To all whom it may concern:

Be it known that I, EUGENE MOREHOUSE, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Methods of Forming Buttons, of which the following is a specification.

This invention relates to an improved button or method of forming the same, and has for its object to provide a button preferably of the collar button type which has an enlarged base or flange with a rolled edge portion; and the particular feature of the invention is that the stock of this roll is flattened to close and seal the base at its edge against the entrance of acid when subjected to a bath of the same preventing it from getting under the roll, or inside the button when a shoe is employed, to subsequently run out and destroy the appearance of the button.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claim.

In the accompanying drawings:—

Figure 1 is a side elevation of one form or style of button which forms the subject of my present invention.

Figure 2 is an enlarged section illustrating a base member or shoe as rolled over the edge of the button flange with the usual open roll.

Figure 3 shows a portion of a button with the rolled edge of the base or shoe as flattened to close and seal not only the roll itself but also to seal the edge of the base to prevent the entrance of foreign matter thereinto.

Figure 4 is a detail showing a portion of a button shank and flange with the edge of the flange rolled with the usual open style of roll.

Figure 5 shows the edge as flattened with the roll closed to seal the space normally formed inside of the roll to prevent the entrance of foreign matter thereinto.

Figure 6 shows the swaging dies in section and in position to compress or close the roll at the edge of the button.

The ordinary type of collar button is provided with the usual roll which is illustrated in Figure 4 and in some cases the flange is covered with a base or shoe whose edge is rolled over that of the flange, the rolled portion being in most cases sufficiently loose to permit the passage of acids into the roll of the edge when subjected to a bath of the same and where a shoe or base is secured to the flange the acid often passes the roll or curve at the edge and flows down into the space between the shoe and the flange and into the hollow tubular stem of the button, and after the button is finished this acid will work out and attack the plating metal destroying the appearance of the button and rendering it quite unsatisfactory. To obviate this serious difficulty in the construction of buttons of this character, I have devised a method of closing the rolled portion about the edge of the flange so as to effectually close and seal this button base at its edge and so effectually prevent entrance of foreign matter thereinto; and the following is a detailed description of my improved construction and the method by which the same is obtained:—

In forming a one-piece collar button the same is usually first drawn up into thimble form from sheet stock and the shank member successively hammered, rolled or spun to reduce its diameter below that of the head, leaving a greatly enlarged, outwardly-turned, bottom flange.

In some cases in order to provide the proper finish about the edge of this flange, its edge is turned upwardly and inwardly to form a roll thereon.

In practice such a roll when made in the usual way is open as at 14 and although it is the intention of the manufacturer to turn this roll tightly over against the surface of the flange it is found almost impossible to do this with every button owing to the fact that the drawing tools become worn to some extent also the stock itself varies in thickness and, therefore, the roll at the edge in some cases is quite tight, that is, the lower portion of the curl as at 15 will rest against the adjacent portion of the flange thereby tightly closing this portion, but other portions of the roll in the same or in other buttons may vary in thickness to such an extent that the roll is not sufficiently close to be absolutely tight and therefore, the roll is not sealed against entrance of the acid in which the buttons are immersed in washing.
or coloring and shortly after the buttons have been finished this acid works out, attacks and destroys the gold plate or precious metal deposited on the surface of the stock thereby exposing the base metal beneath which quickly corrodes and becomes unsightly and so injures the appearance of the button rendering it practically unsalable and if they have already been sold they are often returned to be recolored and refinished. This is particularly the case in the cheaper class of collar button on which gold is deposited by an electroplating process. To obviate this serious difficulty I provide a die best illustrated in Figure 6, which engages the under side of the base or flange in the construction illustrated in Figure 4 while the upper portion 21 of the die descends upon the roll flattening the same into substantially the shape illustrated in Figure 5 in which the open portion of the roll is shown as having been effectually and completely crushed and closed thereby sealing and effectually preventing the entrance of foreign matter thereinto.

In other cases where the shoe or outer base member 16 is employed the rolled portion of the edge of this member is flattened as at 17, the open portion of the roll being tightly closed and at the same time the inner surface of the shoe at 18 is forced against the bottom edge of the flange 12 while the inner surface 19 of the roll is forced against the upper surface of the flange thereby completely sealing both the roll and the edge of the base effectually preventing foreign matter from either entering the roll or from entering the opening between the shoe and the flange, or from entering the hollow shank portion of the button.

By flattening the edge of this button I accomplish three objects: first, I exclude foreign matter and so prevent the deteriorating after effects of acid which may otherwise be contained therein and come therefrom; second, I reduce the thickness of the base of the button which is of importance especially in collar buttons of this character as the thinner the base the better it is liked as the room taken up thereby inside the collar is reduced to the minimum; and third, by flattening this roll I broaden the inner engaging or wearing surface 17 at the edge of the roll thereby prolonging the wearing life of the precious metal at this point particularly where thinly plated stock is employed.

I claim:

An improved method of forming a metal button, which consists in drawing and shaping the button into a long body, reducing the body to form a long thin neck portion with a broad flaring base portion at one end, curling or rolling the edge of the base upwardly and inwardly and under, and flattening the stock at the top of the curl or roll to close and seal the space normally formed inside of the roll against the passage of foreign matter into the curl.

In testimony whereof I affix my signature.

EUGENE MOREHOUSE.