A. G. ANDERSON.

SEPARABLE FASTENER.

APPLICATION FILED JAN. 16, 1920.

1,387,115. Patented Aug. 9, 1921.

Fig. 1.

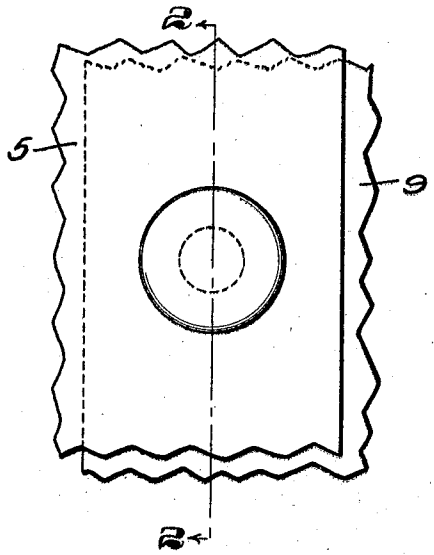


Fig. 2.

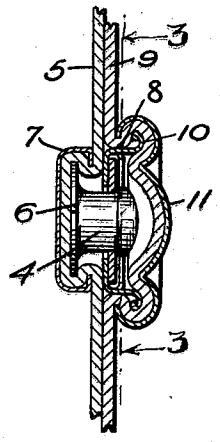
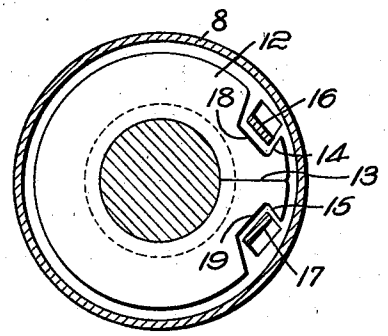


Fig. 3.



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UNITED STATES PATENT OFFICE.

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SEPARABLE FASTENER.

1,387,115. Specification of Letters Patent. Patented Aug. 9, 1921.

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To all whom it may concern:

Be it known that I, ANDREW G. ANDERSON, a citizen of the United States, and resident of Wollaston, in the city of Quincy, county of Norfolk, and Commonwealth of Massachusetts, have invented an Improvement in Separable Fasteners, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention pertains to improvements in separable fasteners.

It is among the objects of the invention to provide a simple and rugged fastener having superior holding power against undesired separation by forces resultant from lateral strain between stud and socket.

In the drawings, which show a preferred embodiment of one form of my invention:

Figure 1 is an elevation of two pieces of fabric secured together by a preferred form of fastener;

Fig. 2 is a section on the line 2—2 of Fig. 1; and

Fig. 3 is a section on the line 3—3 of Fig. 2, showing in detail the preferred form of spring.

Referring to the drawings and to the preferred form of my invention selected for illustrative purposes, I have shown a stud 4 which may be of any suitable form, and which may be secured to a stud-securing fabric 5 in any suitable way, but preferably by expansion of the stud base 6 within the flanged-over stud-securing part 7.

The socket 8 may be secured to the socket-securing carrying fabric 9 in any suitable way, as by sewing, but I prefer to secure the same to the fabric by flanged-over portions 10 gripping the fabric against a stud-securing cap 11.

The socket 8 includes a casing containing a spring 12, which is preferably flat and may be conveniently stamped from sheet brass or the like to provide a stud-receiving aperture split at one side as 13. Coöperating cam surfaces are preferably provided on the spring and casing, so that lateral strain between stud and socket in at least one direction will bring the cam surfaces into operation and firmly close the spring 12 about the neck of the stud to preclude undesired separation of stud and socket by forces arising from tipping of stud and socket as a result of lateral strains therebetween.

In the preferred form of my invention selected for illustrative purposes, I have provided the spring with cam surfaces 14 and 15 adapted to bear against abutments 16 and 17 on the socket when lateral strain between stud and socket tends to move the spring in the direction to the left, as shown in Fig. 3. I also preferably provide the spring 12 with cam surfaces 18 and 19 adapted to bear against the abutments 16 and 17 and to wedge the spring 12 in closed position about the neck of the stud when strain is exerted between the parts in such a manner as to tend to move the spring 12 in a direction toward the right, as shown in Fig. 3. It is clear that one or both of the before-described wedging actions may be brought into operation by strains other than directly to the left or directly to the right, as above described.

The abutments 16 and 17 may be provided in any suitable way, but preferably by struck-up portions of the socket-casing.

It will be understood that I use the word "fabric" in its broader sense to include not only woven materials, but any flexible carrying medium.

While I have shown and described a preferred form of one embodiment of my invention, it will be understood that changes involving omission, substitution, alteration and reversal of parts, and even changes in the mode of operation, may be made without departing from the scope of my invention, which is best defined in the following claims.

Claims:

1. A separable fastener comprising, in combination, a stud having a head and a neck, and a socket providing a spring having an opening at one side thereof and a spring casing, said spring and spring casing providing coöperating cam means tending to hold the spring closed about the neck of the stud entered therethrough when lateral strain is exerted between stud and socket.

2. A separable fastener comprising, in combination, a stud having a head and a neck, and a socket providing a spring having an opening at one side thereof and a spring casing, said spring and spring casing providing coöperating cam means tending to hold the spring closed about the neck

of the stud entered therethrough when lateral strain is exerted between stud and socket in a direction away from the opening in the spring.

3. A separable fastener comprising, in combination, a stud having a head and a neck, and a socket providing a spring having an opening at one side thereof and a spring casing, said spring and spring casing providing coöperating cam means tending to hold the spring closed about the neck of the stud entered therethrough when lateral strain is exerted between stud and socket in a direction toward the opening in the spring.

4. A separable fastener comprising, in combination, a stud having a head and a neck, and a socket providing a spring having an opening at one side thereof and a spring casing, said spring and spring casing providing coöperating cam means tending to hold the spring closed about the neck of the stud entered therethrough when lateral strain is exerted between stud and socket in a direction either toward or away from the opening in the spring.

5. A separable fastener comprising, in combination, a stud having a head and a neck, and a socket including a casing, a flat spring in the casing, said spring having a stud-receiving aperture and an opening at one side thereof to permit expansion and contraction of the stud-receiving aperture, said spring having outwardly flaring cam surfaces adjacent said opening and coöperating surfaces on the casing adjacent said cam surfaces.

6. A separable fastener comprising, in combination, a stud having a head and a neck, and a socket including a casing, a flat spring in the casing, said spring having a stud-receiving aperture and an opening at one side thereof to permit expansion and contraction of the stud-receiving aperture, said spring having inwardly flaring cam surfaces adjacent said opening and coöperating surfaces on the casing adjacent said cam surfaces.

7. A separable fastener comprising, in combination, a stud having a head and a neck, and a socket including a casing, a flat spring in the casing, said spring having a stud-receiving aperture and an opening at one side thereof to permit expansion and contraction of the stud-receiving aperture, said spring having outwardly and inwardly flaring cam surfaces adjacent said opening and coöperating surfaces on the casing adjacent said cam surfaces.

In testimony whereof, I have signed my name to this specification.

ANDREW G. ANDERSON.