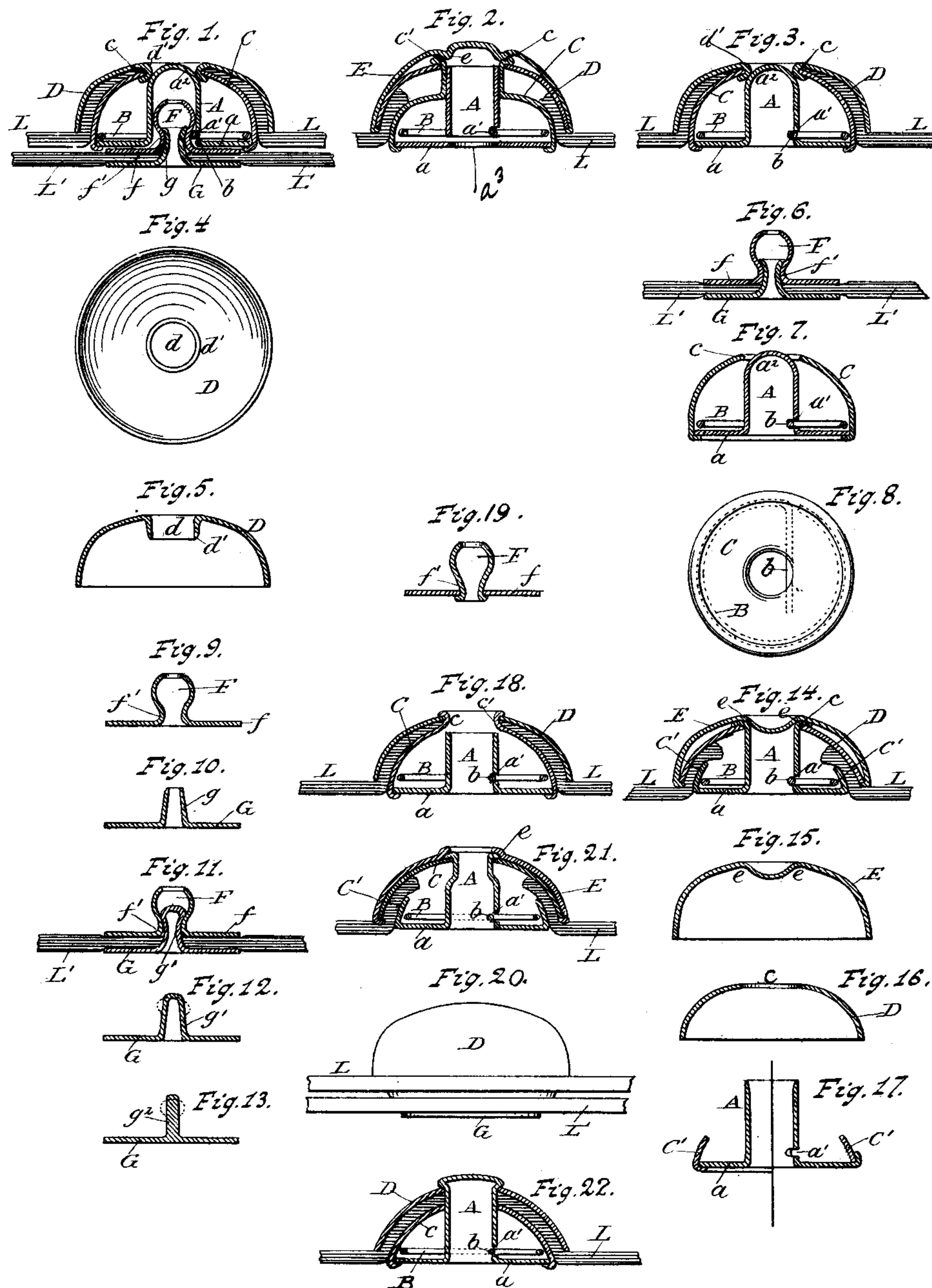


(No Model.)

M. D. SHIPMAN.
SEPARABLE BUTTON.

No. 388,225.

Patented Aug. 21, 1888.



Witnesses:
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MADISON D. SHIPMAN, OF DE KALB, ILLINOIS.

SEPARABLE BUTTON.

SPECIFICATION forming part of Letters Patent No. 388,225, dated August 21, 1888.

Application filed April 30, 1887. Serial No. 235,539. (No model.)

To all whom it may concern:

Be it known that I, MADISON D. SHIPMAN, a citizen of the United States, residing at De Kalb, in the county of De Kalb and State of Illinois, have invented certain new and useful Improvements in Separable Buttons, of which the following is a specification.

My invention relates to separable buttons in which the holding part of the button-head is secured to the under side of the fabric by means of a shell-shaped piece applied to the upper side of the same, which piece, together with the holding part, forms the complete button-head, and also to its coacting stud, which is made to be peculiarly adapted to engage with the button-head and be readily secured to the fabric; and it consists in the arrangement, construction, and combinations of parts, hereinafter particularly described, and set forth in the claims.

The accompanying drawings illustrate my improvements on an enlarged scale the better to show its parts.

In the drawings, Figure 1 is a section elevation of the stud secured to the material and button-head, also secured to the material and connected with the stud. Fig. 2 is a sectional elevation of the button-head, having some of its parts modified in form of construction and showing a covering-shell over the same. Fig. 3 is a sectional view of the button-head secured to the material and separated from the stud. Figs. 4, 5, 6, 7, 8, 9, and 10 are detail views of the several parts of this separable button. Figs. 11, 12, and 13 are sectional views of a modified form of device for securing the stud with the material. Fig. 14 is a sectional elevation of the button-head having some of its parts modified in form and manner of connection with each other. Figs. 15, 16, and 17 are sectional detail views of the parts shown in Fig. 14. Fig. 18 is a sectional elevation showing another modification of some of the parts of the button-head. Fig. 19 is a sectional view of a stud and its base made separately, but having a clinched connection with a base. Fig. 20 is a side elevation of the button-head and two parts of the material when secured together by the stud. (Not seen.) Fig. 21 is a sectional view of a button-head embodying my improvements and showing modified forms of construction of the parts. Fig.

22 is a sectional view showing another modification of the button-head.

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

In the drawings, A represents the stud-receiving tube, which is provided with the washer-form base-flange *a*, made, preferably, solid with it and provided with a perforation or notch, *a'*, in its side.

B is a suitable spring-catch, made with any known form of construction and arranged around the lower end portion of tube A, with the catching portion *b* thereof lying in notch *a'* of said tube or partly across the stud-receiving opening *a''* in base *a*, as in Figs. 2, 3, 7, 14, 18, 21, and 22.

C is a thin sheet-metal shell of any suitable form, having its lower marginal edge portion secured to the marginal edge of base-flange *a* of tube A. Central in the upper side of this shell is perforation *c*, the edge of which can nearly approach the sloping closing wall portion *a''* of tube A, as shown in Figs. 1, 2, and 7.

D is an outer shell, which is made a little larger than shell C and operates in conjunction with it for holding the fabric or leather, L, to which the button-head proper is to be secured permanently. This cap D is shown in Figs. 4 and 5 to be provided with a central perforation, *d*, and the downwardly-projected rim *d'*, which is concentric to said perforation. This rim *d'* is shown in Fig. 5 before being clinched on the lower side of the edge margin of central perforation, *c*, of shell C. This outer shell, D, is made to have a concavity with a size larger than the dimension of convexity of shell C, so as to leave between the two shells C and D a narrow space, within which the fabric or leather, L, will be received and held when shell D is secured with shell C, as shown.

Instead of making the shells C and D as above described, the shell C can be made with an upwardly-projecting rim, *c'*, (shown in Figs. 2 and 18 clinched,) while from shell D the downwardly-projected rim can be omitted, as shown in the same figures, and in such a case the rim *c'* of shell C will be passed through a suitable hole in material, L, and the central perforation *d* of shell D, and be clinched on the edge margin of the said perforation, as shown in Figs. 2 and 18; or, if preferred, the tube A can be

extended in its length so as to pass up through the central perforation, *d*, of shell D and project above the same to a short distance, so as to be clinched on the same, as shown in Fig. 14, in which case I reduce the height of shell C, or use in lieu thereof the shallow shell C', (shown in Figs. 14, 17, and 21,) made with or connected with the base-flange *a* of tube A, as shown in said figures.

E, Figs. 2, 14, 15, 18, and 21, is the button-head covering-shell, which is made with suitable size and form to readily receive the shell D and close over the same. This covering-shell has its middle portion provided with a circular corrugation, *e*, at a line outside the center of the shell, which will be about over the clinching-rim *e'* of shell C, Fig. 2, or clinching end of tube A, as shown in Figs. 2 and 14, so that the sloping surface of this circular corrugation *e* will turn said clinching portions when force is applied to set the parts together. In Fig. 21 the stud-receiving tube A is shown to have its upper end contracted and clinched on the upper side of shell C within the corrugation *e*, while in Fig. 22 this tube is shown to have a closed end, which, after passage through the openings in both the fabric and the shell, is clinched or burred on the upper side of this latter shell. In all these modifications the shell D operates as a holding or binding piece on the upper side of the fabric or leather, while shell C or its modifications C' operate as a lower washer, and these two (the shells D and C,) are made to unitedly operate to clamp the fabric or material, L, between, and securely hold the same between their respective concave and convex surfaces when the shell D is, by its clinching-rim *d'*, clinched on shell C, as shown in Figs. 1 and 3, which is readily done by the edge of the rim *d'* striking on the convex surface of the closed end of tube A when the parts are being forcibly united. When rim *e* of shell C is clinched on shell D, as in Figs. 2 and 18, or when the shell D or modification C' of shell C are held together by the clinch of tube A on shell D, as in Figs. 14 and 21, it is seen that the covering shell or cap E is clinched at its lower or base margin edge on the base margin edge of shell D before the fabric or leather, L, is placed over shell C, and the latter is secured to shell D, as shown, and above described.

F is the holding-stud, having a base-flange, *f*. This stud is made with a hollow form and has below its bulbous head the holding-neck *f*, with which the catching-limb *b* of the spring-catch B will engage when the stud has been entered into the tube A of the button-head, as shown in Fig. 1. This hollow stud is made open at both ends, as shown.

G is a disk, having projected upward from its plane a fastening device, as *g*, (shown in Figs. 1 and 10,) or as *g'*, in Figs. 11 and 12, or as *g''* in Fig. 13, any one of which forms can be employed and be clinched on the inner side of stud F. When this stud is to be secured to the fabric or leather, L', the projec-

tion *g*, or its described equivalents *g'* or *g''*, will be passed through the leather and into the hollow stud F, when, by means of a suitable set or instrument, the end of which can readily pass through the opening in the top of the bulb of stud F and burr, clinch or spread the upper end of projection *g*, or its described equivalents, against the inner side of the stud F, as shown, when the latter will be securely held with the fabric or leather, L'.

To fasten the two parts of this button together, the operator is required to simply press the button-head containing the catch B on the stud F and press the same down, when said catch will engage with the neck of stud F and hold the two parts united.

Certain subject-matter shown in this application, but not claimed herein, is claimed in another application, Serial No. 267,448, filed March 17, 1888.

What I claim, and desire to secure by Letters Patent, is—

1. In a button-head of a separable button, the combination, with the shell, which is secured to the lower or under side of the material and contains within it a stud-receiving tube and a spring-catch which works in an opening made in a side wall of said tube for engagement with a coacting stud, of a second shell clamping on the upper side of the material and secured to the shell below the material by clinching, and the outer or inclosing shell, E, secured by clinching to said second or upper shell, substantially as and for the purposes set forth.

2. In a separable button, a button-head comprising the stud-holding tube A, provided with notch *a'* in its side and a spring-catch having its catching portion in said notch, the shell C, secured to the base-flange of said tube and adapted to be applied to the lower side of the material, and the shell D, applied on the upper side of the material, the said shells being secured together with the material between by clinching, substantially as and for the purposes set forth.

3. In the button-head of a separable button, the combination, with a stud-receiving tube having an annular base-flange and a notch or opening in its side wall neighboring its base-flange, and the spring catch, which has its body portion exterior to said stud-receiving tube and its catching portion seated in the notch of said tube, of the shell C, which has its lower edge secured to the base-flange of said tube and its wall inclosing both the said tube and spring-catch, and also clamping on the under side of the fabric, and the coacting shell D, clamped on the upper side of the material and secured by its upper end with the upper end of the lower side shell, C, substantially as and for the purposes set forth.

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Witnesses:

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