M. F. CARR.

FASTENER.

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1,300,581.

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Fig. 1.

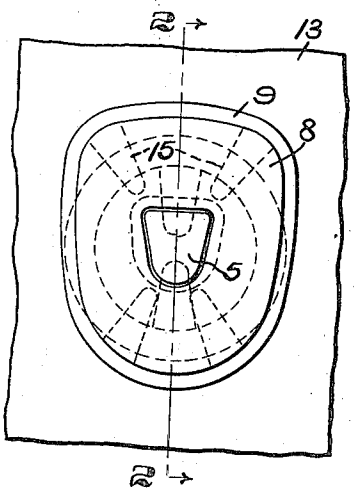


Fig. 2.

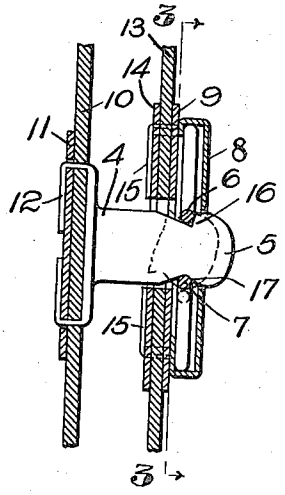
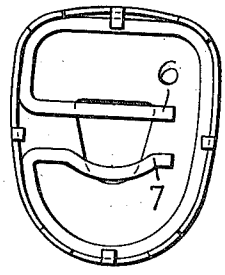


Fig. 3.



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UNITED STATES PATENT OFFICE.

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FASTENER.

1,300,581. Specification of Letters Patent. Patented Apr. 15, 1919.

Application filed August 23, 1917. Serial No. 187,802.

To all whom it may concern:

Be it known that I, MOSES F. CARR, a citizen of the United States, and a resident of Newton, in county of Middlesex, Commonwealth of Massachusetts, (whose post-office address is care of Carr Fastener Company, Cambridge, Massachusetts,) have invented an Improvement in 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 fasteners, more particularly, though not exclusively, to improvements in snap fasteners in which separation of two engaging elements can be effected by tipping movement of one of said elements in one direction only.

Referring to the drawings:

Figure 1 is a front elevation of a fastener device constituting a preferred form of one embodiment of my invention;

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

Fig. 3 is a rear elevation of a portion of the socket of the fastener showing in detail a preferred jaw construction for use in connection with my invention.

Referring to the drawings of the preferred embodiment of my invention, I have shown a stud 4 having a head 5 adapted to enter the socket and to be engaged by jaw means herein typified by the spring jaws 6 and 7. The spring jaws 6 and 7 are preferably, as shown, formed of a single piece of wire held in a socket comprising a front plate 8 and a back plate 9. The fastener is shown with the stud 4 attached to fabric 10 by a back stud plate 11 held by prongs 12 in the usual manner. The socket is preferably attached to fabric 13 by means of a back plate 14 and prongs 15, said prongs being preferably integral with the front plate 8.

The jaw elements 6 and 7 preferably extend transversely of the socket. The stud 4 is provided with an unsymmetrical shoulder providing an abrupt shoulder 16 for engagement with the jaw 6 and a comparatively sloping shoulder 17 for engagement with the jaw 7. The aperture through the plates 9 and 14 is preferably so shaped that the socket may be tipped relative to the stud until the position of the stud relative to the fastener is as shown in dotted lines in Fig. 2, thereby permitting the spring 7 to be pushed down by the sloping shoulder 17 until the shoulder 16 is in position to disengage from the jaw 6. The aperture through the plates 9 and 14 is preferably such as to prevent any considerable tipping movement of the socket relative to the stud in any direction other than that above described. The head of the stud is preferably rounded, as shown, so that the stud may be entered in the socket by a straight rectilinear movement, the head 5 of the stud 4 crowding the jaws 6, 7 apart so that the head of the stud can pass between them.

Separation of stud and fastener by direct rectilinear movement is prevented by the engagement of the abrupt shoulder 16 with the jaw 6. Separation of stud and socket by tipping movement in a plane parallel with the jaws is prevented by the shape of the aperture through which the stud passes. Thus a stud and socket fastener separable by tipping movement in one direction only is provided.

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

Claims:

1. A stud and socket fastener comprising, in combination, a stud having a head and providing a reduced portion rearwardly of said head, said reduced portion presenting an abrupt shoulder at one side and a less abrupt shoulder on the opposite side; a socket providing stud-engaging means extending transversely thereof and means permitting separation of said stud and socket by initial tipping movement in a direction transverse to said stud engaging means.

2. A stud and socket fastener comprising, in combination, a stud, a socket, jaw means carried by said socket for engagement with a reduced portion of said stud and means permitting separation of said stud and socket on an initial tipping movement of said socket relative to said stud in one direction transverse to said jaw means only.

3. A stud and socket fastener comprising, in combination, a stud, a socket, two resilient jaws extending transversely of said socket, dissimilar notches in said stud for engagement with said jaws, one of said notches pro-

viding an abrupt shoulder, the other of said notches providing a less abrupt shoulder and a casing permitting relative tipping movement of said stud and socket only in a direction transverse to said jaws and only in an arc about the jaw-engaging notch having the abrupt shoulder.

4. A stud and socket fastener comprising, in combination, a socket, two resilient jaws extending transversely of said socket, an unsymmetrical stud for engagement with said jaws, one side of said stud providing a notch having an abrupt shoulder and the other side of said stud providing a notch having a less abrupt shoulder, said socket having an elongated opening therethrough permitting relative tipping movement of said stud and said socket in a direction providing for disengagement of one of said jaws from the notch providing the less abrupt shoulder.

5. A stud and socket fastener providing a stud having a head and a neck, and a socket having parallel jaws, said socket being formed to permit relative tipping movement of said stud and socket only in a direction transverse to said jaws.

6. A stud and socket fastener providing a stud having a head and a neck, and a socket having jaw means, said socket being formed to permit relative tipping movement of said stud and socket only in a direction transverse to said jaw means.

7. In a stud and socket fastener a stud having a shank cut away to provide a head having opposed shoulder portions one of which is abrupt and the other less abrupt, a socket having an opening to receive the stud arranged to bear on and support the shank thereof on three sides, a spring jaw at the fourth side engaging said abrupt shoulder and means engaging said less abrupt shoulder to hold against direct outward pull.

8. A fastener as defined in claim 7 wherein the means engaging said less abrupt shoulder is a spring jaw.

9. In a stud and socket fastener a stud cut away to provide an abrupt shoulder at one side thereof, a socket having an opening to receive said stud adapted to bear on and support same on three sides, a spring jaw at the fourth side engaging said abrupt shoulder, one of the elements presenting opposite said fourth side an inclined cam-like surface along which the other may ride to permit the socket and the stud to approach at said fourth side by tipping movement.

10. In a stud and socket fastener a stud having a shank 4 cut away to provide a head having opposed shoulder portions, a socket having an oblong opening receiving said shank, a spring jaw crossing said opening and adapted to rest on one of said shoulder portions, said portion being abrupt whereby to resist separation of stud and socket if said head is tilted toward said jaw, said jaw tending to thrust said stud downwardly in the opening to position the same against the sides thereof for resistance to substantial lateral deflection and to seat the opposed shoulder against an engaging abutment at the bottom thereof, the engagement being such as to permit tipping of the head toward said abutment whereby to alter the angle of the abrupt shoulder aforesaid to permit the spring jaw to move along the same and thence to permit separation of the fastener.

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

MOSES F. CARR.