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F. G. BROTTZ

METHOD OF PRODUCTION OF VALVE HANDLES

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My invention relates to improvements in the method of production of valve handles of the type customarily used in connection with supply fittings for bath tubs, lavatories and similar fixtures.

Such valve handles are practically always electro-plated with nickel or chromium or both and have hitherto been buffed and polished over their entire surfaces prior to and sometimes after plating to give a smooth or bright finish. This buffing and polishing operation is both difficult and expensive due to the numerous curvilinear surfaces on the handle, as such surfaces do not lend themselves to machine or automatic buffing and polishing as do flat or planar surfaces and consequently require tedious and expensive hand buffing and polishing.

It is the object of my invention to reduce the amount of buffing and polishing required on such a handle, particularly the portion which must be performed manually.

With the foregoing and related objects in view, the invention consists in the method illustrated in the accompanying drawing, in which Figure 1 is a plan view of a portion of the apparatus used in the performance of the method; Figure 2, a sectional view thereof taken along the line 2—2 of Figure 1, also illustrating a ram forming part of said apparatus; Figure 3, a sectional view of said ram taken along the line 3—3 of Figure 2; Figure 4, a perspective view of a valve handle blank; and Figure 5, a perspective view of a completed valve handle.

In the performance of the invention a suitable metal, such as brass, is formed into a blank 1 having the general configuration of a valve handle, which is ordinarily substantially cruciform, as illustrated in Figure 4. Such a handle has a substantially flat upper surface and a substantially flat lower surface parallel therewith with the connecting vertical surfaces of curvilinear configuration.

In the practice of the invention the curvilinear portion of these vertical surfaces is formed with corrugations or splines 2 extending between the upper and lower surfaces. The splines 2 may be formed by passing the blank 1 through a suitable broaching fixture such as that illustrated in Figures 1 and 2 and comprising a circular base 3, slotted to receive cutters 4 spaced in a cruciform arrangement as illustrated in Figure 2. Preferably there are several of these cutters superimposed, for example, three as illustrated in Figure 2, the upper cutters being roughing cutters designed to cut the blank to accurate shape and the lower cutter being provided with teeth 5 adapted to cut the splines 2 in the blank.

The cutters 4 are held in position by cap screws 6 and by the annular collar 7. As will be observed from Figure 2, the outer edges of the cutters 4 are beveled and the collar 1 is oppositely beveled, providing an inwardly operating wedging action. Thus the cutters 4 may be adjusted inwardly to compensate for shortening due to sharpening by loosening the cap screws 6 and tightening the screws 8, thus forcing the collar 7 downwardly and the cutters 4 inwardly. When the desired adjustment is secured, the cap screws 6 are again tightened. A power driven punch or ram 9 is provided for forcing the blank 1 through the broaching fixture and thereby causing the teeth 5 to cut the splines 2. It will be understood, of course, that the splines may be formed in some other manner if desired, the invention not being limited to the formation of the splines by broaching.

After the splines 2 are formed the blank 1 is buffed and polished preparatory to plating. I have discovered, however, that it is unnecessary to buff or polish the splined surfaces and that they may be plated directly without further treatment (other than chemical cleaning to remove oil and grease if indicated). The operation of buffing and polishing may be performed by any of the well known processes; however, since only relatively flat surfaces are to be buffed, the article lends itself readily to buffing and polishing by automatic machinery.

The blank is then cleaned and plated by any of the well known processes, such as, for example, first plated with nickel and then chromium. Regardless of the type or process of plating, the splined surfaces take on an ornamental and attractive appearance and need no buffing, polishing or coloring, either prior to or after plating.

It will thus be observed that a large portion of the buffing and polishing is entirely eliminated while the remainder is rendered adaptable to automatic operation.

I claim:

1. The method of producing valve handles consisting of forming a suitable metal into a blank having substantially flat parallel upper and lower surfaces and connecting vertical surfaces, forming a substantial portion of said vertical surfaces into splines extending between said flat surfaces, buffing and polishing only the unsplit surfaces and then plating both the splined and unsplit surfaces.

2. The method of producing valve handles consisting of forming a suitable metal into a blank having substantially flat upper and lower surfaces and curvilinear connecting vertical surfaces, forming splines extending between said upper and lower surfaces over a substantial portion of said vertical surfaces, buffing and polishing only the unsplit portions of said blank and then plating all surfaces.

FRANK G. BROTZ.