

(No Model.)

S. J. STONE.
COLLAR BUTTON AND STUD.

No. 553,944.

Patented Feb. 4, 1896.

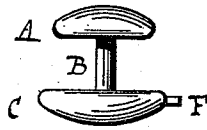


FIG. 1.

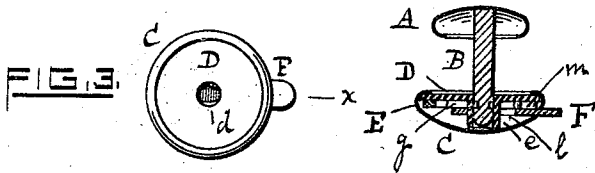


FIG. 2.

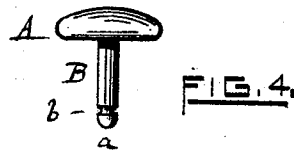


FIG. 4.

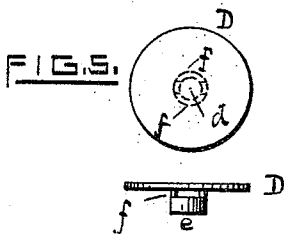


FIG. 5.

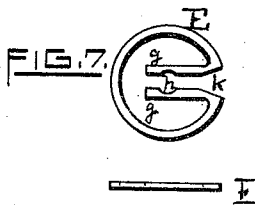


FIG. 7.

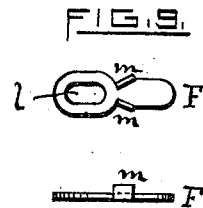


FIG. 9.

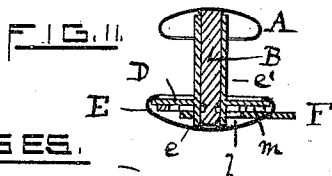


FIG. 11.

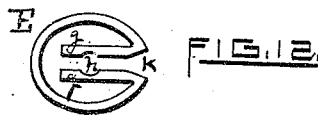


FIG. 12.

WITNESSES.

INVENTOR

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SAMUEL J. STONE, OF PROVIDENCE, RHODE ISLAND.

COLLAR-BUTTON AND STUD.

SPECIFICATION forming part of Letters Patent No. 553,944, dated February 4, 1896.

Application filed October 10, 1895. Serial No. 565,285. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL J. STONE, of the city and county of Providence, in the State of Rhode Island, have invented a new and useful Improvement in Collar-Buttons and Studs; and I declare the following to be a specification thereof, reference being had to the accompanying drawings.

Like letters indicate like parts.

Figure 1 is a side elevation of my improved collar-button and stud. Fig. 2 is a diametrical vertical section of the same, the internal mechanism of the shoe being shown as seen on line *x* of Fig. 3. Fig. 3 is a top plan view of the upper or plane side of the shoe. Fig. 4 is a side elevation of the button front and post. Figs. 5 and 6 are, respectively, a top plan view and a side elevation of the lining-plate of the shoe with its central tubular extension. Figs. 7 and 8 are, respectively, a top plan view and side elevation of the spring contained in the shoe. Figs. 9 and 10 are, respectively, a top plan view and a side elevation of the pusher to operate said spring. Fig. 11 is a form of my invention provided with a tubular shank to receive the post of the button-front. Fig. 12 is a top plan view of a modified form of the spring shown in Fig. 7.

My invention relates to the class of separable buttons designed particularly for wear in the neckbands, bosoms, or wristbands of shirts.

It consists in the combination, with a button-front having a central post whose end is rounded and made with a circumferential groove, of a shoe whose lining-plate has a central tubular socket or extension to receive the end of the post, a spring of peculiar shape arranged in the shoe to normally engage with the groove of said post, and a pusher mounted in the shoe and adapted to open said spring to disengage it from said post, as hereinafter particularly specified.

In the drawings, A is the head or ornamental front of the button or stud.

B is the post extending from the under side of the head or front A at the center thereof and terminating with the rounded end *a* and provided with the circumferential groove or channel *b*.

The shoe is shown at C.

D is the lining-plate of the shoe held in position by the bent or turned over edges of the shoe, as illustrated in cross-section in Fig. 2. The plate D has the central opening or aperture *d* and the central tubular extension *e*, the latter being made with two slots *f* diametrically opposite, Figs. 5 and 6. The diameter of the aperture *d* and that of the bore of the tubular extension *e* are such as to admit the post B.

The spring E in general outline is circular, as seen in Fig. 7, or elliptical, as shown in Fig. 12. It is made of tempered stock and is light and flexible. Its ends *g* are bent to form parallel re-entering arms, whose opposite inner edges have each a rounded recess *h* near the ends, respectively, and at the outer bend each arm *g* is made with an inclined face *k*.

The pusher is shown at F. It is provided with an elliptical slot *l* at one end, the minor diameter of which slot is such as to enable the pusher to move longitudinally upon the tubular extension *e* of the plate D, and the length of the pusher is such that its unslotted end normally extends out from the shoe, as seen in Figs. 1 and 2. The pusher F has the two upwardly-bent projections *m* angularly arranged, as seen in Fig. 9, and adapted to normally lie in contact against the inclined faces *k* of the arms *g* of the spring E.

To insure greater strength or rigidity, it may be desirable to continue the tubular extension *e* of the lining-plate D upward to form the tubular shank *e'*, as seen in Fig. 11, and so to better support the post B.

The operation of my device is as follows: Normally the parts are in the relative positions shown in Fig. 2. The arms *g* of the spring E then press inwardly within the channel or groove *b* of the post B and are supported within the slots *f* of the tubular extension *e* of the plate D, thus firmly locking the parts together and effectually preventing the withdrawal of the post B from its engagement within the shoe C. To disengage the parts, so as to remove or detach the button-head A and its post B, the pusher F is pressed inwardly, whereupon its angularly-disposed projections *m*, working on the inclined faces *k* of the arms *g* of the spring E, cause said arms *g* to spread apart, and this divergence of the arms moves them out of the channel or

groove *b* of the post B, but not out of the support of the slots *f* of the extension *e*, and then the button-front A and the post B can be withdrawn from their connection with the shoe. The elliptical form of the slot *l* allows such movement of the pusher F, and the ends of the slot serve as stops to limit the movement of the pusher in both directions. When the pressure upon the pusher F ceases the resilience of the spring E causes the inclined faces *k* of the arms *g* thereof to act upon the angularly-disposed projections *m* of the pusher, and thus automatically returns the pusher to its former extended position.

It will be seen by an examination of the drawings that the spring E and pusher F do not lie in the same plane, but that the pusher lies beneath the spring. In this respect my device differs from all other separable buttons having a spring and pusher, and this arrangement of the parts enables me to dispose of the operative mechanism in a very small space. The great advantage of this construction is that by the compactness of the arrangement of the operative mechanism within the shoe I am able to construct bosom-studs and collar-buttons of a much smaller size than has heretofore been possible in separable buttons operated by a pusher, and therefore my invention is especially adapted to fine goldwork and to small attractive designs and patterns.

The depth of the slots *f* is sufficient to furnish a support for the arms *g* of the spring E in their divergent as well as in their normal position.

I claim as a novel and useful invention and desire to secure by Letters Patent—

1. The improved button herein described, consisting of the combination with a head or front A having a central post B made with a rounded end *a* and a circumferential groove *b*, of a shoe C having a lining-plate D centrally perforated and provided with a tubular extension *e*, adapted to receive said post B and having slots *f* on its opposite sides as shown, a circularly-bent spring E within the shoe, having its free ends re-entering and made with the rounded recesses *h* and the inclined faces *k* and adapted to engage with the post B in the groove *b* thereof through said slots *f*, and the pusher F having an elliptical slot *l* of a size to receive said tubular extension *e* and to be movable thereon and furnished with the angularly-disposed projections *m* arranged to lie in contact with said inclined faces *k* of the arms of the spring E and to spread said arms apart, substantially as specified.

2. In a separable button having a head or front, a post and a shoe, the combination of a spring engageable with said post and supported in the shoe and a pusher arranged and movable within the shoe in a plane different from the plane of the spring but parallel therewith and provided with a projecting portion adapted to operate said spring to disengage it from said post, substantially as shown.

SAMUEL J. STONE.

Witnesses:

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