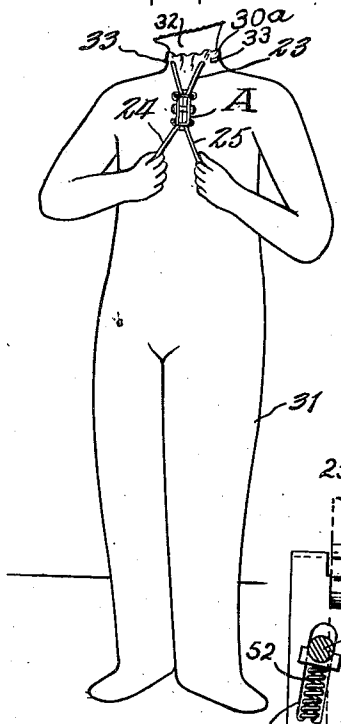
May 16, 1944. T. RUSSELL 2,349,114

DOUBLE CORD FASTENER

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Fig. 1.



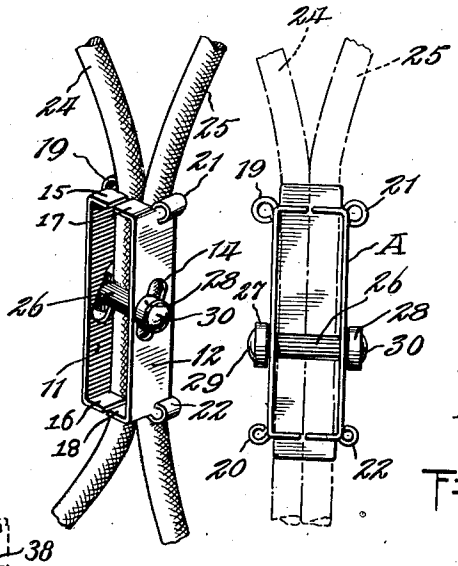


Fig. 2. Fig. 3

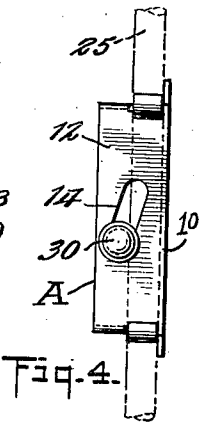


Fig. 4.

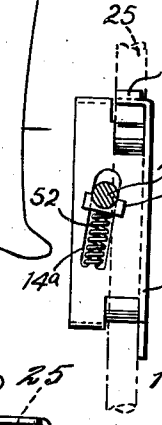


Fig. 17.

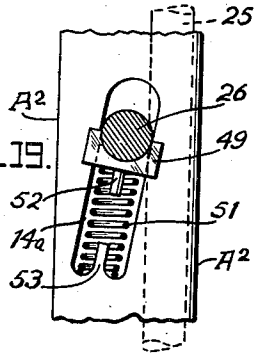


Fig. 19.

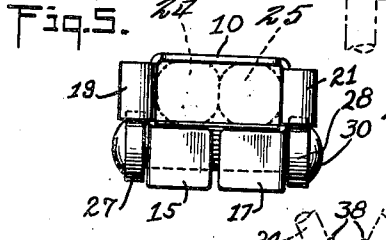


Fig. 5.

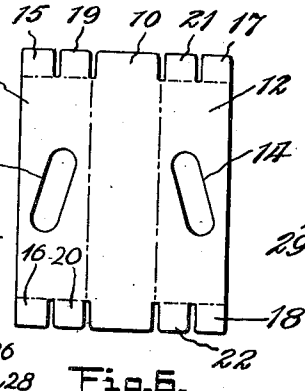


Fig. 6.

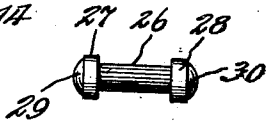


Fig. 7.

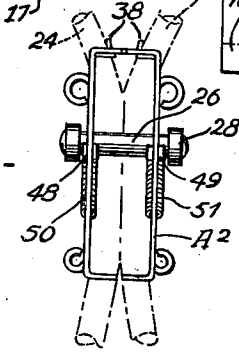


Fig. 18.

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Fig.8.

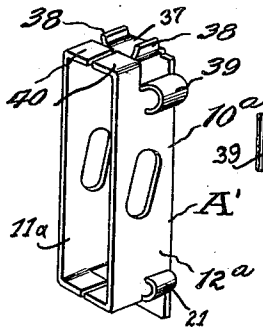
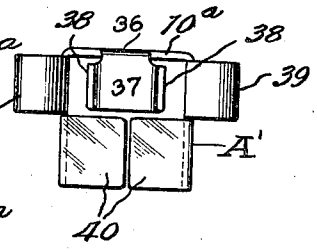


Fig.9.



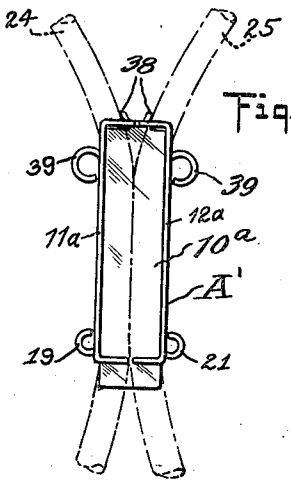


Fig.10.

Fig.11.

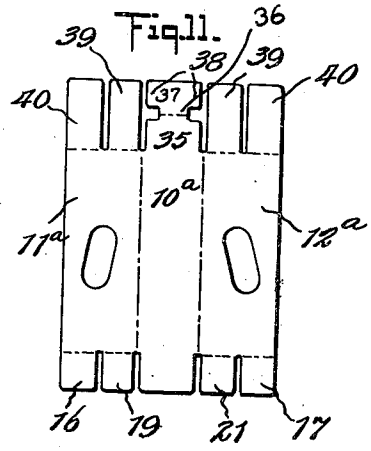


Fig.12.

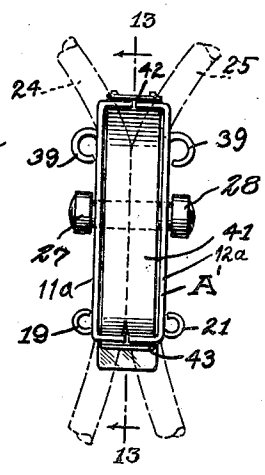


Fig.13.

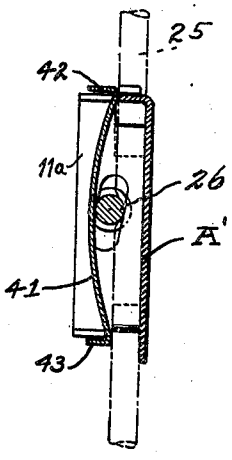


Fig.14.

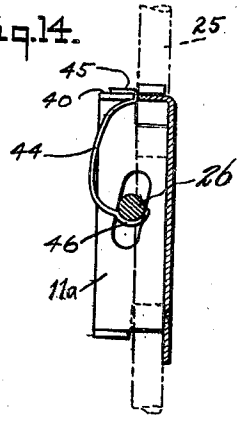


Fig.15.

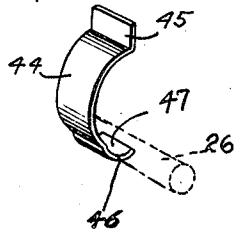
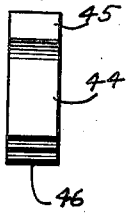


Fig.16.



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Patented May 16, 1944

2,349,114

UNITED STATES PATENT OFFICE

2,349,114

DOUBLE CORD FASTENER

Theodore Russell, Naugatuck, Conn.

Application November 21, 1942, Serial No. 466,453

14 Claims. (Cl. 24—136)

This invention relates to fasteners, and more particularly to an improved fastener slide for detachably holding the parallel ends of a gathering-cord, which passes around the collar of a life saving suit, in any desired adjusted position.

One object of the invention is to provide a double cord fastener of the above nature comprising a metal plate bent up into U-shape and provided with a pair of inclined wedge slots in its side wings for receiving a cord-engaging wedge roller which has a pair of manipulating knobs outside of said wings.

Another object is to provide a self-tightening detachable fastener slide of the above nature in which in which the side wings are provided with outwardly curled sections to facilitate the withdrawal of the ends of said cord, said wings also being provided with inturned sections to hold said cord from slipping laterally out of position.

A further object is to provide a fastener of the above nature in which a top spreader member is provided to separate the upper sections of the cord from contact with each other.

A further object is to provide a fastener slide of the above nature having spring means to press the wedge roller against the two parallel cord sections.

A still further object is to provide a device of the above nature which will be simple in construction, inexpensive to manufacture, easy to install and manipulate, compact, ornamental in appearance, and very efficient and durable in use.

With these and other objects in view there have been illustrated on the accompanying drawings five forms in which the invention may be conveniently embodied in practice.

In the drawings:

Figure 1 represents a perspective view of a life saving suit having an adjustable collar-tightening cord, the two depending exterior portions of which are adapted to be detachably locked by a fastener slide embodying the present invention.

Figure 2 is a perspective view of the fastener slide as it appears in use for clamping the two exterior cord portions together.

Figure 3 is a front view of the same.

Figure 4 is a side view of the same.

Figure 5 is a top view of the same on a larger scale, with the two cord portions shown in dotted outline.

Figure 6 is a development view of the flat blank from which the U-shaped fastener slide is formed by bending.

Figure 7 is a front view of the wedging roller shown in detached position.

Figure 8 is a perspective view of a second form of fastener slide member also embodying the invention.

Figure 9 is a top view of the same.

Figure 10 is a front view of the same with the cord portions shown in dotted outline.

Figure 11 is a development view of the flat blank from which the second form of slide member, shown in Figures 8–10, is formed.

Figure 12 is a front view of a third form of fastener slide member having a curved leaf spring for keeping the roller in contact with the parallel portions of the cord at all times.

Figure 13 is a side sectional view of the same.

Figure 14 is a side sectional view of a fourth form of the invention showing another type of roller-pressing leaf spring attached only to the upper end of the slide member before assembled to slide.

Figure 15 is a perspective view of the leaf spring shown in Figure 14 before the upper end is bent down into operating position.

Figure 16 is a front view of the same.

Figure 17 is a side sectional view of a fifth form of the invention in which the wedge roller is engaged against the cord portions by a pair of spring pressed blocks.

Figure 18 is a front view of the same.

Figure 19 is a detail side sectional view of the same, on an enlarged scale.

Referring now to the drawings in which like reference numerals denote corresponding parts throughout the several views, the numeral 10 indicates the central base portion of the U-shaped slide A, and the numerals 11 and 12 indicate the side wings thereof. Each of said side wings is provided in its central portion with an inclined slot 13, 14, respectively, which slots are initially divergent when in the blank form as shown in Figure 6, but become parallel when bent up into final form as shown in Figures 2 and 4. The side wings 11 and 12 are each provided with two pairs of outer end ears 15, 16, and 17, 18, respectively, which ears are bent inwardly at right angles to form four straight lugs for holding the exterior portions 24 and 25 of the cord from slipping out of position in the fastener member A.

The side wings 11 and 12 are also provided with two pairs of inner end ears 19, 20, and 21, 22, respectively, which are bent outwardly and curled over to engage the exterior of the side wings 11 and 12, said curled ears serving to guide the

portions 24 and 25 of the cord smoothly when the slide A is moved up or down thereon.

The attaching cord is indicated generally by the numeral 23, and is adapted to have its parallel exterior portions 24 and 25 forced against the base 10 of the U-shaped member by the action of a crosswise wedging roller 26 which preferably has longitudinal corrugations on the surface thereof, as shown.

In order to permit the wedging roller 26 to be manually moved upwardly in the slots 13 and 14 away from the base 10 into unlocking position, provision is made of a pair of cylindrical heads 27, 28 formed on the extremities of said wedging roller, said heads terminating in a pair of outer domes 29, 30.

While the present invention may be employed whenever it is necessary to detachably lock two parallel cord portions or two separate cords together, it is especially adapted for use upon the exterior portions of a collar-gathering cord for tightening and holding the collar 30*a* of a life saving suit 31 around the wearer's neck 32, which cord is threaded through suitable slits 33 in said collar 30*a* of said suit 31, whereby said collar 30*a* will have a watertight fit around the wearer's neck. It will be understood, however, that the improved fastener slide may be employed for holding the double gathering cord of any other article having a collapsible bag-like mouth.

Operation

In operation, the collar 30*a* of the suit 31 will be gathered and held firmly in water-tight condition about the neck 32 of the wearer by grasping the two bottom portions 24, 25 of the cord with one hand and pushing up the slide member A with the other hand as far as necessary.

The collar 30*a* may also be gathered and tightened merely by pulling the two bottom cord portions 24, 25 apart, with both hands, which will cause the slide member A to move upwardly automatically to the desired point.

After the slide member A has been moved to the proper adjusted position, the automatic wedging action of the roller 26 will thereafter become effective to prevent the collar from opening until desired. The wedging roller may, however, be released at any time merely by grasping the knob ends 29, 30 thereof and pulling said roller downwardly.

Modified forms

In the second form of the invention shown in Figures 8–11, the cord portions 24 and 25 will be separated above the slide A^1 so as to prevent the gathered material of the collar 30*a* from wedging between said portions as the slide is moved upwardly.

In this form of the invention, the lower part of the slide A^1 is identical with that of the first form of slide A shown in Figures 1–7, but the upper part of said slide A^1 is provided with a separating T-shaped spreader member 35 which is integrally connected to the base 10*a* by a neck 36, which in turn is connected to a tongue 37 having a pair of curved ears 38, 38. The side wings 11*a* and 12*a* of this form of the invention are provided with a pair of elongated inner tongues 39, 39 which are adapted to be curled outwardly and then inwardly, terminating at points spaced from the upper end of the slide. The tongue 37 is adapted to be bent upwardly so that the curved ears 38, 38 thereof will spread the cord portions 24, 25, outwardly from the sides of the slide member instead of permitting them to emerge from the top of the slide in parallel contact as in the first form of the invention.

Provision is also made of a pair of outer elongated ears 40, 40 which are bent inwardly at their mid-points at right angles to the wings 11*a* and 12*a* to form lugs similar to the lugs 15 and 17 of the first form of the invention.

By means of this construction, the portions 24 and 25 of the cord will be caused to enter the slide A^1 at the top thereof through openings in the side wings 11*a* and 12*a*, thus avoiding the formation of sharp angles in the cord sections which might produce chafing in the cord.

The third form of the invention shown in Figures 12 and 13 is identical with the second form shown in Figures 8–11 except that provision is made of a curved roller-pressing leaf spring 41 having extremities 42, 43 bent up around the straight ears 16, 17, and 40, 40, respectively. The leaf spring 41 serves to exert pressure upon the wedge roller 26 to keep it in engagement with the parallel cord portions 24 and 25 at all times.

Figures 14–16 illustrate the fourth form of the invention in which a short curved leaf spring 44 is employed, one end 45 of which is bent over upon the upper lugs 40, 40, and the lower end 46 of which is provided with a semi-circular socket 47 to engage the wedge roller 26.

Figures 17–19 illustrate the fifth form of the invention in which a pair of blocks 48 and 49 slidably mounted in the inclined slots 13*a*, 14*a* of the U-shaped fastener member A^2 are pressed by a pair of coil springs 50, 51 against the wedge roller 26. The springs 50 and 51 are guided by a pair of pins 52, 53 formed on the blocks 48, 49 and the outer ends of said slots 13*a*, 14*a*, respectively.

While there have been disclosed in this specification several forms in which the invention may be embodied, it is to be understood that these forms are shown for the purpose of illustration only, and that the invention is not to be limited to the specific disclosure, but may be modified and embodied in various other forms without departing from its spirit. In short, the invention includes all the modifications and embodiments coming within the scope of the following claims.

Having thus fully described the invention, what is claimed as new and for which it is desired to secure Letters Patent is:

1. In a detachable cord fastener, a slide having an elongated base member provided with a pair of flat side wings bent at right angles thereto, each of said wings having a slot inclined to said base, said slots being parallel to each other, and a knurled wedging roller extending crosswise through said slots for automatically clamping a pair of parallel cords when the cord portions are pulled in one direction, said cords being unclamped when said wedging roller is pulled in the opposite direction.

2. In a detachable cord fastener, a slide having an elongated base member provided with a pair of flat side wings bent at right angles thereto, each of said wings having a slot inclined to said base, said slots being parallel to each other, and a wedging roller extending crosswise through said slots for automatically clamping a pair of parallel cords when they are pulled in one direction, said cords being unclamped when said roller is pulled in the opposite direction.

3. A cord fastener as defined in claim 2 wherein said side wings have four outwardly curled sections to guide the cord portions smoothly through said slide.

4. A cord fastener as defined in claim 2 wherein said side wings have four sections bent inwardly at right angles to hold the cord portions from slipping laterally out of position.

5. A cord fastener as set forth in claim 2 wherein said side wings have four outwardly curled sections to guide the cord portions smoothly through said slide, and wherein said side wings have four sections bent inwardly at right angles to hold the cord portions from slipping laterally out of position.

6. A cord fastener as set forth in claim 2 in which the ends of said wedging roller have knobs to facilitate the manipulation thereof.

7. A cord fastener as set forth in claim 2 in which each end of said wedging roller pin has a cylindrical domed knob to facilitate the manipulation thereof.

8. A cord fastener as set forth in claim 2, in which a spreader member is provided at one end of said slide to separate the cord portions from contact with each other and to prevent the gathered material from clogging.

9. A cord fastener as set forth in claim 2 in which spring means are provided to press said wedge roller against said parallel cord portions.

10. A cord fastener as set forth in claim 2 in which a curved leaf spring is mounted in said slide for pressing said wedge roller against said parallel cord portions.

11. A cord fastener as set forth in claim 2 in which a curved leaf spring is mounted in said slide, the central concave portion of said spring pressing said wedge roller against said parallel cord portions.

12. A cord fastener as set forth in claim 2 in which a spring pressed block is employed in said slide to press said wedge roller against said parallel cord portions.

13. In a detachable cord fastener, a slide having an elongated base provided with a pair of flat side wings extending upwardly from said base member, each of said wings having a slot inclined to said base, said slots being parallel to each other, and a wedging roller extending crosswise through said slots for automatically clamping upon a cord when they are pulled in one direction, said cord being unclamped when said roller is pulled in the opposite direction.

14. A cord fastener as defined in claim 13, in which spring means are provided to press said wedge member against said cord.

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