June 17, 1969 B. S. DEFAZIO ET AL 3,449,764

CLOTHING CLOSURE

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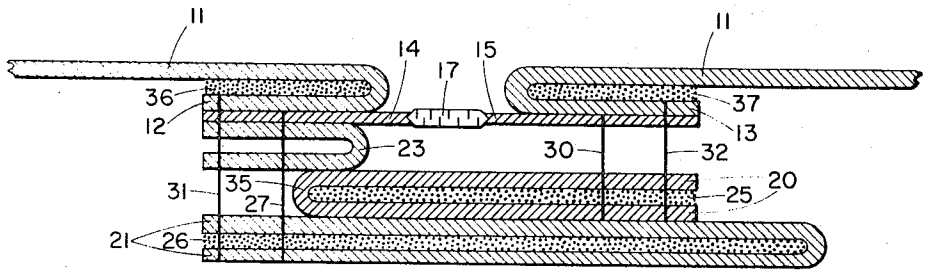


Fig. 1

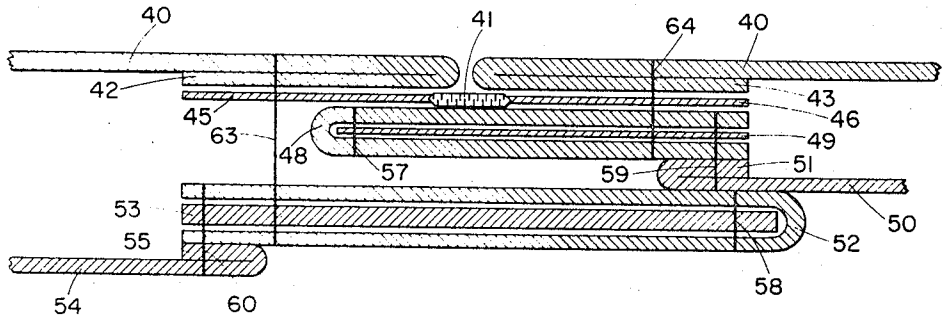


Fig. 2

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CLOTHING CLOSURE

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ABSTRACT OF THE DISCLOSURE

The invention consists essentially of a self-closing double flap closure preferably used in combination with a slide fastener to protect the wearer against a variety of weather conditions. The flaps are positioned between the fastener and the wearer and overlap each other. The flap adjacent the wearer is the wider of the two and overlaps the flap adjacent the fastener, forming a double barrier which is adapted for installation on a variety of types and styles of garments.

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

This invention relates to garment closures and more particularly to a self-closing closure for outer garments which effectively resists penetration of water and wind.

A continuing need exists in all outer garments generally and raingear and windgear especially for an easily operated, inexpensive yet effective closure to secure the front opening against the penetration of wind and rain. Such a need has resulted in the evolution of the parka style garment, among others, where impermeability is required. Having no front opening, however, the parka style requires the garment to be made oversize and to be equipped with a gusset and drawstring arrangement at the neck area to enable the garment to be donned and removed while still assuring a watertight seal at the neckline between the garment and the attached hood. Although adequate protection is obtained with this arrangement, personnel wearing the garment dislike the drawstrings. Another inconvenience is that wearers often become overheated since there is no means for opening the parka at the front during periods of high activity or when they must intermittently enter sheltered areas while wearing the garment.

Parka wearers in most instances do not have time to remove their parkas during alternate, intermittent work on non-work periods basically because it is time consuming to do so but also because removal interferes with the performance of their duties. Wet-weather parkas as well as jackets and other types of outer clothing sometimes are provided with partial or full front openings which have protective storm flaps comprising inner and outer combinations of flaps. These flaps, however, require snap fasteners or buttons to hold them in place. None of the snap or button fasteners have been completely effective in resisting the penetration of water and wind, and frequently the snaps and buttons break or come off leaving the outer flap loose in those places. Such a condition can be and often is dangerous since, among other results, the loose flap may become caught thereby imperiling the wearer who often may become occupied and forget the dangers created by the appendage.

The present invention overcomes the deficiencies of prior closures by providing a self-closing double flap closure in which the flaps overlap each other and are positioned behind a slide fastener or other joining means which effects closure. The bottom flap, which is the one most remote from the fastener, in a preferred embodiment is made wider than the flap nearest the fastener. A variety of flap arrangements are available depending upon the type of garment, i.e. whether permeable or impermeable, the kind of protection provided for, i.e. raingear, cold weather, etc. and the style of garment, i.e. parka with hood, jacket, trouser, etc.

Accordingly, it is an object of this invention to provide a method of and means for effecting closure of outer garments that is simple and self-closing and will act to keep the wearer of the garment protected from wind and water indefinitely.

Another object of the invention is to provide a clothing closure for outer garments that will permit the garments to be donned and removed intermittently without difficulty.

A further object of this invention is to provide a clothing closure for outer garments which can be opened as desired to provide ventilation or access within the garment without difficulty.

Other objects, advantages and novel features of the invention will become apparent from the following detailed description thereof when considered in conjunction with the accompanying drawings in which like numerals represent like parts throughout and wherein:

FIG. 1 is an enlarged sectional view of an embodiment of the invention applied to a rain-impermeable garment; and

FIG. 2 is an enlarged sectional view of an embodiment of the invention applied to an insulated cold-weather impermeable garment.

Referring to FIG. 1, the body of a garment **11** is folded under to present body facings **12** and **13** to which tape portions **14** and **15**, respectively, of a slide fastener **17** such as a zipper may be attached. A pair of overlapping folded moisture barrier flaps **20** and **21** positioned closest to the wearer and an intermediate spacer such as two-ply spacer **23** to permit freedom of operation of the slide fastener complete the fabric elements of the closure. Each of the foregoing fabric elements, namely body **11**, body facings **12** and **13**, moisture flaps **20** and **21** and spacer **23**, is fabricated of material coated with a coating appropriate to the use intended.

Each moisture flap is folded in half and cemented to itself as indicated at **25** and **26** forming double plies of protective material. Spacer **23** is folded in half as shown and together with bottom moisture flap **21** is stitch-joined to tape **14** of fastener **17** as indicated by stitching **27**. Top moisture flap **20** is stitch-joined to tape **15** of fastener **17** as indicated by stitching **30** after which bottom flap **21**, spacer **23** and tape **14** are simultaneously stitch-joined by stitching **31** to body facing **12** on one side of the closure. On the other side of the closure top flap **20** and tape **15** are stitch-joined by stitching **32** to body facing **13** to complete the formation of the moisture barrier closure. Spacer **23** extends inwardly past the fold end **35** of top flap **20** and acts both as a guide for fastener **17** and a preventive forestalling top flap **20** from being caught in slide fastener **17**. The body **11** on each side of the fastener is folded back over facings **12** and **13** and cemented thereto as indicated at **36** and **37**, forming a waterproof seam.

In FIG. 2 a closure similar to that in FIG. 1 but for impermeable insulated cold weather type clothing is shown comprising the body of the garment **40** which is folded under on either side of a fastener **41** to form body facings **42** and **43**, respectively. Tapes **45** and **46** of fastener **41** preferably extend outward from the fastener a distance substantially equal to the length of the respective body facings **42** and **43**. A top moisture barrier flap **48** is folded in half with the halves separated by a stiffening

interlining **49** preferably made of such material as light cotton warp, spun hair, wool filling cloth or non-woven Pellon-type fabric, the flap and interlining being positioned as shown beneath fastener **41** and tapes **45** and **46** in the final assembly. These fabric elements, namely body **40**, body facings **42** and **43** and moisture barrier flap **48** preferably are fabricated of a suitable permeable wind-resistant fabric as is a lining **50** which preferably is folded as indicated to form lining facing **51**. A bottom moisture barrier flap **52** having an insulation means **53** made of substantially ⅛ inch thick polyvinyl chloride closed cell foam or similar suitable material inserted between the plies thereof and another lining **54** which is folded as indicated to form lining facing **55** complete the elements of this closure embodiment.

Moisture barrier flaps **48** and **52** are folded in half around their inserts **49** and **53**, respectively, and stitched at the fold end by stitchings **57** and **58**, respectively, to form three-ply flaps. Lining facings **51** and **55** are positioned on respecitve ends of flaps **48** and **52** as indicated and each lining and lining facing is stitch-joined by stitchings **59** and **60**, respectively, to its respective moisture barrier flap to complete the inner construction of the closure. Body **40** and body facings **42** and **43** are stitch-joined by stitchings **63** and **64**, respectively, to their respective moisture barrier flap to complete the closure construction.

A wearer receives greatly improved protection from the closure of the present invention over those used in the past since the moisture barriers keep the wearer dry indefinitely and the features of the embodiment of FIG. 2 additionally protect against wind. The invention is simple in construction and easy to operate so that parkas fitted therewith now may be made close fitting because the garment does not have to be doffed and donned over the head and shoulders. Garments having the closures disclosed herein also may be donned and removed quickly and without difficulty under conditions requiring the same such as intermittently moving in and out of sheltered areas. The wearer further may open the slide fastener and flaps to the extent desired to reduce heat buildup thereby avoiding the necessity of having to remove the garment.

Obviously many modifications and variations of the present invention are possible in the light of the above teachings.

What is claimed is:

1. In an outer waterproof garment, a closure down the front thereof, comprising

at least one set of moisture barrier flaps and a slide fastener secured thereto and to said garment;

said flaps of different width and positioned in overlapping arrangement between the wearer and the garment with the wider flap adjacent the wearer;

said flaps each being formed of material folded so as to provide dual layers of material;

said garment folded inwardly in each side of the closure;

said garment folds cemented to said garment and said flap folds cemented to said flaps to form a plurality of waterproof barriers;

sad flaps each secured along one edge to a respective side of said slide fastener and said garment at said closure; and

a spacer member interposed between one side of said slide fastener and the unsecured edge of the narrower of said flaps,

whereby said spacer member causes the narrower of said flaps to be pressed along its entire width against the wider of said flaps and facilitates movement of said slide fastener by spacing said narrower flap therefrom.

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U.S. Cl. X.R.

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