

(No Model.)

F. E. WILLIAMS.
BUTTON.

No. 453,570.

Patented June 2, 1891.

Fig. 1.

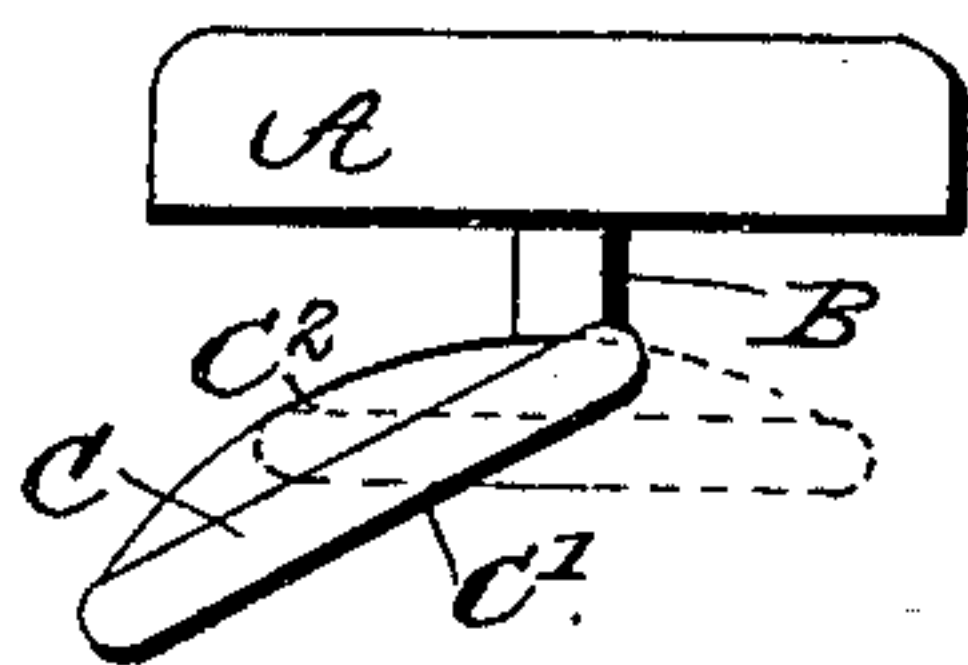


Fig. 2.

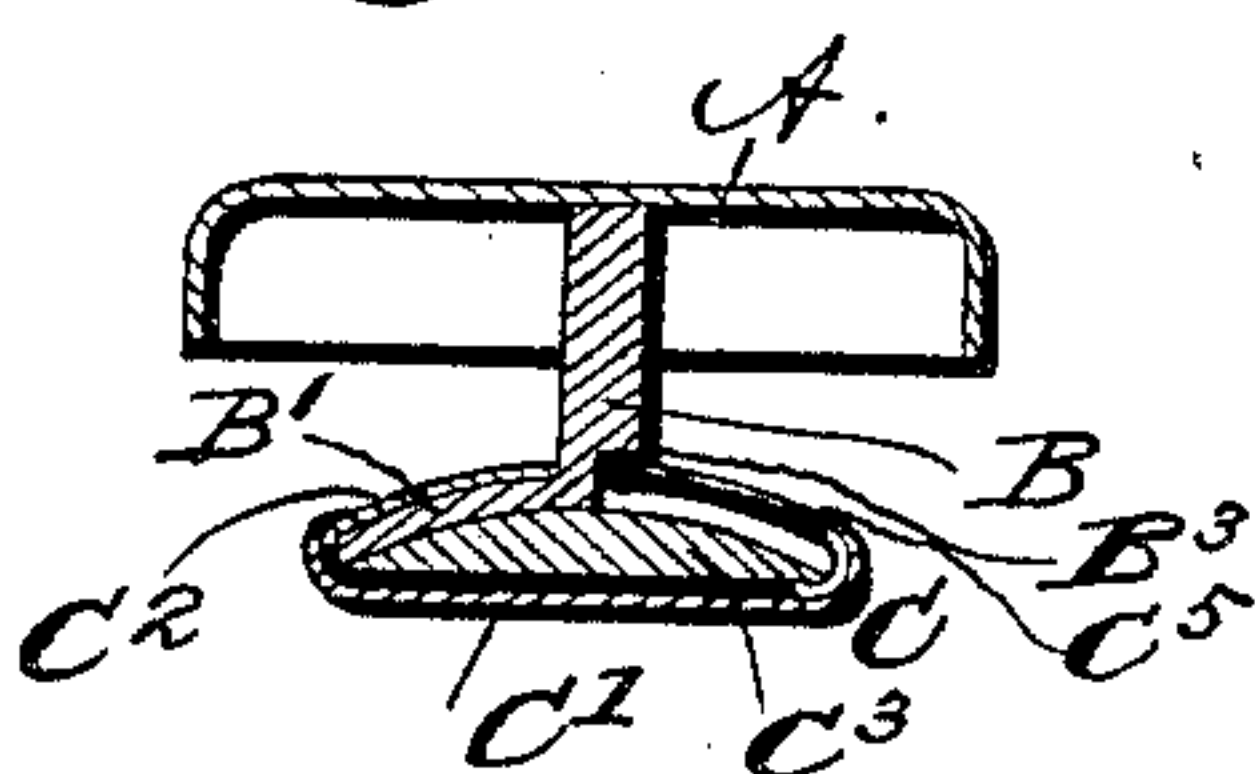


Fig. 3

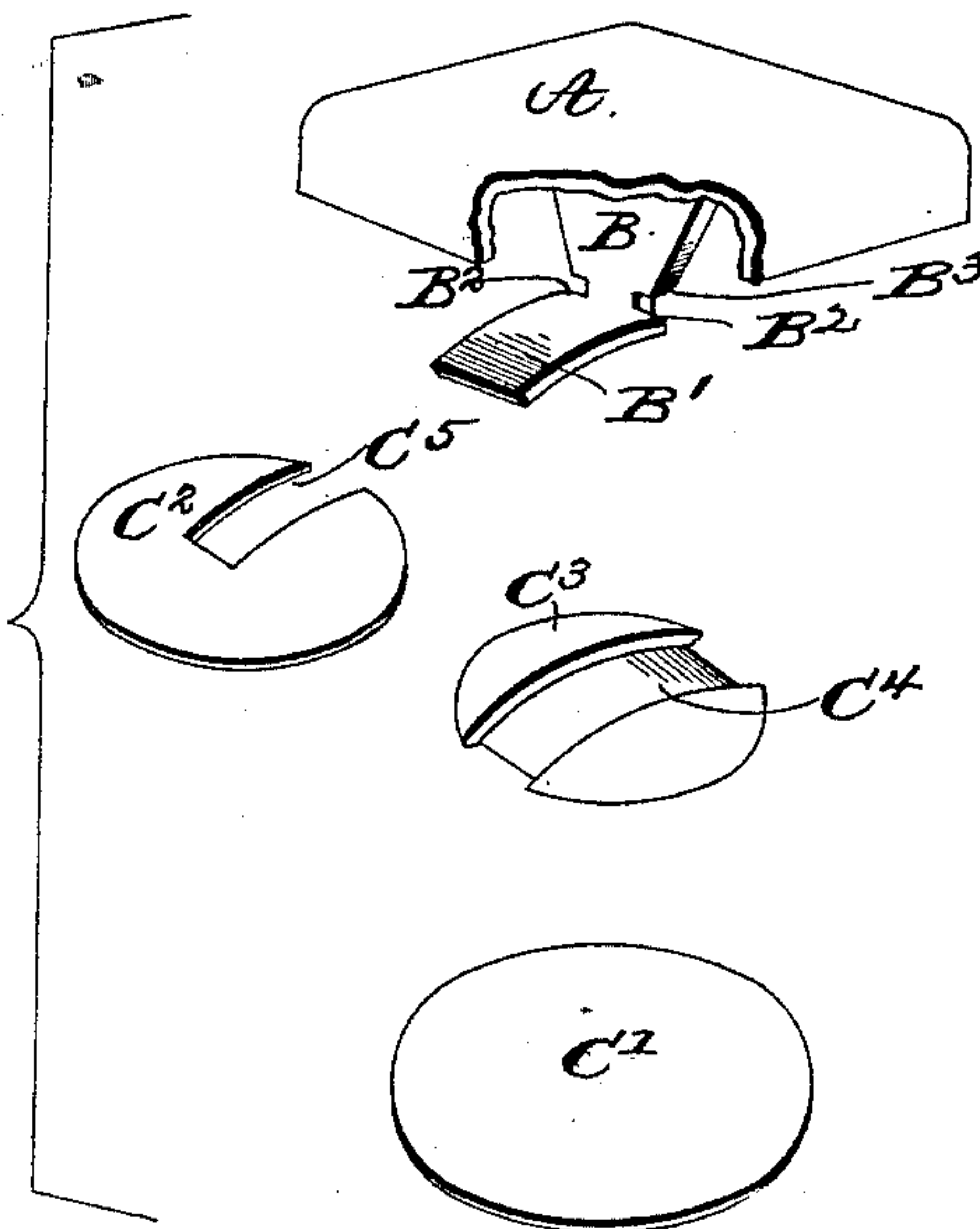
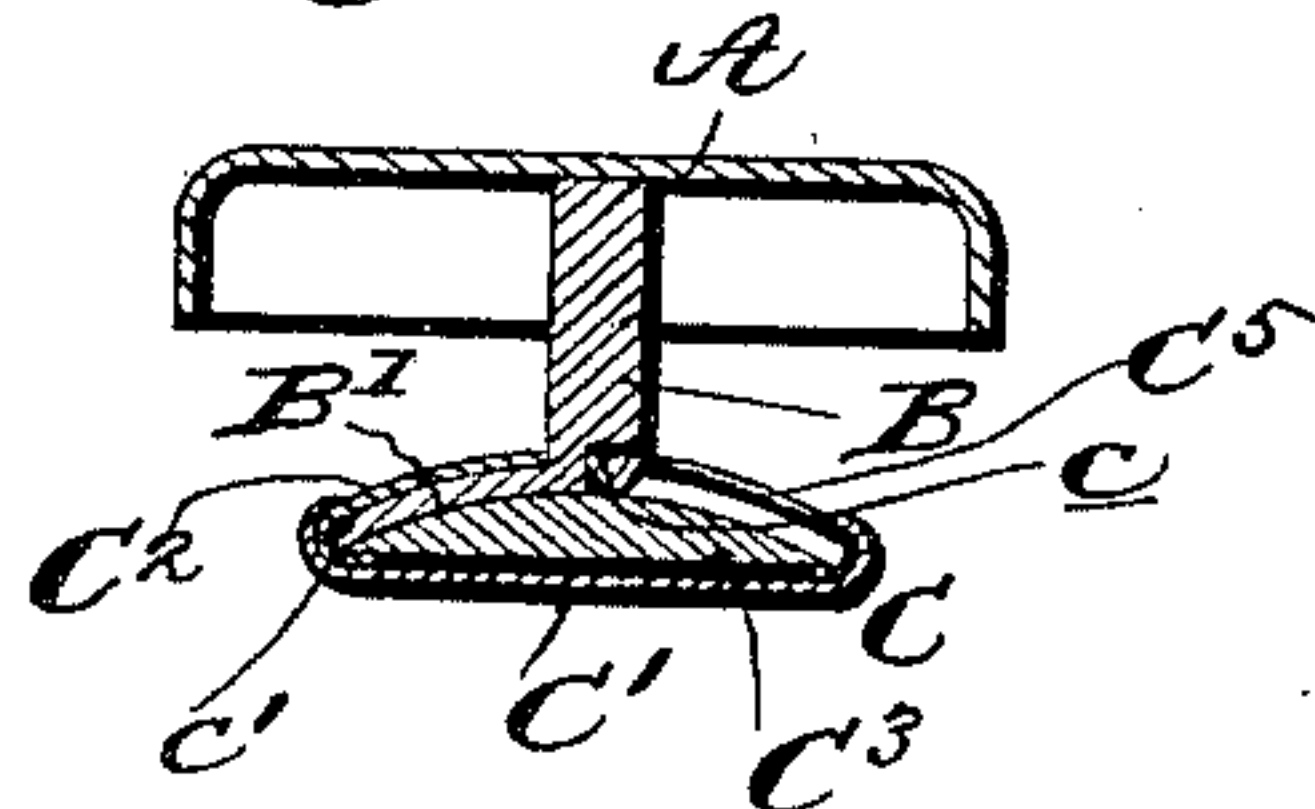


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

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BUTTON.

SPECIFICATION forming part of Letters Patent No. 453,570, dated June 2, 1891.

Application filed January 17, 1891. Serial No. 378,140. (No model.)

To all whom it may concern:

Be it known that I, FRANK E. WILLIAMS, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Buttons or Studs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in buttons, studs, and analogous articles; and it consists of the construction and arrangement of the parts, as will be more fully hereinafter described, and pointed out in the claims.

The object of the invention is to provide a shoe adapted to be easily and readily arranged to enter a button or stud hole and adjusted to prevent withdrawal after insertion, the parts being simple and effective in their construction and operation.

In the accompanying drawings, wherein like letters of reference are used to designate corresponding parts in the several views, Figure 1 represents a side elevation of a button or stud embodying my invention and showing the shoe arranged at an incline to the shank. Fig. 2 represents a vertical sectional view taken centrally through the button. Fig. 3 represents a perspective view of the parts of the button disassembled. Fig. 4 represents a view similar to Fig. 2, showing a locking or catch attachment.

In the drawings, A designates the head of the button or stud, which may be of any form and design, as desired, and has secured thereto a shank B, having its lower end formed into a foot B', bent at an angle to the main portion of the said shank, being curved in an arc of a circle and slightly inclined. The shank converges toward said foot B', and said foot again widens so as to form shoulders B², whereby the shoe is retained intact with said shank. Above said shoulders B² the shank is cut away or reduced, as at B³, in order to provide a flush fitting of the edge of the shoe when operated with the shank, and thereby avoid projection of said shoe, which might interfere with the ready insertion or withdrawal of said shoe into and from the button or stud hole.

The shoe C is constructed with a back-plate C' and a top concavo-convex cap C², the said parts inclosing a plate C³, having a convex side formed with a channel or groove C⁴, the bottom of the latter being parallel with the convex side of said plate C³. The cap C² is formed with a slot C⁵, extending from the center to the periphery thereof for movement of the shoe.

In assembling the parts the foot B' of the shank B is set in the channel or groove C⁴ of the plate C³ and the cap C² mounted thereover, so that the slot C⁵ thereof is in line with said channel or groove. The edge of said cap is then swaged down over the edge of plate C³. The plate C' is then placed against the opposite side of the plate C³ and its edge swaged over the swaged edge of cap C², thereby firmly holding the parts intact. The slot C⁵ in said cap C² is of less width than the foot B' of shank B, to thereby hold said bent end in positive engagement with said shoe, and the shoulders B² reduce the shank to correspond to the width of the said slot to allow movement of one part upon the other.

To insert the shoe in a button or stud hole it is moved on the foot B' until it assumes an angle of inclination to the shank and the reduced or cut-away portion B³ of said shank fits over the periphery of the shoe, and thereby provides an unbroken alignment of the side of the shank and adjacent edge of the shoe. After the shoe is inserted it is pushed back until in central position over the shank when the button or stud will be firmly locked against displacement from the button or stud hole.

It will be observed that a pivotal action is wholly dispensed with, and owing to the side walls of the channel or groove C⁴ of plate C³ a twisting or lateral movement of the shoe is prevented, the wear and tear being thereby received by said plate. Further, the unyielding convex surface of the plate C³ materially relieves the latter of strain by equally bracing it in all directions.

The double swaging hereinbefore set forth prevents loosening and displacement of the parts of the shoe, especially when the same is moved to an angle of inclination on the shank, as in this position the strain is brought to

bear on the edge of said shoe, and without said re-enforcement the tendency would be to loosen the parts.

The converging form of the shank provides
5 an increased securing-base for attachment to the button or stud head and an attachment of re-enforced strength is provided. It will be further noticed that by the construction set forth I am enabled to use a very short
10 shank and bring the shoe closer to the button-head, thereby making said head and shoe closely fit against the parts to which they are applied and avoid loose engagement.

The button or stud thus far described may
15 be used with beneficial and positive results without the addition of any form of lock or catch for holding the shoe in either of its adjusted positions; but it may be desirable in some instances to supply a lock or catch, and
20 to provide for this in Fig. 4 I have shown the cap C^2 formed with indentations c at about the center thereof, which engage the shoulders B^2 of the foot B' of the shank when the said shoe is centrally located. The end of said
25 foot B' is cut away or reduced to form a groove or shoulder c' to engage said indentations c when the shoe is at an angle of inclination to the shank. By this means the shoe is locked against accidental disengagement.

30 Having thus described my invention, what I claim is—

1. A button or stud having a shank with a curved foot at an angle thereto, combined with a shoe inclosing a plate with a channel or
35 groove therein formed with a convex bottom, substantially as described.

2. A button or stud having a shank with a foot at an angle thereto, said foot being formed with a lower concave side, and a shoe having
40 a convex surface, against which the concave side of said foot has movable bearing, said parts being combined substantially as described.

3. A button or stud having a shank with a
45 foot curved and bent at an angle thereto, combined with a sliding shoe having an inclosed plate formed with a channel or groove and engaged by said foot of the shank, said channel or groove being of the same width as

the said foot of shank and said foot being 50 wider than the shank at the angle of bending, substantially as described.

4. A button or stud having a shank with a foot bent at an angle thereto, combined with a shoe with a plate formed with a channel or
55 groove to receive said foot of the shank, a slotted cap having its edge swaged down over the edge of said plate, and a back-plate having its edge swaged over the swaged edge of said cap, substantially as described. 60

5. A button or stud having a flat wedge-shaped shank with its converging end at the bottom, from which extends a curved foot at an angle thereto and wider than the converged
65 end of said shank, combined with a shoe having a convex bearing-surface for said foot, substantially as described.

6. A button or stud having a shank with a curved foot bent at an angle to the body of the shank, combined with a shoe having an
70 inclosed plate with a convex side, and a channel or groove formed with a convex bottom, a convex slotted cap, and a back-plate whereby the shoe may be adjusted at an angle to said shank, substantially as described. 75

7. A button or stud having a shank with a curved foot at an angle and formed with a cut-away or reduced portion, combined with a shoe inclosing a plate with a convex channel or groove, said cut-away or reduced portion being adapted to engage with the edge
80 of the shoe to provide a flush alignment, substantially as described.

8. A button or stud having a shank with a curved foot bent at an angle to the body of
85 the shank and provided with shoulders B^2 and a reduced or cut away portion, combined with a shoe having an inclosed plate with a convex channel or groove, a slotted cap with indentations c , and a back-plate, substantially 90 as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK E. WILLIAMS.

Witnesses:

CHARLES S. HYER,
WM. H. DE LACY.