(No Model.)

I. SMITH.

BUTTON.

No. 381,438. Patented Apr. 17, 1888.

Fig. 1

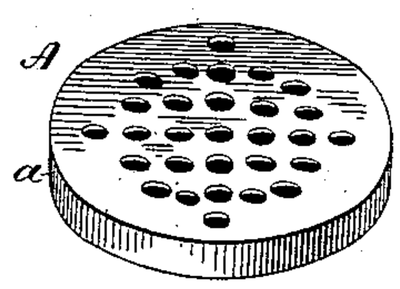

Fig. 2.

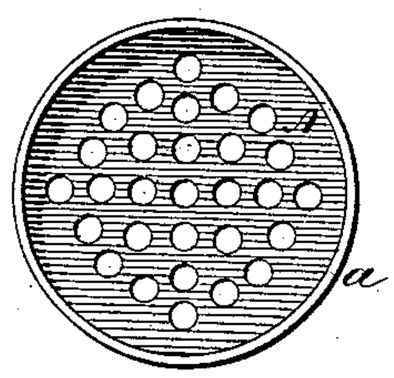

Fig. 3

Fig. 4.

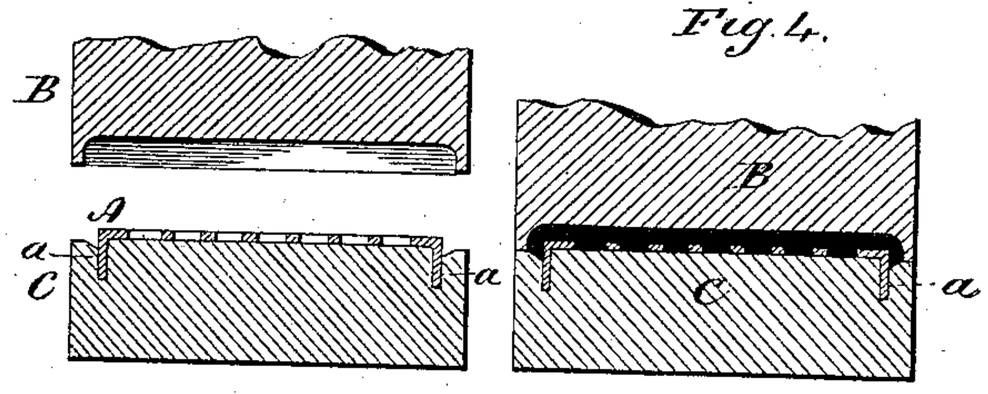

Fig. 5.

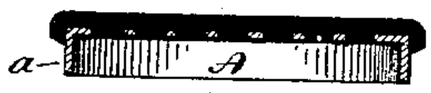

Fig. 6.

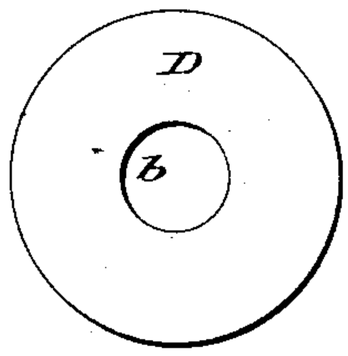

Fig. 9.

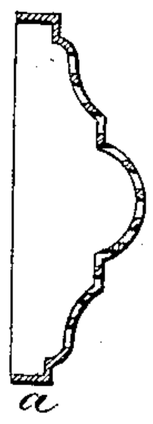

Fig. 10.

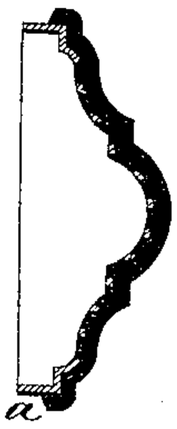

Fig. 11.

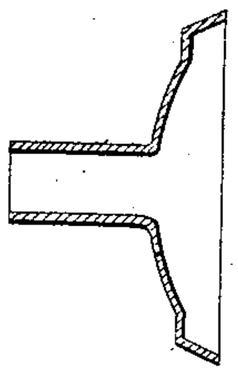

Fig. 7.

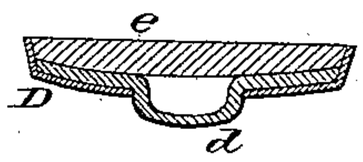

Fig. 12.

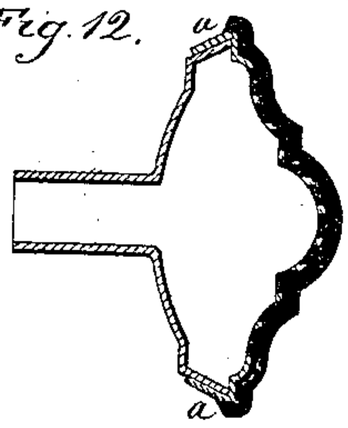

Fig. 13.

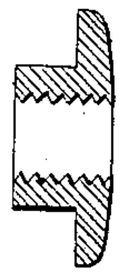

Fig. 14.

Fig. 8.

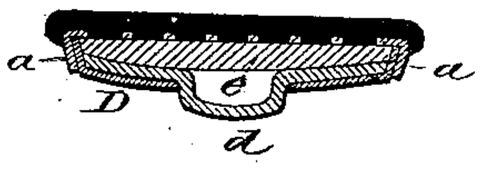

Fig. 15.

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Fred C. Earle

Isaac Smith,
Inventor.
By atty.
Wm C. Earle.

UNITED STATES PATENT OFFICE.

ISAAC SMITH, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF TO FREDERICK S. BECK, OF SAME PLACE.

BUTTON.

SPECIFICATION forming part of Letters Patent No. 381,438, dated April 17, 1888.

Application filed February 16, 1888. Serial No. 264,316. (No model.)

To all whom it may concern:

Be it known that I, ISAAC SMITH, of Brooklyn, in the county of Kings and State of New York, have invented a new Improvement in Composition-Faced Buttons and other Articles; and I do hereby declare the following, when taken in connection with accompanying drawings, and the letters of reference marked thereon to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a perspective view of the cup or face blank for a button as prepared to receive the facing; Fig. 2, an inside view of the face-blank; Figs. 3 and 4, the dies and operation of applying the composition face to the cup or face blank; Fig. 5, a central section through the face-blank with the coating applied; Fig. 6, a rear view of the button-back; Fig. 7, a central section of the button-back; Fig. 8, a section of the button-back, Fig. 7, and of the face, Fig. 5, set together. Figs. 9, 10, 11, and 12 represent the invention as applied to the manufacture of knobs; Figs. 13, 14, and 15, the invention as applied to the manufacture of prop-nuts.

This invention relates to an improvement in the construction of articles—such as buttons, knobs, and various other articles—in which the face is made from a composition molded while in a plastic state and hardened by drying or curing—such as india-rubber and various compositions.

Composition, particularly india-rubber, is an expensive material, so that if the article—such as a button, knob, or like article—be made of solid composition, the expense is too great in many cases to be practical.

The object of my invention is to construct such articles with a surface the same as if made solid, yet in fact with but a thin covering; and it consists in a sheet-metal scalp, perforated, the perforated surface covered with composition, the composition penetrating the perforations as a means for uniting the composition to the metal, the metal scalp being adapted to be closed over the body as a means of securing the face thereto, and as more fully hereinafter described.

The invention is more especially adapted to the manufacture of buttons than almost any other article, yet it is applicable to other articles. I shall show the invention as employed in the manufacture of that class of buttons which are provided with a flexible eye.

In the manufacture of this class of buttons I first prepare a cup or face blank, A, from sheet metal of nearly the size and of the general shape required for the face of the button. This cup is substantially the same as that employed in the manufacture of cloth-faced buttons, except that it is perforated with numerous holes, as seen in Fig. 2. A mold or die is prepared having a cavity corresponding to the face and edge of the button required. B, Fig. 3, represents a section of such die. With this is a companion die, C, which corresponds to the interior of the cup. The cup A is placed upon the die C, as represented in Fig. 3, and the india-rubber or other plastic composition is placed upon the die C, and then the two dies B C brought together, as seen in Fig. 4. The composition will be forced upon the cup and into the perforations thereof and the face and edge given the required configuration or ornamentation. The composition thus applied leaves the flange *a* of the cup exposed upon the back of the composition, as seen in Fig. 5. This cup is now like the cup employed in the usual manufacture of cloth buttons, except that the facing is applied to the cup only and does not project over the edge of the flange, as in the case of a cloth button.

The back of the button is a disk, D, (see Fig. 6,) with a central opening, *b*, the same as for a cloth button, and it corresponds in external diameter substantially to the interior of the cup A. The back D is filled in the usual manner, first with a fabric to form the eye *d*, and then with pasteboard or other suitable disks, *e*, as seen in Fig. 7. This filled back is then set within the coated cup, and the flange of the cup is closed over the back, as seen in Fig. 8, in the usual manner for closing the cups onto the backs of buttons. This completes the button, and when finished the composition facing and edge are alone exposed, and have the appearance of a solid composition; but yet in fact there is but a thin coating, but this coat-

ing is supported by the metal cup, and gives to the button a strength quite equal to if not greater than a solid button.

The application of the cup to flexible eye-buttons will be sufficient to enable others skilled in the manufacture of buttons to apply the coated cup or front to buttons of other classes.

As a face for a knob, a cup is prepared in substantially the same manner, say, as seen in Fig. 9, and may be in any desired shape, but so as to leave the flange *a* surrounding it. The face is perforated, as in the case of the button, and the surface is coated and the edge formed in like manner, as seen in Fig. 10.

The back of the knob is prepared in any of the usual methods for preparing metal backs for knobs, say as seen in Fig. 11. Then the coated face is placed upon the back and closed thereon, as seen in Fig. 12, the knob is complete, and presents the same face and surface as if made solid, yet with but a thin coating, the metal, however, giving it strength and durability equal to a solid knob.

Another application of the invention is for top-prop nuts for carriages. Such a nut is represented in Fig. 13. The surface of these nuts is required in many cases to be covered. To apply my invention to these nuts, the cup is made, as in the first instance, of the required shape, and with a flange, *a*, around its edge of a diameter corresponding to the diameter of the head of the nut. The surface is coated, as represented in Fig. 14, leaving the metal flange *a* exposed. Then the coated cup is placed over the head of the nut and closed thereon, as seen in Fig. 15. These illustrations will be sufficient to enable those skilled in the art to apply the invention to the various uses to which it is adapted.

It will be understood that the composition after being applied to the head is cured by the usual methods, according to the kind of composition employed, and is best done before the coated cup is applied to its back.

The face may be molded in imitation of fabrics, enamels, or embossed in any desirable style, such imitation or embossing being produced by the dies, in the usual manner.

I claim—

The herein-described improvement in composition-faced buttons and other articles, consisting in a metal cup-shaped face-blank perforated, and a coating of composition pressed upon the outer surface of said face-blank, so as to interlock with the said perforations, but leave the flange of the cup exposed, combined with a back in shape corresponding to the interior of the flange of the cup, and the said flange of the cup closed over the edge of said back, substantially as described.

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Witnesses:
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WALT. D. GARDNER.