lines on the bracket in the diagram.

It is wise to bore preliminary holes for these nails with a bradawl to avoid any troublesome splitting. At the top of the leg three similar, but smaller, brackets are fixed, as shown. Glue and a single nail to each will fix these securely enough.

Side Tray

The side where no bracket is fitted is where the "cut out " of the table will come afterwards, and the bracket might block this a little and be a nuisance.

A small tray is provided below the table, convenient for holding tools used in fretwork. It is shown

x 2'

2°x67



Fig. 2-General construction

Fig. 1-The halved feet

in Fig. 3 Cut it from stout wood, lin. thick, or about, and Sins. each way plus the two extending lugs at one end which fit either side of the

These should be spaced sufficiently wide apart to admit the leg between. A rim of 1 in. by 1 in. wood strips is glued round to keep the tools from falling off. This is seen in the diagram. Note, the rim is glued clear of the lugs. Through these lugs bore a hole for a metal or wooden rod.

Fixing the Tray

At the bottom of the tray fix a bracket piece, as shown at Fig. 3, A. This can be securely fixed with a screw driven in through the tray. Its dimensions can be 2ins. by 4ins. or thereabouts. Its purpose is fairly obvious—it takes the strain of any weight in the tray and keeps it in a horizontal position.

The height of the tray from floor level should be decided by the user. It can be most convenient just above the knees and a hole for the rod should be bored through the leg at this height and the tray fixed in place by inserting the rod mentioned. Attach the rod to the leg with a short length of cord to prevent

its getting lost. The tray could be fixed to the leg permanently with a nail each side through the lugs, but the rod arrangement allows for any adjustment suitable to the needs of any user and may be preferable.

Cutting Table

The cutting table, Fig. 4, is a disc of stoutish wood cut to diameter given. If deal is used let it be about lin. thick, a hardwood table can be

thinner, say ½in. to ¾in. wood. The "cut-out" need not be more than 2ins. at the widest and tapers towards the centre but is short of the centre by $1\frac{1}{2}$ ins. The table is to be fitted to the leg with one screw in the centre, it can then be swung round to the most convenient position for work.

A stout round-headed iron or brass screw should be provided, also a metal washer to go under the screw head. In the centre of the table bore a recess with a centre bit deep enough



to let the head of the screw and the washer sink in level with the surface.

This is important, as no screw head must project above-it would be an impediment to moving the work about to suit the fretsaw. The hole for the screw should then be bored in the centre of the recess and should be large enough to let the screw be pushed in with the thumb.

Finishing Points

Fix to the leg by driving the screw in as at Fig. 4, B, tightening it when the cutting table is swung to its best position. A point to note here is the direction of the grain of the wood used for the table, which should be as indicated by the arrow.

This completes the work. It can be left plain, but a coat of paint, or stain and varnish is desirable to all parts except the surface of the cutting table. This can be left in the white, but should be glasspapered smooth.



Fig. 3-Showing table details and fixing

61

Fig. 4—The cutting table and fixing section

A handy mobile shelter from the sun is this GARDEN SCREEN



T is very nice to have a nice sunny grass plot or lawn in the garden, but when sitting out sometimes it becomes too hot to be comfortable. Some people have a large parasol attached to a table, while others perhaps have a complete garden shelter of canvas on a portable framework.

With the sun screen shown here there is always a free circulation of air, and it can be easily turned round to suit the angle of sunshine.

Hinged Flap

The screen shown is of light construction, and consists of one large flat screen with another smaller screen above hinged to it, made adjustable to get good protection from the sun. The whole is made to revolve round a central vertical post so a little adjustment will make for lasting shade.

Figure 1 shows the arrangement of the two screens, with the dimensions included for marking out and cutting

for marking out and cutting

D

Fig. 3—Marking Tool and joint details the various parts. Fig 2 shows how the upper screen is made adjustable by a slotted rod pivoted to the end of the top screen, and attached to the end upright of the large screen at X by a bolt and wing nut.

The joints need to be accurately cut, and these can be either fixed with screws or wing-nuts and washers. The latter method would be useful where there is a lack of storage space.

All the rails can thus be taken apart quite easily, and the whole tied in a bundle with the canvas covering and stored during the

stored during the winter. The type of halving joint shown at A in Fig. 3 can be used at all corners and junctions of middle and cross rails.

These joints must be accurately marked out and neatly cut with the small-tooth tenon saw and with a chisel for the centre halvings. An ordinary pocket knife has been found very useful for cleaning away the wood after the half-cuts have been made in the absence of a chisel.

The angle braces must all be ar-

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2.9-

0

ranged to come at an angle of 45° and these too must be recessed into the other rails for strength.

A Marking Tool

A most useful little tool for marking out the lines accurately on which to cut is shown at B in Fig. 3. It is simply a 45° set square of 3/16in. or jin. wood with a fillet of wood nailed along one edge. This fillet, forming a ledge, can be readily held against the rails and a true 45° angle drawn along the set square edge thus producing the correct angle.

CUTTING LIST

Main Frome---Three horizontals---6ft. Oins Two verticals--5ft. 10ins. One vertical--5ft. 6ins. Four braces---3ft. 7ins.

Top Frame— Two horizontals—6ft. Oins. Three verticals—2ft. 6ins. Two braces—3ft. 1in.

Adjusting Arms— Two—4ft. 6ins. One piece of iron piping 7ft. 4ins. long and 3 clips.

All rails and diagonal braces may be cut from wood 1½lins. by ¾in. or thereabouts. When arranging the diagonal braces be sure to keep them a reasonable distance from the joints of the horizontal and upright braces. Otherwise the rails at these parts are liable to become weakened. Note the braces, therefore, in Fig. 1.

(Continued on next page)



Fig. 2—Side view of frame showing top movement

Garden Screen (Continued previous page)

Where the bolt and thumb-screw comes at each upright edge of the lower frame, a splicing joint should be made to strengthen the upright at this point. The method of forming this spliced joint is shown at C in. Fig. 2 and need no further comment

For the central rod, about which the screen revolves, a length of 11in. diameter iron piping will be required and this may be fixed to the large screen by metal clips as shown at D in Fig. 3.

The piping should be long enough to go into the ground for a depth of from 15ins. to 18ins. A good idea is to form a box casing to go into the ground so the iron rod could be dropped into it and so preserve a permanent hole for the pipe. The inside square of the box casing

should just clear the piping and the wood should be creosoted before being put into the ground.

To allow the screen to revolve round the central upright without

cutting up and damaging the turf, two small wooden wheels could be put one each side of the screen and pivoted with round-head screws.

Alternatively, shaped blocks could be fixed at the corners as shown in Fig. 2.

Awning canvas would be suitable for stretching over and nailing to the frames, or of course the canvas could be tied to the frames by means of tapes sewn on.

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CUT FROM S/188. WOOD.

NOTE.—This design sheet is only presenied free with the current issue of Hobbies and not with back numbers. Further dopies may be obtained.

THE PIECE OF WOOD CUT FROM THIS OFENING TO BE CHAMFERED ON ITS BACK EDGES AND REINSERTED BEHIND PICTURE AND GLASS.

OVERLAY

The arrows indicate the direction of grain of wood. ROUND CLASS CUT ORE OF AND CHAMPER SECTION.

OVERILAYS RO OFERING, CU EACH 3:46m, AN

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FROM THIS OPENING TS BACK EDGES AND ICTURE AND GLASS.

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One G2 One J3

The price is shown in Habbles Weakly, May SN4, 1946, but is subject to revision. See the current edition of Hebbles Handbook, or write for price is Hobbles Limited, Devaluam, Horfelz.

CUT ONE 1, MA

OVERLAY.

ER EDGE

B

OVERLAY.

OVERLAYS ROURD CLAIS OPENING, CUT ONE OF RACH SIGE AND CHAMPER AS SUCTION.

The arrows indicate the direction of grain of wood.

WINSTON CHURCHILL PHOTO FRAME

THE main portion of this frame can be cut from one panel of 3/16in. wood, 15ins. by 10½ins. (J3) and all the other smaller pieces from one panel of ½in. wood (G2) 9ins. by 4ins. Patterns should be pasted down with the grain running in the direction shown by the arrow, and left to dry before cutting.

The frame itself is cut carefully to preserve the curves and the flow of the laurel decoration each side. The piece of wood coming from the centre is used for backing the glass and picture, so a drill hole should be made right in the corner and as unobtrusively as possible where it will be covered by the overlay strips later.

The position of the various overlays is indicated by the dotted lines, and they should be noted so the appropriate parts can be glued in that position after the design paper remains have been glasspapered off.

Minor Parts

Having cut the main piece, clean, up thoroughly both back and front, and proceed with the cutting of the smaller parts forming the overlays.

Four narrow ornamental strip pieces are made to form the surround for the picture, and a good joint is only obtained at the corners by cutting the ends of these strips correctly to an angle of 45 degrees.

The shorter edge of each of these strips is chamfered to an angle of 45 degrees as shown by the shaded sections. Do not carry the chamfer quite to the bottom. If you do, a sharp edge of wood will remain. It is better to have a slight thickness stopping the chamfer slightly before the bottom. Having seen the frame forms correctly, glue it in place around the opening in the back so there is an equal projection all round.

In the overlays bearing the words, cut the letters portion out first, being careful to get them all the same height and width. Clean these pieces up and glue to the back in their proper position.

Backing Frets

A good plan is to back them up with a piece of fancy paper—silver or gold if you can obtain it. You may also like to paint the lettering and the edges of the wood of these parts. This will make the wording stand out very strongly against the background.

The strut to make the whole thing stand correctly is 74 ins. tall, and if the hinge supplied with the parcel of wood is used, an indentation must be made at the top as shown. The rectangular portion of the hinge is then glued to the strut itself, and the rounded portion to the backboard of the frame 44 ins. upwards.

Fixing the Hinge

Notice that only one screw hole is provided in the hinge, and to prevent any side play a couple of further short nails should be put through holes drilled in the metal. The top edge of the back strut will be chamfered to an angle which will allow the frame to slope when the strut is open.

In addition to this, it is advisable to put a stay cord near the bottom of the strut and across to the back of the main frame. This will prevent it pulling open too far or wringing the hinges.

If you are proposing to stain the frame, it should be done before the overlays are glued on, and of course, before the picture is put in place.