

#### 4- WORK DETAILS OF MOST FREQUENT OCCURRENCE IN THE SMITHS' ART.

Although the number of these is almost countless and they vary materially in style with the various periods of art; some, which are constantly recurring and form, as it were, the ABC of the "formlanguage" of the smiths' art, may be mentioned. No pretence to completeness is made, yet such as are referred to may prove useful to those desiring to make practical use of this manual.

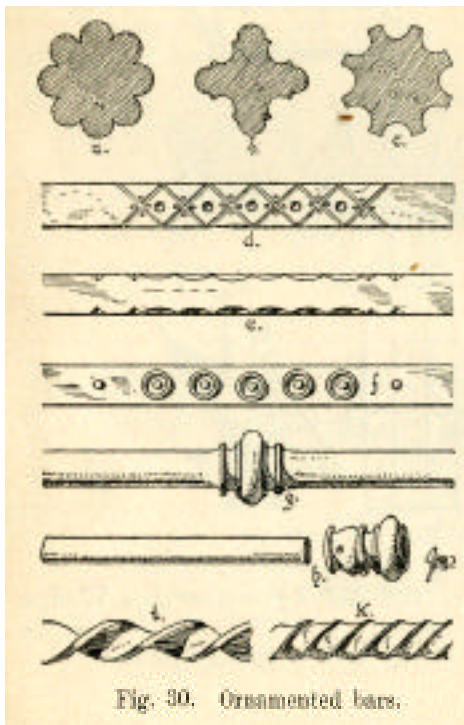


Fig. 30. Ornamented bars.

Let us first consider the ornamentation of bars, beginning with the cross sections. The rolling-mills of the present day are able to produce fancy bar-iron with stellate, cruciform, and many other such sections. These are, however, not frequently used and were formerly unknown. In the middle-ages bar- or rod-iron was not seldom ornamented by chiselling and punching simple patterns into it (Fig. 30, d), or the edges were fretted (Fig. 30, e). By the use of swages regularly shaped protuberances were produced (Fig. 30, f). Swages are also used to produce moulded swellings (Fig. 30, g). Of late this is done more simply, if less genuinely and solidly, by slipping malleable cast-iron sockets, &c. over the bar and riveting them (Fig. 30, A).

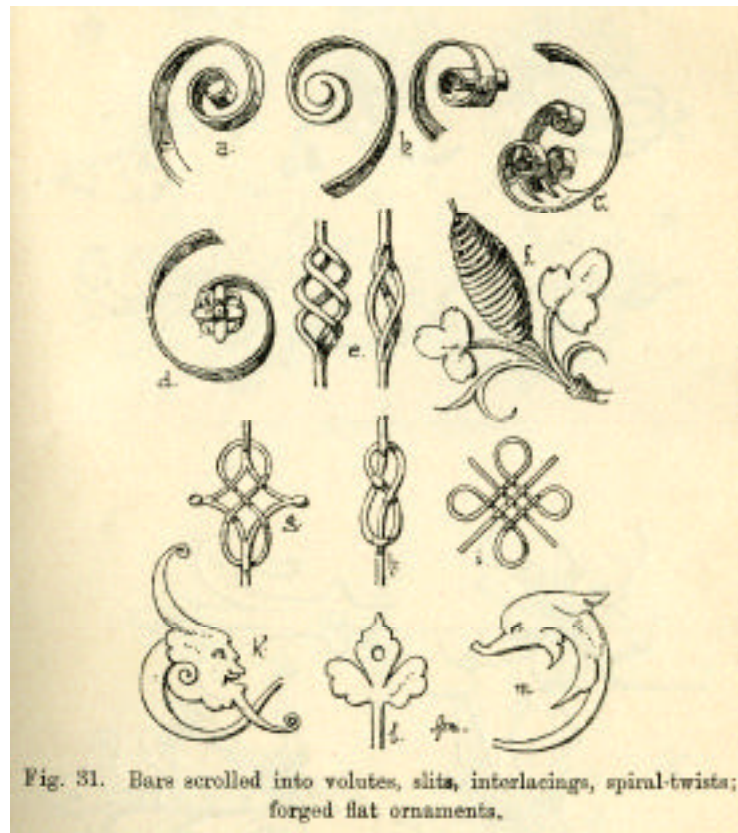
A good, effective and long-known process is the **Twisting** of bars While red hot, which can be done with the aid of the tongs in light work, but which in heavier work requires the help of a screwstock or wrench (Fig. 30, i, k).

**Scrolling into volutes** is universally practised. There are many varieties of these. Thus the bar may be bent with the scroll wrench or round a scrolling iron without varying the section of the bar (Fig. 31, a), or it may be drawn down or snubbed, thus varying the cross section (Fig. 31, b), or it can be slit into 2 or 3 volutes (Fig. 31, c).

The inner end of the volute is often ornamented with a rosette or knop (Fig' 31, d).

The **Slitting** and opening out as a break in the length of a bar is effective but uncommon (Fig. 31, e).

**Spindle-shaped spiral twists**, especially of round rods and thick wires, are more common (Fig. 31, f).



**Repeated interlacings**, a kind Of plaiting, are favourite forms in the renaissance style (Fig. 31, g, h, i).

The **Hammering out of bars into Flat ornaments**, such as leaves, masks, or grotesques, also often recur in the same period of art (Fig- 31, k, l, m). The outline is cut out with the chisel or shears and then finished off with the file.

The **Beating of scroll ends into forged or embossed leaves** carries the art a step farther, and reached great technical perfection.

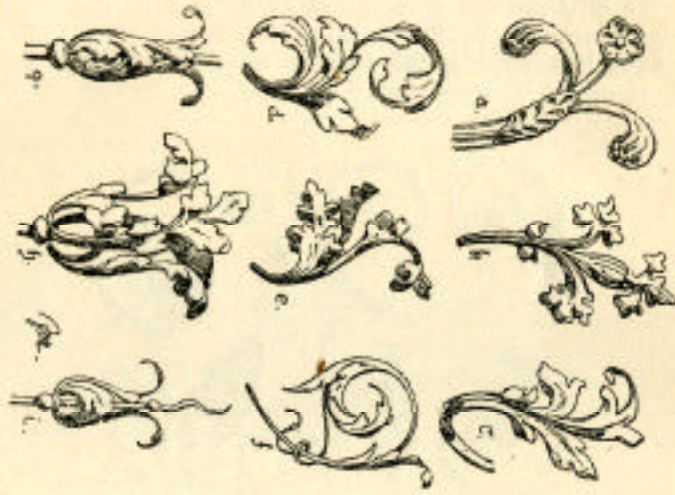


Fig. 32. Embossed leaves and acanthus husks.

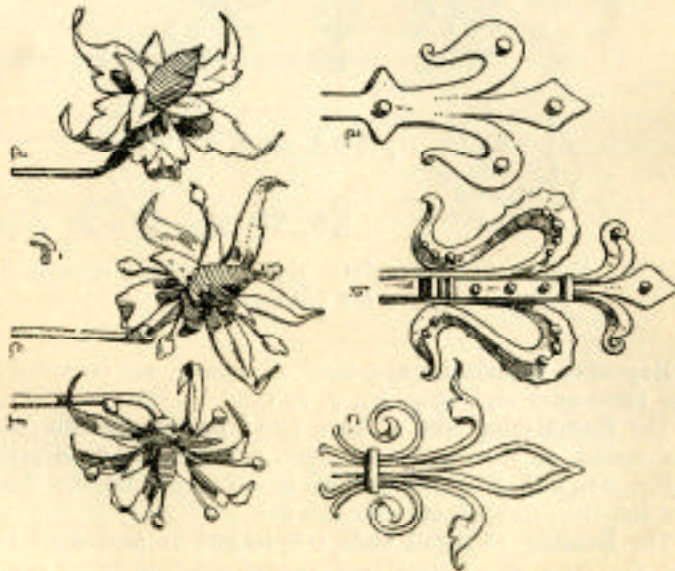


Fig. 33. Examples of lilies and other flowers.

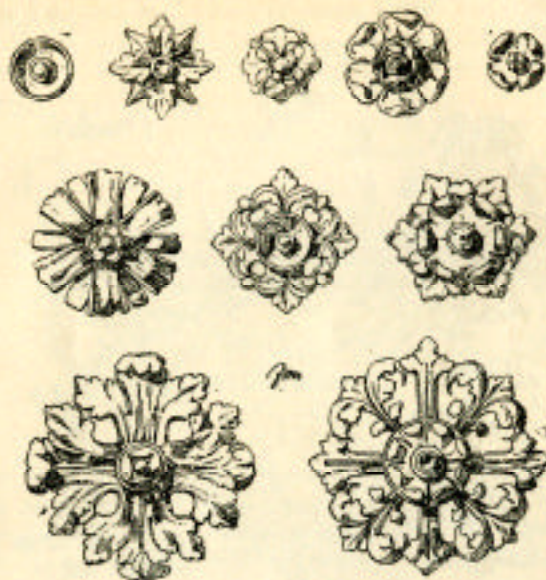


Fig. 34. Examples of rosettes.

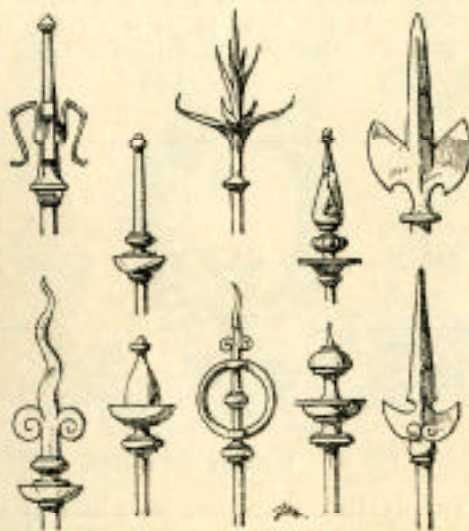
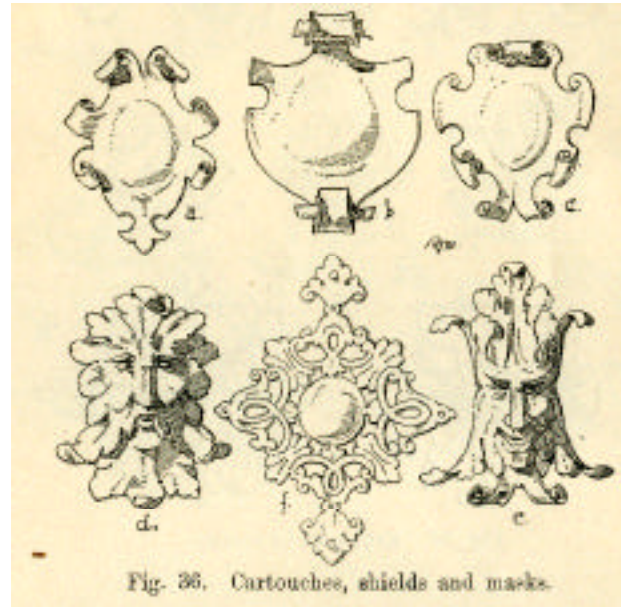


Fig. 35. Spear-heads and knops

in the baroque and rococo ages. The principal natural motive is the acanthus. Fig. 32 shows a number of foliage patterns (a to f).



The **Acanthus husks** may be mentioned here. They serve as ornamental envelopes to the bars, or as free ends, or cappings to them (Fig 32, g, h, i). One often finds in the latter position



**Lilies** (fleur-de-lis); these were often used as motives in the middle-ages and frequently recur later (Mg. 33, a, b, c). They are -only one of the peculiar forms of