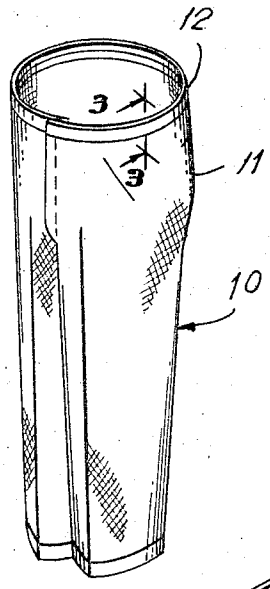
Feb. 18, 1969 B. NAVASKY 3,427,661

WAISTBAND CONSTRUCTION AND CURTAIN THEREFOR

Filed June 28, 1966

FIG. 1



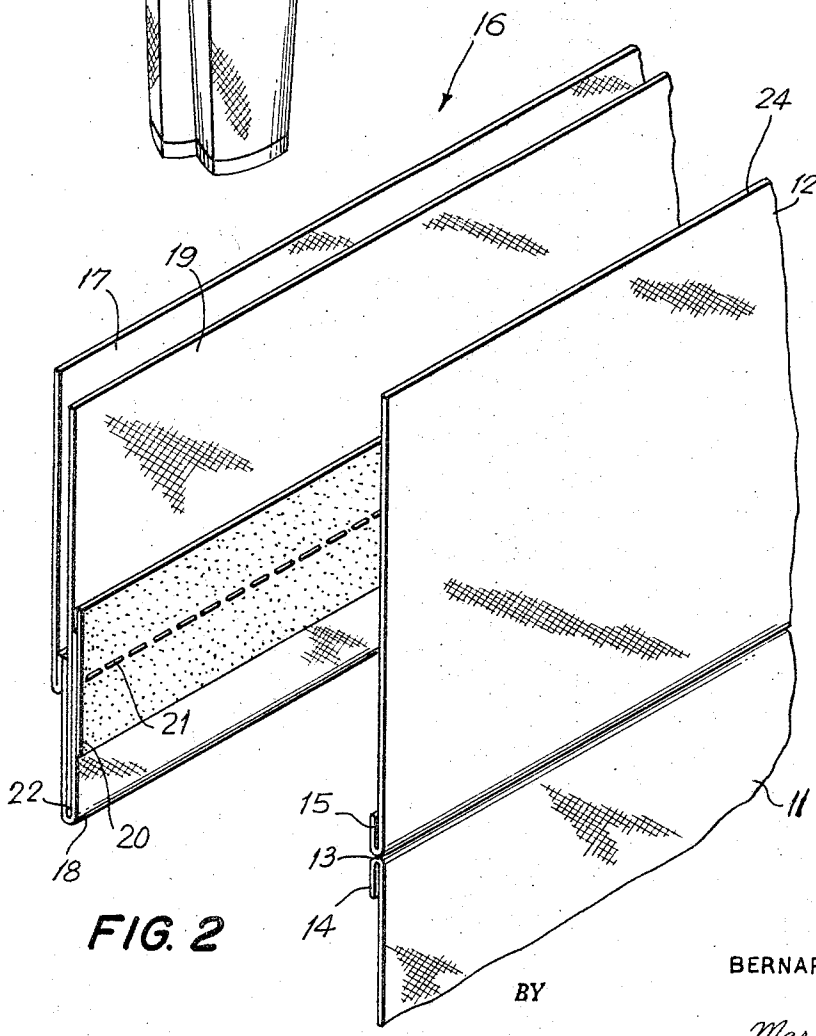
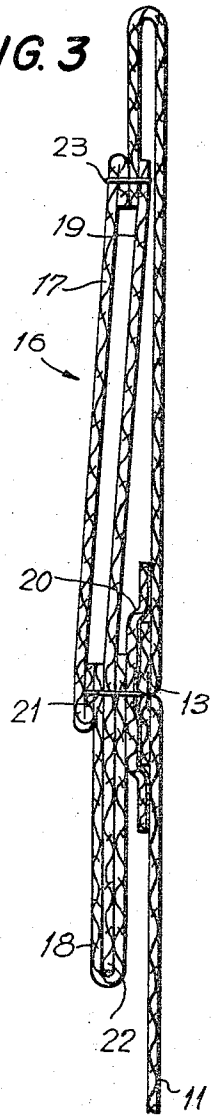


FIG. 2

FIG. 3



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WAISTBAND CONSTRUCTION AND CURTAIN THEREFOR

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ABSTRACT OF THE DISCLOSURE

An improved waistband construction and curtain for forming the same including liner material, stiffener and attachment strip or band surface coated on the garment adjacent surface with a heat activated adhesive composition.

This invention relates to a garment structure, and more particularly to a waistband construction for use in trousers, slacks, skirts or like garments.

This invention relates further to a curtain structure for incorporation within trousers or like garments having waistband portions.

Still core particularly, this invention relates to a waistband or curtain construction for trousers or the like which may readily be assembled within the trousers, which will provide an improved trouser construction and in which the operation of securing the waistband to the garment is greatly simplified.

Heretofore, the formation of the waistband of a pair of trousers has involved a series of time consuming operations. Many of the steps involved are not susceptible of automatic or semi-automatic operations and, thus, the labor costs which inhere in the fabrication of the waistband area of the garment add greatly to the cost thereof.

In the typical trouser garment, the uppermost edge of the base fabric, i.e. the fabric forming the main body of the garment, is stitched to a circumferentially extending strip of fabric, often referred to as the outer waistband. The lower edge of the outer waistband is secured to the upper edge of the base fabric. A so-called curtain, constituting a preassembled series of fabric layers is thereupon secured to the outer waistband and to the base fabric. The operation of securing the curtain involves a series of stitching steps which are tedious and time consuming and which, if not properly carried out, will detract from the over-all appearance of the garment.

Specifically, and in accordance with known practice, the upper edge of the outer waistband is inwardly folded and secured to the upper edge of the curtain, which typically includes a stiffener element such as buckram, as well as inner finishing material, by passing a row of stitching through the curtain, the upper edge of the waistband being sandwiched between the buckram and the upper edge of the curtain. Thereupon, the curtain is inwardly folded so as to lie adjacent the inner face of the outer waistband, with lower edges of the curtain outwardly lapping the junction of the outer waistband and base fabric. The curtain is thereupon basted to the outer waistband, to secure the same in position. Thereafter, a felling or blind stitching operation must be carried out, generally adjacent a lower portion of the curtain, uniting the same with the base fabric.

As is well known in the art, the felling or blind stitching operation must be carried out with extreme care so as to avoid exposing the stitches on the outside of the base fabric. Also, great care must be taken to assure that the multiple layers of the curtain and the base fabric and waistband are perfectly flat during the felling operation,

or else unsightly puckers, wrinkles or the like will result. Further, since the felling operation requires that the base fabric be only partially penetrated so as to avoid exposure of the thread, the anchorage is inherently weak and liable to pull loose after use for a period of time.

After the blind stitching operation is completed, the basting is removed and the garment pressed.

The present invention relates to an improved trouser construction which is highly stable and provides improved appearance as contrasted with trousers fabricated by the methods above noted.

The invention further relates to a curtain sub-assembly for use in trousers, skirts or other waistband incorporating garments, which may be permanently secured to the garment without requiring the operations of basting, felling and removal of the basting stitches.

Accordingly, it is an object of the invention to provide an improved garment waistband construction.

A further object of the invention is the provision of a waistband curtain for attachment to a garment wherein the integrating of the curtain into the garment obviates the necessity for felling and basting.

A still further object of the invention is the provision of a garment having a waistband of improved appearance, less susceptible to puckering, wrinkling and the like.

To attain these objects and such further objects as may appear herein or be hereinafter pointed out, reference is made to the accompanying drawings, forming a part hereof, in which:

FIGURE 1 is a perspective view of a pair of trousers embodying the waistband structure in accordance with the invention;

FIGURE 2 is an exploded, perspective, pre-assembly view of a curtain and waistband area of the trousers shown in FIGURE 1;

FIGURE 3 is a magnified, vertical section taken on the line 3—3 of FIGURE 1.

In accordance with the invention, there is shown a garment **10**, in this instance a pair of trousers (the invention obviously being susceptible of use on other waistband incorporating garments). The trousers include a base fabric portion **11** and an outer waistband **12**. As best seen from FIGURES 2 and 3, the outer waistband **12** is secured to the base fabric **11** by a line of stitching **13**, the upper marginal edge **14** of the base fabric and the lower marginal edge **15** of the outer waistband being inwardly turned and lying adjacent the base fabric and waistband, respectively.

The curtain structure **16** is supplied in bulk by the manufacturer and typically is cut to appropriate length by the garment maker. The curtain includes a liner strip member which may constitute a single piece of fabric but which more commonly incorporates an upper liner portion **17** and a lower liner portion **18**. A piece of open weave stiffener fabric **19**, such as buckram, is united to the liner portions and to an attachment strip **20** by a line of stitching **21**.

As best seen in FIGURES 2 and 3, and in accordance with the preferred construction, the line of stitching **21** penetrates the upper liner **17** adjacent its uppermost edge, the upper liner being thereafter folded inwardly over the inner face of the stitching to conceal the same.

In a similar fashion, the lower liner **18** extends downwardly over the lowermost edge **22** of the buckram stiffener **19**, the lower liner thereupon extending upwardly to sandwich the buckram between the two layers of said liner, so that the stitching **21** extends through a single layer of the outer liner **17**, a layer of the lower liner **18**, the buckram **19**, a second layer of the lower liner **18** and

the attachment strip **20**. The attachment strip **20** preferably constitutes an open weave fabric which may be either bias cut or cross cut, to provide some degree of stretchability along the longitudinal axis of the strip.

The outer or trouser-adjacent surface of the attachment strip **20** is coated with or carries a heat fusible adhesive material capable of forming a bond under the appliration of heat and pressure, which bond is resistant to relaxation under the influence of ironing temperatures, cleaning solvents and like reagents and conditions to which the garment is likely to be subjected.

While a number of known heat fusible adhesives may be satisfactorily employed, a preferred material comprises granules of polyethylene plastic secured to the outer surface of the attachment strip **20**. An example of such adhesive is applied to a satisfactory attachment strip and sold by Federal Bias Products Corp. of 890 Broadway, New York, N.Y.

It has been determined that particle sizes whose largest dimensions average about $\frac{1}{64}$" to $\frac{1}{16}$" are preferable for this application. Such rather large particle sizes have been found to be particularly suitable in that they enable adhesion of the strip **20** to a wide variety of fabric types and thicknesses.

The curtain is attached to the garment by an upper line of stitching **23** which optionally but preferably is applied with the buckram **19** lapping the inner face adjacent the upper edge **24** of the downwardly folded outer waistband **12**, the stitching penetrating a folded-over edge portion of the upper liner **17**. Obviously this layer of stitching is applied before the outer waistband is folded.

The waistband is next folded inwardly so as to position the attachment strip **20** in registry with the inwardly folded flaps **14, 15** of the base fabric **11** and waistband **12**, respectively. The orientation of the last mentioned parts may be best appreciated from FIGURE 3, wherein it is seen that, in accordance with the illustrated embodiment, the width of the member **20** is sufficient completely to cover the fold portions **14** and **15** and optionally but preferably, also lap small increments of the base fabric and waistband.

With the components thus positioned, the attachment strip **20** is integrated to the waistband and base fabric by a pressing operation carried out under heat sufficient to liquefy the adhesive components on the surface of the strip **20**. Preferably, the iron or other pressing implement is disposed against the outer face of the base fabric and outer waistband.

One of the important features of the invention lies in the registry of the attachment strip **20** with the junction of the outer waistband and base fabric.

From FIGURE 3 it will be apparent that when heat and pressure are applied at the outer surface of this junction, a greater pressure must be developed in the area directly behind the folds **14, 15**, since when the inner portions of the garment are supported on a surface, the additional thicknesses provided by these flaps or folds provide a backing, whereas such backing is not present in the areas directly above and below the flaps **14, 15**.

Several useful functions result from this construction. For example, even if a relatively light weight fabric is employed for the base material and waistband (which is customarily a material identical to the base material), there is no substantial likelihood of any of the adhesive being exposed at the outside of the garment. This is so since, in the areas of the strip **20** which register with the flaps **14, 15**, the additional thicknesses provided by such flaps assure against migration of the adhesive melt. The areas above and below the folds **14, 15** are, as above noted, protected against migration due to the fact that they cannot be subjected to the same degree of migration-inducing pressures to which the areas in registry with the folds **14, 15** are subjected.

Thus, the curtain **16** is substantially universal in its application since the amount of adhesive on the strip **20** need not be adjusted for lighter or heavier fabrics, the amount sufficient for the heaviest fabric being provided with no danger of exposure of the adhesive at the outer face of the garment where the curtain is used in conjunction with a light weight fabric.

A further advantage of the construction lies in the fact that the primary attachment of the strip **20** is to a layer spaced from the surface of the base fabric and waistband. This permits a degree of lateral stretchability without puckering which cannot be obtained where the curtain is secured directly to the base fabric or waistband by blind stitching or felling.

While it will be observed that some attachment of the strip directly to the waistband and base fabric occurs above and below the folds **14, 15**, the fact that this attachment occurs at spaced points from the stitching attaching the strip to the curtain rather than at a single central line or stress area, adds to the ability of the garment to be free of puckering when subjected to longitudinal or diagonal stress components.

While the registry of the attachment strip with the inwardly folded portions of the waistband and base fabric, i.e. with the seam attaching the aforementioned parts, provides a highly improved construction, it is to be understood that certain benefits of the invention may be realized where the strip is displaced from the said attachment seam. However, in such cases a greater degree of care in the selection of the adhesive should be exercised, with particular emphasis being placed upon matching the quantity of adhesive to the thickness of the base or waistband fabric, so that firm attachment is secured but exposure of adhesive melt at the outside of the garment is avoided.

Having thus described the invention and illustrated its use, what is claimed as new and is desired to be secured by Letters Patent is:

1. A waist structure for a garment, such as trousers or the like, comprising a base fabric having an upper edge, an outer waistband having its lower edge stitched to said upper edge to form a continuation of said base fabric, said stitched-together edges being directed toward the interior of said garment, with said upper edge of said base fabric folded downwardly against and extending a distance along said base fabric and said lower edge of the outer waistband folded upwardly against and extending a distance along said waistband, a curtain on the inner face of said garment adjacent the waistline, said curtain including a liner strip member, the width of said strip member being greater than the width of said waistband, said liner having an upper edge portion stitched to the upper edge of said outer waistband, a stiffener strip member stitched to said liner member and interposed between said waistband and liner, a fabric band stitched to said liner, said band secured to said liner at a position to register with said upwardly and downwardly folded edges of said outer waistband and base fabric, respectively, and a heat activated adhesive means connecting said band with said folded over edges, said adhesive means impregnating said band and edges effectively to unite said parts.

2. A structure in accordance with claim **1** wherein the combined width of said folded over edges is slightly less than the width of said band.

3. A structure in accordance with claim **1** wherein the thickness of material defining said folded over edges is sufficient to prevent substantial migration of said layer through said edges and to the face of said base fabric and waistband.

4. A curtain for attachment to the inner face of a garment at the waistband comprising an elongated liner strip member, an elongated open weave stiffener member se-

cured to said liner, said stiffener being of lesser width than said liner, and an elongated open wave band secured to said liner and stiffener by a longitudinally extended line of stitching disposed generally centrally of said band, the marginal edges of said band being free of attachment to said stiffener and liner, said band being disposed on the face of said stiffener opposite said liner, said band, liner and stiffener being disposed in parallelism, said band being disposed adjacent the lower marginal edge of said stiffener, the face of said band remote from said stiffener carrying heat activated adhesive components, the stiffener adjacent face of said band being essentially free of adhesive.

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