(No Model.)

E. PRINGLE.

SEPARABLE BUTTON.

No. 447,346. Patented Mar. 3, 1891.

Fig. 1.

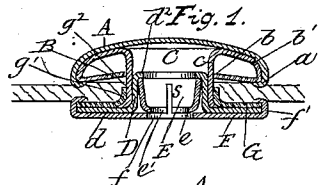


Fig. 2.

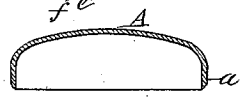


Fig. 3.

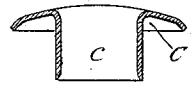


Fig. 4.

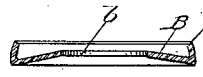


Fig. 5.

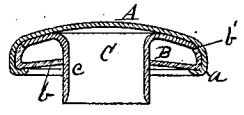


Fig. 6.

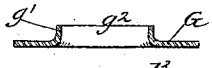


Fig. 7.

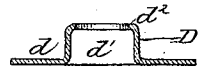


Fig. 8.

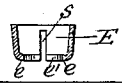


Fig. 9.

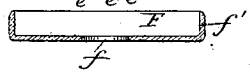


Fig. 10.

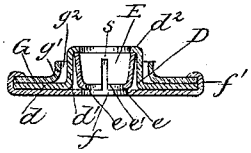


Fig. 11.

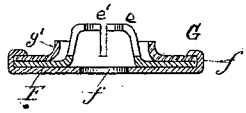


Fig. 12.

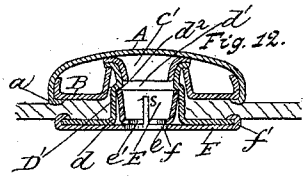


Fig. 13.

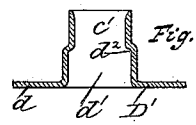


Fig. 15.

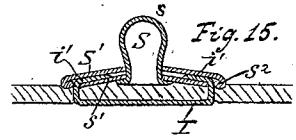


Fig. 16.

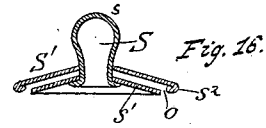


Fig. 17.

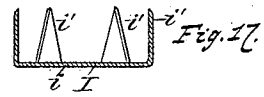


Fig. 18.

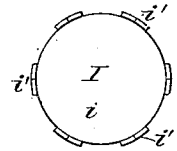


Fig. 14.

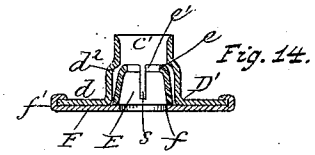


Fig. 19.

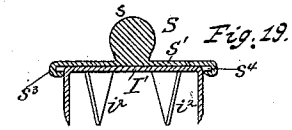


Fig. 20.

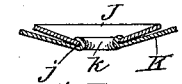
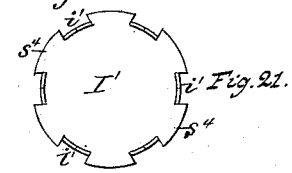


Fig. 21.



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Inventor.

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UNITED STATES PATENT OFFICE.

EUGENE PRINGLE, OF GLOVERSVILLE, NEW YORK, ASSIGNOR TO MADISON D. SHIPMAN AND CHARLES E. BRADT, BOTH OF DE KALB, ILLINOIS.

SEPARABLE BUTTON.

SPECIFICATION forming part of Letters Patent No. 447,346, dated March 3, 1891.

Application filed March 20, 1888. Serial No. 267,864. (No model.)

To all whom it may concern:

Be it known that I, EUGENE PRINGLE, a citizen of the United States, and a resident of Gloversville, in the county of Fulton and State of New York, have invented certain new and useful Improvements in Separable Buttons, of which the following is a specification.

My invention relates to separable buttons; and it consists of the parts and elements and combination of parts and elements hereinafter described, and specifically set forth in the claims.

The objects of this invention are to produce a button-head which will combine with the upper and under side fabric clamping parts thereof a tube form of stud-holding device which will be elastic, so as to receive and engage with the head of an inelastic stud, and to provide a pronged fastening which will automatically pass through and invisibly fasten the stud to the fabric. I attain these objects by the means illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a sectional elevation of a button-head of a separable button embodying some of the improvements in this invention. Fig. 2 is a sectional view of the outer shell of the button-head. Fig. 3 is a sectional view of the button-head-fastening eyelet. Fig. 4 is a sectional view of the upper-side-clamping piece. Fig. 5 is a sectional view of the outer shell button-head-fastening eyelet and upper-side-clamping piece when secured together to form the upper half of the button-head. Fig. 6 is a sectional view of the lower-side-clamping piece. Fig. 7 is a sectional view of the upper stud-holder-retaining piece. Fig. 8 is a sectional view of the stud-holding piece. Fig. 9 is a sectional view of the lower stud-holder-retaining piece. Fig. 10 is a sectional view of the upper and lower stud-holder-retaining pieces, stud-holder, and eyelet-holding washer secured together and forming the lower-half portion of the button-head. Fig. 11 is a sectional view of the parts which can be employed to produce a modified form of this lower half of the button-head. Fig. 12 is a sectional elevation of a button-head having some of the parts modified in their form, yet embodying the essential parts and elements in this improved button-head. Fig. 13 is a sectional view of a piece which can be used in the button-head to serve as the button-head-fastening eyelet and upper stud-holder retainer. Fig. 14 is a sectional view of the lower-side half of the button-head detached from the upper-side half, and showing a modified form of parts. Fig. 15 is a sectional view of the stud secured to the material. Fig. 16 is a sectional view of the same before being secured to the material. Fig. 17 is a sectional elevation of the stud-fastening piece. Fig. 18 is a plan view of the same. Fig. 19 is a sectional elevation of a stud, showing the inverse of connecting means which can be employed in this invention. Fig. 20 is a sectional view of other inverse means employed with those shown in Fig. 19. Fig. 21 is a plan view of the stud-fastening plate shown in Fig. 19.

The same letters of reference refer to like parts throughout the several views.

In the drawings, Fig. 1 shows the upper and lower halves, respectively, of the button-head secured together and fastened to the material M. In Fig. 5 is shown the parts which compose the upper-side half of this button ready for being fastened to the material and with the coacting lower-side half of said head, which is shown in Fig. 10, or with the modified form of lower-side half shown in Fig. 11.

In Figs. 1 and 5, A is shown to be the outer shell of the upper-side half of the button-head, which shell is shown in Fig. 2 before it is secured with the upper-side-clamping plate B by the clinch *a*, as shown in Figs. 1 and 5. The upper-side-clamping piece B, Fig. 4, is shown to have in it a central perforation *b*, in which is the tube portion *c* of the fastening-eyelet C, as shown in Figs. 1 and 5. This fastening-eyelet C has its flange made with a form corresponding with that of the under side of shell A, and its periphery abutting on the edge of the flange *b'* of the clamping-piece B, as also shown in Figs. 1 and 5. These pieces A, B, and C form the upper-side half of the button-head in its essential parts.

In Figs. 1 and 10, D is shown to be the stud-holder-retaining piece, which is made with the base-flange *d*, tubular wall *d'*, and annular flange d^2, as shown in Fig. 7.

E, Figs. 1, 8, 10, and 12, is the stud-holding piece, which is shown in Fig. 8 to be of tubular form and having the holding-lip *e* annular to the central perforation *e'*. The side wall of this piece E is slitted at *s* from its holding-lip end to a line which is a little short of the line of the plane of the opposite end of this piece, as shown. If selected, this stud-holding piece can be double slitted by having one slit *s* made transversely to another in the wall of said piece.

F, Figs. 1, 9, 10, 11, 12, and 14, is the lower stud-holder-retaining piece, which is provided with the central opening *f* and rim-flange *f'*, by which latter this piece F is secured in place to hold the stud-holding piece E and its upper-side-retaining piece together when it (this rim-flange *f*) is clinched on the flange *d* of retainer-piece D, as in Fig. 12, or on the eyelet-holding washer G, which is shown in Figs. 1, 10, and 11, to intervene between said flange *d* of piece D and the clinch of rim-flange *f* of said piece F. The eyelet-holding washer G has an extension of body sufficient to fill out to the rim-flange *f'* of piece F, and a length of centrally-projected flange *g'*, which will be sufficient to guide the tube portion of the fastening-eyelet C, which this washer receives within its central opening g^2, when the upper and lower halves of the button-head are forced together with the fabric between, as shown in Fig. 1.

In Figs. 12 and 13 is shown piece D', which piece combines with the stud-holder-retaining element (shown in piece D, Fig. 7, as above described) the clinching-tube portion of a fastening-eyelet. This piece D' has flange *d* and side wall *d'* and annular flange-lip d^2 for joint operation with the lower-side stud-holder-retaining piece F to hold the stud-holding piece E in place, while its tubular portion *c'* operates with the upper-side-clamping piece to hold the upper-side half of the button-head with the lower-side half. With this piece D' in the lower-half portion of the button-head I would use the eyelet-tube-turning piece H, Fig. 12, which will turn the end of the tubular portion *c'* of this piece D' and hold the two halves of the button-head. When a piece similar to piece D' is used, the eyelet-turning washer (with the lower-half portion of the button-head) will be omitted, as the piece H then used in the upper half of the head will operate as the eyelet-turning washer.

In Fig. 14 the stud-holding piece E is shown to be inverted and to be contained within the retaining-piece D'.

S, Figs. 15, 16, and 19, is the stud which has the inelastic holding-head *s*. This stud is shown in Figs. 15 and 16 to be made hollow or with a shell form, with its lower-end portion secured to a base-flange *s'*, yet the stud can be made solid and integral with a base-flange, as shown in Fig. 19.

The modifications of the form of construction of stud S, Figs. 15 and 16, show used with it and its base-flange *s'* the second piece S', made to receive in its central perforation the lower end of the stud before it is clinched on base-flange *s'*. This second piece S' (shown in Fig. 16) is circular in form, and is made to have a clinch-turning rim s^2 projected all around outwardly to a short distance past the periphery of the base-piece *s'*, as shown in Fig. 16, so that there will be between the periphery and the inner edge of the turning-rim s^2 a slight opening, as shown in said figure.

I, Figs. 15, 17, and 18, is the stud-fastener piece, which is shown to consist of the clamping-disk *i* and the clinching-spuds *i'*. With this piece I the stud will be securely fastened to material M by placing this piece opposite the base-piece *s'* of the stud, with the points of the clinching-spuds *i'* at the opening *o* between the base-piece *s'* and the turning-rim s^2, when, by force applied by a suitable instrument, the piece I will be forced toward the base-piece of the stud and be driven through the material and into the opening *o* to enter between the pieces *s'* and s^2 and be turned or clinched on the base-piece *s'*, as shown in Fig. 15.

If preferred, a stud-fastening piece like piece I' can be made, as illustrated in Figs. 19 and 21, when that piece will be secured against the lower side of the base-piece *s'* of the stud by its flange-rim s^3, being turned and clinched on the projections s^4 s^4, made to extend outwardly past the spuds i^2, as shown. With this form of construction of the stud and its fastener I prefer to use a lower side clamping-piece formed of disk J, provided with a central opening *j*, and the more extended disk K, having a central projecting annular clinching-flange *k*, clinched on the margin edge of opening *j* in piece J, as shown. By the use of this form of clamping-piece with the base and spuds shown in Fig. 19 to be used with the stud, the material will be securely clamped between the stud and said clamping-piece, with the stud firmly attached by the spuds i^2 passing through the material and clinching on piece J, after entering and turning in the joint between the pieces J and K, as do the spuds *i'* in Fig. 17 in the joint between the pieces S' and base-flange s^2 of the stud.

By my above-described improvements the button-head is made to consist of two half portions, which will be united with the material between by the clinching portions of the fastening-eyelet made with one of the halves of the button-head engaging with the coacting portion made with the other half part of the same, which parts will be strong in their fastening with the material and with each other and be cheaply produced, while the stud portion will have strong engagement with the button-head at a low point on the same, and also a strong connection with the material to which it is fastened.

If preferred, a convex or conical form plate

can be substituted for the turning-washer H in Fig. 12 for turning the tubular portion *c'* of piece D' when the latter is used in place of the upper retaining-piece D and the eyelet C, as in Fig. 1, and, further, if preferred, the stud-holding piece E, Figs. 1, 8, 10, and 12, can be inverted in its situation in the lower portion of the button-head, as shown in Fig. 14.

Any form of stud post or button may be used with this fastening device by properly securing it to one of the plates; or by omitting the stud the fastening may be used to secure two or more pieces of fabric together. The spuds or prongs may be made integral with the base-flange of the stud, if preferred.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a button-head, the combination of a shell-form slitted stud-catch E, held in place by two pieces, as F and D, with a clinching-tube having its end turned over the margin of a clinch receiving disk for securing said pieces securely attached to the fabric and with the shell of the button-head.

2. In a button-head of a separable button, the combination, with the outer or top shell, upper-side clamping-piece, and a fastening-eyelet, of the upper and lower stud-holder-retaining pieces D and F, an under-side clamping-piece, and a piece which will turn the clinching portion of the fastening-eyelet when the parts of the button-head are applied to the fabric and forced together, substantially as and for the purposes set forth.

3. In a separable button-head, the combination of a disk F, a shell-form slitted stud-catch E, and a chambered stud-catch-retaining piece secured to said disk F with a tubular clinching-tube and a clinch-receiving disk for securing the above parts to the fabric and button-head, substantially as and for the purpose set forth.

4. In a stud or button fastening, the combination of two disks centrally secured together and clamping on one side of the fabric with an opposite side disk having fastening-spurs projecting through the fabric and between the first two disks around the outer periphery of the inside disk, and a stud secured to one of the above disks.

5. A fastener consisting of a pronged disk to clamp one side of the fabric and two disks centrally secured together to clamp the opposite side of the fabric, the prongs of said disk adapted to pass through the fabric around the outside of the inside disk and be clinched between the two said disks, substantially as and for the purpose set forth.

EUGENE PRINGLE.

Witnesses:
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CHARLES SELKIRK.