Dec. 27, 1932. R. T. DAWES 1,892,610

GARMENT FASTENER

Filed Oct. 29, 1931

Fig. 1.

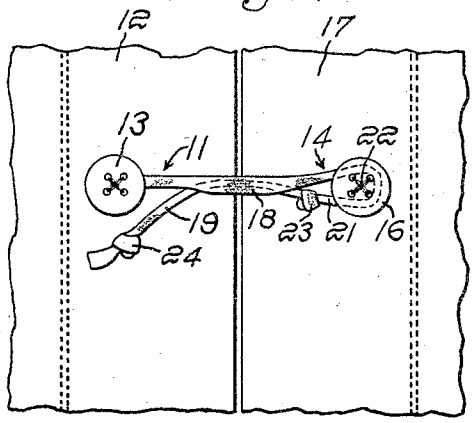

Fig. 2.

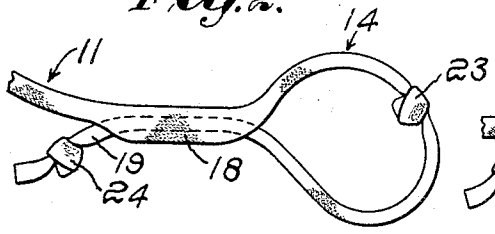

Fig. 3.

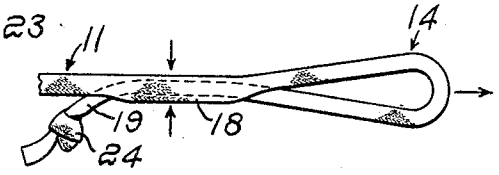

Fig. 4.

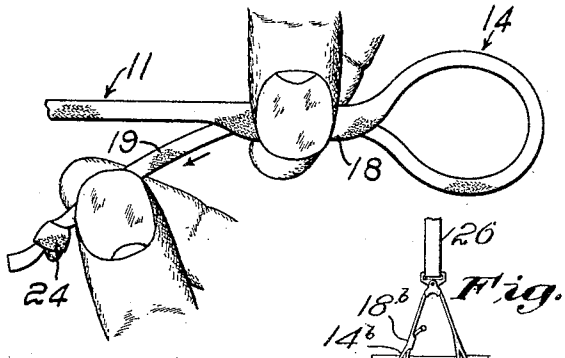

Fig. 5.

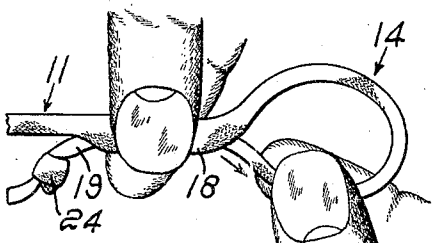

Fig. 7

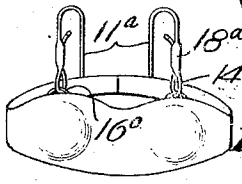

Fig. 6

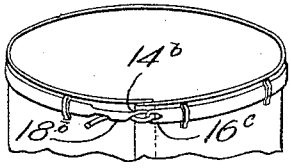

Fig. 8

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UNITED STATES PATENT OFFICE

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GARMENT FASTENER

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This invention relates to adjustable fasteners or connecting devices for garments and various other articles having parts which are to be united, constricted or supported. Such fasteners or suspension devices are useful, for example, in garments or apparel accessories, for instance, suspenders for trousers,—shoulder straps for undergarments, dresses or the like,—belts for holding or confining garments, garters for supporting stockings or socks,—garment frogs, etc., in all of which adjustability is a desirable characteristic and which, for simplicity and ease of manufacture,—freedom from injurious effect on the person or garments of the wearer,—capability of application without detracting from the appearance of the garment,—and low cost of manufacture, are desirably free from metallic or rigid buckles, clasps, or the like, all of which is accomplished by the present invention, which permits the construction of such device solely of textile or other soft and flexible material in any desired color and in such sizes as may be best suited to the intended purpose.

While the invention is thus of broad utility, I shall hereinafter describe the application thereof as specifically embodied by way of example in a garment frog or fastener as illustrative of a simple and readily understood use of the invention.

These frogs are commonly formed to have a button-receiving or like opening as well as a length of constant unvarying dimensions so that these proportions of the frog determine a definite relationship or spacing which must prevail to assure the neat tidy appearance of a well tailored garment as well as to provide effective means for closing or connecting portions of the same. Thus in these older forms of frogs a change of buttons from one size to another may necessitate a change in the frogs. Moreover, various conditions, such as those arising where a garment is to be worn by different persons or again, changes in weather may make it highly desirable to have frogs capable of accommodating different amounts of clothing. Furthermore, frogs of snugly fitting garments place an additional strain on the button-retaining stitches as a button is passed through the retaining button hole of the frog and this often results in loosening or pulling off the buttons after a relatively brief period of use.

Objects of the present invention are generally to improve adjustable fasteners so as to overcome undesirable features thereof such as those just mentioned specifically with reference to frogs and to provide a fastener which may be fixedly attached to one portion of a garment or other article and yet be capable of adjustment to vary the effective length of the fastener and/or to adapt the latter for releasable attachment to or about objects such, for example, as a part of the wearer's body buttons or like elements of different sizes, as well as to provide for reducing the pulling or twisting strains during attachment; and also to provide a fastener having an improved construction and relative arrangement of parts.

In the drawing:

Fig. 1 is a face or plan view illustrating portions of a garment connected by a frog;

Figs. 2 and 3 are plan views illustrating different forms of frogs;

Figs. 4 and 5 are plan views illustrating the manner of using frogs of the type disclosed in the preceding figures; and

Figs. 6, 7 and 8 are diagrammatic views illustrating the application of the invention to such garment accessories as suspenders, shoulder straps and belts, respectively.

A fastener according to this invention may comprise a flexible element such as a cord adapted to form a connection between portions of a garment and having intermediate its length a sleeve proportioned to receive an end portion of the cord which may be passed around or looped over a part of the wearer's body a button or the like. This sleeve provides a retaining means for automatically and releasably securing the end portion of the cord or other element which may either carry a fastener member or provide means for securing the device in relative fixed position. The sleeve is capable of elongation or stretching when placed under tension, as when the fastener is drawn taut, so as to effect a reduction in the diameter or cross section of

the sleeve sufficient to bind or to grip securely the portion of the cord disposed therein and thus to determine the length of the fastener and/or of the button-receiving opening thereof. The cord thus fastened may be withdrawn by relieving the tension on the fastener and causing the sleeve to expand transversely and to contract longitudinally by pulling on the cord disposed therein.

In the embodiment of the invention chosen for illustration herein and by way of example, the fastener is a frog and comprises a flexible member or element in the form of a cord having an end section 11 thereof attached to a portion 12 of a garment, preferably at the point of attachment of a button 13 mounted upon this portion; the frog also has another or loop section 14 adapted to be disposed about a retaining element such as the button 16 mounted upon another portion 17 of the garment. Conveniently the frog may be formed as a unitary member from a single piece of cord or other suitable material, which is provided with a longitudinally disposed sleeve portion 18. This sleeve is arranged to lie lengthwise between the buttons 13 and 16 of the separable sections 12 and 17 of the garment when the frog extends from the button 13 to the button 16 to form a connection between these points. The sleeve 18 is also proportioned to receive an end portion 19 of the flexible member to form a loop 21 which extends about the retaining threads 22 of button 16. In order that this sleeve may function as a means for automatically gripping and retaining the portion 19 of the flexible member, as well as to be capable of releasing this portion when desired, the sleeve preferably is in the form of a tubular member which may be made of helically disposed strands so arranged that the body portion of the sleeve is capable of elongation or stretching when placed under tension, as when the frog is drawn taut between the buttons, this elongation of the sleeve being effective to reduce its cross-sectional area and to cause it to contract about a portion of the flexible member disposed therein, so as to bind and to grip securely this portion of the cord. A tubular braid may be cited as an instance of a sleeve member having inherent characteristics such as just described. Such braid, normally of a substantially uniform diameter, may be obtained in any desired length, from which suitable sections may be cut off in accordance with the use to which the desired fastener is to be put.

When it is desired to lengthen the frog or to increase the size of the loop 21 thereof, this may be accomplished by holding the sleeve as illustrated in Fig. 5. From this figure it will be seen that the sleeve is permitted to retract longitudinally by grasping the same lightly between the fingers at a point adjacent the loop, and at the same time pulling the loop in a direction to enlarge it and to pull the cord through the sleeve in the direction from left to right, as viewed in this figure. It will be apparent that as the manual grip on the sleeve is released, further tension on the loop will result in elongation and transverse contraction of the sleeve, and consequently the latter will become effective automatically to retain the cord in a definite position therein. Likewise when it is desired to reduce the size of the loop or to reduce the length of the frog, the sleeve may be held as illustrated in Fig. 4, wherein it is gripped lightly at the end thereof remote from the loop, while the cord is pulled through the sleeve in a direction to reduce the size of the loop.

When the cord or other member forming the frog is sufficiently flexible, it is possible to pull this cord, including the loop portion thereof, entirely through the sleeve, so as to turn the latter inside out. Likewise it is also possible to pull the cord too far to the right, as shown in Fig. 5, in which case the end of the cord might be removed from the sleeve, or the free end of the cord might be drawn within the sleeve far enough to be inaccessible. To avoid occurrences of this kind, it is advisable to form an obstruction or abutment of some kind for limiting movement of the flexible member through the sleeve. For these purposes a knot 23 (Fig. 2) may be formed in the loop portion of the flexible member, of such a size as to be effective to prevent movement of this knot into the sleeve. Likewise a knot 24 may also be formed on the free end portion 19 of the cord to prevent the latter from being withdrawn either entirely from the sleeve or so far within the latter as to be inaccessible.

From the foregoing it will be evident that instead of forming the loop and sleeve sections as a unitary part of the flexible member or cord, these sections may be made in separate parts comprising a length of cord or section having a loop which may be of fixed proportions and having a separate section corresponding to the section 11 which may, if desired, be attached fixedly to the garment. When so constructed the sleeve 18 may be carried either by the loop section or by the other section of the frog.

For purposes of further illustration reference may be had to Figs. 6, 7 and 8. Thus in Fig. 6 a garment 25 is illustrated having the suspending shoulder strap 11^a corresponding to the part 11 above described. The garment is provided with a retaining element 16^a, shown as a loop, which is engaged by the loop section 14^a of the fastener device, such loop section having its end portion passing through the contractile sleeve 18^a which allows adjustment of the length of the loop section 14 in the same manner as above de-

scribed with reference to the sleeve 18 and the loop 14.

In Fig. 7 I have illustrated the attaching portions of trouser supporting suspenders 26, each attaching member having a loop portion 14^b adapted to engage a retaining member such as a button 16^b on the trousers and having its end passing through a contractile sleeve 18^b, thus permitting adjustment of the length of the suspenders by adjusting the length of the attaching loops.

Fig. 8 illustrates the invention as applied to a belt device shown as extending around the upper part of a garment. In this case the retaining element 16^c is a loop of fixed length at one end of the belt which is engaged by the adjustable loop member 14^b whose end is adjustably received within the contractile sleeve portion 18^b.

Other and equivalent applications of the invention will occur to those skilled in the art and are to be regarded as within the scope of the invention as defined in the appended claims.

I claim:

1. A fastening device comprising an elongate flexible member having anchoring means at one end, said flexible member having a stretchable and contractible integral sleeve spaced from the anchoring means and the opposite free end of said flexible member, said flexible member being bent upon itself to form a loop of adjustable length with said opposite free end portion extending longitudinally through and permanently projecting beyond the sleeve, said projecting free end portion normally being of substantially uniform diameter from its point of emergence from the sleeve to its extremity and being of such length as to permit ready seizure by the fingers of the operator for exerting pull to shorten the length of the loop and also to furnish available material for lengthening the loop after it has been shortened, said sleeve being capable of stretching longitudinally and of contracting transversely, thereby gripping that portion of the free end disposed therein when subjected to longitudinal tension, said sleeve being contractible longitudinally at will to cause it to expand transversely when said longitudinal tension is released, thereby releasing said portion of said free end and permitting longitudinal movement thereof through the sleeve, whereby the effective length of the fastening device and the size of said loop may be adjusted as desired.

2. An adjustable garment fastener for releasably connecting separable portions of a garment, said fastener comprising a flexible element connected to one of the separable portions, said flexible element having an elongate free end, a retaining element on the other of the separable portions of the garment, a stretchable and contractible integral sleeve carried by the flexible element intermediate the ends thereof and in a position to lie between said point of connection of the flexible element to said one portion and the retaining element of the said other portion of the garment when the fastener extends to the retaining element, said sleeve being constructed and arranged so that the free end of the flexible element may be inserted longitudinally therethrough and project outwardly toward said point of connection thereby to form a loop which may extend about the retaining element, said sleeve being capable of stretching longitudinally and of contracting transversely about and thereby gripping the portion of the free end of the flexible element disposed therein, when subjected to longitudinal tension, said sleeve being retractible longitudinally at will to cause it to expand transversely and thereby to release the portion of the free end of said flexible element disposed therein and thus permit longitudinal movement of said free end through the sleeve to vary the length of the fastener and size of the loop, and at least one enlargement formed in the free end of said flexible element on at least one side of the sleeve for limiting the movement of the free end through the sleeve in the direction from the enlargement toward the sleeve.

Signed by me at Boston, Mass., this 27th day of October, 1931.

ROBERT T. DAWES.