TROUSERS AND PROCESS FOR IMPROVING SHAPE RETENTION DURING CLEANING

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8 Claims

ABSTRACT OF THE DISCLOSURE

A garment having a crease formed therein and having improved shape and crease-retention properties, the interior of said garment containing fastening means for maintaining the garment substantially in a crease favoring configuration during cleaning operations.

BACKGROUND OF THE INVENTION

This invention relates to garments having improved shape and crease-retention properties, and more particularly, to trousers containing internal means for fastening together the inside side seam areas of the trousers.

Garments containing creases which are durable to home laundering and dry cleaning operations are well-known to the art. Garments prepared from cellulosic fiber-containing fabrics recently have found wide acceptance in the textile industry. Cellulosic garments of the aforementioned types and the methods for their preparation are discussed in U.S. Patent No. 2,974,852. Satisfactory processes for the preparation of durable creases in wool fabrics which will withstand home laundering operations have also been described, for example, in copending application Ser. No. 508,823.

Although attempts to prepare trousers having creases and durable to home laundering and dry cleaning operations have been somewhat successful, especially where the fabrics are chemically treated prior to or during the setting process, it has been observed that on repeated washings, there is a tendency to lose the sharpness of the crease and the desirable flat dry properties. The latter problem is evidenced by an increased amount of seam puckering and the tendency of the legs of the trousers to lose its flat, creased appearance and become rounded. These problems are especially observed when lighter fabrics are utilized in the preparation of the garments.

Such loss of crease and shape may be due to the agitation and tumbling action to which the garments are subjected during the cleaning operations. For example, it has been observed that the waist and hip portion of trousers are forced open and undergo considerable flapping and twisting during this treatment.

SUMMARY OF THE INVENTION

It has now been discovered that the shape and crease-retention properties of garments, particularly trousers, can be improved by providing garments having internal fastening means for maintaining the garments substantially in a crease-favoring configuration during cleaning operations. In particular, improved trouser construction is obtained by providing internal means for fastening together the inside side seam areas of the hip or waist portion, or the inseam and outseam of the leg portion of the trousers during cleaning operations.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a view of a pair of trousers having improved shape and crease-retention properties in accordance with this invention.

FIGURE 2 is a view of a pair of trousers maintained substantially in a crease-favoring configuration by a pair of snaps attached to opposite inside side seams of the waist, hip and leg portions of the trousers.

FIGURE 3 is a view of the trousers of this invention unzipped and with the waist and hip portion spread out showing the pair of aligned snaps used to maintain the crease-favoring configuration during the cleaning operation.

FIGURE 4 is a view of a pair of trousers which have been washed and tumble dried but not maintained substantially in a crease-favoring configuration during the washing and drying operation.

FIGURE 5 is a view of the trousers of this invention showing a pair of aligned ties 15 fastened to opposite seams 14 of the hip portion and tied together to maintain the crease-favoring configuration during the cleaning operation.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The garments of interest in this invention are those having a particular shape and/or creases. Such garments can include jackets, shirts and trousers. The invention is drawn particularly to trousers as shown in FIGURES 1–3 since these garments are formed with longitudinally extending front and rear creases 16 on the leg portions, and it is desirable to maintain these creases during the life of the garment. The crease-favoring configuration is that configuration which is normally obtained when the front and rear creases are extended through the hip and waist portion of the trousers as shown in FIGURE 2.

Such garments are now prepared commercially from virtually all types of fabrics ranging from fabrics containing 100% natural fibers such as cotton or wool to fabrics composed exclusively of synthetic fibers such as polyessters and polynamides. Blends of these fibers have been particularly valuable for preparing garments having durable creases. Further examples of natural fibers include flax, ramie, alpaca, vicuna, mohair, cashmere, guanaco, camel hair, llama, fur, suede and silk. Synthetic fibers include polynamides, such as polyhexamethylene adipamide; polyessters such as polyethylene terephthalate; acrylic fibers such as polyacrylonitrile, homopolymers or copolymers of acrylonitrile, such as acrylonitrile/methyl acrylate (85:15); and cellulosic derivatives such as cellulose acetate and viscose rayon.

Examples of fabrics wherein synthetic fibers are blended with natural fibers include wool/nylon (85:15); Acrylic/wool (55:45); Orlon/wool (65:35); Dacron/wool (55:45); wool/nylon (65:35); and wool/nylon/nylon (65:25:10).

Garments prepared from laminated fabrics are also improved by this invention. This laminated fabrics can be composed of two or more layers of fabric or an outer layer of fabric and an inner layer of a foam such as...
urethane foam. Such laminated fabrics are well-known in the art. Bonding of the layers is accomplished either by an adhesive or by the flame technique when a layer of foam is utilized. The outer layer is generally a woven or knitted fabric comprised of natural fibers, synthetic fibers or blends thereof. Examples of such fibers and fabrics have been listed previously. The inner or backing layer of the laminated fabric is preferably a knitted fabric obtained from either spun or continuous filament yarns. Particularly useful and popular knitted fabrics include those prepared from such fibers as cotton, nylon, poly- 
ester, cellulose acetate, rayon and viscose rayon. Knitted tricot fabrics such as acetate and nylon tricot have achieved wide popularity.

Garments prepared from these fabrics are provided with internal fastening means for maintaining the garment substantially in a crease-favoring configuration during cleaning operation. The nature and location of the fastening means within the garment is not critical so long as the garment is maintained in the desired configuration. It is preferred, however, that the fastening means be located on the inside side seam areas so that the side seams of trousers may be fastened together during cleaning thereby reducing the tendency of the leg portion of the trousers to round out. The fastening means may be attached along the seams of the leg, hip or waist portion of the trousers. The shape and crease retention properties of trousers are particularly improved when the fastening means and the composition thereof is not critical so long as the garment remains fastened during the cleaning operations and the fastening means are not offensive to the wearer of the garment. Particularly improved results have been obtained when the fastening means comprise a pair of snaps which is attached to the inside side seam area of the hip portion of the trouser, a few inches above the crotch area of the trouser as shown in FIGURE 3. It also will be appreciated that these desirable results can be obtained when opposite sides of crease-containing trousers are fastened together with a pin or a pair of cloth ties as shown in FIGURE 5 prior to subjecting the trousers to a cleaning operation such as is obtained in a washing machine or a dry cleaning machine.

The improvements obtained by this invention are particularly evident when durable press and washable trousers are fastened with the fastening means described above. Processes for obtaining such press-free garments are known in the art, as for example, in U.S. Patents 3,268,915, 3,096,524 and 2,974,432. Copending application Ser. No. 508,823 discloses a method for providing keratinous fiber-containing fabrics and garments prepared therefrom having creases which are durable to home laundering operations.

The shape and crease-resistant properties of the garments prepared in accordance with the processes described in the above patents and patent application as well as other available crease-containing garments can be improved by the present invention by incorporating into the garments fastening means to maintain the garment substantially in a crease-favoring configuration during laundering operations. The presently available permanently creased garments have a tendency to lose their original shape during laundering operations and in some instances, the crease-retention properties are substantially diminished after repeated washings. FIGURE 4 illustrates the affect of repeated washings on a creased trouser. The sharpness of the crease 20 in the leg portion of the trouser is drastically reduced and the leg portion is rounded out. FIGURES 1-3 illustrate an embodiment of the invention and the improved results obtained. In this embodiment of a pair of snaps 12 is attached to the inside side seams of the hip portion of the trouser. FIGURE 1 illustrates the trousers in the unfastened position with aligned pairs of snaps 11 and 11' and also represents the trousers of this invention after several cleaning operations. The crease 16 and appearance of the trousers are substantially unchanged by the laundering operations. FIGURE 2 is a view of the trousers of this invention with the snaps closed and in a crease-favoring configuration. The trousers are maintained in this configuration by closing the snaps prior to placing the trousers in the cleaning apparatus, and the snap is maintained in the fastened position until the trousers have been cleaned and dried.

FIGURE 3 is a view of a pair of trousers with the waist and hip portion of the trousers opened to reveal the position of the pair of snaps 12 attached to the inside side seam 14 of the hip portion of the trouser.

As mentioned previously, the shape and crease-retention properties of trousers are improved when the interior of the trousers contains fastening means such as snaps for maintaining the garment in a crease-favoring configuration during cleaning. The improvement is demonstrated by comparing the performance of two pairs of commercially available, washable, durable press, crease-containing trousers prepared from a chemically treated laminated fabric comprising an outer layer of wool and an inner layer of nylon tricot, bonded together with an acrylic adhesive. The two trousers differ only in that a pair of snaps is attached to the inside side seam areas of one pair of trousers. Both trousers are subjected to five washing cycles in an agitator type washing machine employing commercially available detergents and tumble drying cycles after each wash cycle. At the end of this test, the trousers of this invention (containing snaps) was observed to have a sharper crease and improved crease-containing properties. That is, the legs of the trousers which did not have the snaps were rounded, and at least one new crease was observed in the seam area of the legs.

That which is claimed is:

1. An improved trouser construction having durable crease retention properties comprising: a waist, hip and leg portions and containing cooperating means in the interior of the trousers for fastening together opposite inside side seam areas of the trouser said fastening means comprising at least one pair of separate fasteners aligned on opposite inside surfaces of the seams of the legs of the trousers.

2. The trouser construction of claim 1 wherein the fastening means comprise a plurality of pairs of snap fasteners, said fasteners being further positioned along the opposite inside side seams of the hip portion of the trouser.

3. The trouser construction of claim 1 wherein the fastening means comprise a plurality of pairs of cloth ties, said ties being further positioned along opposite inside side seams of the hip portion of the trouser.

4. A process for improving the crease retention of durable crease-containing washable trousers when subjected to cleaning operations which comprises
(a) fastening together the sides of the trousers along the inside side seams substantially in a crease-favoring configuration prior to cleaning,
(b) subjecting said trousers to a cleaning operation, and
(c) unfastening the trousers after completion of the cleaning operation.
5. The process of claim 4 wherein the opposite inside side seam areas of the hip portion of the trousers are fastened together.

6. The process of claim 4 wherein opposite inside side seam areas of the waist portion of the trousers are fastened together.

7. The process of claim 4 wherein opposite inside side seams of the leg portions of the trousers are fastened together.

8. The process of claim 4 wherein the fastening is accomplished with a pair of snap fasteners aligned on the opposite inside side seams of the hip portion of the trousers.
CERTIFICATE OF CORRECTION

Patent No. 3,466,666 Dated September 16, 1969

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It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 2, line 62, delete "This" and substitute therefor --The--.
Column 3, line 18, "operation" should be --operations--; line 32, "operation" should be --operations--; line 36, "unheatable" should be --unheated--; line 69, "resistant" should be --retention--.
Column 4, line 30, "caintains" should be --contains--.

SIGNED AND SEALED
JAN 27, 1970

(SEAL)
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