Jan. 8, 1924. 1,480,530

F. S. CARR

SEPARABLE FASTENER

Filed Dec. 2, 1921

Fig. 1.

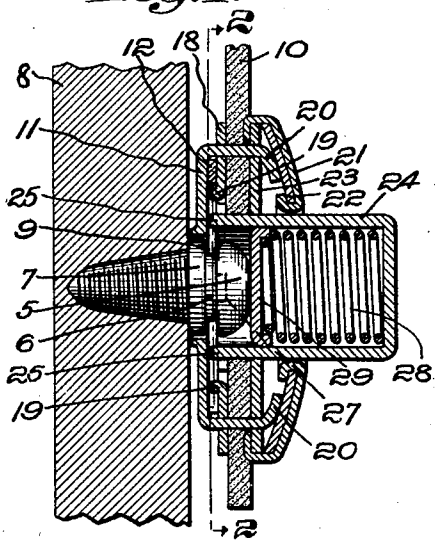


Fig. 2.

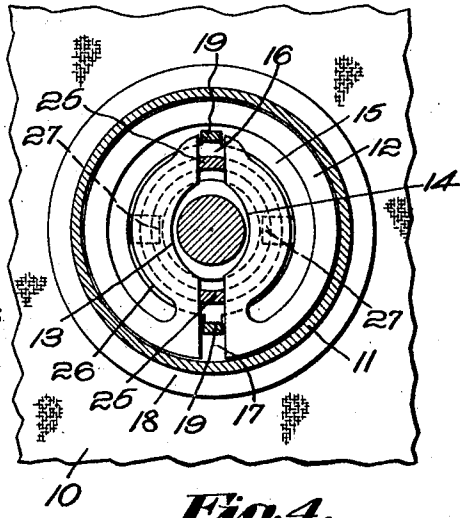


Fig. 3.

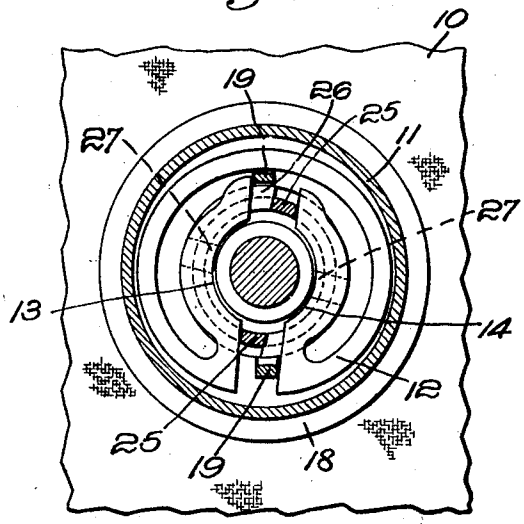


Fig. 4.

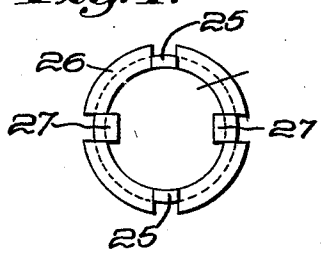
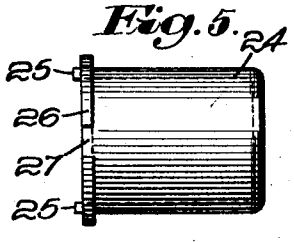


Fig. 5.



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Patented Jan. 8, 1924. 1,480,530

UNITED STATES PATENT OFFICE.

FRED S. CARR, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO CARR FASTENER COMPANY, OF CAMBRIDGE, MASSACHUSETTS, A CORPORATION OF MAINE.

SEPARABLE FASTENER.

Application filed December 2, 1921. Serial No. 519,381.

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 a separable fastener in which the stud and socket are positively locked against separation except pursuant to a desired manipulation, and in which a very short stud may be used.

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

Figure 1 is a vertical central section through a preferred form of fastener, being partly in elevation;

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

Fig. 3 is a section on the line 2—2 of Fig. 1, showing the position of the parts pursuant to that manipulation which permits separation of stud and socket; and

Figs. 4 and 5 are end and side elevations respectively of a part of the fastener illustrated in Fig. 1, and are more fully described hereinafter.

Referring to the drawings and to the preferred form of my invention selected for illustrative purposes, I have shown a stud including a head 5, a neck 6, and a shank portion 7 secured to a stud-carrying part 8, which may be a portion of the body of a motor car or the like. Between the head 5 and neck 6 of the stud is preferably provided, as illustrated, a relatively abrupt shoulder 9. The preferred form of socket illustrated is secured to socket-carrying fabric 10, which may be a motor car curtain, and includes a casing 11 containing a spring 12 having jaw portions 13 and 14 adapted resiliently to underlie the head 5 of the stud by entering the neck 6 behind the shoulder 9 of the stud. In the preferred form of spring illustrated, resiliency is provided to the jaws 13 and 14 by forming the spring 12 of spring sheet metal and cutting away an almost complete annular portion 15 and by slotting the spring at 16 from the stud-receiving aperture therein to connect with this annular cut-away portion 15. Opposite the slot 16, the spring is slotted at 17 from the stud-receiving aperture to the periphery of the spring. In the form of my invention illustrated, the spring 12 is held in the casing 11 by the closure plate 18 (Fig. 1), which provides spring-locating lugs 19, 19 extending into the slots 16 and 17 in the spring 12. The casing 11 is preferably, as illustrated, provided with prongs 20 adapted to penetrate the curtain 10 and to be clenched within a guiding and securing part on the outside of the curtain 10, this securing part including a cover plate 21, anvil plate 22 and clench plate 23. The socket-securing part is apertured to receive a manipulatory portion 24, which may be generally cylindrical and which may be provided with projecting means typified by the lugs 25, 25 extending into the slots 16 and 17 respectively of the spring 12. The cylindrical portion 24 may be held in position in any suitable way, typified by the flange 26 which may underlie portions of the socket-carrying fabric 10.

The mechanism described constitutes a preferred form of fastener in which a relatively short stud is adapted to be engaged by jaw means located on the same side of the socket-carrying fabric or curtain as the stud, while providing for manipulation of the jaw means from a part projecting through the curtain and located on the outside of the curtain on the side thereof opposite the stud. When the manipulatory part 24 is turned relative to the socket casing, the lugs 25, 25 will press against the adjacent faces of the spring in opposite directions and will spread the jaws 13, 14 so that they will no longer underlie the head 5 of the stud. In the preferred form of my invention illustrated, it is not necessary to exert an outward pull on the socket to effect separation of stud and socket pursuant to this manipulatory movement because I have provided kick-off means typified by the kick-off spring 28 located within the manipulatory part 24 and pressing a sliding disc 29 against the outer end of the head of the stud 5 so that as soon as the jaws release the head of the stud, the socket casing, including the spring, will be moved outwardly away from the stud so that, if the manipulatory part is again released, the jaws 13, 14 will not again enter the neck of the stud behind the head thereof. The sliding

disc 29 is held in relation to the manipulatory part 24 by the projections 27.

The operation of the fastener herein described is very similar to that illustrated in United States Letters Patent to Bourque No. 1,367,350, issued February 1, 1921. The construction of the fastener has, however, been improved from a manufacturing standpoint and particularly in that its parts have been so reorganized as to admit of the location of the jaw-containing portion of the socket on that side of the socket-carrying fabric from which the stud enters, so that a very short stud may be used. The use of a very short stud is desirable in many places, particularly in connection with the fastenings of curtains on automobiles because of the improved appearance and because clothing, etc., is not likely to be caught and torn on a short stud. For many purposes fasteners differing considerably in construction and operation from the one illustrated may be used to advantage while retaining the before-described principal advantages of my invention.

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 stud having a head and a neck, a casing containing jaw means for engagement in said neck of said stud behind said head, said casing and jaw means secured to a carrying fabric and located on that side of said fabric from which said stud enters, and manipulatory means on the opposite side of said fabric for disengaging said jaw means from said neck of said stud.

2. A fastener comprising, in combination, a stud having a head and a neck, a casing containing jaw means for engagement in said neck of said stud behind said head, said casing and jaw means secured to a carrying fabric and located on that side of said fabric from which said stud enters, manipulatory means on the opposite side of said fabric for disengaging said jaw means from said neck of said stud, and resilient means urging said casing and jaw means toward said head of said stud and away from said neck pursuant to manipulation of said manipulatory means to disengage said jaws from said neck of said stud.

3. A separable fastener comprising, in combination, a stud having a head and a neck, and a socket comprising a casing secured to a carrying fabric on that side thereof from which the stud enters, jaw means in said casing, a closure plate for said casing between said casing and said fabric and clenched within a casing-securing part on the opposite side of said fabric from said casing, and manipulatory means projecting through said casing-securing part and permitting stud-releasing movement of said jaw means.

4. A separable fastener comprising, in combination, a stud having a head and a neck, and a socket comprising a casing secured to a carrying fabric on that side thereof from which the stud enters, jaw means in said casing, a closure plate for said casing between said casing and said fabric and clenched within a casing-securing part on the opposite side of said fabric from said casing, manipulatory means projecting through said casing-securing part and permitting stud-releasing movement of said jaw means, and resilient means associated with said manipulatory means for urging said jaw means toward said head of said stud pursuant to disengagement of said jaw means from behind said head of said stud.

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

FRED S. CARR.