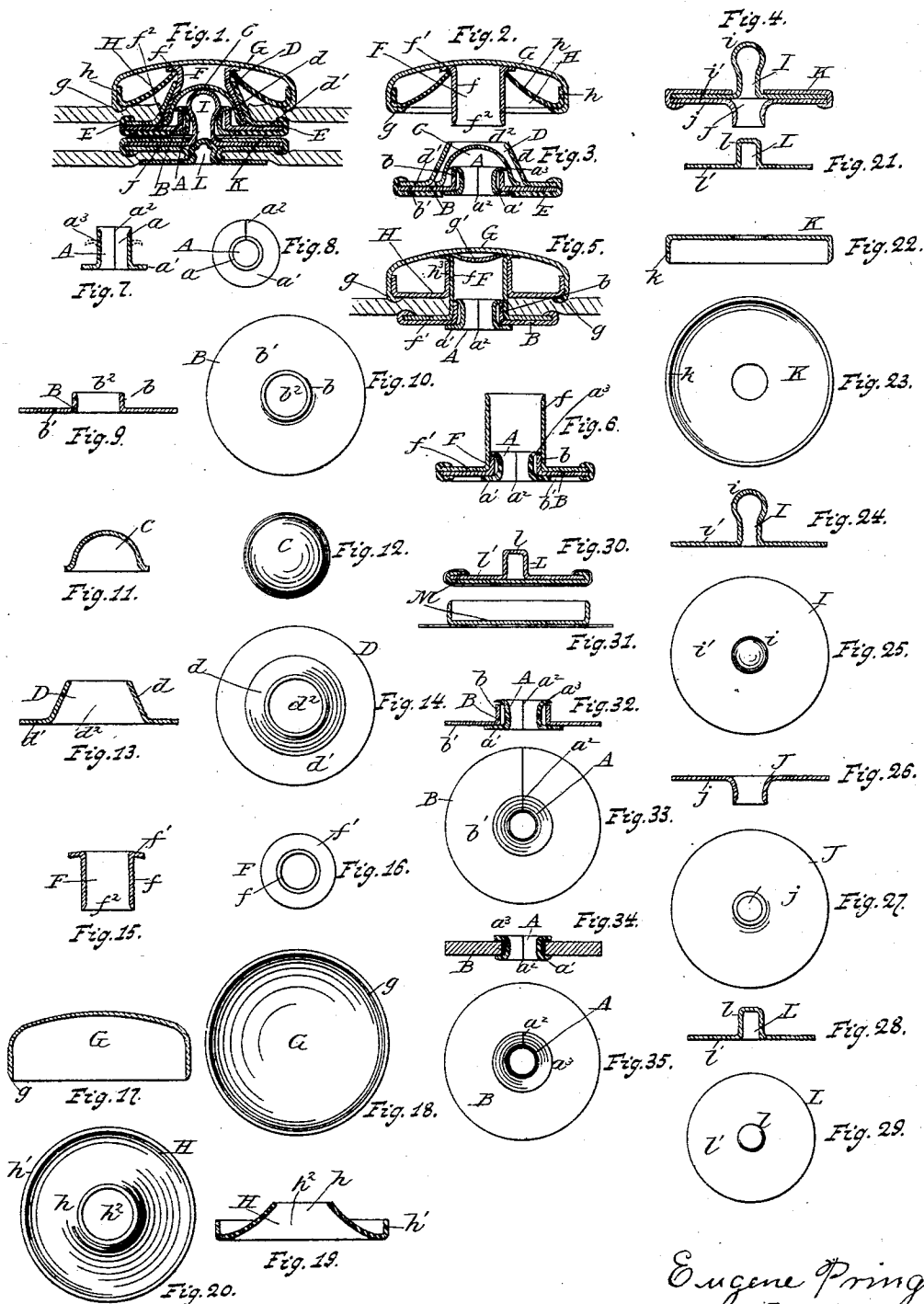


(No Model.)

E. PRINGLE.
SEPARABLE BUTTON.

No. 580,000.

Patented Apr. 6, 1897.



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SEPARABLE BUTTON.

SPECIFICATION forming part of Letters Patent No. 580,000, dated April 6, 1897.

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To all whom it may concern:

Be it known that I, EUGENE PRINGLE, a citizen of the United States, residing at 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 improvements in the button-head and stud portions of separable buttons; and it consists in the devices and parts and combinations of devices and parts hereinafter described, and specifically set forth in the claims.

The objects of my invention are, primarily, to provide in a button-head member of a separable button a tubular elastic stud holding or catching piece which is loosely held within the central opening provided in a disk or piece of fabric, and, secondly, to provide specific means by which the improvements can be embodied in the button-head member and be secured to the fabric, and, further, to provide novel and economical means by which the stud member can be securely fastened 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 view of the button-head portion and the stud portion of the separable button when connected together and secured to the fabric. Fig. 2 is a sectional elevation of the upper half portion of the button-head proper. Fig. 3 is a sectional view of the lower half portion of the button-head proper. Fig. 4 is a sectional elevation of the stud portion of the separable button. Fig. 5 is a sectional view of a button-head secured to the fabric and illustrating a modified form of some of the parts. Fig. 6 is a sectional view of the lower half portion of the button-head proper in the modified form of some of its parts. Fig. 7 is a sectional view of the elastic stud-catching device before it is secured in place. Fig. 8 is a plan view of the same. Fig. 9 is a sectional view of the stud-catch-holding device. Fig. 10 is a plan view of the same. Fig. 11 is a stud-holding-device guard. Fig. 12 is a plan view of the same. Fig. 13 is the exterior eyelet. Fig. 14 is a

plan view of the same. Fig. 15 is the internal eyelet before it is secured in place in the head. Fig. 16 is a plan view of the same. Fig. 17 is the outer inclosing shell. Fig. 18 is a plan view of the same. Fig. 19 is the lower side closing-piece of the upper half portion of the button-head. Fig. 20 is a plan view of the same. Fig. 21 is a sectional view of the hollow rivet for securing the stud to the fabric. Fig. 22 is a sectional view of the binding-piece for securing the flange-eyelet with the flange of the stud. Fig. 23 is a plan view of the same. Fig. 24 is a sectional elevation of the hollow stud and its flange. Fig. 25 is a plan view of the same. Fig. 26 is a sectional elevation of the flanged eyelet which backs the base-flange of the stud. Fig. 27 is a plan view of the same. Fig. 28 is a sectional elevation of the hollow rivet for holding the stud with the material. Fig. 29 is a plan view of the same. Fig. 30 is a sectional elevation illustrating the flange of the hollow rivet covered by a non-metallic wearing-piece. Fig. 31 is a sectional elevation of the backing-piece of the rivet and the non-metallic wearing-piece before secured. Fig. 32 is a sectional elevation of the elastic stud-catching piece and the piece holding the same and detached from the button-head. Fig. 33 is a plan view of the same. Fig. 34 is a sectional view of the elastic stud-catching piece held by its opposite end flanges within a metallic piece without flange *b*, and Fig. 35 is a plan view of the same.

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

In the drawings, *A* is the elastic stud-catching piece, which is made with the tubular body *a* and having flange *a'* with its lower end. This piece has its wall slitted from top to bottom by slit *a''*, so that the said wall can be expanded by internal pressure exerted against its inner surface, as by the pressure of the head of the stud against the interior of the slitted body *a*.

B is the stud-catch holding-piece, having the vertical flange *b* and horizontal flange *b'* and a central opening *b''* of larger diameter than the outer diameter of the body *a* of the stud-catching piece *A*. The stud-catching piece *A* is passed through opening *b''* of piece

B, preferably from its lower side, and has its opposite and unflanged end portion turned down all around on the upper edge of the vertical flange *b*, as shown in Fig. 1, so as to form with the body *a* of the stud-catch A and upper flange *a*³, as indicated by dotted lines in Fig. 7. When this upper end portion of the stud-catch A is turned on the upper edge of flange *b* of piece B, the stud-catch will be held in the opening *b*³ of piece B, with the body *a* of the former out of contact with the vertical flange *b* of the latter, so that the said stud-catch can be readily expanded in its diameter by the head of the stud when passing through the same. In Fig. 32 this stud-catch A is shown to be held in place in the catch-holding piece B when the latter is disconnected from the other adjuncts. In Figs. 34 and 35 is shown a thicker piece B, of metal, operating as a substitute for the piece B, (having flange *b*¹,) which obviates the use of the flange *b*.

C is an eyelet-spreading piece and preferably consists of a semispherical form of shell which is arranged over the upper end of the stud-catch A and closes the upper portion of the same, as shown in Figs. 1 and 3.

D, Figs. 1, 2, and 13, is an exterior fastening-eyelet which is shown in said figures to have a tapering tubular body *d*, an annular flange *d*¹, and a central opening *d*². This eyelet is placed with its flange *d*¹ on the flange *b*¹ of the stud-catching piece B and is secured with the same by the binding-piece E, as in Figs. 1 and 3, and when thus secured the eyelet-spreading piece C will be inclosed by the tapering wall *d* of the eyelet D and will be held from shifting.

F is the internal eyelet made with the plain body *f* and narrow end flange *f*¹, as shown.

G is the outer or inclosing cap or shell of the button-head proper.

H is the lower side closing-piece of the upper portion of the button-head and is made with the eyelet-holding wall *h* and annular flange *h*¹ and central opening *h*². When the eyelet F has its body passed down through the opening *h*² of the piece H and is placed within the chamber of the cap or shell G, as shown in Figs. 1 and 2, and is there secured by the margin edge *g* of said cap being clenched on the lower side edge of the eyelet-holding piece H that piece H, with the internal eyelet F, will be securely held within the said cap or shell G. In this button-head the pieces A, B, and D constitute the lower half portion of the button-head, while the pieces F, G, and H compose the upper half portion of the same. When these two half portions of the button-head are to be united together and with the material clamped between them, the wall *d* of the exterior eyelet D will be passed through the material from its lower side, and the tubular portion *f* of the interior eyelet F will be passed down through the upper end of the opening *d*² of the exterior eyelet and be forced downwardly

to carry the lower clenched margin edge of the cap G against the upper side of the material and the flange *d*¹ of the piece D against the lower side of the same, so as to tightly clamp the material between the said flange *d*¹ and the clenched margin of cap G, and when being thus forced together the lower end portion of the eyelet F will be passed outwardly by the incline of the spreading-piece C, and the lower end portion *f*² of said eyelet F will pass downwardly and be spread out against the inner surface of the inclined wall *d* of the exterior eyelet D, as shown in Fig. 1, and the two half portions of this button-head will be securely united together with the fabric between.

In Fig. 5 the closing-piece H is shown to have its closing portion (corresponding with *h* in Fig. 19) made with right-angular form and with the straight tubular wall *h*³, while the shell G, secured to this closing-piece H by clenched *g*, is provided with a central concavo-convex piece *g*¹ (or is made with the same) to operate as a device for spreading the upper end portion of the inverted eyelet F, as shown in Fig. 5. When this inverted eyelet F is employed, the upper end of the tubular portion *f* will be spread outwardly all around by the operation of the depressed portion of shell (or the piece *g*¹ used with the same, as shown in Fig. 5) and be clenched down on the upper edge of the tubular portion *h*³ and hold the upper and lower half portions of the button-head securely united, with the material clamped between. In this form of construction of the parts of the button-head the stud-catch guard C will be dispensed with and the tubular portion *h*³ of closing-piece H will operate as a substitute for the body *d* of piece D in Figs. 1, 3, and 13 for holding with the internal eyelet F connected with the lower half portion of the button-head, as shown in Fig. 5.

I is the stud, which stud is made with the shell or hollow form and with the bulb form of head *i*, as shown in Figs. 1 and 4, and is provided with a base-flange *i*¹. The head *i* of this stud is slightly larger than the bore of the stud-catch A, so that when passing through the latter it will expand the slitted wall *a* of the same.

J is an eyelet having flange *j* of a diameter about corresponding with that of the stud I. This flange *j* and flange of stud I are secured together by a clamping-piece, as K, Fig. 4; or that clamping-piece may be dispensed with, and the flange of the stud or that of the eyelet can be made larger than the other and be clenched on the same in the usual way practiced by the trade, when the said eyelet-stud will be securely united together, flange to flange.

L is a hollow rivet having its upper end closed and its lower end provided with flange *l*. This rivet has its cylindrical portion of a diameter corresponding with that of the bore of the eyelet J, so as to enter the same.

M is a rivet-closing piece made preferably of thin metal covered with fabric or leather or other non-metallic material. This piece M is shown in Fig. 30 as applied to piece K and holding the flange *k* of the said piece by the margin edge of the said flange being turned on the flange *l'* of said rivet, as shown. When this stud is to be secured to the fabric, the eyelet J will be passed through the material, and the rivet L will be entered into the bore of said eyelet, and by the means of a suitable tool or instrument the rivet and the eyelet will be crowded together, and the annular corner portion of the closed end of the rivet will be made to strike against the curved corner of the wall of the opening to the chamber of the shell of the stud (where the said wall connects with its flange *i'* of the stud) and will spread the upper closed end of the rivet downwardly, so as to clench against the curved annular corner or line of union of the stud-shell with its flange, while at the same time the lower open end of the eyelet J will be spread, and under a sufficient force the rivet L and eyelet J will be clenched tightly together and be securely united, with the fabric between and with the flange *l'* of the rivet clasping one side of the fabric and the flange *j* of the eyelet J clamping the opposite side of the same.

When the button-head portion of this separable button is to be connected with the stud portion of the same, the head *i* of the stud will be pressed up into the bore of the elastic stud-catch A, when the latter will be expanded by the force of the pressure of the former against the slitted wall *a* of the latter, and when the head of the stud has passed through said piece A it will securely hold with the upper side of the same and thereby unite the two portions of the fabric together. A pull of the stud away from the button-head will withdraw the latter.

When the body of the hollow rivet is made with a shorter length between its flange and its closed end, the eyelet J can be dispensed with and a simple washer can be substituted.

Having described my invention, what I claim is—

1. A separable button-catch comprising an

apertured washer and an eyelet having a shank of less diameter than the aperture of the washer and having two enlargements securing it in the aperture of the washer and slitted lengthwise through the shank and the enlargements, as and for the purpose set forth.

2. A button-head comprising a slitted eyelet, an apertured washer to which the eyelet is secured, a fastening-eyelet connected thereto, passed through the material and clenched to a cap or shell, substantially as described.

3. A button-head consisting of a slitted eyelet secured to an apertured washer, a fastening-eyelet attached thereto and projected through the material, a cap or shell containing a clamping-piece, said fastening-eyelet clenched over the clamping-piece, for holding the head to the material, substantially as described.

4. A stud member of a separable button comprising a post secured to a downwardly-projecting eyelet, said stud attached by an upwardly-projecting boss and flange upon the opposite side of the material, substantially as described.

5. A stud member of a separable button consisting of a post secured to a downwardly-projecting eyelet, said stud attached by an upwardly-projecting boss and flange upon the opposite side of the material, and said flange provided with a covering, substantially as described.

6. A separable button-stud having a flanged eyelet J, secured to the base thereof, with its tubular portion projecting in an opposite direction from the stem of the stud, and of larger diameter than the diameter of the opening in the base of the stud, in combination with a washer L, having a hollow stem and closed top adapted to have its stem inserted through the fabric and into the stem of the eyelet J, and upset against the base of the stud I, thereby securing the stud to the fabric, substantially as and for the purpose set forth.

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Witnesses:

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