United States Patent

Hudson

[15] **3,703,008**

[45] **Nov. 21, 1972**

[54] WAISTBAND CONSTRUCTION

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[52] **U.S. Cl.** **2/237**

[51] **Int. Cl.** **A41d 1/06**

[58] **Field of Search**....2/237, 221, 76, 236, 220, 311, 2/335; 139/421

[56] **References Cited**

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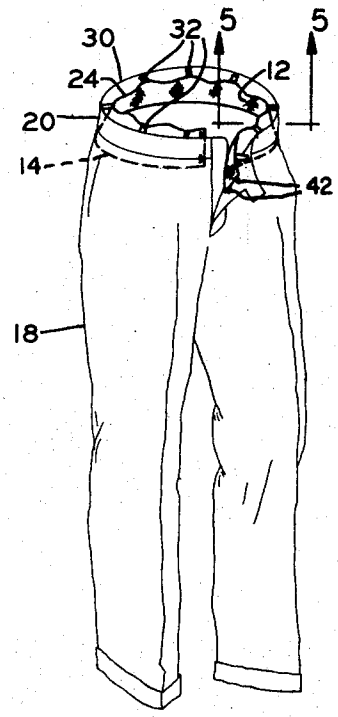
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Primary Examiner—H. Hampton Hunter
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[57] **ABSTRACT**

A frusto-conically shaped panel of elastomeric two-way stretch material is secured at the lower edge within the interior of a pair of trousers along the waistline and the upper edge of the band is supported by collapsible panels. When the trousers are worn, the waistband is stretched to conform with the waistline of the wearer, and the stretched waistband provides a reinforcement to the upper edge of the trousers, preventing them from turning over or deforming under use.

9 Claims, 10 Drawing Figures



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SHEET 1 OF 2

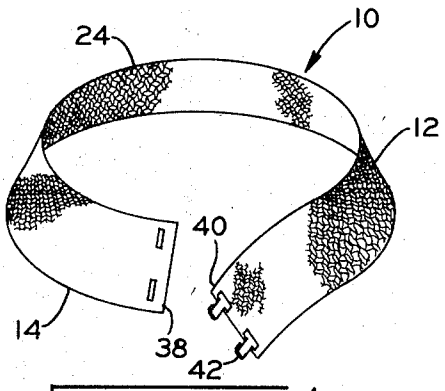


FIG. 1

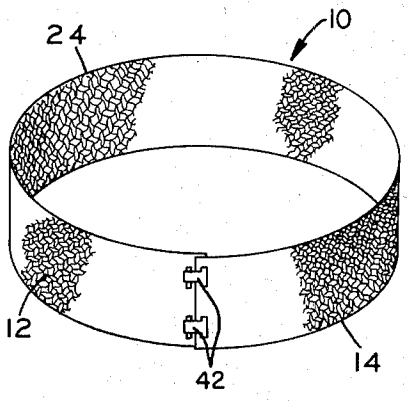


FIG. 2

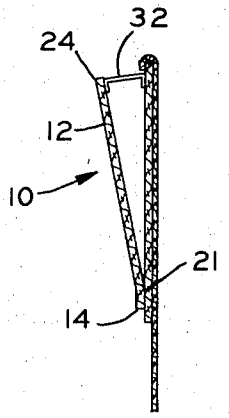


FIG. 5

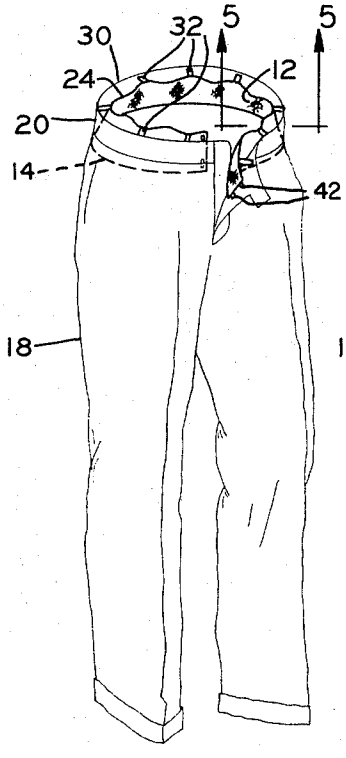


FIG. 3

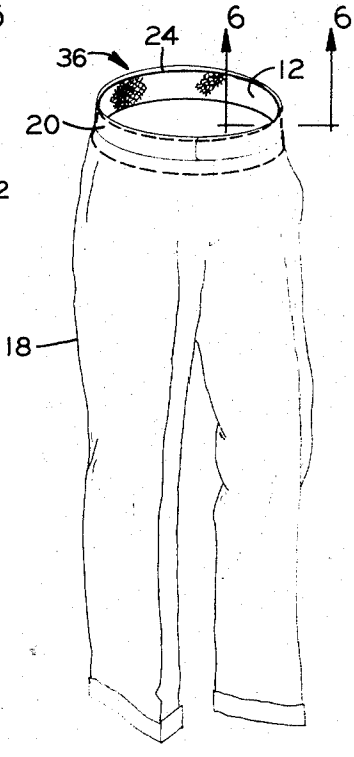


FIG. 4

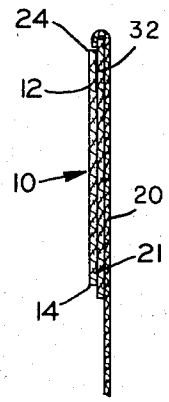


FIG. 6

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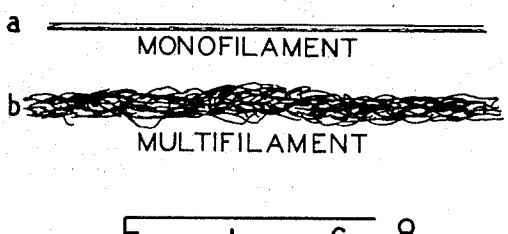


FIG 8

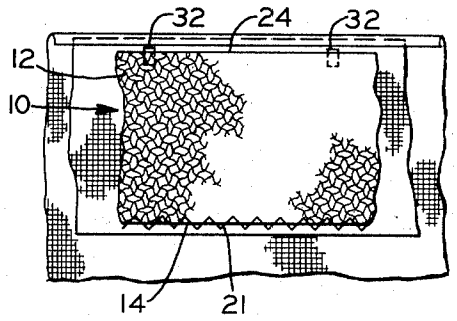


FIG 7

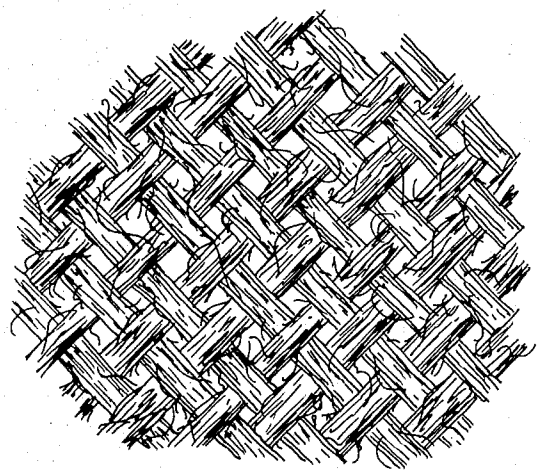


FIG 10

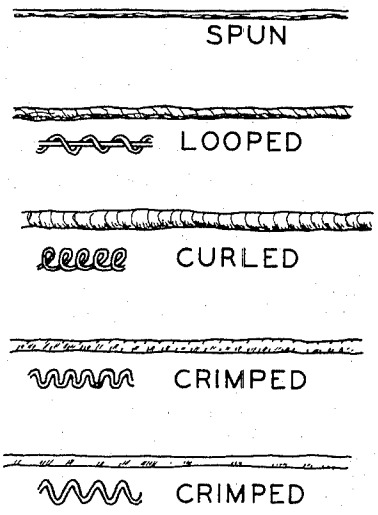


FIG 9

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WAISTBAND CONSTRUCTION

BACKGROUND OF THE INVENTION

In many trousers, there is a tendency for the upper edge of the trousers to become rolled over while being worn. This produces an unsightly appearance and unfortunately the fabric at this portion of the trousers is stretched in such a way that these deformations of the fabric are a frequent occurrence and in time become permanent. It is difficult to tailor a pair of trousers so that it will retain its original shape and configuration without taking on this unsightly and objectionable appearance. The trousers, in order to retain their original well-tailored appearance, should continuously present a belt line in which the upper waistline portion of the trousers fits snugly and flatly against the waistline of the wearer without the upper edge becoming curled over at the belt.

Numerous reinforcements have been proposed by tailors of men's and women's clothing and some of these proposals are adequate up to a point. One of the great shortcomings of these reinforcements is that for maximum effectiveness, they must vary in configuration with individual use; the band must be made either narrow or broad according to the dimensions of the user, and also, even these correctives tend to become less effective with wear.

In order to be a practical solution, the fabric which provides the reinforcement must be durable and comfortable. Moreover, any reinforcement material must be installed in such manner that it will not interfere with normal wearing, cleaning, altering, etc., and will produce a more attractive appearing garment throughout the wear life of the garment.

OBJECTS OF THE INVENTION

An object of the present invention is to provide a stretchable waistband which can be easily installed at the interior of a pair of men's or women's wearing apparel at the waist section in order to reinforce such waist section against distortion during wear.

Another object of the present invention is to provide a new and improved reinforcement which is comprised of two-way stretch material which resiliently reinforces the waist section of a pair of men's or women's wearing apparel and will prevent distortions of the apparel fabric during normal wear.

Another object is to provide a new and improved fabric reinforcement which is attached at the waistline section of a pair of men's or women's wearing apparel and will prevent a curling over of the outer edge of the apparel during use.

Other objects and features of the present invention will become apparent from a consideration of the following description which proceeds with reference to the accompanying drawings.

DRAWINGS

FIG. 1 is an isometric detail view of the waistband reinforcement shown detached from the trousers and in a relaxed condition;

FIG. 2 illustrates the same waistband section as FIG. 1 but in a stretched condition while the apparel is worn;

FIG. 3 illustrates the waistband as it is installed on a pair of men's wearing apparel, in this case a pair of trousers;

FIG. 4 illustrates the same trousers as indicated in FIG. 3 but showing the waistband expanded as it would be under normal use;

FIG. 5 is a sectional detail view taken on line 5—5 of FIG. 3 with the waistband relaxed;

FIG. 6 is a section view taken of the same portion as indicated in FIG. 5 but with the waistband stretched as shown in FIG. 4;

FIG. 7 is an enlarged detail view of the part of the waistband panel;

FIG. 8 is a view of a strand of multifilament yarn;

FIG. 9 is a composite view of various relaxed yarns in spun, looped, curled and crimped form from which the waistband is constructed; and

FIG. 10 is an enlargement of the weave formed with the yarn or filaments of FIG. 8.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIG. 1, a frusto-conically shaped band designated generally by the reference numeral **10** is constructed of a two-way stretch material **12** providing both circumferential and radial expansion of the fabric, and enabling the band to be reshaped from configuration illustrated in FIG. 1 to that indicated in FIG. 2. Band **10** has a lower edge **14** which is continuously seamed to a pair of trousers **18** at the waist section **20** and is located at the inner portion of the trousers. The inner seam **21** joins edge **14** of the waistband **10** to the apparel by means of appropriately stretched elastic thread or the like. When the trouser apparel is unworn, the upper edge **24** of the band projects slightly inwardly from the open end **30** of the pair of trousers **18**. The upper edge **24** of the band (FIG. 5) is secured at circumferentially spaced points to the upper edge **30** of trousers by means of collapsible panels **32** which are suitably stitched to the waistband **10** and trousers **30**. The panels **32** are collapsible as indicated from comparing FIGS. 5 and 6 so that the waistband is expanded outwardly and upwardly to come into full facial contact with the confronting surface of the trousers along the inner surface thereof. When the waistband is stretched outwardly and upwardly, it will bias upwardly the cylindrical surface of the trousers around the beltline (or waistline) and reinforce it against wrinkling or distorting during wear. The fact that the upper edge **24** of the band is free to expand and by a greater circumferential amount than is the lower edge, tends to impose a lifting action on the trousers, so that they are drawn upwardly by the reinforcement band which is provided at the upper section of trouser, and such upper trouser section is simultaneously maintained smooth and without wrinkle. The upper edge **30** of the trousers is prevented from rolling back because of the combination of stretching and reinforcing which occurs at the upper region of the trousers indicated generally by reference numeral **36**.

The panel sections **32** which hold the upper edge of the reinforcement waistband, do not interfere with the outer expansion of the waistband, nor do the panels **32** themselves contribute to bunching, wrinkling or other distortion at the under surface of the belt region of the trouser waist.

Because the waistband **10** is constructed of two-way stretch material wherein the warp and woof fibers (FIG. 10) are permitted to move freely, there is an expansion of the waistband, both circumferentially and

laterally. The resultant stressing will maintain the upper region of the trousers in a wrinkle-free and attractive condition. Also, once the reinforcement is installed, it is permanent, and can be laundered or cleaned in the usual manner without any special handling requirements.

It is easy to install the reinforcement both in men's and women's wearing apparel and the same improved results will be attained. It is also contemplated that this addition can be made to children's wear as well, and such additions are well within the scope of the present invention.

I have further found that is is possible to reverse the configuration shown in FIG. 1 in which the larger diameter end of the waistband is secured at the upper edge of the trousers and the lower edge secured by panels to the interior surface of the trousers; but, such arrangement is not as desirable in that the hugging action given the waist and hip sections is not as effective nor the lifting action imparted to the apparel in the manner described previously for FIGS. 1 and 2.

The two-way stretch material comprising the waistband is made up of any elastomeric material wherein the cords or fibers are woven in a warp and woof pattern which permit a differential circumferential expansion from top to bottom edges, whereby the combination of hugging, stretching and drawing forces cause the waistband to draw firmly but comfortably against the hip and waist of the wearer to provide the necessary reinforcement to the trousers, and without causing a wrinkling or distorting thereof.

Typical materials of construction of the yarn or cords are nylon, terylene and the like. The multifilament cords or yarns (FIG. 8) are spun, looped, curled or crimped (FIG. 9) and the textralizing is as shown in U.S. Pat. Nos. 2,575,781; 2,575,837; 2,575,838; or 2,575,839. The weave (FIG. 10) is a 45° angle bias angle weave and the two-way stretching is achieved by the elongation and attenuation under stress. The fabric has near complete recovery however throughout its wear life. The band gives snug, yet comfortable fit, and also contributes greatly to well tailored appearance and trimness desired.

The open ends 38, 40 have clasps or coacting fasteners 42 which are hooked together as shown in FIGS. 1, 2 when the waistband is worn. The fasteners are on the outside of the waistband so as not to cause discomfort to the wearer.

Although the present invention has been illustrated and described in connection with a selected example embodiment, it will be understood that this is illustrative of the invention and is by no means restrictive thereof. It is reasonably to be expected that those skilled in this art can make numerous revisions and adaptations of the invention, and it is intended that such revisions and adaptations will be included within the scope of the following claims as equivalents of the invention.

What I claim is:

1. A stretchable waistband for wearing apparel comprising an annular elastomeric two-way stretchable fabric band of frustoconical configuration, means forming a substantially continuous seam for securing said band along its larger diameter lower edge to the inner surface of the waistline of the apparel, a plurality of spaced apart fabric panels connecting the upper edge of said waistband to the upper edge of said apparel waistline, said panels being foldable to an inconspicuous position between the waistband and apparel waistline, said waistband being stretchable to conform with the waistline of the wearer to provide a smooth reinforcement for the confronting surface of the apparel around the beltline region of the apparel.

2. A stretchable reinforcement waistband in accordance with claim 1 wherein the material comprising said waistband consists of a plurality of interwoven stretchable yarns providing differential expansion of said waistband from edge to edge.

3. A stretchable waistband for wearing apparel in accordance with claim 1, wherein said stretchable waistband is expanded circumferentially at the upper edge of the waistband whereby the entire band is stretched from a frustoconical shape to a substantially cylindrical shape conforming in configuration with the contiguous opposed waist of the wearer.

4. A stretchable waistband for wearing apparel in accordance with claim 1 which is relatively smooth and having the larger diameter lower edge continuously seamed to the wearing apparel and stretchable within the elastic limit of the waistband.

5. A stretchable waistband in accordance with claim 1 comprised of textured yarn having a relatively open weave providing attenuation and relaxation of the yarns.

6. A stretchable waistband in accordance with claim 1 wherein the band is comprised of yarns consisting of nylon, terylene and the like.

7. A stretchable waistband in accordance with claim 1 wherein the yarns are looped, curled or crimped to permit elongation and relaxation and thereby effecting a two-way stretchable characteristic of said band.

8. A stretchable waistband in accordance with claim 1 including means for securing and unsecuring the free ends thereof when the apparel is worn.

9. A stretchable waistband in accordance with claim 1 wherein the yarn is textured to impart the elastomeric two-way stretchable properties thereof.

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