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DETACHABLE HERMETIC SEALING JOINT FOR GARMENTS

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FIG. 1

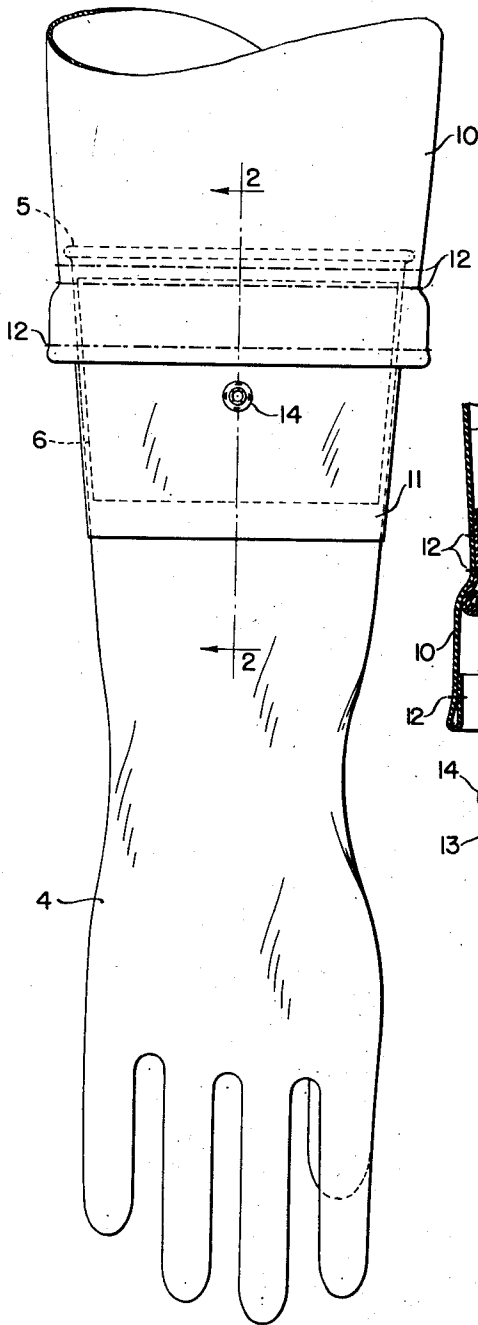


FIG. 3

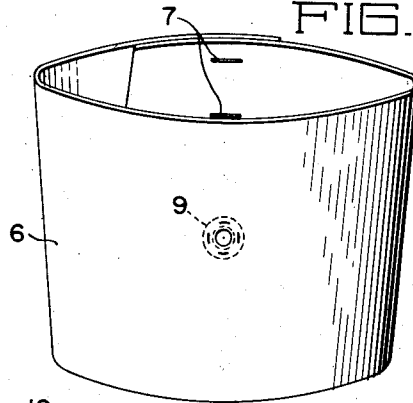
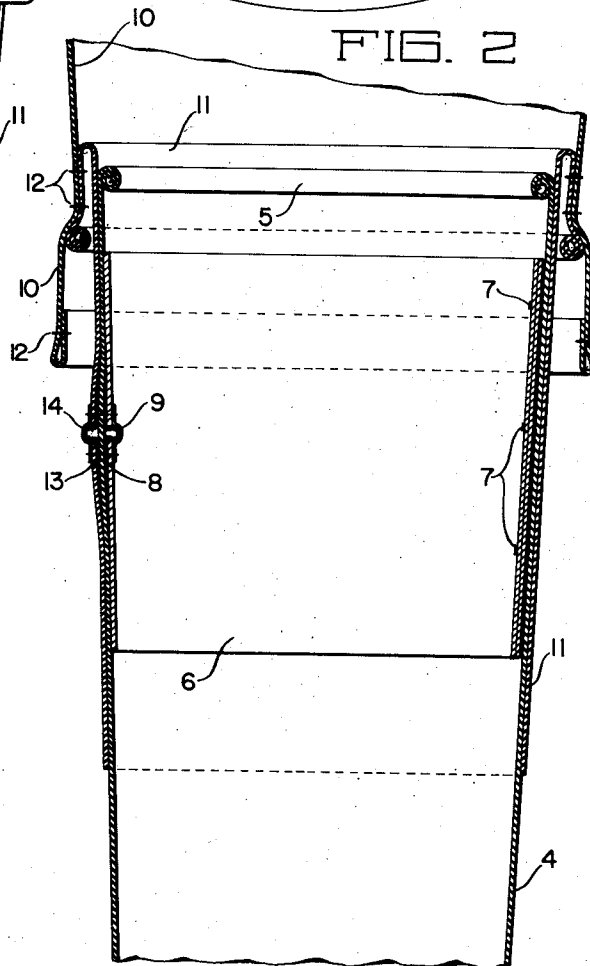


FIG. 2



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DETACHABLE HERMETIC SEALING JOINT
FOR GARMENTSEarl J. Hoagland, Chicago, Ill., assignor to Stand-
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3 Claims. (Cl. 2—270)

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This invention relates to protective garments which may be worn when working with or handling corrosive chemicals and gases.

The primary object of the invention is to provide an improved detachable hermetically sealed joint between a sleeve member and a glove or boot.

Heretofore, the gap between the sleeve and rubber glove was closed by a drawstring or an elastic band, with the glove gauntlet inside the sleeve. This arrangement pulls the sleeve tight, but produces folds of material which are not liquid-tight and sometimes uncomfortably squeeze the wrist of the wearer. In using a gauntlet type glove, if the gauntlet is placed within the sleeve it is only effective when the hand is held downwardly, and if the sleeve is placed within the gauntlet it may catch splashed material when the hand is held downwardly.

The present invention provides a joint between a glove and sleeve which is liquid-tight and hermetically sealed regardless of the position of the arm and hand. The joint permits the glove to be removed and replaced, but the glove is put on before the sleeve is pulled into position and can be accomplished by the wearer without assistance.

The present device is used with gloves of different sizes, and it may be used also on trouser legs to make a hermetic seal with boots.

The invention is illustrated in a preferred embodiment in the accompanying drawings, in which—

Fig. 1 is a longitudinal view, showing the joint made with the gauntlet of a rubber glove; Fig. 2 is an enlarged fragmentary sectional view, taken as indicated at line 2—2 of Fig. 1; and Fig. 3, a perspective view of the stiffening insert which may be inserted in the gauntlet portion of the glove to prevent its collapse when compressed by the elastic sleeve.

In the embodiment illustrated, a conventional rubber glove 4 is provided with an outwardly flared gauntlet portion 5 into which a stiffening insert 6 may be inserted. Preferably the insert is tapered like the gauntlet portion of the glove, and may be made of cardboard, cellulose acetate, or even light metal. It may be made of a flat strip of material with its ends stapled together, as indicated at 7. The insert may be cemented to the gauntlet, stapled to it, or fastened in any desired manner, such as by a snap-fastener 8 engaging a socket member 9 of the insert.

A garment sleeve 10 is preferably made of a flexible fabric having a chemically-resistant

coating. To the lower portion of the garment sleeve 10 is stitched an elastic sleeve member 11, as indicated at 12. Preferably, this member is of a rubber-like material, and has a shape similar to the gauntlet portion of the glove. This may be turned inside out during the stitching operation and then turned back, as shown in Fig. 2, so that it may be pulled around the gauntlet of a glove in telescoping relation, so as to make a hermetically sealed connection with the gauntlet. If desired, it may also be held against longitudinal displacement by a snap fastener 13 engaging a socket member 14. The stitching 12 and the socket member 14 are preferably given a chemically-resistant coating, such as rubber cement or a compounded neoprene latex.

As shown in Fig. 2, it is preferred to have a short length of sleeve allowed to extend beyond the seam of the gauntlet, to provide a gripping area for adjusting the sleeve. Preferably the stiffening liner 6 is about three inches in length, so that when the joint is made there is an area of approximately thirty-six square inches of rubber-to-rubber contact under tension. This has been found sufficient to insure complete protection against liquid and gas seepage.

In using the device, the gloves are put on first. Then, the gloved hands are thrust through the sleeves and the sleeves are pulled up over the gauntlets until the tapered collar stitched to the sleeve fits snugly around the gauntlet portion of the glove which is reinforced with the liner. If a snap-fastener is used, it may then be engaged and the parts adjusted into a smooth tensioned telescoping relationship. To remove the garment, the fastener is unsnapped and the garment pulled off over the glove.

The foregoing detailed description is given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, for some modifications will be obvious to those skilled in the art.

I claim:

1. In combination: a glove having a smoothly rounded, tapered gauntlet stiffened against circumferential collapse; and a garment sleeve provided at its lower end with an elastic sleeve portion having an opening of smaller diameter than the gauntlet of said glove whereby said sleeve member may be tensioned smoothly about said gauntlet in continuous face-to-face telescoping relation so as to make a detachable hermetically sealed connection with said gauntlet.

2. In combination to prevent circumferential collapse: a glove of rubber-like material having

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an outwardly tapered gauntlet; a removable annular stiffening insert within said gauntlet; and a flexible sleeve of rubber-like material adapted to be drawn over and tensioned smoothly around said gauntlet in telescoping relation so as to make a detachable yielding hermetically sealed connection with the gauntlet.

3. In combination: a smoothly rounded tapered fabric member stiffened against circumferential collapse; and a garment sleeve provided at its lower end with an elastic sleeve portion having an opening of smaller diameter than said tapered member whereby said sleeve may be tensioned smoothly about the tapered member in continuous face-to-face telescoping relation so

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as to make a detachable hermetically sealed connection therewith.

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