

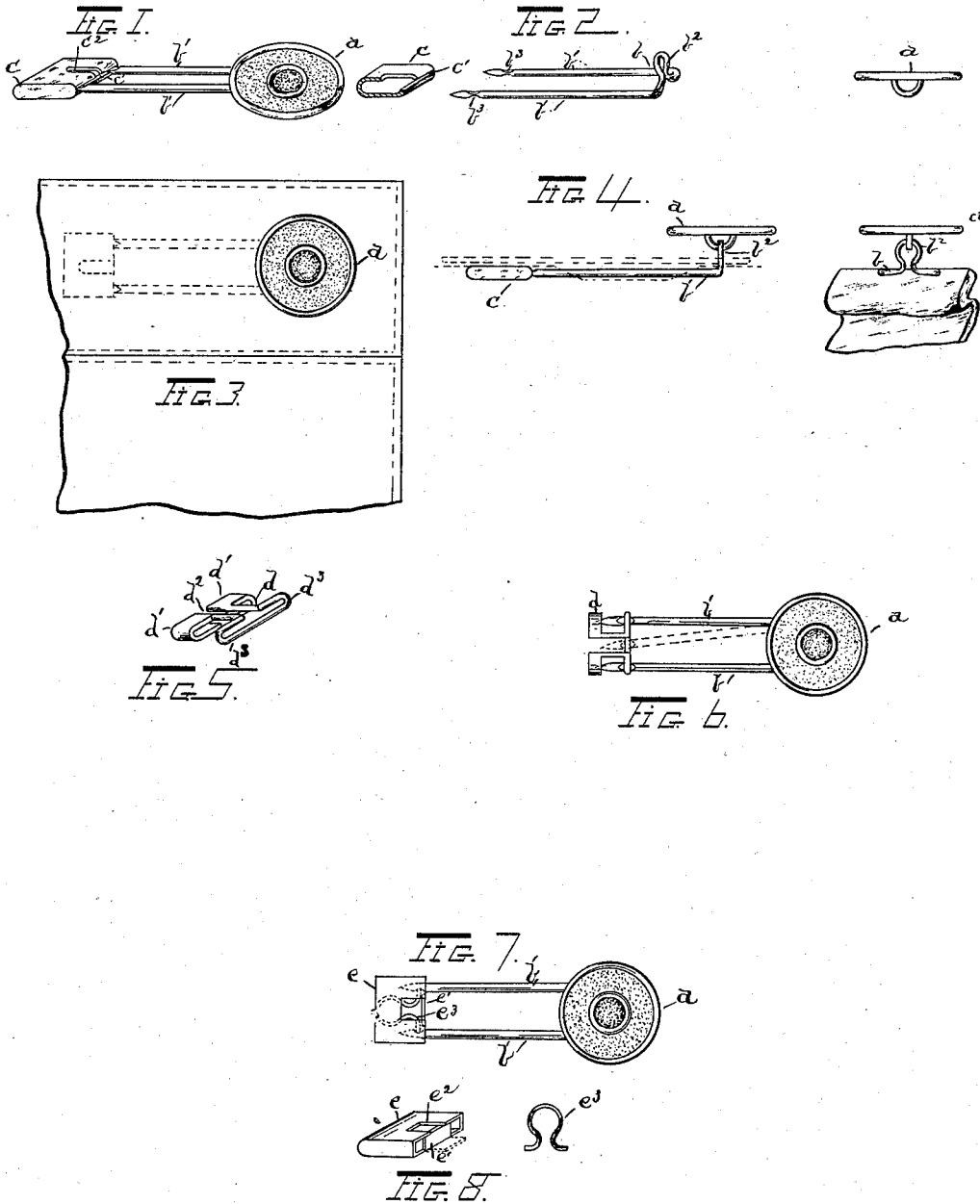
(No Model.)

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BUTTON FASTENER.

No. 384,019.

Patented June 5, 1888.



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UNITED STATES PATENT OFFICE.

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BUTTON-FASTENER.

SPECIFICATION forming part of Letters Patent No. 384,019, dated June 5, 1888.

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To all whom it may concern:

Be it known that we, EMBURY P. CLARK and NATHAN D. INGRAHAM, of Holyoke, in the county of Hampden and Commonwealth of Massachusetts, have invented a new and useful Improvement in Button-Fasteners, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

Our invention relates to devices for detachably securing shank-buttons to garments without the use of thread; and it has for its object to provide a device of this nature which will enable the button to be quickly attached to and detached from the garment, which will securely unite the button to the garment and yet permit the button to have all the freedom of movement of a sewed button, which will preserve to the face of the garment the same appearance that would be presented if the buttons were secured by sewing, and which will cause no inconvenience to the wearer of the garment by reason of the rigidity of any of its parts.

To these ends our invention consists in the fastener constructed as hereinafter fully described, and particularly pointed out in the claims.

Referring to the drawings, in which like letters designate like parts in the several figures, Figure 1 is a view in perspective of a button having our improved fastener connected thereto. Fig. 2 is a view in perspective of the pin and of so much of its clasp as lies upon one side of the transverse slot therein and a view in side elevation of the button. Fig. 3 is a face view of a portion of a garment having the button and fastener applied thereto. Fig. 4 represents by broken lines a vertical section of the fabric with the button and fastener applied thereto, and by full lines a perspective view of the face side of the fabric. Figs. 5 and 6 illustrate a slightly-modified form of the invention. Figs. 7 and 8 illustrate still another modification thereof.

The letter *a* designates a shank-button of the ordinary form. The fastener is composed of pin *b* and clasp *c*. Pin *b* is preferably composed of a single piece of wire bent twice near

the middle point thereof at substantially a right angle to form the prongs *b'*, which terminate in sharp points. Said piece of wire is also bent at a point midway between said prongs to form loop *b*², standing at substantially a right angle to the plane of prongs *b'*. The prongs *b'*, near their pointed ends, are slightly flattened or otherwise reduced in diameter to form the transverse grooves or notches *b*³, which serve as stops to retain the clasp upon said prongs, as will be presently described.

The clasp *c*, as shown in Figs. 1 to 4, inclusive, consists of a hollow flattened receptacle with closed ends and rounded sides. In one of its rounded sides said receptacle is provided with a slot extending lengthwise thereof, (designated by the letter *c'*), said slot corresponding substantially in width with the diameter of prongs *b'* at the bottom of the grooves or notches *b*³ in the latter. Midway between its ends, and in one of the flattened faces thereof, the receptacle is provided with a slot, *c*², extending transversely for about one-half the width of the receptacle and opening into slot *c'*, said latter slot being in width greater than the diameter of prongs *b'* between the grooves or notches *b*³ and the points of the latter. The clasp thus formed can be made of brass or other sheet metal, or of celluloid and similar materials.

The button *a* is applied to the fastener by passing one of the prongs *b'* through the shank of the button until said shank is received upon loop *b*², as shown in Fig. 4. To secure the button to a garment, the prongs *b'* are caused to penetrate the fabric, passing from the face to the rear side of the latter, and are forced through the same until stopped by the rear end of the pin at the base of loop *b*² being brought against the face of the fabric. When the garment is provided with a lining, the prongs *b'*, after their points have passed through the fabric and lining, will be caused to again penetrate the lining and to pass between the fabric and lining nearly to the end of their movement, when their points will be again passed through the lining, as shown by broken lines in Fig. 4. The clasp *c* is then

applied to said prongs by passing the pointed end of one of the latter through slot c' , and from thence into slot c' , the sides of the latter embracing the prong at the bottom of the groove or notch b^3 therein. The end of the second prong is then moved toward the first prong and is passed within said slots in the same manner, the elasticity of said prongs causing them to occupy opposite ends of the slot c' , and the clasp being securely retained upon them by the grooves or notches b^3 . To detach the clasp, one of the prongs is compressed until its end is brought beneath slot c' , when it can be readily released, as can also the second prong. When the button is thus secured the face of the fabric presents the same appearance that it would if the button were sewed on in the usual manner, the prongs and clasp being upon the inner side of the fabric and concealed. (See Figs. 3 and 4.) Whenever such concealment of the fastener is not important, as upon an under-garment, and especially when the fabric of which the garment is made is thin and of loose texture, the prongs can be passed in and out through the fabric two or three times before the clasp is applied, and thus a very firm and secure hold of the fabric is obtained. The button has a free universal movement upon the loop b^2 , so that said button can be passed through a button-hole as easily as if the button were sewed on. The flat and rounded surfaces of the clasp and the natural flexibility of the prongs b' enable the fastener to be worn upon any garment without causing the least discomfort to the wearer. Moreover, the fabric being defaced only by the slight punctures made by the pin, the position of the button can be changed upon the fabric without affecting the general appearance of the latter.

In Figs. 5 and 6 we have shown a slightly-modified form of the invention, in which the clasp d is formed from a single piece of wire bent twice upon itself to form the loops d^3 , from which the two ends are bent at a right angle to form the parallel straight portions d^2 , and are then again bent at a right angle and curved to form the loops d' . The loops d^3 thus correspond with the slot c' of clasp c , and the space between the straight portions d^2 with slot c^2 of the latter. That portion of the wire forming loops d' is preferably flattened, as shown, to more effectually guard the points of the prongs. The clasp d is applied to and detached from the prongs b' in the same manner as previously described with reference to clasp c , and as indicated by the broken lines in Fig. 6.

In Figs. 7 and 8 we have shown still another modification of the invention, in which the clasp e is composed of a receptacle similar in shape to clasp c , except that one of the rounded sides is removed. In the middle portion of said open side is located a lip, e' , which we prefer to form integral with one of the flattened sides, to which it is bent at a right an-

gle, as shown. At each end of the lip e' an opening is thus formed of sufficient dimensions to freely admit the ends of prongs b' . In one of the flattened sides of the clasp is formed an opening, e^2 , extending from the edge of said side adjacent to lip e' to substantially one-half the width of the clasp. Within the receptacle thus formed is located a spring, e^3 , formed from a single piece of wire by bending its middle portion into curved form, as shown, and then bending the two ends outwardly in opposite directions, whereby the elasticity of the wire will tend to move the two ends away from each other. Said spring is placed within the receptacle with its two ends adjacent to the open side of the latter, and lip e' is then bent up, as shown, thereby retaining the spring in such position. The grooves or notches b^3 in the prongs b' are in this instance made within the inner sides of the latter, whereby when the ends of said prongs are inserted within the clasp at each end of lip e' the ends of spring e^3 are forced into said grooves or notches, and thus securely lock the clasp upon the prongs. The clasp e can be released by inserting any pointed instrument within opening e^2 and retracting the ends of the spring, whereupon the prongs b' can be withdrawn.

It will be observed that in each of the three forms of the invention thus described there is combined with the button-holding pin a clasp which is detachable from the pin, and which, when attached thereto, entirely protects the person from the points of the prongs of the pin. The detachability of the clasp is an important feature of the fastener, inasmuch as it permits the prongs of the pin to be passed several times through the fabric to increase the strength of the connection between the button and the garment.

The fastener can be used with buttons of any size, and can be used upon garments of all kinds. When one garment is cast aside, the fasteners can be readily detached and the same buttons used upon the new garment.

We do not wish to limit ourselves to the exact details of construction shown, as it is obvious that modifications other than those herein mentioned can be made without departing from the spirit of our invention.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a button-fastener, the combination, with a two-pronged pin having at its rear end a loop to receive the shank of a button, and having near each of its pointed ends a transverse groove or notch, of a clasp having an opening to receive the pointed ends of said pin and having an engaging device to engage the grooves or notches in the pin, whereby the clasp is detachably retained upon the pin, substantially as set forth.

2. The combination, with a shank-button, of a two-pronged pin having at its rear end a loop which passes loosely through the shank of said

button, whereby said button is free to rock upon said loop, and a detachable clasp adapted to be received upon the pointed ends of said pin, substantially as described.

5 3. The combination, with a shank-button, of a pin comprising two sharp-pointed prongs and a loop secured to or formed integrally with said prongs at their rear end and projecting therefrom at substantially a right angle, said
10 loop being inserted through the shank of the button, a clasp consisting of a hollow receptacle adapted to receive the pointed ends of the prongs of said pin, and stops located upon said clasp and prongs, respectively, whereby the
15 former is retained upon the latter, substantially as and for the purpose described.

4. The combination, with a shank-button, of pin b , having loop b^2 to receive the shank of the button, and prongs b' , having grooves or
20 notches b^3 therein, and a clasp consisting of a hollow receptacle having a central opening and a longitudinal slot communicating with said opening, whereby it is adapted to receive the ends of prongs b' , said clasp being provided
25 with stops to engage the grooves or notches in said prongs, arranged and operating substantially as and for the purpose set forth.

5. The combination, with pin b , having a

button secured thereto, said pin having prongs b' , provided with transverse grooves or notches
30 b^3 near their pointed ends, of clasp c , consisting of a flattened hollow receptacle having therein the transverse slot c^2 , of greater width than the diameter of prongs b' , and having the longitudinal slot c' , communicating with said
35 slot c^2 , said slot c' corresponding substantially in width with the diameter of prongs b' at the bottom of the grooves or notches b^3 , substantially as and for the purpose described.

6. The button-fastener herein described, con-
40 sisting of a pin, b , composed of a single piece of wire bent to form prongs b' , and loop b^2 , projecting at substantially a right angle to said prongs, said prongs having their ends pointed, and having grooves or notches b^3 near said
45 ends, and a clasp consisting of a hollow receptacle having an opening to receive the ends of said prongs, and having stops to engage the grooves or notches b^3 in the latter, substantially as set forth.

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