June 2, 1953 C. SCHNEIDER 2,640,239

STEP ADJUSTING SEPARABLE FASTENER

Filed Nov. 28, 1950

Fig. 1.

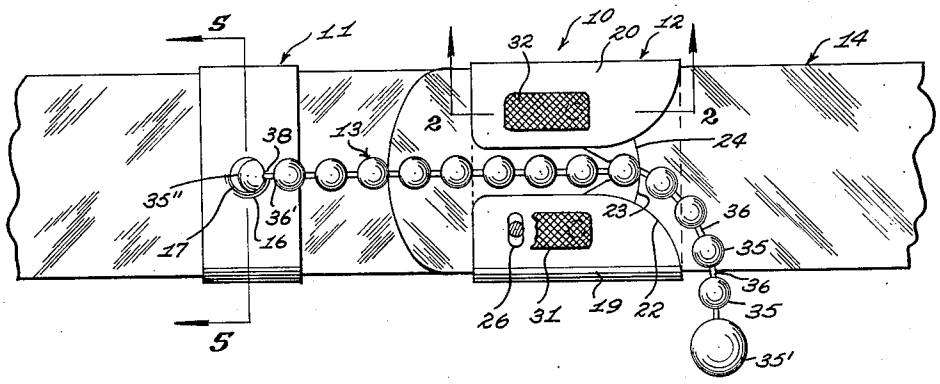
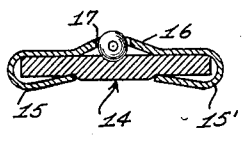


Fig. 5.



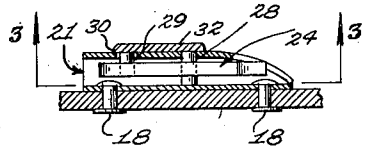


Fig. 2.

Fig. 3.

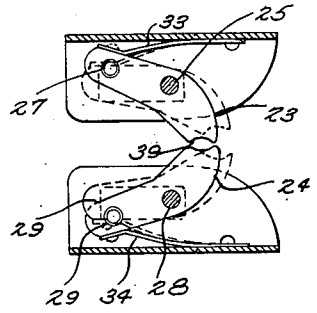
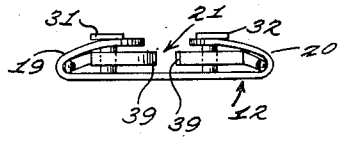


Fig. 4.



INVENTOR.
CARL SCHNEIDER
BY

McMorrow, Berman & Davidson
ATTORNEYS

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STEP ADJUSTING SEPARABLE FASTENER

Carl Schneider, Rapid City, S. Dak.

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1 Claim. (Cl. 24—116)

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This invention relates to separable fasteners and more particularly to a selectively adjustable fastener.

An object of this invention is to provide a separable fastener which may be utilized to secure two articles or two parts of the same article together in any select one of a plurality of positions relative to each other.

Another object of this invention is to provide a separable fastener which is relatively flexible and particularly adapted to be utilized in conjunction with articles of clothing.

A further object of this invention is to provide a separable fastener which is simple and efficient in operation and cheap to manufacture.

Other objects and advantages of this invention will become apparent upon consulting the following specification in conjunction with the drawings.

In the drawings:

Figure 1 is a top plan view of the separable fastener of the present invention as applied to secure the free ends of a belt together.

Figure 2 is a sectional view with parts broken away, taken along the line 2—2 of Figure 1.

Figure 3 is a sectional view taken along the line 3—3 of Figure 2.

Figure 4 is an elevational view taken from the right of Figure 1, with the belt omitted.

Figure 5 is a sectional view taken along the line 5—5 of Figure 1.

Referring now more particularly to the drawings wherein like reference numerals have been used throughout the several views to designate like parts, there is shown the separable fastener of the present invention generally designated by the numeral 10, which comprises a first strap 11 adapted to be secured to an article of wearing apparel, a second strap 12 adapted to be secured to another article of wearing apparel or another portion of the first named article, and a flexible connecting link 13 extending between said straps and operatively connected thereto.

The first strap 11 is positioned transversely of one face of the article of wearing apparel, illustrated as a belt 14, adjacent to and spaced from one free end thereof. The ends of the strap 11 are bent as indicated at 15 and 15' to underlie and embracingly engage the underface of the belt 14 to thereby fixedly position the strap 11 relative to the belt. The intermediate portion of the strap 11 is bent away from the adjacent face of the belt 14 to form a raised portion 16 centrally of said strap 11. The raised portion 16 is provided with a centrally disposed aperture 17

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for the reception of one end of the connecting link 13.

Disposed transversely of the belt 14 adjacent the other free end thereof is the second strap 12. The intermediate portion of the strap 12 rests upon the belt 14 and is fixedly secured thereto by means of the rivets 18. The end portions of the strap 12 are bent inwardly to overlie the intermediate portion thereof, as clearly indicated at 19 and 20, said end portions and intermediate portion cooperating to form a channelway 21 extending transversely of the strap 12. It is to be noted that the end portions 19 and 20 are cut away, as indicated at 22, and are spaced with respect to each other so that the adjacent portion of the flexible link 13 may be inserted and withdrawn from the channelway 21.

Disposed within the channelway 21 and pivotally supported in the bounding walls thereof are a pair of gripping jaws 23, 24, said jaws being mounted for swinging movement toward and away from each other.

Each of the jaws 23, 24 are of like structure and are mounted by like means, so it will suffice to merely describe the structure and mounting of one of the jaws in detail. The jaw 23 is pivotally mounted intermediate its ends by means of a pin 25 which has its intermediate portion fixedly secured to the jaw 23 and has its end rotatably journaled in the adjacent portions of the strap 12. Suitable guide means are disposed adjacent to and spaced from one end of the jaw 23 to thereby guidingly support the jaw 23 for pivotal movement about the pin 25 acting as the pivotal axis. The guide means embodies a slot 26 provided in the end portion 19 of the strap 12, and a lug 27 extending from the jaw 23 and slidably received and supported within slot 26. Similarly the jaw 24 is mounted by a pin 28 and is guided by the lug 29 and the slot 30.

Resting upon each of the end portions 19, 20 and fixedly secured to the lugs 27, 29 are the knurled buttons 31, 32. Accordingly, each of the jaws 23, 24 may be swung into and out of confronting relation with respect to each other by grasping the buttons 31, 32 and urging them toward and away from each other.

Suitable resilient means, such as the leaf springs 33, 34 are disposed within the channelway 21 intermediate the jaws 23, 24 and the adjacent bounding walls to the channelway. The leaf springs 33, 34 each have one end fixedly secured to the jaws 23, 24 respectively and each have the other end fixedly secured to the adjacent bounding wall of the channelway 21. Accord-

ingly the jaws **23**, **24** are normally biased into engagement with each other, as clearly indicated in Figure 3 of the drawings.

The flexible connecting link **13** embodies a plurality of equally spaced spherical beads **35**, which are interconnected by the flexible linkages **36**. The bead **35'** at one end of the connecting linkage **13** is enlarged, so that it may be conveniently grasped in the hand of the user. The bead **35''** at the other end of the connecting link **13** is slightly smaller than the aperture **17** provided in the raised portion **16** of the strap **11**.

Extending outwardly from the bounding wall of the aperture **17** of the strap **11** toward the strap **12**, there is provided a slot **38**, the slot **38** embracingly engaging the adjacent one of the connecting linkages **36'**. Accordingly to detach the connecting link **13** from the strap **11**, the connecting linkage **36'** is brought out of engagement with the slot **38** and a force exerted on the connecting linkage **13** to thereby bring the bead **35''** out of its position within the aperture **17**.

It is to be noted that the jaws are each arcuately cut away, as indicated at **39** such that they are complementary to the spherical beads **35** to thereby tightly engage select ones of said beads.

In actual use, the straps **11**, **12** are connected to the portions of the wearing apparel to be secured together. After inserting the bead **35''** into the aperture **17** of the strap **11** and engaging the connecting linkage **36'** in the slot **38**, any one of the beads **35** of the connecting link **13** may be embracingly engaged intermediate the cut away portions indicated at **39**, of the jaws **23**, **24**. When it is necessary to make an adjustment, the enlarged bead **35'** may be grasped and a force exerted on the connecting link **13** to thereby urge another one of the beads into engagement with the jaws **23**, **24**.

As is apparent to one skilled in the art, the step adjusting fastener of the present invention can be readily adapted for use as a quick and speedy mechanism in securing and holding fast any type of rope, cord, chain, band, wire cable, and/or any flexible material used for fastening or securing, which could be used in any household, commercial or industrial field, and in any and all applications of every human endeavor. This shall be accomplished by supplanting the jaws, indicated by reference numerals **23**, **24** in Figure 3, to fit the contour of the fastening element. These surfaces shall be ribbed or knurled to properly secure the fastening element in place. The adjustable fastener may be made of any metal or alloys or any durable material whatsoever and in a variation of sizes to conform to any specifications in sustaining the load for which it is specifically designed.

Although only one embodiment of the invention has been disclosed, numerous modifications may be made without departing from the spirit of the invention as set forth in the appended claim.

What I claim is:

In a separable fastener for securing two articles together, a first strap adapted to be secured to one of said articles, a second strap having its intermediate portion adapted to be secured to the other of said articles, the ends of said second strap being each provided with a slot and being turned inwardly into spaced confronting relation with respect to each other to thereby form a channelway extending transversely of said strap, a pair of jaws positioned within said channelway and pivotally mounted intermediate their ends on the bounding walls thereof for swinging movement into and out of confronting relation with respect to each other, resilient means operatively connected to said jaws and said bounding walls of said channelway for biasing said jaws into confronting relation with respect to each other, a lug carried by one end of each of said jaws and slidable in the slot of the adjacent end of said second strap, a button secured to each lug for individually effecting the movement of said jaws out of contacting confronting relation with respect to each other, and flexible link means including a plurality of beads carried by said first named strap and having the beads selectively engageable between the other ends of said jaws.

CARL SCHNEIDER.

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