

Sept. 12, 1944.

D. MARINSKY ET AL

2,358,178

SEPARABLE FASTENER

Filed April 21, 1942

Fig. 1.

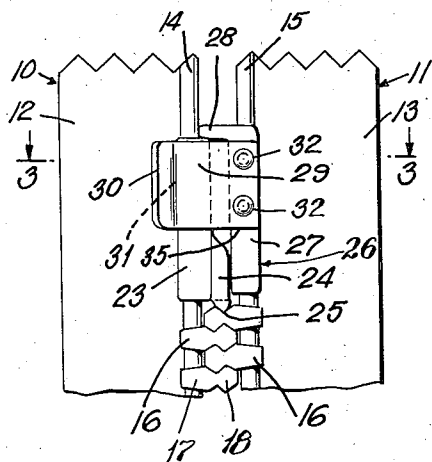


Fig. 2.

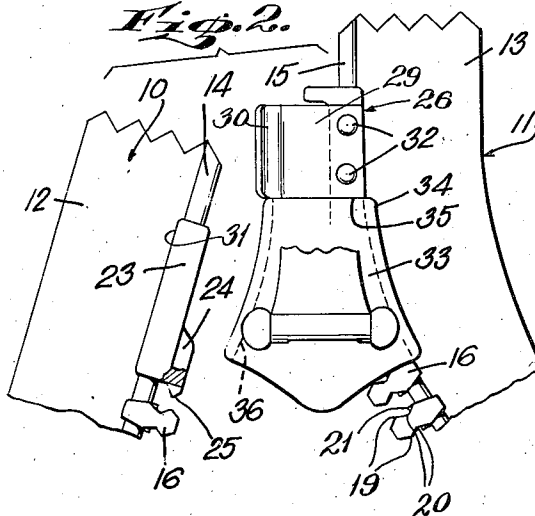


Fig. 3.

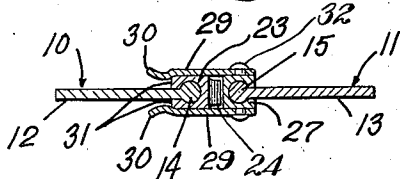


Fig. 4.

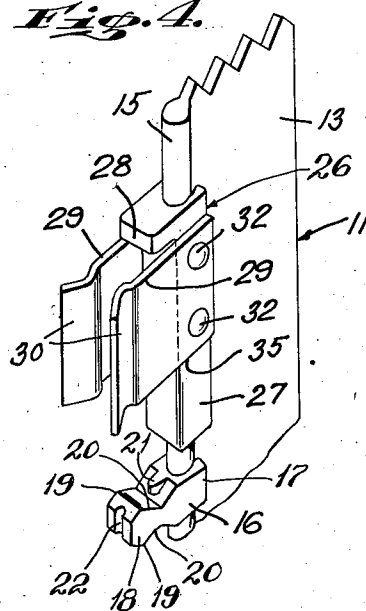
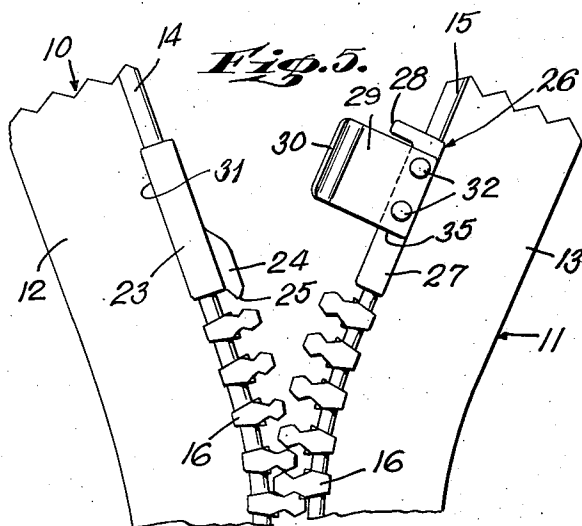


Fig. 5.



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2,358,178

SEPARABLE FASTENER

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Application April 21, 1942, Serial No. 439,810

10 Claims. (Cl. 24—205)

This invention relates to separable fasteners employing stringers adapted to be coupled and uncoupled by a slider movable along the stringers. More particularly, the invention relates to a detachable end stop coupling for one end portion of the stringers, by means of which the stringers may be coupled and uncoupled when the slider is arranged adjacent said end stop and further, whereby the end stop coupling may be forcibly separated to detach and uncouple the stringers at said end portion for the purpose of freeing or opening predetermined portions of a garment such, for example, as the upper or lower part of a shirt, sweater, jacket, windbreaker, or like garment. The novel features of the invention will be best understood from the following description when taken together with the accompanying drawing, in which certain embodiments of the invention are disclosed, and in which the separate parts are designated by suitable reference characters in each of the views; and in which:

Fig. 1 is a plan view of one end portion of a fastener made according to the invention showing the stringers coupled together with one of our improved end stop couplings.

Fig. 2 is a view similar to Fig. 1 showing the parts in detached relationship preparatory to coupling engagement.

Fig. 3 is a section on the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of the end portion of one stringer; and

Fig. 5 is a diagrammatic view illustrating the forcible separation of the coupled end of the stringers with the links of the other end portion of the stringer in engagement with each other.

In fasteners of the kind under consideration applied to sweaters, jackets and similar garments where complete separation of the fastener stringers or chains is desirable, couplings have been provided at one end of the stringers or chains for complete separation thereof, the couplings also serving as an end stop limiting movement of the slider in one direction on the stringers. In devices of this kind as applied to jackets and similar garments, it has been impossible to separate the stringers at the end portion having the detachable couplings without completely separating the fastener.

It is the purpose of our invention to provide a detachable coupling and end stop for stringers which can be forcibly detached so as to separate and spread the coupled stringers at said end portion thereof, while leaving the other end portion of the stringers in coupled relationship. This provides opening of the lower portion of a jacket or

similar garment when the wearer is in seated position, or to give access to pockets in under garments, such as vests, trousers and the like, without completely opening the jacket, sweater or other garment. In other uses, it will provide separation of the upper neck portions of the garment. To render such fastener devices practical, links or scoops of the double acting or reversible type and kind are employed thereby facilitating recoupling of the forcibly detached end of the stringers whenever desirable.

In the accompanying drawing 10 and 11 represent the two stringers or chains of the separable fastener each comprising tapes 12, 13 to the beaded edges 14, 15 of which are secured links or scoops 16. As the links or scoops applied to both stringers are of identical construction, the brief description of one will apply to all. Each link or scoop comprises a yoke shaped mounting end 17 arranged upon the beaded edges 14, 15 and a substantially diamond-shaped coupling end 18 which forms upwardly and downwardly directed triangular couplings 19 adapted to engage V-shaped recesses 20 in the links of opposed stringers. Each recess 20 has centrally thereof a coupling element 21 adapted to enter a channel 22 in the outer surface of the links of an opposed stringer, note Fig. 4.

By employing links of the type disclosed, it will be apparent that the stringers may be coupled and uncoupled in a universal manner and by sliders moving in either direction on the stringers regardless of the arrangement of the sliders on the stringer. Secured to the bead 14 of the stringer 10, adjacent, but spaced from one end link 16, is a pin part 23 of a detachable coupling. The width of this pin part across the tape is slightly less than the corresponding width of the links. The pin part extends longitudinally of the beaded edge, the outer surface of the pin part having a projecting rib 24 of reduced thickness, the forked nose 25 of which is adapted to enter the recess 20 of the end link of the stringer 11, the nose being forked to receive the coupling 21 in said recess.

Arranged longitudinally of the beaded edge 15 of the stringer 11 is what is commonly termed the box part 26 of the coupling. This part, in the construction shown, comprises an elongated pin portion 27 substantially similar to the pin part 20, excepting that the rib 24 is not included and the outer end of the pin 27 has an returned stop flange 28 which checks movement of the pin part 23 longitudinally with respect to the box part 26. Arranged on opposed sides of the pin portion

27, adjacent the flange 28, are similar spring plates 29, outer edges of which are curved inwardly and then outwardly to form elongated clip flanges 30. The flanges 30 are adapted to engage the edges 31 of the pin part 23, as is clearly illustrated in Fig. 3 of the drawing. However, by exerting a pull on the stringer 10, the pin part 23 may be forcibly withdrawn from the box part 26 to separate the corresponding end portions of the stringers 10 and 11 in the manner illustrated in Fig. 5 of the drawing, while leaving the links 16 coupled at the other end portions of the stringers.

In the construction shown, the spring clips are formed on the plates 29 which are riveted or otherwise secured to the pin portions 27, as indicated at 32, the rivets being preferably formed integrally with the pin portion 27 and will extend through apertures formed in the plates 29 and then being riveted over in the assemblage of the parts.

In the normal use of the fastener stringers, and when the stringers are separated in the manner indicate in Fig. 2 of the drawing, the slider 33 is arranged upon the box part 26 with the narrow end portion 34 of the slider abutting the lower edge 35 of the plates 29. The pin part 23 is first passed laterally through the open side of the slider 33 and then is moved upwardly into the box part 26 between the plates 29 until the end of the pin part strikes the stop flange 28. With the parts thus assembled, the slider may then be moved along the stringers to couple the links thereof. It will be understood that the flanged side walls 36 of the slider are so spaced apart as to clear the pin 23 and yet are sufficient to engage the links 16.

It will be apparent that when the stringers are coupled together, as seen in Fig. 1 of the drawing, the long spring clips 30 securely engage the pin part 23 to prevent accidental separation of the stringers. However, whenever desired, the stringers may be forcibly separated in the manner hereinbefore set forth and in some cases, one of the clips 30 may be engaged by a finger of the hand to flex it outwardly to assist in this operation, this latter procedure being desirable with the larger types of separable fasteners, that is to say, where the links are of large sizes, commonly referred to in the trade as No. 7 and No. 10 sizes.

With a fastener of the type and kind under consideration, it will be apparent that in addition to providing for the opening of a lower portion of a jacket as described, the neck portion of the jacket may also be partially opened, while, at the same time, maintaining the jacket in coupled relationship intermediate the stringer ends. Fasteners of this type and kind will find other practical uses in various installations, generally where it is desirable to obtain quick access to both end portions of an article controlled by the fastener. It might be said that the pin and box part structure of the fastener operates in the manner of a snap coupling where the parts may be forcibly detached against the action of a spring retaining means and recoupled by snapping the pin part into the socket or box part.

It will also be understood that instead of arranging the detachable coupling at the lower portion of a garment, as for example in jackets in the manner heretofore described, that the detachable coupling may be disposed at the top neck portion of the garment and forcibly separated to control a neck opening. In such installations, the slider may be moved along the lower ends of

the stringers in controlling the separation or spreading of the lower portion of the garment.

Having fully described our invention, what we claim as new and desire to secure by Letters Patent, is:

1. In separable fasteners employing stringers adapted to be coupled and uncoupled by a slider movable along the stringers, an end stop coupling at one end of the stringers, said coupling comprising a pin part and a box part adapted to receive the pin part, said box part having a longitudinal channel therein adapted to receive said pin part, resilient means for said box part adapted to permit lateral removal of said pin part therefrom, and a side opening in said box part through which said pin part may be removed.

2. In separable fasteners employing stringers adapted to be coupled and uncoupled by a slider movable along the stringers, an end stop coupling at one end of the stringers, said coupling comprising a pin part and a box part adapted to receive the pin part, the pin part being insertable into the box part through the slider when the latter is adjacent the box part in coupling the stringers together, resilient walls for said box part adapted to retain said pin part against lateral accidental displacement, while permitting lateral withdrawal of the pin part from said box part, said yieldable walls comprising spring plates having elongated hook-shaped ends, and said pin part having a projecting element adapted to engage the end link of the stringer to which the box part is secured.

3. A coupling for stringers of separable fasteners, said coupling comprising two pin-like members secured to adjacent edge portions of the stringers, one of said members having spring means adapted to engage the other member to retain said members against accidental separation, while permitting lateral separation of the members in separating said stringer ends, and said spring means comprising spring plates at opposite sides of one member having hook ends engaging the other member.

4. A coupling for stringers of separable fasteners, said coupling comprising two pin-like members secured to adjacent edge portions of the stringers, one of said members having spring means adapted to engage the other member to retain said members against accidental separation, while permitting lateral separation of the members in separating said stringer ends, said spring means comprising spring plates at opposite sides of one member having hook ends engaging the other member, and means limiting longitudinal movement of said members one upon the other in one direction.

5. A coupling for stringers of separable fasteners, said coupling comprising two pin-like members secured to adjacent edge portions of the stringers, one of said members having spring means adapted to engage the other member to retain said members against accidental separation, while permitting lateral separation of the members in separating said stringer ends, said spring means comprising spring plates at opposite sides of one member having hook ends engaging the other member, means limiting longitudinal movement of said members one upon the other in one direction, and one of said members having a scoop engaging portion adapted to interlock with the end scoop of the stringer to which the other member is secured.

6. A coupling for stringers of separable fasteners, said coupling comprising two pin-like

members secured to adjacent edge portions of the stringers, one of said members having spring means adapted to engage the other member to retain said members against accidental separation, while permitting lateral separation of the members in separating said stringer ends, said spring means comprising spring plates at opposite sides of one member having hook ends engaging the other member, and said plates forming a stop limiting the movement of a slider in one direction on the stringers.

7. In separable fasteners employing stringers adapted to be coupled and uncoupled by a slider movable along the stringers, in combination, series of fastener elements mounted on said stringers, said elements being of the double action type adapted to be readily coupled and uncoupled by movement of the slider in either of the two longitudinal directions of said stringers and an end stop coupling at one end of said stringers, said coupling comprising a box part and pin part, the box part having resilient, laterally yieldable jaw means adapted for the lateral insertion and retention of the pin therebetween and the lateral withdrawal of said pin therefrom.

8. In a separable fastener having a separable end stop, said end stop comprising a pin member and a socket member, said socket member including opposed means engaging the sides of said pin member and providing a lateral opening and an end opening, at least one of said means in-

cluding resilient lateral guiding means for said pin member, whereby said pin member may be inserted in and withdrawn from said socket member laterally and longitudinally thereof.

9. In a separable fastener having a separable end stop, said end stop comprising a pin member and a socket member, said socket member being defined by opposed spaced walls, means on at least one wall engaging the pin member checking the same against free lateral displacement from the socket member, and at least one of said walls being resilient, whereby the pin member may be inserted into and withdrawn from the socket member laterally thereof.

10. In a separable fastener having a separable end stop, said end stop comprising a pin member and a socket member, said socket member being defined by opposed spaced walls, means on at least one wall engaging the pin member checking the same against free lateral displacement from the socket member, at least one of said walls being resilient, whereby the pin member may be inserted into and withdrawn from the socket member laterally thereof, said pin member being freely insertable into and removable from the socket member through one end thereof, and means at the other end of the socket member for checking the last named movement of the pin member into the socket member.

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