April 27, 1943. J. F. HOLLAND ET AL 2,317,768

CONSTRICTING MEANS FOR TUBULAR GARMENTS

Filed Nov. 30, 1939

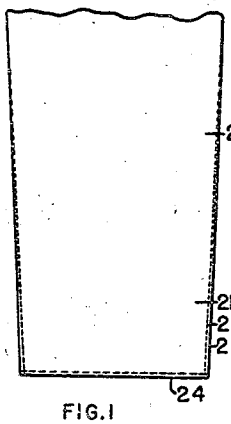


FIG. 1

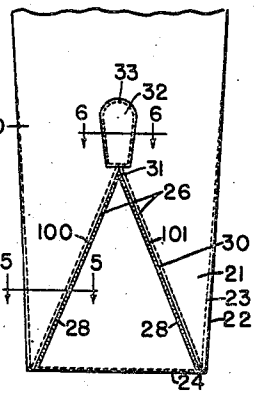


FIG. 2

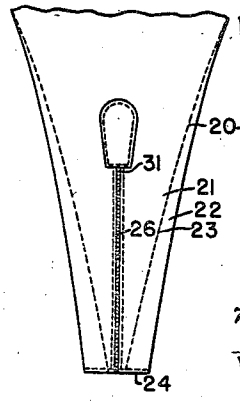


FIG. 3

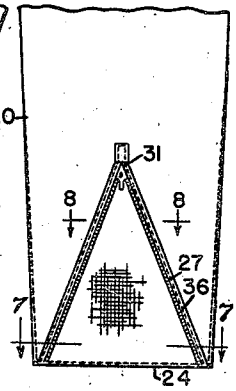


FIG. 4

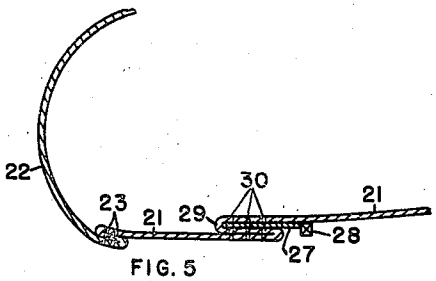


FIG. 5

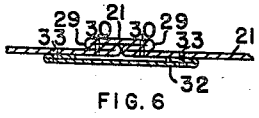


FIG. 6

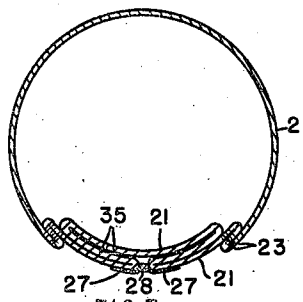


FIG. 7

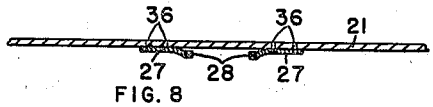


FIG. 8

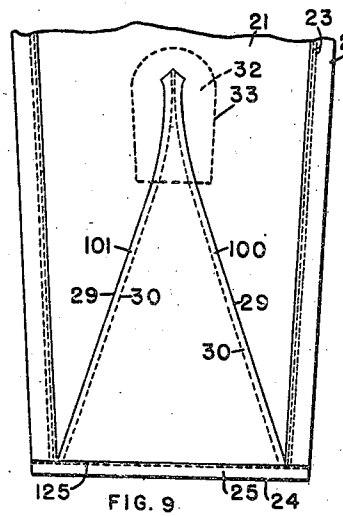


FIG. 9

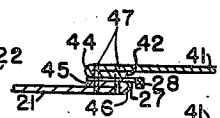


FIG. 11

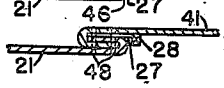


FIG. 12

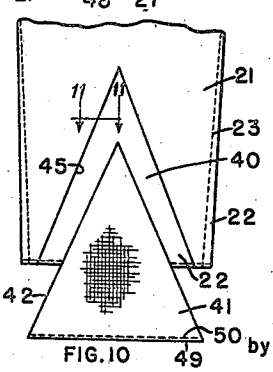


FIG. 10

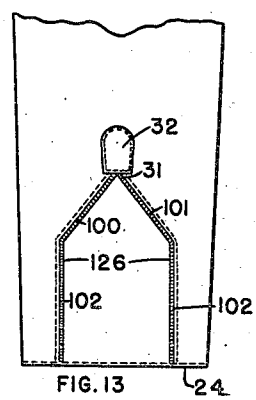


FIG. 13

INVENTORS
JAMES F. HOLLAND
JOHN W. KINNEY, JR.
by Frank Mueller
ATTORNEY

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CONSTRICTING MEANS FOR TUBULAR GARMENTS

James F. Holland, Toledo, and John W. Kinney, Jr., Cincinnati, Ohio

Application November 30, 1939, Serial No. 306,912

2 Claims. (Cl. 2—227)

This invention relates to garments and more particularly to an improvement in the method of constricting portions of tubular garments.

An object of the invention is to provide simple yet effective means for gathering the outer or free portion of a tubular garment snugly and neatly around the limb of the wearer.

A further object of the invention is to provide fastening means for gathering the end portion of a tubular garment which fastening means may be associated with the garment without necessitating cutting or mutilating of the garment.

Another object of the invention is to provide gathering means for a tubular limb covering garment which may be worn in a fully open, ungathered manner, or in a gathered condition in which the cross sectional area of the garment is progressively reduced toward the free end thereof.

Still a further object of the invention is to provide gathering means for a pant or overall leg which when in a constricted or closed condition provides a padding of material over the shin of the wearer.

These and other objects of the invention are attained by the means described herein and disclosed in the accompanying drawing, in which:

Fig. 1 is a front elevational view of a conventional continuous tubular overall leg.

Fig. 2 is a front elevational view of the overall leg of Fig. 1 embodying the present invention.

Fig. 3 is a front elevational view of the overall leg of Fig. 2 in a fully closed or constricted condition.

Fig. 4 is a front elevational view of the overall leg of Fig. 1 equipped with a modified form of constricting means.

Fig. 5 is a sectional view taken on line 5—5 of Fig. 2.

Fig. 6 is a sectional view taken on line 6—6 of Fig. 2.

Fig. 7 is a sectional view taken on line 7—7 of Fig. 4 when in a fully closed or constricted position.

Fig. 8 is a sectional view taken on line 8—8 of Fig. 4.

Fig. 9 is a front rear elevation of the inner side of Fig. 2.

Fig. 10 is a front elevation of a tubular garment embodying a modification of the present invention in the process of being fabricated.

Figs. 11 and 12 are sectional views taken on line 11—11 of Fig. 10 showing alternate methods of securing panel portions 41 and fastening means 26 to front panel 21.

Fig. 13 is a side elevational view of a so-called army trouser leg embodying the present invention.

Heretofore it has not only been the custom, but a rigidly enforced rule with railroads, utilities, construction firms, and the like, to require that the outer or free end or cuff portion of the limb covering garments worn by the workmen be securely and snugly fastened to their limbs to eliminate the chance of accidents caused by loose ends. Loose flapping cuffs are outlawed because of the likelihood of becoming caught in the machinery and the like. In the past, it has been widespread practice among the overall wearing employees to resort to ropes, rubber bands, wire clasps and such means to eliminate loose flapping cuffs and to secure the lower leg portions around their limbs.

The present invention is directed, among other things, to a method of providing a tuck in the free end of a continuous tubular limb covering garment, which tuck may be opened or closed by the wearer of the garment by manipulating a slide fastener device.

With reference to the drawing, the present invention is illustrated as applied to a tubular limb covering garment such as a trouser or overall leg indicated generally by the numeral 20. Each leg may comprise a front panel 21 and a rear panel 22, joined by a row of stitching 23, as shown. If desired, the free outer or cuff edge 24 may be suitably reinforced by an inturned bead or fold 25, Fig. 9, secured by a row of stitching 125. The front panel 21 of a standard or conventional tubular limb covering garment or leg 20, Fig. 1, is adapted to be provided with suitable fastener or closure means 26, preferably of the so-called "Zipper" type of sliding clasp fastener shown in Sunback Patent No. 1,219,881. Such a slide fastener comprises two halves or legs 100 and 101, each comprising a textile edge 27 which carries a plurality of interlocking toothed fastener units denoted generally by the numeral 28.

In the preferred embodiment of the invention, the closure means 26 is secured to the front leg panel 21 by locating textile edge 27 in fold 29 formed by turning back the material comprising the front panel, upon itself and securing it by a row or rows of stitching 30, as clearly illustrated in Fig. 5.

As shown in Figs. 2 and 9, the legs 100 and 101 comprising the slide fastener, may be secured to front panel 21 in the form of an inverted V with each leg converging upwardly from the free edge or cuff 24 adjacent stitching 23 to a common apex 31, which is preferably located at or below

the knee of the wearer. A reinforcing strip or patch 32 is secured to front panel 21 at apex 31 for the purpose of reinforcing the upper portion of the fold 29, as shown in Fig. 6. Patch 32 prevents the folds 29 from being opened up during those periods of time when a lateral strain is applied to the front panel such as is set up when the wearer bends his knee. The outer edges of patch 32 may be turned under and secured by a peripheral row of stitching 33.

It should be noted, Figs. 5 and 9, that front panel 21 is not cut or in any way mutilated in order to secure the slide fastener or closure means thereto. It should likewise be observed that the over-all width of leg 20 is not appreciably diminished or lessened by reason of securing closure means 26 thereto, whereby the diameter of the tubular leg portion, Fig. 2, will readily permit the passage of the shoe and leg of a wearer.

When in use, the garment may be worn with the closure means fully opened, Fig. 2, in which event the tubular leg portion is substantially uniform in diameter throughout and functions like and has the general appearance of a standard pant or overall leg. However, if desired the garment may be worn with the fastener or closure means closed in which event the lower portion of the leg is adapted to be neatly and securely gathered or contracted, as shown in Fig. 3. It should be noted that the diameter of the tubular leg portion is progressively reduced from a minimum at apex 31 to a maximum at free edge 24 when the legs of the closure or fastening means are interlocked as in Fig. 3.

With reference to Fig. 7, it is seen that the material disposed within the converging fastener legs 100 and 101 is neatly tucked in, as at 35 on the inner side of the restricted tubular leg portion and that there are no overhanging portions extending beyond the outer perimeter thereof. This tuck of material provides a padding over the shin of the wearer. Such padding is highly desirable in those instances where the constricted leg bottom is laced in the inside of boots, since it effectively eliminates any discomfort which may otherwise exist by reason of the closure means contacting the shins of the wearer. In those instances where boots are not worn, the gathered or constricted leg bottom, may be brought down over the shoe top of the wearer to prevent foreign material from entering the shoe via the shoe top.

The effect of closing the fastener means 26 results in progressively drawing the back panel 22 around the leg of the wearer, as disclosed in Fig. 3, wherein the adjacent edges of the back panel are almost in physical contact at the open end 24. It should be observed that there are no loose ends hanging or projecting from the outer perimeter of the constricted leg portion, and that the closure means is likewise disposed flat in the plane of said perimeter whereby no part of the garment can catch on objects or machinery.

A modified method of securing the clasp fasteners to the front panel portion 21 is disclosed in Figs. 4, 7, and 8, in which the textile edge 27 of each closure member leg is secured directly to the outer surface of front panel 21 by means of a row of stitching 36.

A second method of securing the closure means to the front panel is disclosed in Figs. 10, 11 and 12, in which an inverted V-shaped central opening 40 is provided in front panel 21. A separate V-shaped panel piece 41, somewhat larger than opening 40, is adapted to be secured to front panel 21 to provide a continuous leg portion. The raw or outer edge 42, of panel piece 41, is turned under to provide fold 44, and raw edge 45 of central opening 40 is turned back to provide fold 46. The textile edge 27 of the fastening means 26 may be secured between folds 44 and 46 by means of one or more rows of stitching 47, as shown in Fig. 11.

If desired, the inturned raw edges 42 and 45 of panel piece 41 and front panel 21 respectively, may be interlocked, as illustrated in Fig. 12, with the textile edge 27 of the closure means secured between the outer face of panel piece 41 and the inturned edge of front panel 21 by means of stitching 48, as shown. The lower edge 49 of panel piece 41 may be turned back and secured by stitching 50, as shown.

In those instances where it is desirable to progressively constrict the tubular leg portion of a garment, and then uniformly restrict the tubular portion for an additional distance, as for example in knee breeches, army trousers and the like, the structure shown in Fig. 13 may be used.

As illustrated, closure means 126 may be secured to the front, or side portions of the leg with the two halves 100 and 101 diverging outwardly from apex 31 and then extending downwardly at substantial right angles to free edge 24. The closure structure may be secured to the leg by any of the methods hereinabove disclosed.

The trousers so equipped may be worn with the closure means 126 open (Fig. 13) or closed. When closed, the vertical portion 102 of the closure member halves 100 and 101 provides a tubular, uniform leg engaging member adapted to neatly hug the leg of the wearer. Trousers of the type shown are ideally adapted for use with leggings and the like.

From the foregoing, it is apparent that this invention provides in a continuous tubular garment gathering means which may be worn open or closed, and which when closed will neatly and snugly hug the limb of the wearer without any part of the garment or the fastening means extending, protruding, or being disposed outwardly of the smooth outer perimeter of the gathered or constricted portion. The invention not only eliminates the presence of any and all loose ends which could catch in or on machinery and the like, but it also provides a pad or cushion member over the shin of the wearer.

By reason of the fact that a continuous trouser leg is provided there is no opening presented into or through which foreign material such as dirt, water, seeds and the like, may enter into the interior of the tubular leg portion. This feature is of particular importance to farmers, soliders, utility workmen, railroad men and all those whose jobs involve contact with dust, water, and the like.

In the preferred embodiment of the invention, the closure means is disposed in the front panel of a pant leg in order to facilitate ease and convenience of operation, and in order to locate the material disposed between the convergent closure member legs, when said members are closed, over the shin of the wearer.

While the invention disclosed herein is shown embodied in the leg of a pair of pants or overalls, the present invention is not limited to application to the leg portion of garments but may be applied to sleeves of shirts, raincoats and the like. It is particularly adapted for applica-

tion to army trousers, skiing pants and the like where it is desirable to wear the garments in a closed, gathered manner for action and in an open manner for dress.

It should be understood that certain modifications and changes may be made in the structural details, within the scope of the appended claims, without departing from the spirit of the invention.

What is claimed is:

1. In a garment, a contractable tubular portion for covering an extremity of the human body, said tubular portion in its normal uncontracted form having a full tubular and substantially uniformly wide free end, two lines of fold formed in the tubular portion, each consisting of reverse folds in the material of the garment spaced along the major portion of their length but convergent throughout at least a portion of the length of the tubular portion, with the point of convergency located at a distance from the tubular free end, a pair of slide fastener tapes carrying cooperative hooks and a slide to engage and disengage the hooks, for contracting the tubular portion to snugly embrace the human extremity, means fixing the tapes between adjacent laps of the reverse folds, leaving intact the continuity of the garment material at both sides of each line of fold, with an area of continuous material spanning said fold lines and fastener tapes.

2. In a garment, a contractable tubular portion for covering an extremity of the human body, said tubular portion in its normal uncontracted form having a full tubular and substantially uniformly wide free end, two lines of fold formed in the material of the garment in the tubular portion, each consisting of reverse folds in the material spaced along the major portion of their length but convergent throughout at least a portion of the length of the tubular portion, with the point of convergency located at a distance from the tubular free end, a pair of slide fastener tapes carrying cooperative hooks along longitudinal edges thereof and a slide to engage and disengage the hooks, for contracting the tubular portion to snugly embrace the human extremity, means fixing the tapes between adjacent laps of the reverse folds with disposition of the slide fastener hooks to opposing relationship in the normal uncontracted condition of the tubular portion, leaving intact the continuity of the garment material at both sides of each line of fold, with an area of continuous uncut material integral with and spanning said fold lines and underlying the fastening tape hooks.

JAMES F. HOLLAND.
JOHN W. KINNEY, JR.