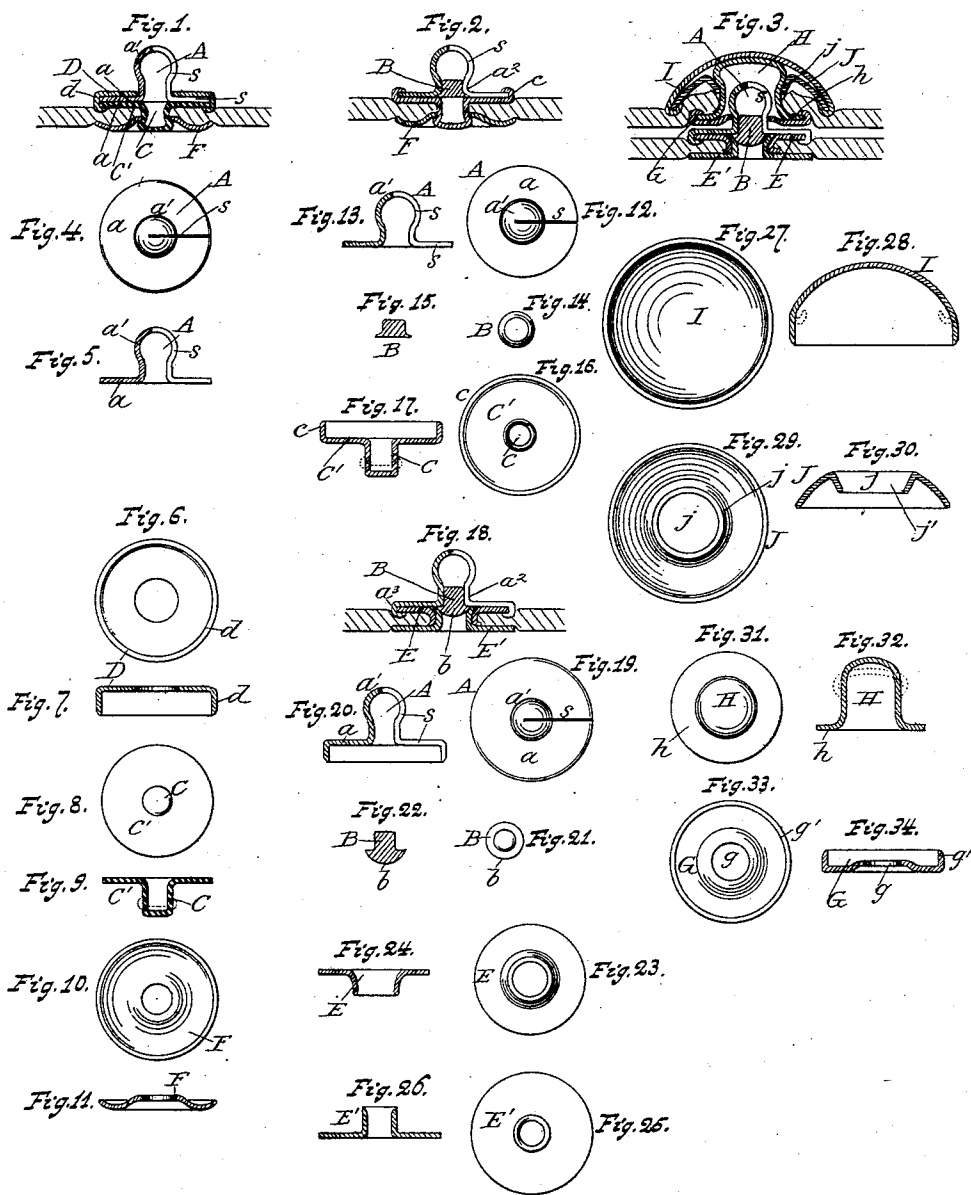


(No Model.)

E. PRINGLE.
SEPARABLE BUTTON.

No. 580,001.

Patented Apr. 6, 1897.



Witnesses.

William F. Seckin
Charles Seckin

Eugene Pringle
Inventor.

UNITED STATES PATENT OFFICE.

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

SEPARABLE BUTTON.

SPECIFICATION forming part of Letters Patent No. 580,001, dated April 6, 1897.

Application filed September 8, 1888. Serial No. 284,949. (No model.)

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 separable buttons; and it consists in the devices and parts and combinations of devices and parts hereinafter particularly described, and specifically set forth in the claims.

The objects of my invention are, first, to provide in a separable button a stud which will have its holding head or bulb composed of two semispherical-form lobes, which are separated from each other at one side of a slit running in the direction of the axis of the stud and integral with each other at a line opposite the line of the said slit, and thereby cause said lobes to be elastic or yielding from the line of union of said lobes in direction transverse to the line of the axis of the stud; second, to provide specific means for reinforcing the lower end of the slitted stem of the stud; also, to provide means by which a hollow rivet will operate with the button-head member to hold both it and the stud-catching device secured with the fabric, and, further, to provide specific means by which my improvements can be embodied in the button-head and stud member of a separable button. 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 stud embodying my improvements and illustrating its connection with the material. Fig. 2 is a sectional elevation of the same with some of its adjunctive parts having a modified form of construction and arrangement. Fig. 3 is a sectional view of the button-head and coacting stud embodying the improvements in this invention. Fig. 4 is a plan view of my improved elastic stud when detached from its adjunctive pieces. Fig. 5 is a sectional elevation of the same. Fig. 6 is a plan view of the flange binding piece which can be employed. Fig. 7 is a sectional view of the same. Fig. 8 is a plan view of an attaching-rivet

which can be employed. Fig. 9 is a sectional view of the same. Fig. 10 is a plan view of the washer which can be employed. Fig. 11 is a sectional elevation of the same. Fig. 12 is a plan view of the elastic stud shown in Figs. 2 and 3. Fig. 13 is a sectional view of the same before receiving the internal reinforcing-piece. Fig. 14 is a sectional view of the internal reinforcing-piece. Fig. 15 is a sectional view of the same. Fig. 16 is a plan view of a fastening-rivet which can be employed. Fig. 17 is a sectional view of the same. Fig. 18 is a sectional elevation of the elastic stud, with its internal reinforcing-piece and adjunctive parts for attachment to the material. Fig. 19 is a plan view of an elastic stud having a base of modified form. Fig. 20 is a sectional elevation of the same. Fig. 21 is a plan view of an internal reinforcing-piece shown to be employed in Fig. 18. Fig. 22 is a sectional elevation of the same. Fig. 23 is a plan view of a fastening-eyelet which can be employed. Fig. 24 is a sectional view of the same. Fig. 25 is a plan view of the coacting fastening-eyelet which can be employed. Fig. 26 is a sectional elevation of the same. Fig. 27 is a plan view of an outer shell of the button-head. Fig. 28 is a sectional elevation of the same. Fig. 29 is a plan view of the rivet-holding piece of the button-head. Fig. 30 is a sectional elevation of the same. Fig. 31 is a plan view of the fastening-rivet shown to be employed in the button-head in Fig. 3. Fig. 32 is a sectional elevation of the same. Fig. 33 is a plan view of the rivet-holding piece. Fig. 34 is a sectional elevation of the same.

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

In the drawings, A represents my improved elastic stud, having integral with it the base-flange *a*.

This stud is made of a single piece of metal with a shell form, as shown in Figs. 1, 2, 3, 5, 13, and 20.

This stud is so constructed that its bulb or holding-head *a'* will be made elastic or yielding in direction transversely to the line of the axis of the stud and so that the two opposite sides of the bulb or head *a'* of the stud will

be in the form of two lobes longitudinally integral with each other at a line opposite to the line of the slit, which renders said opposite sides or lobes yielding or elastic; and for this purpose this head or bulb a' may in some cases be slitted longitudinally from one side toward and to or past the axial line of the stud without cutting through its side opposite the line of slit s , so that the two lobes produced from head or bulb a' will spring or yield from the line of the uncut side which is opposite to the line of the slit s , which breaks the continuity of the said head. In other cases the stud and its base-flange a may have their continuity broken by means of the slit s being extended from the apex of the stud longitudinally through one side of the stem and also through its flange a , as illustrated in Figs. 4 and 5, and this slit s may be made to extend from the periphery of the bulb or head a' to past the axial line of the same, as shown in Figs. 12 and 19. When the continuity of the head or bulb a' is broken at one side by slit s , the two oppositely-located halves of said head are each in the form of a semispherical lobe, and these lobes will be integral at a line in the stem of the stud directly opposite the line of the slit s , and when under pressure, as when being passed through an inelastic or non-expanding stud-engaging piece, these lobes will yield toward each other from the line of their union with each other and in direction transversely to the axial line of the stud, and after passing through such a stud-engaging piece these lobes will spring back to their normal form and condition of situation in relation to each other and hold with such stud-engaging piece.

When this stud is slitted from its periphery in a line from one side to or past its axial line and from the top of the head to or near to the flange a without passing through it, the neck or contraction of the stud below the lobes comprising the elastic bulb or head a' will be stiffer to resist strain from the draft of the stud-engaging piece of the button-head member than such neck or contraction would be were the flange a also slitted and the neck not reinforced. When, from economical or other reasons, this stud has its slit s extended longitudinally from the top of the stud to cut through one side of its stem and also the flange a , as shown in Figs. 2, 12, 18, and 19, the contraction or neck a^2 may be stiffened by the internal reinforcement or piece B, applied, as shown in Figs. 2, 3, and 18, to the inner side of the chamber of the stud opposite its neck a^2 and flange a ; but the said reinforcing-piece may be omitted in some cases, as it is shown to be in Fig. 1. In Fig. 2 the reinforcing-piece B is shown to be applied to within the neck of the stud, with its lower end on a plane with the line of the lower side of flange a of the same.

In Fig. 1 the stud is shown to be secured to a hollow fastening-rivet C by its flange

portion being secured to the flange of said stud by a clamping-piece, and this hollow fastening-rivet C is shown to clamp the fabric on one side, with the clamping-washer F applied to the opposite side and clenched, as shown in said Fig. 1, and also in Fig. 2. This hollow fastening-rivet C in its attachment with the stud A and use with the washer F, holding the stud with the fabric, forms no part of this invention, but is the subject-matter in my application, Serial No. 284,940, filed September 8, 1888.

To obviate the use of a hollow rivet for securing this stud to the fabric, I employ with the reinforcing-piece B another element consisting of a convex surface made with the said reinforcing-piece B, (shown in Fig. 18,) which convex surface will operate to turn outwardly the clenching end of a fastening-eyelet E' and cause it to engage with the coating piece E, secured to the flange of the stud.

H is a hollow rivet for receiving and holding the stud and clamping the fabric from its lower side. I is the outer shell or cap of the button-head, and J is the rivet-engaging piece, secured at its outer edge with the outer edge of the outer shell I. This rivet-engaging piece J is provided with the tapering internal ring-form flange j , Figs. 3 and 30, which receives the swell of the rivet H when in place and clenched, as shown in Fig. 3.

In Fig. 3 is shown piece G, having in it central perforation g , Fig. 34, for passage of the stud. This piece G is shown in Fig. 3 to be secured to the flange h , Fig. 32, of the hollow rivet H. In some cases this piece G can be dispensed with, when the flange h of the hollow rivet will operate as a clamping device to the lower side of the fabric, and the enlargement of the upper portion of the chamber of the rivet will receive the bulb or head of the rivet, while the said head or bulb of the stud will engage with the more contracted portion of the shell of said rivet, when the several members H, I, and J are in place with the upper end of the hollow rivet spread, as shown by full lines in Fig. 3 and indicated by dotted lines in Fig. 32, so as to hold with the internal flange j of piece J.

When this button-head is applied to the material, the rivet H, with or without the piece G attached, will be passed through the material from its lower side, when cap I, with its attached rivet-holding piece j , will be placed in position with the body of the rivet entering the aperture of the flange j of the piece J, when by suitable instruments the cap-piece and rivet will be forced toward each other, and the upper end of the rivet, having bearing on the lower side of cap I, will be upset and its upper portion spread so as to form in it an enlarged chamber, which will receive the bulb or head, while the more contracted portion of the shell of the rivet will engage with the contracted portion of the stud. At the same time the flange of the rivet and the

cap will securely clamp the material and hold the operating parts of the button-head secure with the fabric.

Having described my invention, what I claim is—

1. A button-head for a separable button consisting of a cap having a rivet-engaging piece extending inward from its outer edge and provided with a central aperture and a hollow rivet, having a closed head, inserted from the opposite side of the material from the cap and spread or upset by pressure against the inner surface of the cap and upon the rivet-engaging piece therein, and flanged below the material, substantially as described.

2. A button-head comprising a cap-plate, a rivet-engaging piece connected thereto, a hollow rivet spread or burred within the cap against the rivet-engaging piece, and a stud-catch secured to the base-flange of the rivet, substantially as described.

3. A flanged stud having a head slitted on

one side only, thus rendering said head resilient transversely thereof, and a fastening-eyelet secured to the flange, whereby said stud is secured to the material, substantially as described.

4. A stud for a separable button consisting of a head rising from a base-flange, said head slitted upon one side only, and a plug held in the lower portion of the stud in line with the engaging groove, to add strength at this point, substantially as described.

5. In a button-head of a separable button the combination with an outer cap or shell and the piece J having the annular ring-form flange, of the stud-receiving and cap-securing shell-form hollow rivet H, and the centrally-perforated piece G substantially as and for the purpose set forth.

EUGENE PRINGLE.

Witnesses:

WILLIAM F. SELKIRK,
CHARLES SELKIRK.