Nov. 6, 1928. 1,690,666

F. S. CARR

SNAP FASTENER

Filed July 23, 1926

Fig. 1.

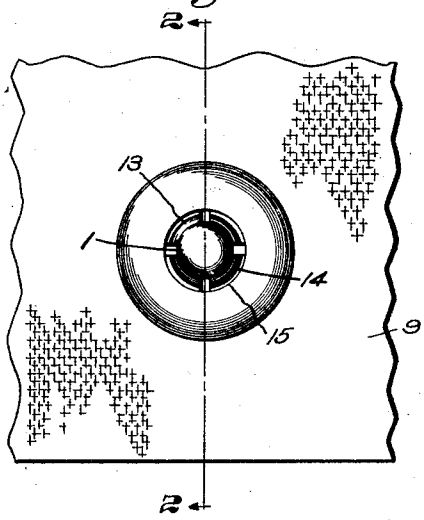


Fig. 2.

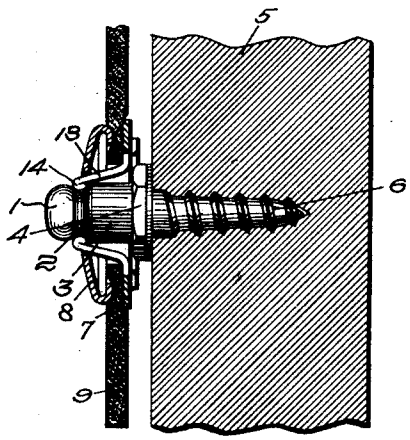


Fig. 3.

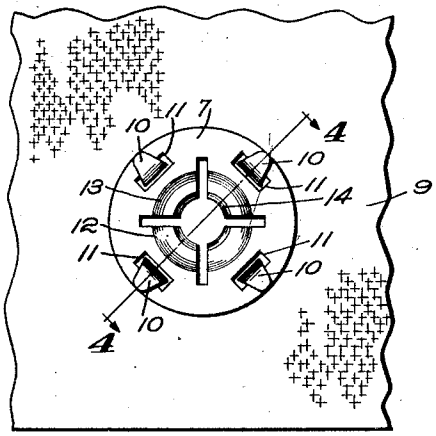
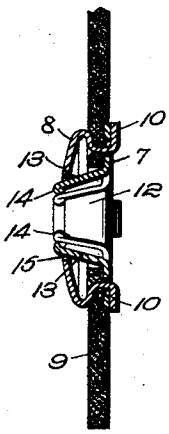


Fig. 4.



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UNITED STATES PATENT OFFICE.

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SNAP FASTENER.

Application filed July 23, 1926. Serial No. 124,283.

This invention aims to provide an improved snap fastener of the type wherein the fastener may be separated by a pull at any side thereof.

In the drawings, which illustrate a preferred embodiment of my invention:—

Figure 1 is a front elevation of the stud and socket secured together;

Fig. 2 is a section on the line 2—2 of Fig. 1, the stud being shown in elevation;

Fig. 3 is a rear elevation of the socket shown attached to a support; and

Fig. 4 is a section of the socket on line 4—4 of Fig. 3.

Referring to the embodiment of my invention illustrated by the drawings, I have shown a snap fastener including a stud member, as illustrated in Fig. 2, having a rounded head 1, neck 2, shank 3 and base 4. The stud may be secured in any suitable manner to a support, but for convenience is here shown as secured to the body 5 of a vehicle by a screw 6.

The fastener also includes a socket which has a one-piece back plate 7, and a one-piece front plate 8 secured to opposite sides of a curtain 9 of the vehicle by means of attaching prongs 10 formed integral with the front plate. The prongs 10 pass through the curtain 9, through slots 11 in the back plate, and are then bent downwardly against the back plate 7 as shown in Figs. 3 and 4.

In forming the back plate 7, the central portion is pressed out to provide a stud-receiving aperture 12 therethrough, the metal pressed out being in the form of a tapered wall surrounding the aperture. By slitting this wall, I provide a plurality of resilient fingers 13 having their free ends bent inwardly to provide smoothly rounded neck-engaging jaw portions 14. The slits extend a substantial distance into the base of the back plate 7, as shown in Figs. 2 and 3, to permit free expansion and contraction of the fingers 13.

When the plates of the socket are assembled with the curtain 9, the fingers 13 pass through an aperture in the curtain and the free ends of the fingers extend through an aperture 15 in the front plate 8. Therefore, when the socket is completely assembled, a stud-receiving aperture is presented which passes completely through the socket installation. The stud and socket may be engaged by pressing the socket toward the stud, the head 1 of the stud thereby passing through the aperture 12 in the back plate 7 and engaging the jaw portions 14 and expanding the fingers 13 to permit the head 1 to pass so that the jaws 14 may snap into the neck 2 back of the head, as shown in Fig. 2.

Thus, when the stud and socket are engaged as shown in Fig. 2, the fingers 13 surround the shank of the stud and are spaced uniformly away therefrom on all sides. The distance between the fingers and the shank increases on all sides from the points of engagement of the jaws 14 at the neck to the base of the back plate, so that when a separating pull is exerted upon the curtain at any side of the socket, the socket may tip relative to the stud and become disengaged therefrom.

If undue stress is exerted upon the fingers 13 at any time during engagement or disengagement of the fastener, the free end portions of the fingers will expand only sufficiently to engage and be supported by the wall surrounding the aperture 15 in the front plate 8, thereby preventing accidental setting of the fingers.

While I have illustrated and described a preferred embodiment of my invention, it will be understood that I do not wish to be limited thereby, my invention being best defined in the following claims.

Claims:

1. A snap fastener comprising, in combination, a stud member having a head, a neck and a shank portion, a socket for engagement with said stud comprising a back plate and a front plate located at opposite sides of a support, attaching means presented by one of said plates and passing through the other plate to secure both plates to the support and a plurality of contractible and expansible stud-engaging fingers extending from said back plate through an aperture in said front plate thereby to provide a stud-receiving aperture extending entirely through said socket so that the head of the stud may pass entirely through the socket and be exposed at the front face of the support to permit the free ends of the fingers to engage the neck of the stud, said fingers being sufficiently spaced away from the shank of the stud to permit separation of the fastener by an outward pull at any side thereof.

2. A snap fastener comprising, in combination, a stud member having a head, a neck and a shank portion, a socket for engagement with said stud comprising a back plate and a

front plate located at opposite sides of a support, attaching means presented by one of said plates and passing through the other plate to secure both plates to the support and a plurality of contractible and expansible stud-engaging fingers extending from said back plate through an aperture in said front plate thereby to provide a stud-receiving aperture extending entirely through said socket so that the head of the stud may pass entirely through the socket and be exposed at the front face of the support to permit the free ends of the fingers to engage the neck of the stud, said fingers being sufficiently spaced away from the shank of the stud to permit separation of the fastener by an outward pull at any side thereof, the wall surrounding the aperture in said front plate relatively closely embracing said fingers to prevent over-expansion of said fingers.

3. A fastened socket installation comprising a back plate and a front plate located on opposite sides of a socket-carrying medium, means for securing said plates to the carrying medium, a plurality of uniformly converging resilient stud-engaging fingers pressed from the center portion of one of said plates and having their free ends passing through an aperture in the socket-carrying medium and through an aperture in said other plate, thereby to provide a socket installation having a stud-receiving aperture extending entirely therethrough, the resilient stud-engaging fingers being uniformly converged to permit separation from a stud by a pull at any side thereof.

4. A two-piece fastener socket comprising a front plate and a back plate secured to opposite sides of a curtain, a tapered cylindrical portion pressed from said back plate to provide a stud-receiving aperture, said tapered portion slit to provide contractible and expansible stud-engaging portions the free ends of which extend through an aperture in the front plate, and a wall surrounding said aperture for back-supporting said fingers to prevent over-expansion thereof when an abnormal strain is exerted upon said fingers.

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

FRED S. CARR.