Jan. 8, 1924. 1,480,531

F. S. CARR

SEPARABLE FASTENER

Filed Dec. 2, 1921

Fig. 1.

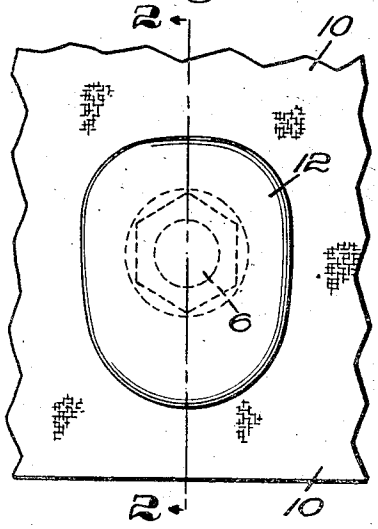


Fig. 2.

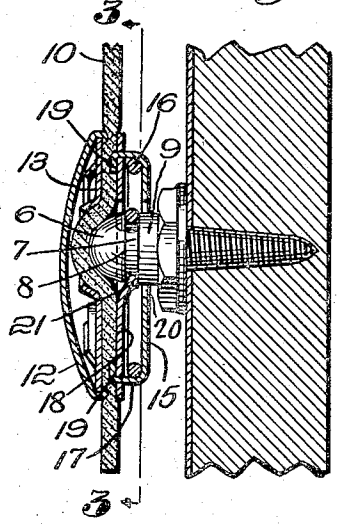


Fig. 3.

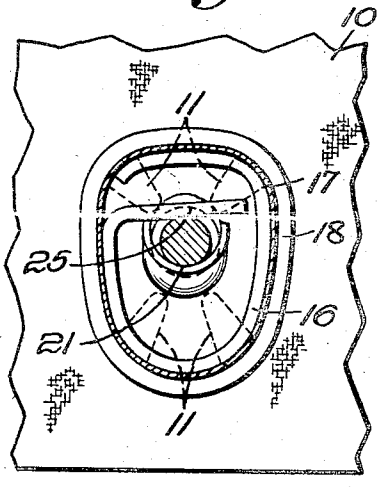


Fig. 4.

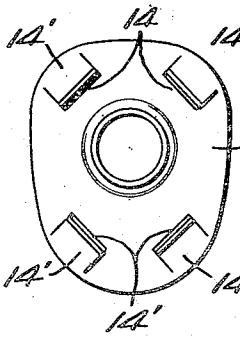


Fig. 5.

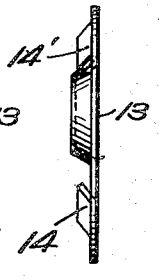
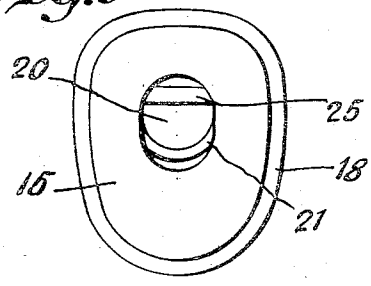


Fig. 6



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Patented Jan. 8, 1924. 1,480,531

UNITED STATES PATENT OFFICE.

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SEPARABLE FASTENER.

Application filed December 2, 1921. Serial No. 519,382.

To all whom it may concern:

Be it known that I, FRED S. CARR, a citizen of the United States, and a resident of Newton, in the county of Middlesex and State 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 an improved and simplified securing means for attaching the socket of the fastener to its carrying fabric and to provide a fastener, preferably of the three-side lock type, in which a relatively short stud may be used if desired.

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

Figure 1 is a front elevation of a fastener;

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

Fig. 3 is a section on the line 3—3 of Fig. 2;

Figs. 4 and 5 illustrate details of the preferred form of attaching plate; and

Fig. 6 is a rear elevation of the socket casing.

Referring to the drawings and to the preferred form of my invention selected for illustrative purposes, I have shown a stud having a head 6 and a neck 7 presenting between them a relatively abrupt shoulder 8, and having a shank portion 9. The preferred form of socket illustrated includes a socket member secured to that side of a curtain or other flexible carrying medium 10 on which the stud is located and including forwardly projecting prongs 11 adapted to penetrate the fabric 10 and to engage and be clenched within the attaching plate which, as illustrated, is preferably formed from two pieces of metal, a cover plate 12 and a clench plate 13. The clench plate 13 may, if desired, be depressed or apertured centrally and preferably provides holes 14 to receive the forwardly projecting prongs 11. The metal from the holes 14, as best viewed in Fig. 4, is preferably only cut away on three sides, the outer edges not being cut and the metal being thrown toward the interior of the securing plate so as to rest against the cover plate 12 and to provide reinforcing and clenching parts 14', which render unnecessary the provision of the usual separate reinforcing and clenching plate ordinarily used with this type of securing means.

Referring now to the socket proper, this may be conveniently formed, as illustrated, from two pieces of metal, one constituting the casing proper 15 dished to receive a spring 16 and providing side walls 17 from which the clench prongs 11 project. A front plate 18 may be secured to the casing proper 15 by any suitable means, typified by the relatively short prongs 19. The socket contains a spring, which may be of wire bent to the form illustrated in Fig. 3 having one end thereof adapted to intersect the top of the stud-receiving opening 20 and to press the stud when entered therein against a fixed jaw 21, which may be formed on the front plate 18 of the socket proper. This jaw 21 preferably slopes upwardly and rearwardly so as to provide an inclined surface against which the shoulder 8 of the stud rests when stud and socket are in engagement, with the jaw portion 25 of the spring 16 engaged in the opposite side of the neck 7 of the stud. The stud-receiving aperture 20 is preferably elongated to permit relative tipping movement of stud and socket in one direction only, this being the direction produced by an outward pull on that side of the socket toward which the fixed jaw 21 is located, the socket fulcruming about the spring jaw 25 as the shoulder 8 rides up the incline of the fixed jaw 21 until the stud and socket are free to separate.

While the stud and socket may be freely separated by an outward pull on the bottom of the socket, as viewed in Fig. 2, a corresponding tipping movement which would normally arise from an inward push on the upper side of the socket as viewed in Fig. 2 will not separate the stud and socket because such an inward push, when arising from any normal strain on the flexible carrying medium 10, such for instance as wind strain on the curtain of an automobile, will produce an upward pull on the socket which will urge the fixed jaw 21 firmly into engagement with the neck 7 of the stud behind the shoulder 8 so that the stud and socket will not separate pursuant to such manipulation. Further, where as in the fastener illustrated the shank 9 of the stud is exceedingly short, the upper portion of the casing 15 will bear against the base of the stud be-

fore any considerable tipping movement can take place arising from an inward push on the top of the socket. On the other hand, an outward pull on the bottom of the socket in the desired stud and socket separating direction may produce a tipping movement because the resolution of forces causing the inclined face of the jaw 21 to ride down the shoulder 8 permits the outward movement of the bottom of the socket to a sufficient extent so that the desired tipping may be effected.

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 fastener comprising, in combination, a socket having forwardly projecting prongs and a socket-securing part including a cover plate, a clench plate within the cover plate, said clench plate having penetrations to permit passage of said prongs therethrough, and portions of said clench plate bent toward said cover plate adjacent said penetrations to provide prong-deflecting surfaces interiorly of said cover plate.

2. A fastener comprising, in combination, a socket having forwardly projecting prongs and a socket-securing part including a cover plate, a clench plate within the cover plate, said clench plate having penetrations to permit passage of said prongs therethrough, and portions of said clench plate bent toward said cover plate adjacent said penetrations to provide prong-deflecting surfaces interiorly of said cover plate, said portions of said clench plate bent toward said cover plate and resting thereagainst whereby said cover plate may reinforce said portions.

3. A socket for separable fasteners comprising a socket proper having prongs projecting forwardly therefrom and socket-securing means including a cover plate, a clench plate within said cover plate and having penetrations therethrough, the metal from said penetrations in said clench plate remaining attached to said clench plate at one side and bent toward the inside face of said cover plate to provide means intercepting said prongs pursuant to their passage through said penetrations in said clench plate.

4. A separable fastener comprising, in combination, a stud having a head and a neck with a relatively abrupt shoulder between them, and a socket secured to a flexible carrying medium at that side thereof adjacent said stud and presenting resilient jaw means above the stud and an inclined fixed jaw below the stud, said inclined fixed jaw presenting a sloping surface permitting disengagement of said fixed jaw from behind said shoulder when said socket is tipped relative to said stud in that direction resulting from an outward pull on that side of the socket where said fixed jaw is located.

5. A separable fastener comprising, in combination, a stud having a head and a neck with a relatively abrupt shoulder between them, and a socket secured to a flexible carrying medium at that side thereof adjacent said stud and presenting resilient jaw means above the stud and an inclined fixed jaw below the stud, said inclined fixed jaw presenting a sloping surface permitting disengagement of said fixed jaw from behind said shoulder when said socket is tipped relative to said stud in that direction resulting from an outward pull on that side of the socket where said fixed jaw is located, said stud and socket organized and operating to prevent separation by relative tipping movement in all other directions.

6. A separable fastener comprising, in combination, a stud having a head, a neck and a shoulder between them, and socket means including a casing 15 presenting a stud-receiving aperture 20 and cooperating with a front plate 18 presenting a fixed jaw 21, and spring means in said casing presenting a springer-pressed jaw 25 opposite said fixed jaw 21.

7. A socket for separable fasteners comprising, in combination, a casing having forwardly projecting prongs 11 and attaching means including a cover plate 12 and a clench plate 13, said clench plate penetrated to permit passage of said prongs 11 therethrough and presenting prong-turning portions 14'.

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

FRED S. CARR.