

Nov. 6, 1928.

1,691,004

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SEPARABLE FASTENER

Original Filed Dec. 20, 1924

Fig. 1.

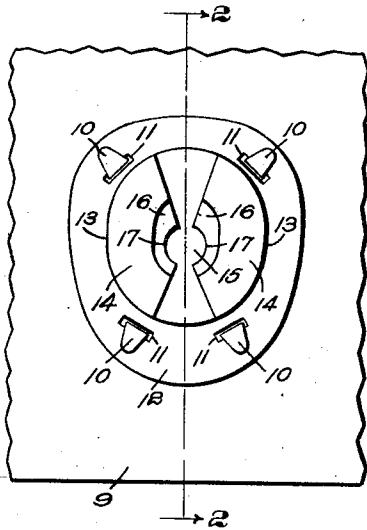


Fig. 2.

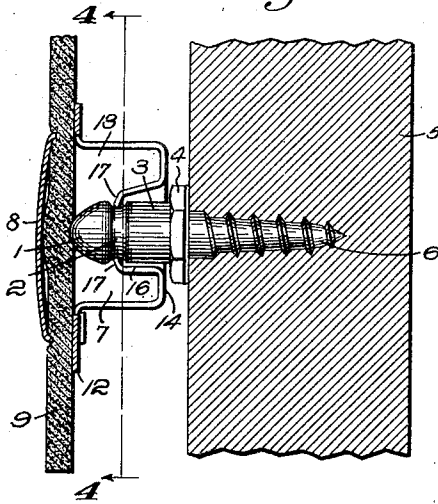


Fig. 3.

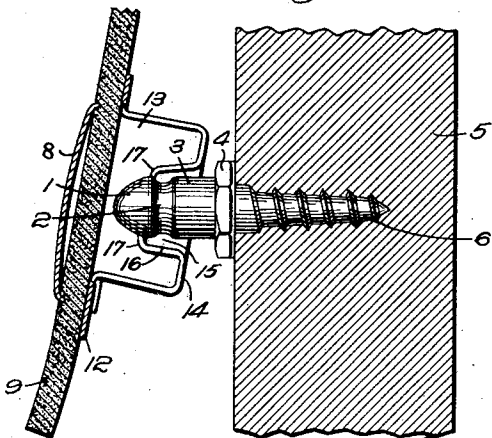


Fig. 4.

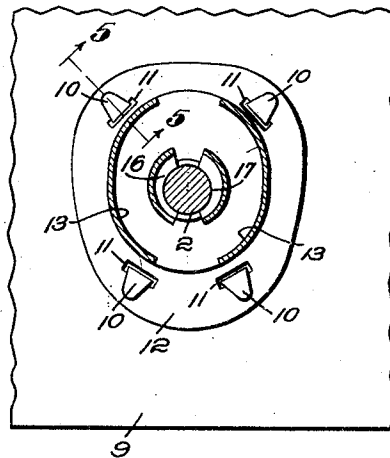
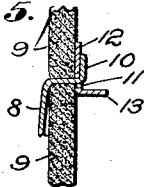


Fig. 5.



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UNITED STATES PATENT OFFICE.

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SEPARABLE FASTENER.

Application filed December 20, 1924, Serial No. 757,153. Renewed May 31, 1928.

This invention aims to provide an improved separable fastener.

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

Fig. 1 is a rear elevation of the socket;

Fig. 2 is a section on the line 2—2 of Fig. 1, showing the socket secured to the stud, the stud being in elevation;

Fig. 3 is a section similar to Fig. 2, but showing the socket being tipped out of engagement with the stud;

Fig. 4 is a section on the line 4—4 of Fig. 2; and

Fig. 5 is a section on the line 5—5 of Fig. 4, showing the attaching means for securing the socket parts to their carrying medium.

Referring to the drawings, I have shown the usual stud having a head 1, neck 2, shank 3 and base portion 4 secured to the support 5 by the usual attaching screw 6.

The socket, as illustrated, is simple, inexpensive and durable and comprises a casing 7 and a front plate 8 secured to opposite sides of a curtain 9, or other flexible support. The above mentioned parts of the socket are secured to the socket by a plurality of attaching prongs 10, which are presented by the front plate 8. These prongs pass through the curtain 9, through slots 11 in the base 12 and are clenched outwardly and downwardly against the base 12 of the casing, as best illustrated in Figs. 4 and 5.

The casing 7 is pressed from a single piece of metal by passing a sheet of metal through a series of pressing operations. When completed, the casing presents two independent side walls 13, 13 extending from the base toward the stud and away from the curtain. Each wall presents a web portion 14, which extends toward the center of the casing to form a stud-receiving aperture 15 therebetween. The metal then extends from the web portions 14 toward the base to form a contractible and expansible cup portion 16 terminating about midway between the curtain 9 and the web portions 14. At the inner end or bottom of the cup portion, I have provided two jaws 17, 17 for engagement with the neck of the stud when the socket and stud are engaged, as best illustrated in Fig. 2.

The cup-shaped portion 16 is so shaped that it closely embraces three sides of the stud (namely, the bottom and sides) and is spaced away from the top side when the stud and socket are engaged. This arrangement pre-

vents separation of the stud and socket by a pull at the top and both sides of the curtain while permitting separation by a pull at the bottom of the curtain, which pull causes the socket to tip out of engagement with the stud.

Enough space is provided between the curtain 9 and the jaws 17, 17 so that the head may extend into the casing without providing a hole in the curtain, thereby leaving the curtain substantially intact. Thus the curtain can withstand greater strain, without pulling free from the socket, than a curtain that is provided with an aperture to permit passage of the head of the stud therethrough.

When engaging the stud with the socket, the head of the stud enters the stud-receiving aperture 15 and passes between the jaws 17, thereby spreading them and expanding both the cup-shaped portions 16 and the walls 13. The head then passes between the jaws which contract again and engage the neck of the stud (Fig. 2). The walls 13, 13 bend at the base 12 of the casing 7 and the cup-shaped portions 16 bend at the web portions 14.

To effect disengagement of the socket, the operator grasps the lower edge of the curtain 9 and exerts a slight outward pull thereon. This action tips that portion of the cup-shaped portion 16, that is normally spaced away from the shank 3 of the stud, toward the shank 3 and the jaws 17 expand (Fig. 3) and tip out of engagement with the neck 2 of the stud.

While I have shown and described a preferred embodiment of my invention, it will be understood that I have done so for clarification and not for limitation, my invention being best defined in the following claims.

I claim—

1. A separable fastener comprising, in combination, a stud having a head, a neck and a shank portion, a socket for engagement with said stud including a front plate and a base plate secured to opposite sides of a socket-carrying medium by a plurality of attaching prongs presented by one of said plates, a wall extending from said base plate away from the carrying medium, a second wall surrounded by said first wall, said second wall providing means at its free end for engagement with said stud, said second wall being oval-shaped in cross-section to provide means for closely embracing the stud at at least one side to prevent tipping of the socket relative to the stud while being spaced away from the stud at

one side to permit tipping of the socket relative to the stud so that the fastener may be separated by a pull exerted in a predetermined direction.

5 2. A separable fastener comprising, in combination, a stud having a head, a neck and a shank portion, a cooperating socket including a socket casing and an attaching plate secured to opposite sides of a socket-carrying medium; said socket casing presenting beyond the back face of the socket-carrying medium resilient means pressed from
10 said casing for engagement with the neck of the stud, said resilient means providing a wall surrounding a stud-receiving aperture which is extended at one side, said wall being adapted closely to embrace the shank of the stud at three sides to lock the fastener against separation by stresses exerted at three sides
15 thereof while the extended portion of the aperture spaces said wall from the shank at the fourth side to permit said socket to tip relative to said stud when a pull is exerted in a predetermined direction thereby permitting separation of the fastener.

3. A separable fastener comprising, in combination, a stud having a head, a neck and a shank portion cooperating with a socket including a socket casing secured to the inner face of a socket-carrying medium by means presented by an attaching plate located at the outer face of the socket-carrying medium, said socket casing presenting a stud-receiving aperture, resilient means at said
30 aperture for engagement with the neck of the stud and said socket casing also providing means which closely embrace three sides of the shank of said stud to lock said stud and socket against separation by stresses exerted at three sides thereof, said means being spaced away from said shank at the fourth side to permit said socket to be tipped out of engagement with said stud, by a pull at a predetermined side of said socket.

4. A separable fastener comprising, in combination, a stud having a head, a neck and a shank portion cooperating with a socket having a contractible and expansible stud-engaging casing secured to the inner face of a socket-carrying medium, said casing formed from a single piece of metal and presenting a base portion lying against the inner face of the carrying medium, contractible and expansible walls extending therefrom toward the stud, web portions extending inwardly from said walls to form an elongated aperture at the outer end of said casing and a plurality of resilient stud-engaging portions extending from said web toward the base of said casing to provide means for engagement with the neck of the stud.

5. A separable fastener comprising, in

combination, a stud having a head, a neck and a shank portion cooperating with a socket having a contractible and expansible stud-engaging casing secured to the inner face of a socket-carrying medium, said casing formed from a single piece of metal and presenting a base portion, contractible and expansible walls extending therefrom and partially surrounding the head, neck and shank of the stud, web portions extending inwardly from said walls to form an elongated aperture therebetween and a plurality of resilient stud-engaging portions extending from said web toward the base of said casing for engagement with the neck of the stud, said resilient stud-engaging portions closely embracing three sides of the shank of said stud to lock said socket against separation by an outward strain exerted at three sides thereof and spaced away from the shank at the fourth side to permit separation of said socket from said stud by a pull exerted thereon in a predetermined direction.

6. A socket for a separable fastener including a casing having a base portion secured to a suitable support, a wall extending from said base in a direction away from the support, a web extending inwardly from the outer end of said wall to provide a stud-receiving aperture, resilient portions of substantial length extending from said web toward said base and surrounding the stud-receiving aperture and jaw portions presented by the free ends of said resilient portions for engaging the neck of a stud.

7. A separable fastener comprising, in combination, a stud member having a head, a neck and a shank, a socket member having a one-piece resilient casing provided with a base portion secured to the inner face of a flexible fabric by a plurality of attaching prongs presented by an attaching plate located at the outer face of the flexible fabric, a cup-shaped portion presented by said casing and closely embracing the shank of the stud at three sides to prevent tipping of said socket member relative to said stud member, said cup-shaped portion being spaced from the shank of the stud member at the fourth side thereby to permit separation of the fastener by a pull at a predetermined side thereof and a plurality of neck-engaging jaws located on the bottom of said cup-shaped portion within said casing, said jaws being spaced away from said base portion thereby to permit the tip end of the head of the stud member to lie substantially in the same plane as said base when the socket member is engaged with the stud member.

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

SOLON D. BOYNTON.