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L. W. JOYCE

1,804,259

RESILIENT METALLIC SUSPENDER LOOP

Filed Nov. 6, 1929

Fig. 1.

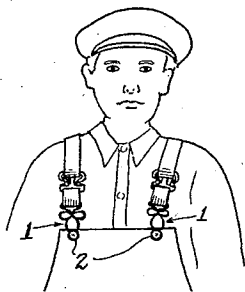


Fig. 2.

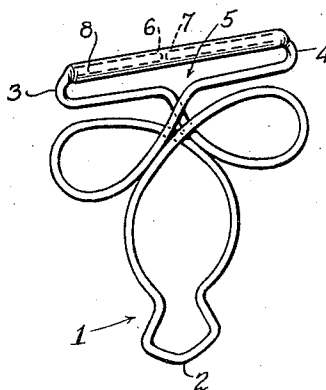


Fig. 3.

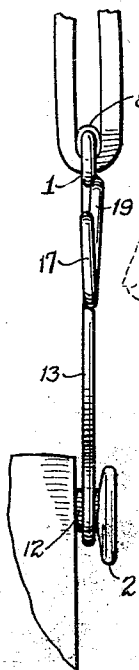


Fig. 4.

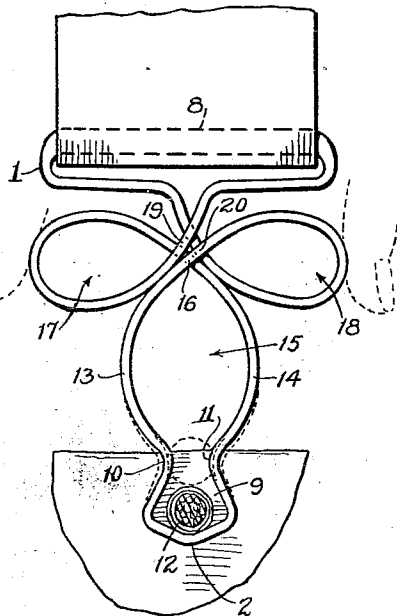
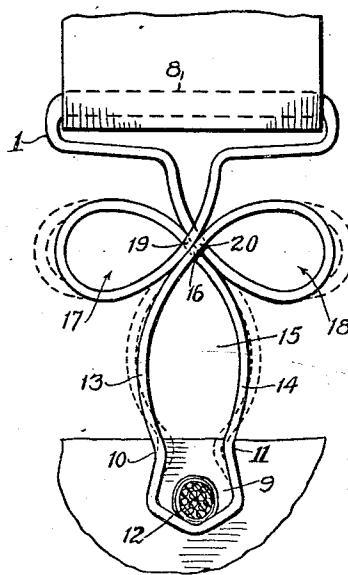


Fig. 5.



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RESILIENT METALLIC SUSPENDER LOOP

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This invention relates to resilient metallic suspender loops, and has for its object the provision of a suspender fastening device of the character described having a button loop, the neck of which expands widthwise when the suspender loop is tensioned in a longitudinal direction.

Another object of the invention is to provide a resilient metallic suspender loop in which the neck of the button receiving loop is automatically contracted when the device is relieved from the longitudinal stress incident to its use, and which may be expanded at will for the insertion of the button by squeezing pressure brought to bear laterally upon the device.

Other objects of the invention will appear as the following description of a preferred embodiment thereof proceeds.

In the drawings in which the same reference characters are used in the several figures to denote identical parts:

Figure 1 is a perspective view showing the device of my invention in its relation to the bib portion of an over-all;

Figure 2 is a perspective view of the resilient metallic suspender loop;

Figure 3 is a side elevation showing the suspender loop in its relation to the shank of a button;

Figure 4 is a front elevation of the suspender loop indicating the function of expanding the neck of the button receiving loop by lateral pressure imparted to the closed loops; and

Figure 5 is a similar view to Figure 4, showing the spreading of the neck by longitudinal tension imparted by the button.

Referring now in detail to the several figures, it will be observed, particularly from Figure 2, that the device of the invention comprises in its preferred form, a single length of resilient wire 1 bent preferably symmetrically with respect to its middle point 2 into a group of loops, all of which function together in the general operation of the device, the free portions 3 and 4 of the wire being finally bent to form a bar loop 5, the free ends 6 and 7 being preferably

concealed within a hollow metallic bar 8 of any preferred or known construction.

The resilient wire 1 is bent into a configuration which includes, first the button retaining loop 9, the sides of which configuration, formed by said wire, are directed toward one another at points 10 and 11 forming an open neck for said loop through which the shank 12 of a button may pass. The normal width of the neck when unstressed is preferably such that the shank of the button may be snapped therethrough. Beyond said neck the wire forming the sides of the configuration is bowed outwardly on each side as indicated at 13 and 14 forming a larger loop 15 communicating with the button retaining loop by way of said neck.

The loop 15 is large enough to slip over a button and the button is transferred from the loop 15 to the loop 9 by pulling upward on the suspender loop or downwardly on the button so as to snap the shank of the button into the button retaining loop in the manner aforesaid. Beyond the loop 15 the sides of the configuration freely cross as indicated at 16 to the opposite sides of a median line extending longitudinally of the suspender loop and on said opposite sides of said median line the wire constituting the sides of said configuration is formed into closed loops 17 and 18.

The limbs of the loops 17 and 18 freely intersect at their points of closure 19 and 20. Beyond the said points of closure of the closed loops, the free portions of the wire 1 are formed in any suitable manner into the bar loop 5 for receiving the end of the suspender.

The novel function of the invention as described is that when a tensioning force is imparted longitudinally to the device by the pull of the button 12, the loops 17 and 18 are reduced in size as is indicated in full lines in Figure 5. The said reduction creating an outward as well as a downward thrust upon the bowed portions 13 and 14, causing an expansion in the width of the neck of the button receiving loop.

While this expansion is a comparatively inutile function while the suspender loop is

under tension, yet when the tension is released, corresponding contraction in the width of the neck occurs, this being a decidedly advantageous feature since it is only
 5 when the tension is released that the button 12 tends to escape from the button holding loop. This operation is quite the contrary to that in known devices in which, when the tension is released, the neck of the button
 10 holding loop invariably widens.

Since the shanks of certain buttons may vary in diameter, it frequently happens that considerable stress may have to be exerted in the device of the invention, in forcing the
 15 button to snap through the contracted neck. In order to avoid such stress, if desirable, the neck can readily be expanded by pressing simultaneously upon the sides of the closed loops 17 and 18, thus reducing their size and
 20 imparting the same outward thrust to the bowed portions 13 and 14 for producing the widening of the said neck. The shank of the button may be readily passed through said neck while the loops 17 and 18 are so pressed
 25 together, and upon releasing the said pressure, the neck will immediately contract to its normal size in which the button is prevented from escaping.

While in the above description, I have defined what I believe to be practical and preferred embodiments of the invention, it is to be understood that it is possible to carry out the same principle by the wire being bent into configurations other than here illustrated, and that such modifications in the structure of the suspender loop are to be considered within the scope of the invention as may come within the terms of the appended claims.

40 What I claim is:

1. A suspender loop comprising a resilient wire bent into a configuration characterized by the following elements, a button retaining loop having the sides of said configuration directed toward one another forming
 45 a neck opening into said loop, said sides beyond said neck being bowed outwardly, together forming a loop larger than the button receiving loop and communicating therewith, said sides being freely crossed beyond
 50 said larger loop and being formed beyond their point of crossing, into oppositely disposed closed loops, the limbs of which are freely intersecting at their points of closure, whereby when said button holding loop is pulled
 55 longitudinally, or said closed loops are laterally squeezed toward each other, said closed loops impart an outward thrust to the said bowed sides, expanding said neck.

2. A suspender loop comprising a resilient wire bent to form a button retaining loop the sides of which extend toward one another at the top forming a neck, said sides being extended beyond said neck and being
 65 bowed outwardly to form a loop larger than

the button retaining loop, closed at the end opposite to said neck and communicating with the button retaining loop by way of said neck, means for securing said suspender loop to a suspender, and mutually cooperating means between the closed end of said larger loop and said suspender securing means, and acting independently of the latter, depressible laterally together for expanding said neck.

3. A suspender loop comprising a resilient wire bent to form a button retaining loop, a narrow neck at the top of said loop, a larger loop on the opposite side of said neck from said button retaining loop, means for securing said suspender loop to a suspender, beyond said larger loop, and means intermediate said suspender securing means and said larger loop and acting through the latter to expand said neck when said button retaining loop is tensioned at its bottom end and to contract said neck when said tension is relieved.

In testimony whereof I affix my signature.

LYNDON WALKER JOYCE.