

# METAL WORK AND ETCHING

## INTRODUCTION

**I**T is the intent of this and several succeeding articles to point out a few of the many artistic possibilities of brass etching that render this gentle art one of the most fascinating and least expensive of hobbies. It is fascinating because the field is almost without limit. Book ends, on which is etched an attractive design or favorite quotation; desk sets, comprising the blotter corners, stationery rack, calendar and paper knife, all etched with the same motif; arts-and-crafts jewelry, such as hatpins and watch fobs; pipe and tie racks and match holders, not to mention the many plain hammered brass and copper pieces that may be purchased and etched in all manner of pretty designs, are among the many practical and attractive possibilities.

This art is fascinating because it affords the worker every opportunity for the display of original talent in working out of new designs, and those to be illustrated in this series have been selected not so much on account of any particular artistic merit, but because they are suitable for the amateur and serve to clearly set forth the method involved. And unless we may hope to so instruct the reader that he or she will be able to apply these methods to the carrying out of new ideas and designs, our efforts, we feel, will have been in

the etched and unetched portions must be developed by means of some oxidizing agent such as a strong solution of butter of antimony, which soon darkens the clean surface of the metal. The high lights are then rubbed up with pumice or a piece of old emery cloth, after which a uniform coat of lacquer should be put on, so as to render the effect permanent.

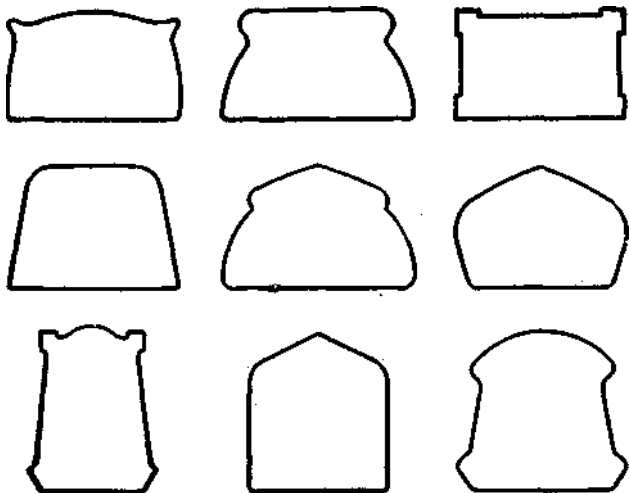


Fig. 3—Outline Suggestions for Book Ends

Four additional designs for book ends are illustrated, and the line drawing (Fig. 3) gives a few suggestions in the way of different outlines. Referring to the former, the design shown in Fig. 2 B, at the bottom, requires considerable hammer work, as\* the outer edge is bent over and hammered down all the way around the top and sides, and the center portion is beaten out.

## WHISK BROOM HOLDER

ANOTHER of the many attractive household articles that may be made at the cost of a few cents is the whisk-broom holder. In the design illustrated, the back board has beveled edges and bears a brass or copper plate etched with a simple design, under which is fastened a bent strip of the same metal to hold the broom. If desired, the metal plate may be replaced with a match holder or even a small mirror, in which case the etching will be confined to the strip that holds the whisk-broom.

A sufficient number of these household articles have been described and illustrated to put any amateur craftsman on the road to the artistic solution of many of the little problems in decoration and furnishing that come up from time to time. Any of the designs described for other articles may be used on



Fig. 18- Whisk Broom Holder

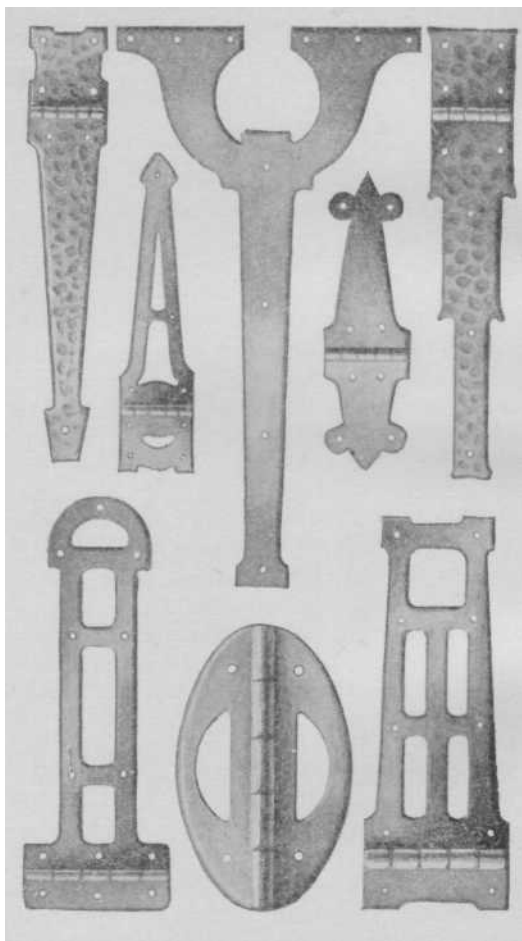
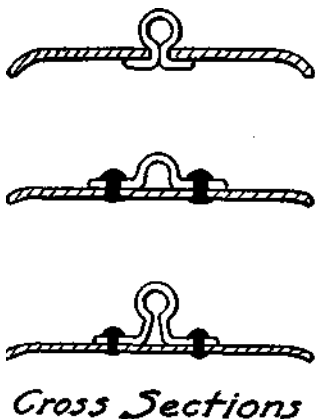


Fig. 33—Artistic Designs for Hinges

## DRAWER PULLS

**T**HERE is probably no article within the scope of home metal work, in the making of which the efforts of the amateur show up to better advantage than in the case of arts-and-crafts drawer pulls. From our illustration of nine specimens the reader will get some idea of the variety obtainable; and, when it is realized that both brass and copper are available, and these in various finishes, the artistic possibilities will be evident. A piece of mission furniture, if but of pleasing design, though made by a school-boy and from pine lumber, will, when properly stained and fitted with this hand-made hardware, present an attractive appearance.

The gauge of the metal will run about No. 16 for average sizes. When it is desired to keep the piece perfectly flat, do all the cutting with the metal saw. Interior openings require the drilling of a hole for the insertion of the saw blade, the end of which is then re-connected to its frame. The handles are of brass or



*Cross Sections*

Fig. 36—Drawer-Pull Construction

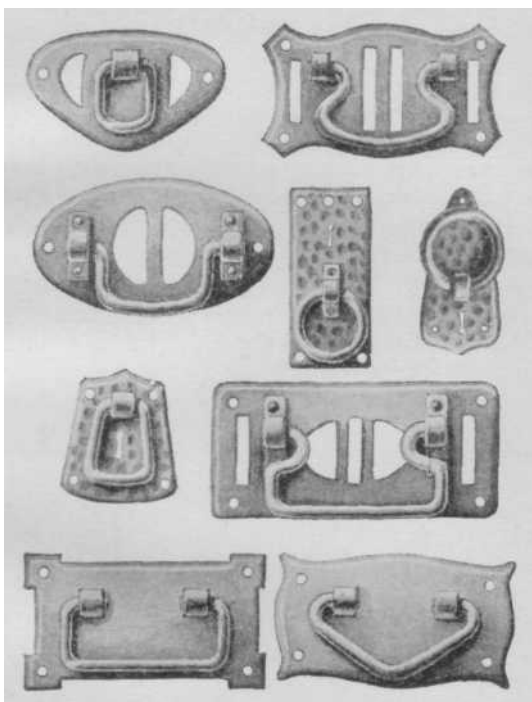


Fig. 35—Designs for Drawer Pulls

## A BRASS BOOKMARK

**S**ECURE a piece of brass of No. 20 gauge, having a width of  $2\frac{1}{4}$  in. and a length of 5 in. Make a design similar to that shown, the head of which is 2 in.

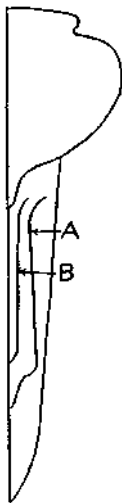


Fig. 40

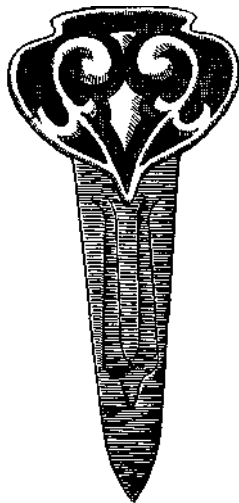


Fig. 41

Designing the Bookmark

wide, the shaft 1 in. wide below the head and the extreme length,  $4\frac{1}{2}$  in. Make one-half of the design, as shown in Fig. 40, freehand, then trace the other half in the usual way, after folding along the center

line. Trace the design on the metal, using carbon paper, which gives the outline of the design Fig. 41.

With the metal shears, cut out the outline as indicated by the drawing. With files, smooth off any roughness and form the edge so that it shall be nicely rounded.

The parts of the design in heavy color may be treated in several ways. A very satisfactory treatment is obtained by etching, then coloring. Clean the metal thoroughly with pumice stone and water, or with alco-

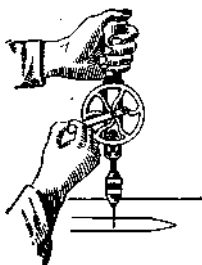


Fig. 42

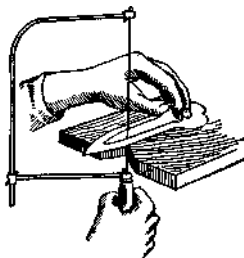


Fig. 43

Sawing the Metal

hol, before the design is applied. Cover all the metal that is not to be lowered with a thick coating of asphaltum. Allow this to dry, then put on a second coat. After this has dried thoroughly immerse the metal in a solution composed as follows: 3 parts water, 1 part sulphuric acid, 1 part nitric acid.

Allow the metal to remain in this solution until the exposed part has been eaten about  $\frac{1}{32}$  in. deep, then remove it and clean off the asphaltum, using turpentine. Do not put the hands in these solutions, but use a swab on a stick.

For coloring olive green use 2 parts water to 1 part permuriate of iron. Apply with a small brush.

## BRASS FRAME IN REPOUSSE

**R**EPOUSSE is the forming of raised designs on metal by hammers and punches, the design being worked up from the reverse side. There is nothing especially hard in working up the design of the frame shown.

Punches can be purchased, as can the pitch bed or block. Both can be made easily, however. There will need to be several punches of different sizes and shapes. A piece of mild steel about  $\frac{3}{8}$  in. square can be easily worked into tools shaped as desired. A cold chisel will be needed to cut the metal to length, a file to reduce the ends to shape, and a piece of emery paper to smooth and polish the end of the tool so that it will not scar the metal.

A small metal box must be secured to hold the pitch. The illustration shows an iron receptacle. The pitch is prepared by heating the following materials in these proportions: pitch, 5 lb.; plaster of Paris, 5 lb.; tallow,  $\frac{1}{2}$  lb. To put it in another way, use pitch and plaster in equal parts with  $\frac{1}{10}$  part tallow. See that the pitch and plaster are dry so that the moisture will not cause the pitch to boil over. Keep stirring the mass so that it never boils. Melt the pitch first and add the plaster by degrees.

For a piece of repousse such as the frame shown, secure a piece of brass about No. 18 gauge. With carbon paper trace the design on the brass. Place the metal on the pitch bed and work over the outline of

the design. Use the chisel-edged tool and try to make the lines continuous. When this has been done, heat the pitch slightly and place the metal, design down, on the pitch, and with the raising punches work up the shape as desired after the pitch has hardened. When the desired form has been obtained, turn the metal over and "touch up" any places improperly

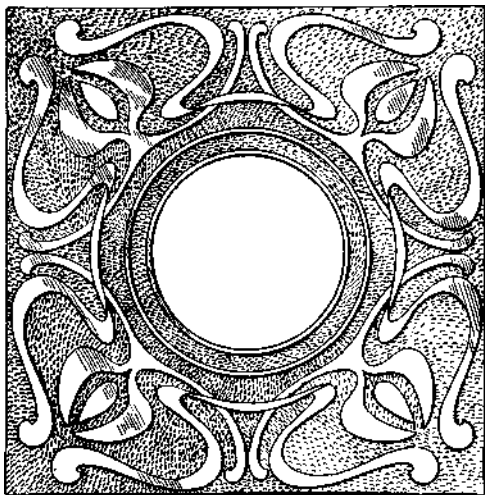


Fig. 46—Design for the Frame

raised. The metal will probably be warped somewhat. To remedy this, place a board on the metal and pound until the metal assumes a flat shape again. Next drill a hole in the center waste and saw out for the opening, using a small metal saw. Trim up the edges and file them smooth.

Clean the metal thoroughly, using powdered pumice with lye. Cotton batting fastened to the end of a