

(No Model.)

W. C. HOWARD.

BUTTON.

No. 316,624.

Patented Apr. 28, 1885.

Fig. 1.

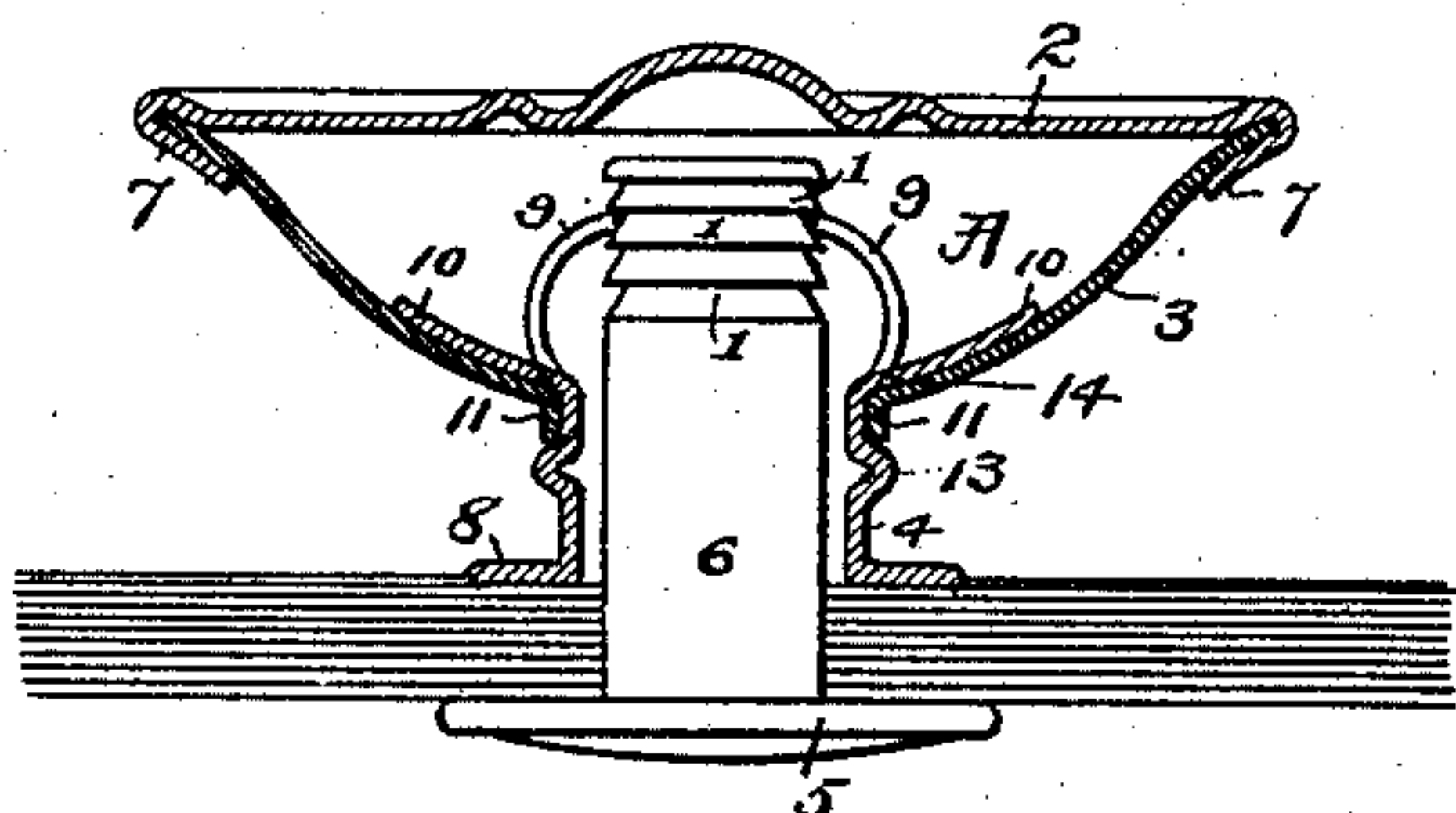


Fig. 2.

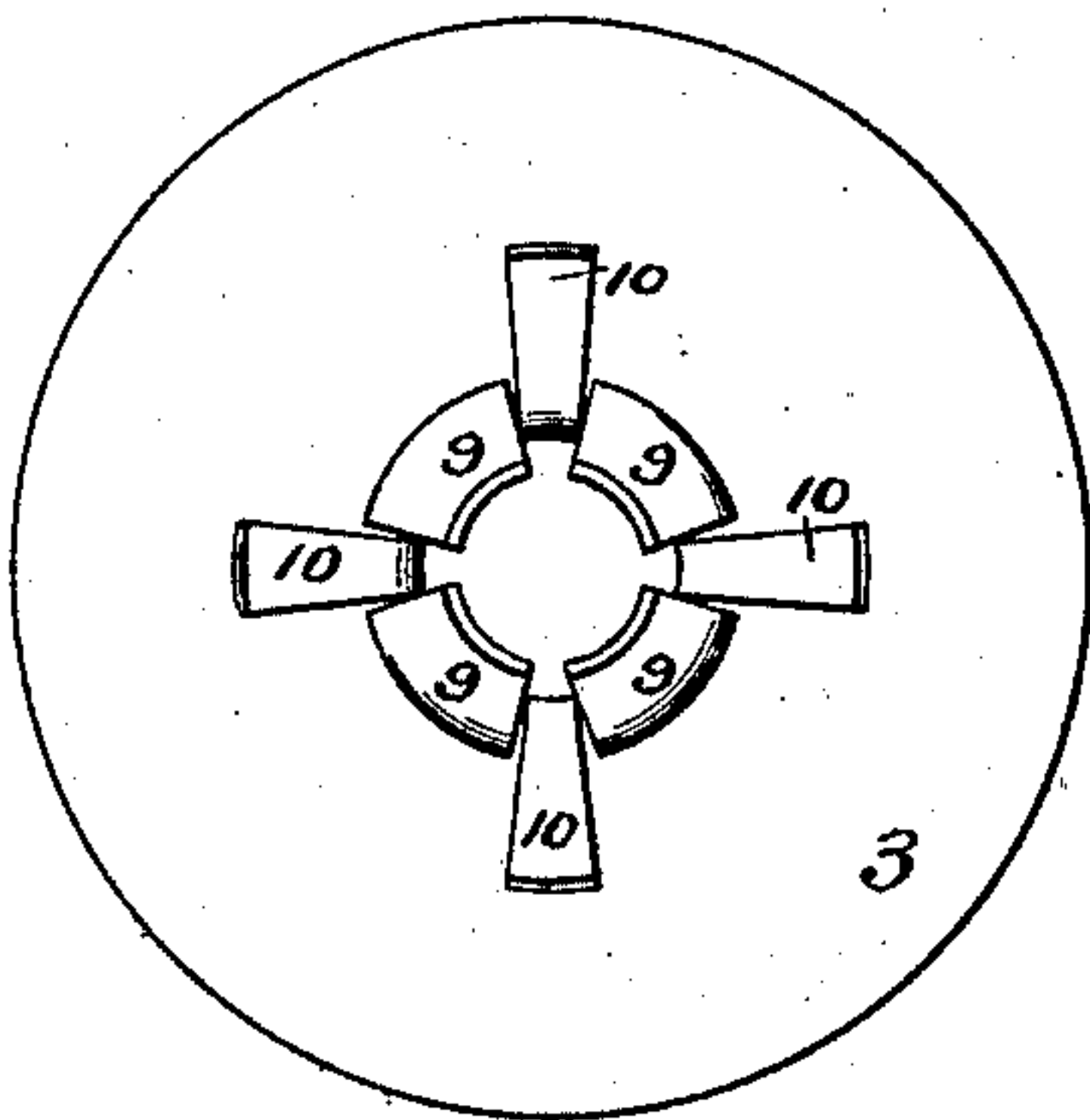


Fig. 3.

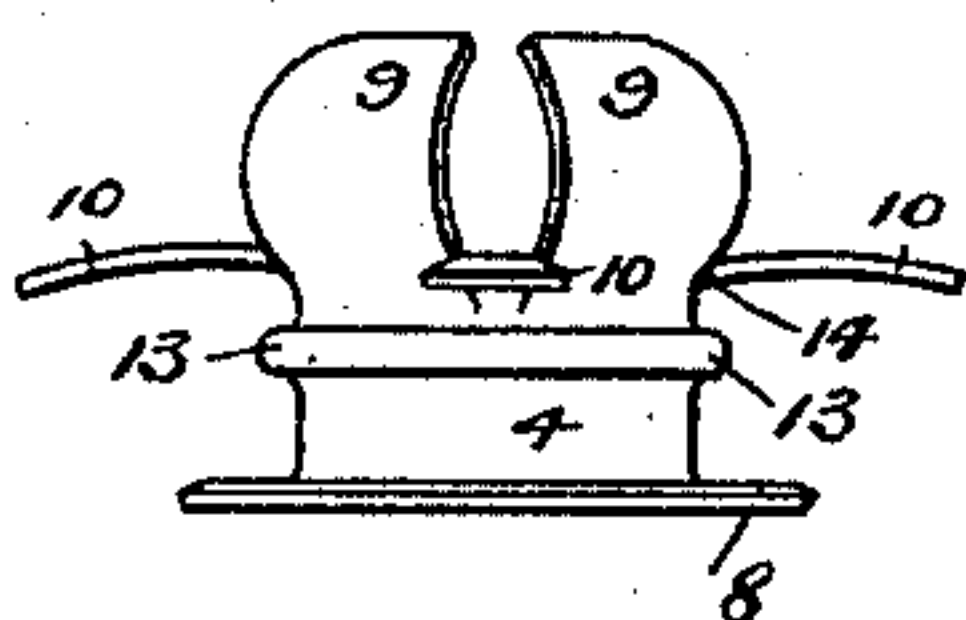


Fig. 4.

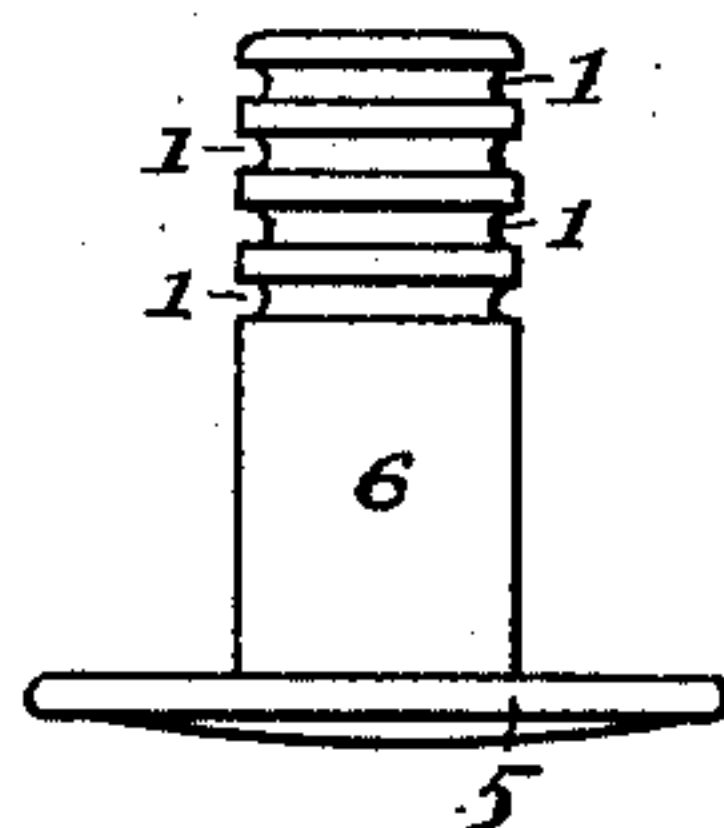


Fig. 6.

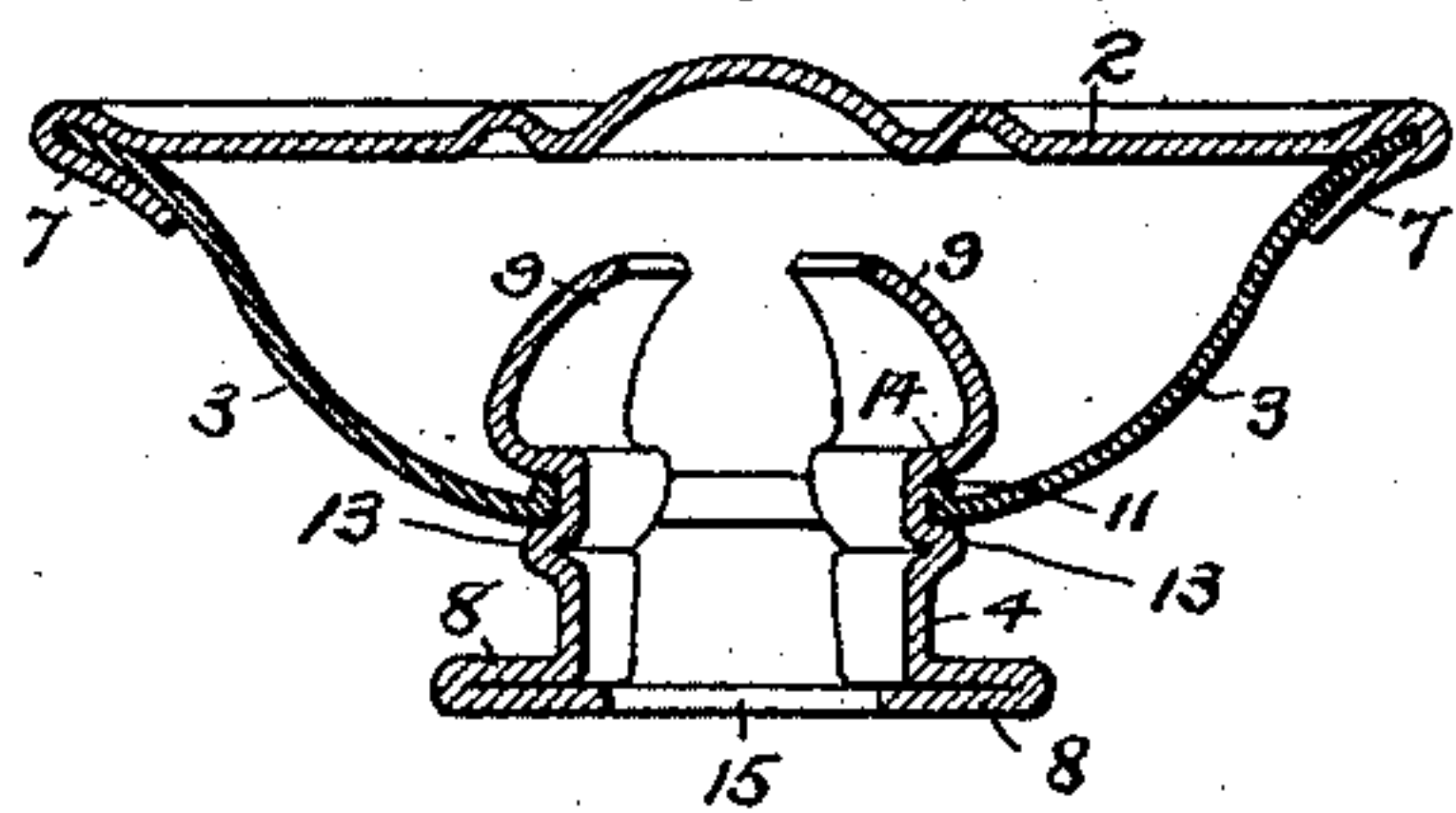
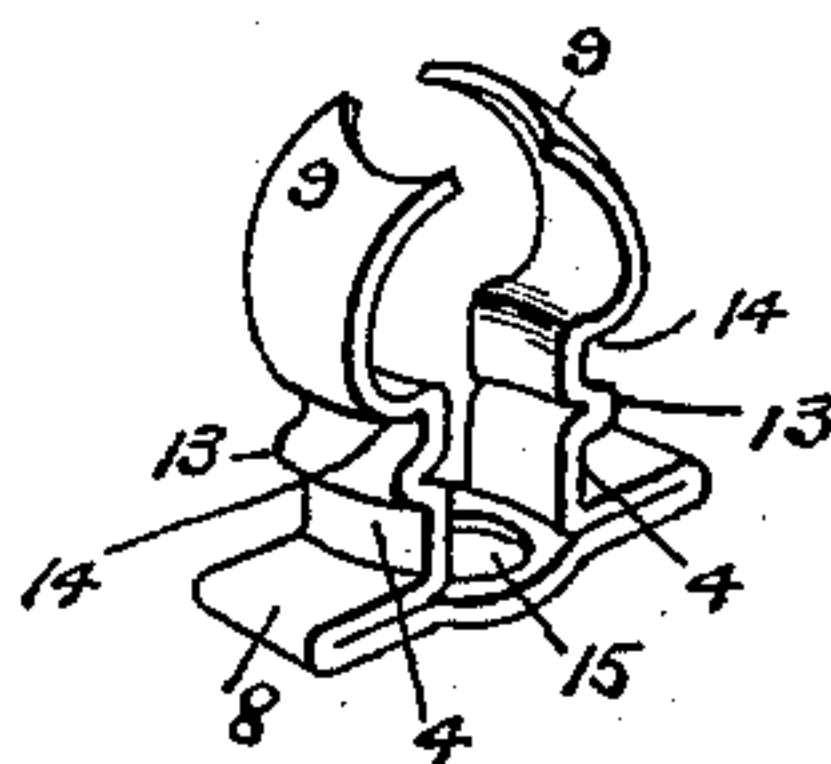


Fig. 5.



Attest:

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UNITED STATES PATENT OFFICE.

WILLIAM C. HOWARD, OF NEW YORK, ASSIGNOR TO JOSEPH P. NOYES & CO.,
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BUTTON.

SPECIFICATION forming part of Letters Patent No. 316,624, dated April 23, 1885.

Application filed May 14, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. HOWARD, a citizen of the United States, residing in the city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Buttons, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

10 This invention relates to that class of buttons known as "self-fastening," the object of the improvements being to adapt the button for attachment to various thicknesses of fabric, and in all cases not only to securely clamp the
15 fabric, but permanently hold the connected parts of the button rigidly in place.

To this end the invention embraces an improved construction of spring clamping-jaws, with which the button-head is provided for
20 engagement with the shoulders of the stem of the back plate. It also includes an improved construction of the shank and means for attaching the collet thereto, all of which and combinations of the parts are hereinafter fully set
25 forth and claimed.

The great desirability of buttons capable of attachment by means provided within the structure itself has long been recognized, and attempts have been made to construct buttons
30 that do not require the use of tools in securing them permanently to garments. Many such buttons as heretofore made have proved defective, principally because they have the radical fault of not being capable of attachment to varying thicknesses of material, and hence
35 have to be made in many sizes, while in others the means for connecting the back plate with the button-head have been of such construction as to impair their strength, and thus render the button liable to detachment. In the
40 improved button these faults are not only avoided, but the shank of the button may be made to provide a buttoning-neck of ample extent by reason of the peculiar structure of
45 that part of the fastening means that is contained in the button-head.

Practical forms embodying these improvements are illustrated in the accompanying drawings, in which—

50 Figure 1 is a diametrical sectional elevation of a button as applied to fabric. Fig. 2 is a

plan view of the inside of the button with the top plate removed. Fig. 3 is a side elevation of the shank provided with clamping-jaws. Fig. 4 is a side elevation of the stemmed back
55 plate. Fig. 5 is a perspective view of a modified form of a shank with clamping-jaws. Fig. 6 is a sectional elevation of the same as applied to the button-head.

The button consists of a head, A, composed
60 of a face-plate, a collet, a shank having arms, and a back plate provided with a stem having fastening-shoulders. The face-plate 2 is of the usual construction—that is, it may be made of metal or any suitable material and
65 given a circular or fanciful shape and be ornamented in any manner. It has the collet 3 secured to it by a flange, 7, turned over the edge of the collet or embracing the edges of
70 both the plate 2 and collet 3, in which case the holding-flanges will be a separate piece. The collet 3 is so swaged or shaped in dish-like form as to provide ample space between the
75 central portions of the plate 2 and collet 3 for the reception of the means for fastening the button to the fabric and to stand an appropriate distance from the face of the garment. The shank, which preferably is tubular, is
80 provided with a flange, 8, to bear upon the fabric, with a neck, 4, to form a seat for one portion of the article to be secured by it, with
85 a means for securing it to the collet, and with clamping-jaws 9. This shank enters through a central perforation in the collet 3, and protrudes within the space between the collet 3
and face-plate 2.

In the form shown in Figs. 1 to 3 the means for securing the shank to the collet 3 are a
90 bead, 13, and radiating arms 10 cut from the body of the shank. The bead 13 forms a shoulder for the edge of a right-angular neck, 11, of the collet to rest upon, and the arms 10 are bent down to bear on the inner surface of the
95 collet, which is thus securely clamped in place. The clamping-jaws 9 are formed from the body of the shank, and are swaged or bent into curved form, as shown, to constitute them
spring-arms, the free ends of which protrude inwardly or toward the center of the tubular
100 shank, being thus properly positioned to engage the stem 6 of the back plate, 5. The back plate, 5 is a disk-like plate or head that may

bear upon the fabric to which the button is to be secured, from which projects a central stem, 6, that is provided with a number of seats, 1, that may be annular depressions in the form shown in Figs. 1 to 4, or in any other form that affords engaging-shoulders, against which the ends of the spring-arms 9 may abut. The ratchet form of Fig. 1 is preferable, because it affords inclined faces, over which the jaws will easily move as the stem is forced through them, and right-angular shoulders, against which said jaws may be seated. The depressions need not extend entirely around the stem, but need only be long enough to receive the ends of the jaws.

To apply this button to a garment, the stem 6 may be entered through the fabric by means of a needle, or the fabric may be simply punctured for the passage of the stem 6, which is inserted until the head 5 bears upon one side of the fabric and the stem protrudes from the other. The button-head is then put in place by passing its hollow shank over the stem 5, pressing the button-head and stemmed back plate together until the material of the garment is tightly compressed between the plate 5 and flange 8, during which operation the end of the stem 6 will have passed into the embrace of the spring-jaws 9 and the latter have engaged the proper one of the seats 1 to rigidly secure the parts of the button together, and while the fabric remains securely clamped between the head 5 and flange 8. As the stem 6 may enter the shank to any extent permitted by the thickness of the material to which the button is attached, it is apparent that one, two, or more of its seats 1 may be forced past the spring-jaws 9, and hence that said jaws will enter appropriate seats to hold the stem 6 in the proper adjusted position and secure the parts of the button rigidly together. When thus attached the button-head will be left free for buttoning on the other part of the garment, the button-hole of which will have ample space provided for it by the neck 4, the dimensions of which are in nowise affected by the adjusting of the other parts in place.

In Figs. 5 and 6 a modification of the shank is shown. Instead of being made in the form of a cylinder having a circular flange, 8, and bead 13, and split to form the clamping-jaws 10 and holding-arms 9, it is constructed from a flat plate folded to form the opposite flanges 8 8, and bent to form beads 13 13, shoulders 14 14, and spring-jaws 9 9, which parts are curved more or less horizontally to provide a semi-cylindrical shape suited for the reception of the stem 6, the passage of which is provided for by a perforation, 15. In this structure the collet 3 has an upwardly-turned flange that is embraced between the bead 13 and shoulder 14, and so clamped thereby as to be firmly held without interfering with the spring action of the jaws 9. The jaws 9 (shown in Figs. 1 to 3) may provide similar shoulders

14 for a like purpose, or be free from any bearing on the collet, as may be desired, and for the purpose of securing the shank the holding-arms 10 may be omitted and the shoulder 14 alone serve the purpose of an upper abutment for the collet.

In the practical manufacture of these buttons the shank will of course be fastened to the collet before the face-plate 2 is secured in place.

The material from which the parts are made may be any that is suitable; but this improved structure is such that the shank may be made of brass and provide arms 9 that are abundantly springy to serve their purpose, the advantage of which is that a shank made of this or similar metal is best adapted for exposure and contact with the clothing.

The construction of the buttons is such that its arms which provide the spring-jaws 9 may be given a considerable bend, thus not only securing the necessary spring quality, but providing a strength that will resist any tendency, under ordinary strains, to rupture or separation of the parts.

By these improvements buttons may be securely attached by pressure of the fingers only, thus avoiding the provision or employment of tools, and buttons of a given size are adapted for use upon various garments, the material composing which may vary considerably in thickness.

What is claimed is—

1. A hollow button-head consisting of a face-plate and a collet, with a tubular shank permanently secured thereto and terminating in spring clamping-jaws within the same, said head being adapted for use with a stemmed back plate, substantially as described.

2. The combination, with a hollow button-head consisting of a face-plate and collet, and a tubular shank terminating in spring clamping-jaws within said button-head, of a stemmed back plate, substantially as described.

3. In a button, a tubular shank provided with a circular neck having one end provided with a flange and the opposite end split to provide spring clamping-jaws, substantially as described.

4. The combination, with the collet, of a shank provided with spring-jaws, radiating holding-arms, and a supporting-bead, substantially as described.

5. The combination, with the collet, of a shank provided with spring-jaws, and a bead, between which said collet is clamped, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM C. HOWARD.

Witnesses:

T. H. PALMER,

GEO. H. GRAHAM.