

[54] EXPANDABLE WAISTBAND FOR TROUSERS

Primary Examiner—H. Hampton Hunter
Attorney, Agent, or Firm—Cahill, Sutton & Thomas

[76] Inventor: Phillip G. Stuart, 7920 W. Glendale Ave., Space No. 9, Phoenix, Ariz. 85303

[57] ABSTRACT

[22] Filed: June 21, 1973

A pair of trousers being partially slit along each side seam and incorporating an expandable waistband is disclosed. Each of the front panels is secured to the corresponding rear panels of the pair of trousers by a pair of independent elastic straps. An overlapping flap extending forwardly from each rear panel, extends across the slit and overlaps the rear edge of the corresponding front panel. Each pair of elastic straps retains the rear panel and flap adjacent the corresponding front panel to prevent longitudinal separation therebetween and also provides support for both front and rear panels to maintain them laterally adjacent one another and the wearer.

[21] Appl. No.: 372,396

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

[51] Int. Cl. A41d 1/06

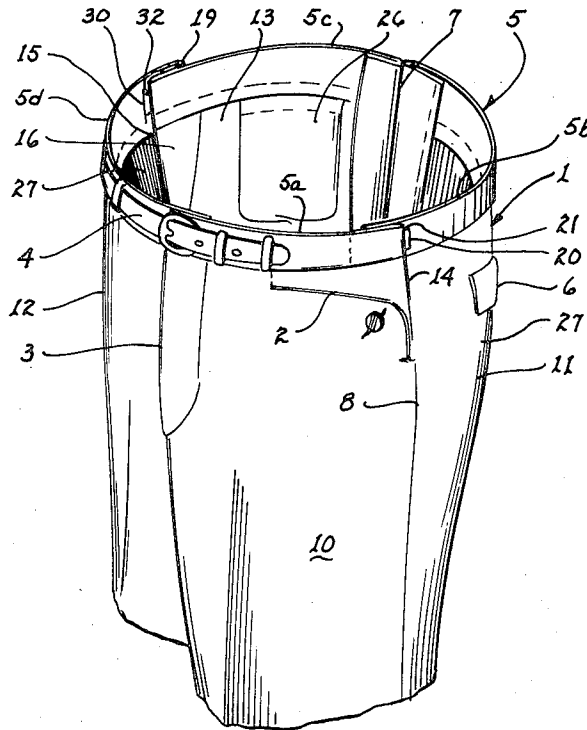
[58] Field of Search 2/237, 221, 220, 236, 76

[56] References Cited

UNITED STATES PATENTS

2,024,922	12/1935	Hewdel	2/237
3,438,061	4/1969	Goldberg	2/237

10 Claims, 4 Drawing Figures



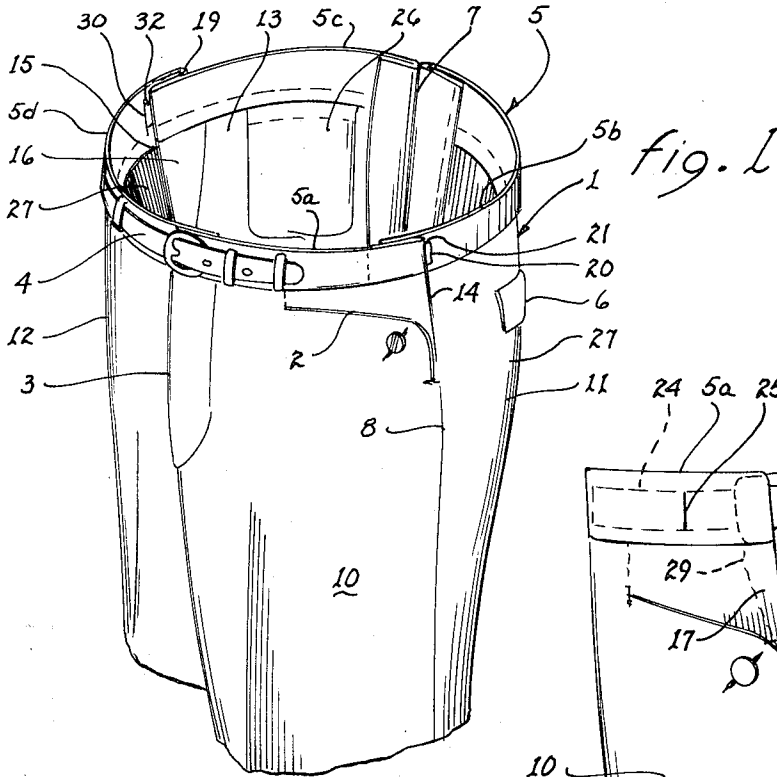


Fig. 1

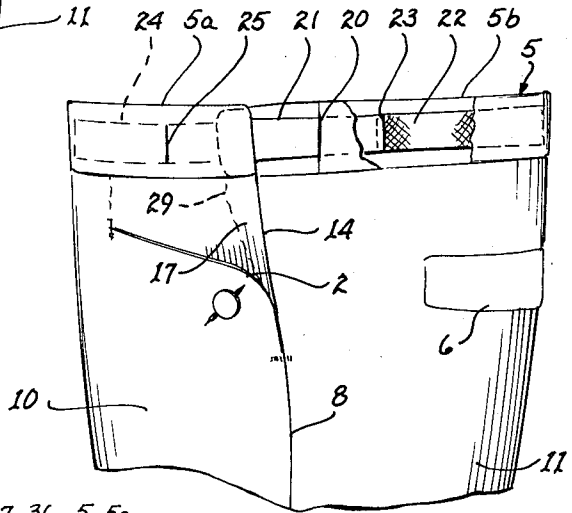


Fig. 2

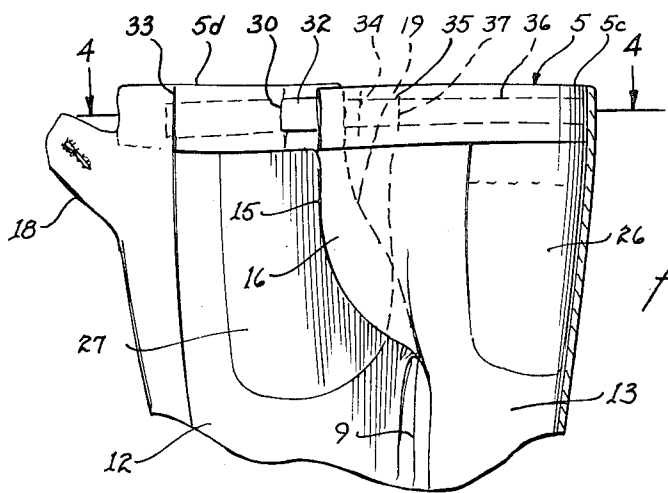


Fig. 3

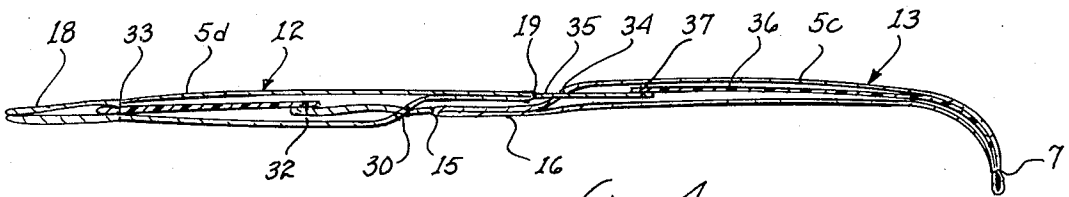


Fig. 4

EXPANDABLE WAISTBAND FOR TROUSERS

The present invention relates to trousers, and more particularly, to trousers having expandable waistbands.

Trousers, particularly men's trousers, are made and intended to be worn for a period of years, rather than just for the season. During this period, it is not unusual, in fact it is quite common, that the wearer gains or loses weight. The weight change generally shows up most quickly in a changed waist measurement. The trousers, being intended to fit a particular size waist, will be either too large or too small as a result of the wearer's waist changes. Therefore, the situation may occur wherein the pants, still being in style and not worn out, are discarded because of their poor fit. On a short term basis, it is not unusual for a person to eat heartily to the extent that the waistband of his trousers cannot comfortably accommodate his temporarily expanded stomach.

In order to provide trousers with the capability of expanding at the waist to accommodate both long term and short term changes of the wearer's waist, several different approaches have been taken. In example, the trousers have been made which have a slit along the side seam and an elastic band extending thereacross to bias the front and rear trouser panels toward one another. To prevent extended separation between the panels, an adjustable belt and buckle arrangement may be juxtaposed with the elastic band. In another configuration, a pleat, biased against the front or rear panel, expands or contracts in accordance with the changes in the required waistband measurement. In yet another type of adjustable waistband construction, one of the panels, the front or the rear panel, is slideable into or out of an envelope formed by the adjacent panel. An elastic band biases the sliding panel within the envelope. The following listed patents illustrate the above described types of expandable waistband trousers: U.S. Pat. Nos. 1,599,486, 2,118,797, 3,097,365, 3,178,727, 3,204,253, and 3,638,242.

All of the known types of variable waistbands cannot be accommodated within the constructional parameters of mass produced trousers without substantial redesign of the waistband seams. The expenses attendant the redesign precludes the use of the known variable waistbands for mass produced apparel. Further, the basic fit of the trousers cannot be altered with simple straightforward techniques. Rather, the alterations must be made by experienced tailors.

It is therefore a primary object of the present invention to provide a pair of trousers with an expandable waistband wherein the adjacent panels are laterally and longitudinally biased toward one another.

Another object of the present invention is to provide a pair of trousers having an expandable waistband wherein use of the pockets within the pants do not derogate from the holding power of the expandable waistband.

Still another object of the present invention is to provide an expandable waistband for trousers, which waistband is adjustable by standard tailoring techniques.

Yet another object of the present invention is to provide an expandable waistband compatible with mass produced trousers.

A further object of the present invention is to provide a pair of elastic straps for an expandable waistband wherein the elastic straps are secured within a pair of trousers at the standard seams.

A yet further object of the present invention is to provide an expandable waistband, which waistband may be made in a manner similar to that for making non-expandable waistbands.

A still further object of the present invention is to provide an expandable waistband for trousers which waistband does not delimit the type of pocket used.

These and other objects of the present invention will become apparent to those skilled in the art as the description thereof proceeds.

The present invention may be understood with greater clarity and specificity with reference to the following drawings, in which:

FIG. 1 is a perspective view of a pair of pants incorporating the present invention.

FIG. 2 is a side view of the pair of pants incorporating the present invention, including a cutaway view to show the internal construction of the waistband.

FIG. 3 is a side view of the inside of a pair of pants incorporating the present invention.

FIG. 4 is a cross-sectional view of the present invention taken along lines 4—4, as shown in FIG. 3.

Referring to FIG. 1, there is shown a pair of trousers 1 constructed in accordance with the present invention. The trousers 1 may be sewn from a plurality of panels 10, 11, 12 and 13, which panels form the body and legs of the trousers. Segmented waistband 5, consisting of waistbands 5a, 5b, 5c and 5d, define the upper extremity of each of the panels. A belt 4, serving primarily as an ornamentation, extends from waistband 5a across fly 3 to waistband 5d. Pockets, such as pocket 27, may be disposed in each of the front panels 10 and 12 and pockets, such as pocket 26, may be disposed in each of the rear panels 11 and 13.

The entrance to the front pocket 27 may be of the western style having a generally horizontal flap 2 secured to the panel 10 by a button. The rear pocket opening may be covered by an external flap 6.

The rear panels 11 and 13 are joined to one another by a standard rear seam 7, extending to the crotch. The front panels 10 and 12 are joined to one another by means of a fly 3 of standard construction and a seam extending downwardly therefrom to the crotch. A buttonhole tab 18 may extend from front panel 12 to engage a button on front panel 10. The front and rear panels, 10 and 11, are secured to one another by side seam 8. A similar side seam 9 secures front and rear panels, 12 and 13, to one another. The construction of the rear panels, which construction accommodates the expandable waistband of the present invention is primarily shown in FIG. 2. The front panel 10 is joined to left rear panel 11 by seam 8, which seam extends upwardly from the cuff of the trousers but terminates short of waistband 5. The edge of front panel 10 extending upwardly from seam 8 is a finished edge and identified by numeral 14. The edge 29 of rear panel 11 extending upwardly from seam 8 curves forwardly to form a flap 17, which flap overlaps edge 14 along the inside of front panel 11.

The waistband 5b, coterminus with rear panel 11, is formed as an envelope. A tongue 21 extends rearwardly from edge 14 of front panel 10 and is inserted within the envelope defined by waistband 5b through a

slit 20. An elastic strap 22, disposed intermediate tongue 22 and rear panel 11, is secured to the former by seam 23 and to the latter by seam 7. Thus, tongue 21 and elastic strap 22 are moveable with respect to waistband 5b.

By appropriate dimensioning of elastic strap 22, edge 14 can be maintained in alignment with seam 8 when the waistband 5 is not stretched. If the waistband is stretched, front panel 10 will tend to pivot forwardly and slide along flap 17. The elastic strap 22 accommodates the movement of the panels by permitting tongue 21 to be partially withdrawn from within the envelope of waistband 5b. The stretching of elastic strap 22 creates a bias upon front panel 10 which bias tends to retract tongue 21 within waistband 5b when the stretching force on the waistband is removed or diminished. It may also be readily understood that as front panel 10 is pivoted forwardly, flap 17 will become viewable. The purpose of flap 17 is that of extending the color and design of the rear panel 11 so that it will not become immediately apparent that edge 14 of front panel 10 has been displaced. Similarly, tongue 21 is of the same color and design as the rear panel 11 to disguise its movement into and out of waistband 5b.

Rear panel 13 (see FIGS. 1 and 3) is similar to rear panel 11 and will be described in a cursory manner. Tongue 35, extending rearwardly from edge 19 of the front panel 12 is inserted within the envelope formed by waistband 5c through slit 34. One end of an elastic strap 36 is attached to tongue 35 at seam 37 and the other end is anchored by seam 7. When the waistband 5 is stretched, the front panel 12 will tend to pivot forwardly and withdraw a part of tongue 35 from within waistband 5c against the bias provided by elastic band 36. Flap 16 defined by edge 15 is adjacent the interior surface of front panel 12 and will camouflage the relative pivotal movement between the adjacent front and rear panels.

The construction of the front panels will be described primarily with reference to front panel 12 shown in FIG. 3. An elastic strap 32 extends forwardly from edge 15 of flap 16 and is in general alignment with the envelope defined by waistband 5d. The elastic strap 32 is inserted within waistband 5d through a slit 30. It is secured to the waistband by seam 33, which seam is part of the standard seam employed to form fly 3.

Similarly, front panel 10 (see FIG. 2) is connected to rear panel 11 by an elastic strap 24 extending forwardly from the edge 29 of flap 19. The elastic strap is inserted within waistband 5a through a slit 25 and anchored to a seam, which seam is a part of the fly 3.

By reference to FIG. 4, further operational features of the present invention will become readily apparent. FIG. 4 is a cross-sectional view of front and rear panels 12 and 13 taken along waistband 5c and 5d. It is to be assumed that the figure is also representative of corresponding elements in front and rear panels 10 and 11.

When waistband 5 is stretched, front panel 12 will tend to pivot with respect to rear panel 13 about a point proximate to the upper extremity of seam 9. Elastic band 32 will be stretched and partially withdrawn from within waistband 5d. The stretched elastic band 32 will tend to maintain edge 15 of flap 16 as close to slit 30 as possible. Lateral movement of front panel 12 with respect to flap 16 will be inhibited as such movement would tend to bend elastic strap 32 at slit 30 and

lengthen the distance between edge 15 and seam 33. Thus, elastic band 32 not only tends to retain front and rear panels 12 and 13 adjacent one another but also tends to retain flap 16 adjacent the front panel.

Simultaneous with the above operation, elastic band 36 will be stretched and tongue 35 will be partially withdrawn from within waistband 5c through slit 34. The force exerted by the stretched elastic band will tend to maintain edge 19 of front panel 12 as close to slit 34 as possible. Thus, any relief of the stretching force will result in an immediate movement of front panel 12 toward rear panel 13.

Simultaneously, a lateral force on one panel with respect to the other will cause tongue 35 to bend at slit 34. Such a bend will result in an increased distance between edge 19 and seam 7 and a stretching of elastic band 36. The stretching of elastic band 36 will result in a force tending to maintain the edge 19 adjacent slit 34. Thus, elastic band 36 not only biases the panels toward one another but also tends to inhibit relative lateral movement therebetween.

For reasons stated above, the elastic straps extending forwardly from each of the rear panels and secured to seams within the corresponding front panels in combination with the juxtaposed elastic straps extending rearwardly from the front panels and secured to seams within the corresponding rear panels will tend to retain the flaps of the rear panels in contact with the internal surface of the front panels. Thereby, there is a minimum likelihood of possible embarrassment to the wearer due to separation between the adjacent movable panels.

In the prior art patents, the entrance to the front pocket was through the slit between adjacent panels. Such an arrangement, necessitated by the structural features taught by the prior art, effectively rendered the prior art expandable waistbands impractical for several reasons. First, the pocket was supported by the strength of the expandable elements intermediate the sliding panels. Repeated use of the pocket necessarily forced the panels to separate from one another longitudinally and laterally, which separation tended to become permanent. The resulting permanent aperture rendered the visual effect unacceptable. Second, if the contents contained within the pocket were of any substantial weight, the slit tended to open and expand the waistband of the trousers. Third, the configuration of the opening to the pocket was limited to the vertical or near vertical slit intermediate the panels.

With the present invention, the opening to pocket 27 (See FIG. 3) is formed within front panel 12. With this configuration, the pocket and its contents are supported by the waistband 5d and not directly by the expandable member, as taught in the prior art. In addition, the opening to the pocket 27 may be horizontal, slanted, or vertical depending upon the style of the pants and not upon the angle of the slit intermediate adjacent panels.

As, each of the elastic straps is anchored at presently used standard seams, it is possible to make waist alterations by simply redoing seam 7 in the standard manner. The necessary adjustments of elastic bands 22 and 36 can be made simultaneously. Further, with the use of standard seams to secure the various elastic straps, the manufacturing costs of the present invention are minimized as most of the existing manufacturing techniques can be used without modification.

While the principles of the invention have now been made clear in an illustrative embodiment, there will be immediately obvious to those skilled in the art many modifications of structure, arrangement, proportions, the elements, materials, and components, used in the practice of the invention which are particularly adapted for specific environments and operating requirements without departing from those principles.

I claim:

1. A pair of trousers having a segmented expandable waistband, said trousers being formed by a first and second rear panel secured to one another by a rear seam, a first front panel secured to said first rear panel by a side seam terminating short of said waistband, a second front panel secured to said second rear panel by a side seam terminating short of said waistband, and a fly disposed intermediate said first and second front panels for selectively securing said first and second front panels to one another, said trousers comprising in combination:

- a. an expandable waistband comprising:
 1. first, second, third and fourth waistbands, each of said waistbands including a slit and defining an envelope adjacent the upper part of said first front panel, said first rear panel, said second rear panel and said second front panel, respectively;
 2. first elastic means extending from said first rear panel into said first waistband through said slit for urging said first rear panel toward said first front panel;
 3. second elastic means extending from said first front panel into said second waistband through said slit for urging said first front panel toward said first rear panel;
 4. third elastic means extending from said second front panel into said third waistband through said slit for urging said second front panel toward said second rear panel; and
 5. fourth elastic means extending from said second rear panel into said fourth waistband through said slit for urging said second rear panel toward said second front panel; whereby said first and second elastic means, in combination, restrain relative longitudinal and lateral movement between said first front panel and said first rear panel, and said third and fourth elastic means, in combination, restrain relative longitudinal and lateral movement between said second front panel and said second rear panel;
- b. first slit means disposed intermediate said first front panel and said first rear panel for accommodating separation of said first and second waist-

bands;

- c. second slit means disposed intermediate said second front panel and said second rear panel for accommodating separation of said third and fourth waistbands;
 - d. said first and second slit means being in general alignment with respective ones of the side seams; whereby, said first and second front panels separate from said first and second rear panels, respectively, in proximity to the side seams to accommodate expansion of side waistband; and
 - e. flap means extending forwardly from each of said first and second rear panels in an inside overlapping relationship with said first and second front panels for obscuring the separation between said front and rear panels.
2. The combination as set forth in claim 1 wherein each said second and third elastic means include a tongue extending rearwardly from the respective one of said front panels.
 3. The combination as set forth in claim 2 wherein said first, second, third and fourth elastic means comprise elastic straps.
 4. The combination as set forth in claim 2 wherein each of said tongues extend into the corresponding one of said waistbands.
 5. The combination as set forth in claim 4 wherein each of said front panels and the corresponding one of said tongues are formed of the same material.
 6. The combination as set forth in claim 4 wherein said flap means comprises a first flap extending forwardly from said first rear panel, said first elastic means being secured to the edge of said first flap, and a second flap extending forwardly from said second rear panel, said fourth elastic means being secured to the edge of said second flap.
 7. The combination as set forth in claim 6 wherein each of said rear panels and the corresponding one of said flaps are formed of the same material.
 8. The combination as set forth in claim 1 wherein said second and third elastic means are anchored within said second and third waistbands, respectively, by said rear seam; whereby, alteration of the fit of the trousers can be effected by altering said rear seam.
 9. The combination as set forth in claim 8 wherein said first and fourth elastic means are anchored within said first and second waistbands, respectively, by a seam for the fly.
 10. The combination as set forth in claim 1 including a pocket disposed in each of said front panels, the opening of said pocket being non-coincident with said first and second means.

* * * * *