Sept. 18, 1945. N. LEVIN 2,384,934

KNITTED ARTICLE OF APPAREL AND FABRIC THEREFOR

Filed Aug. 31, 1944

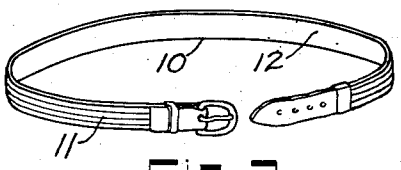


Fig. 2.

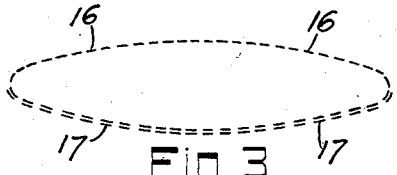


Fig. 3.

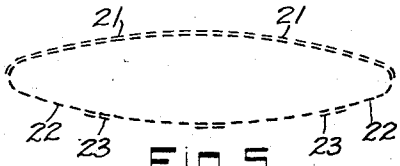


Fig. 5.

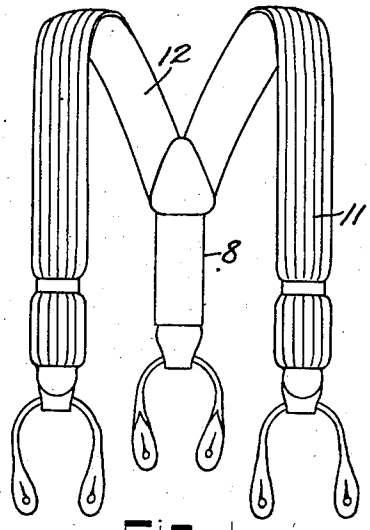


Fig. 1.

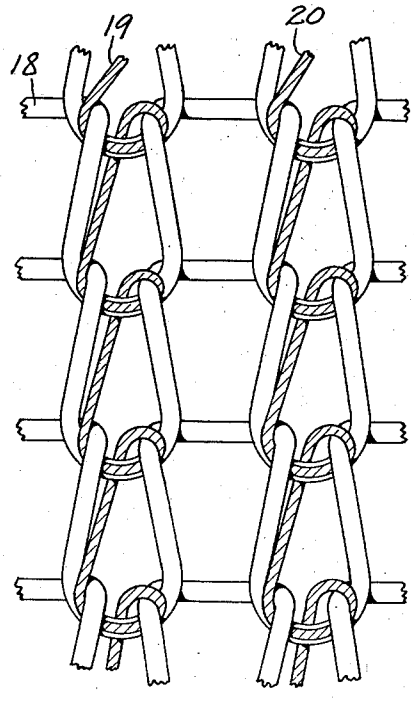


Fig. 6.

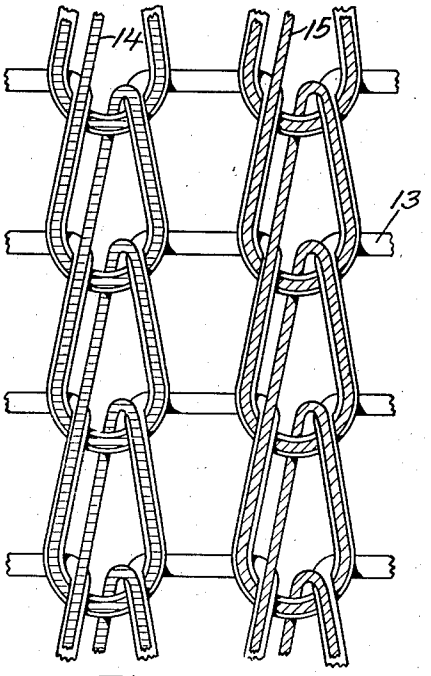


Fig. 4.

INVENTOR.

Nathan Levin

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KNITTED ARTICLE OF APPAREL AND FABRIC THEREFOR

Nathan Levin, Trenton, N. J.

Application August 31, 1944, Serial No. 552,073

7 Claims. (Cl. 66—171)

This invention relates to articles of apparel of the type subject to a lengthwise pull or strain therein in use such as suspenders, belts and the like which includes as an integral part thereof one or more separate lengths of tubular knitted fabric each of which has means to substantially limit the walewise lengthening and the coursewise contraction thereof under the walewise extending tension induced by the said strain or pull. The invention also relates to tubular knitted fabric having means to substantially limit the walewise lengthening and the coursewise contraction thereof under walewise extending tension, said fabric being adapted for articles of apparel of the type subject to a lengthwise strain or pull therein in use such as suspenders, belts and the like.

It is an object of this invention to provide a tubular knit fabric with means to substantially limit the walewise lengthening and the coursewise contraction thereof under walewise extending tension, said means comprising a plurality of walewise extending wrap threads incorporated in the fabric, the said fabric being adapted for articles of apparel of the type above described. In one form of the invention, the incorporated wrap threads form ornamentation on the face of the fabric by knitted plated designs and in another form the wrap threads are incorporated unknit in the body of the fabric.

It is a further object of the present invention to manufacture articles of apparel of the type subject to a lengthwise strain or pull therein in the use thereof such as suspenders, belts and the like which includes in combination as an integral part thereof one or more separate lengths of the tubular knit fabric above described.

Figure 1 is a view of a pair of suspenders made from the novel fabric,

Figure 2 is a view of a belt made from the novel fabric,

Figure 3 is a diagrammatic view of a tubular section of the novel fabric,

Figure 4 is a stitch diagram of the novel fabric,

Figure 5 is a diagrammatic view of a tubular section of a modified form of the novel fabric and

Figure 6 is a stitch diagram of the modified form of the novel fabric.

In the drawing two articles of wearing apparel are shown, the suspenders 8, and the belt 10. The body of each of these two articles is made of two and of one separate lengths respectively of tubular knitted fabric having the walewise extending stripes 11 on one face thereof for substantially its full length as shown and while the opposite face 12 of these separate lengths of tubular fabric could likewise be ornamented with walewise extending stripes, it is preferred that the reverse side 12 be not so ornamented. A small section of the novel tubular fabric and representative thereof is shown in Figure 4 in which the plain or jersey stitches are made of the body yarn 13 and in the two wales and in the courses shown, the walewise extending wrap threads 14 and 15 are shown plated over all of the stitches of the yarn 13 for the full length of the fabric section illustrated. It will be obvious that the stitch construction of all of the tubular fabric and consequently of each length thereof is like that shown in Figure 4 since the latter is a representative section which may have been taken anywhere in the fabric. Accordingly the wrap threads 14 and 15 extend for substantially the full length of each length of the fabric since the walewise extending stripes 11, which are shown as extending for substantially the full length of each length of the fabric, are formed thereof. It will also be obvious that the invention is not limited to plain knit fabric but is applicable to other types of tubular knit fabric as well, so long as the walewise extending wrap threads are incorporated in the outside plain wales of such other types of fabric. It is to be noted that the yarns 14 and 15 are of different colors and in each of the other wales of the fabric on the face thereof, yarns of other or of the same color may be used. The color of each of the wrap threads for each of the face wales of the tubular fabric, of which threads 14 and 15 are examples, may vary according to the will of the designer and the designs 11 will vary accordingly.

Turning now to Figure 3, which is a diagrammatic view of a tubular section of the fabric, the short single lines 16, 16 each represent single unplated stitches of the rear of the fabric and the short double lines 17, 17 each represent single plated stitches of the front of the fabric. It will be seen that all of the stitches, and the wales, of the front of the fabric are plated with the walewise extending wrap threads and that all of the stitches, and the wales, of the rear of the fabric are not plated. A plated stitch takes up more room than an unplated stitch and accordingly, where adjacent wales are plated, to plate half of the tubular fabric so far as circumferential distance is concerned, it is necessary to plate less than half of the total number of stitches. For instance, if the needle cylinder has fifty needles, as in Figure 3, due to the fact that plated stitches are wider, it is necessary to plate only twenty-two

stitches 17, 17 and leave twenty-eight stitches 16, 16 unplated in order that the front half of the fabric will be plated and will be equal in size to the rear half of the fabric. The addition of the wrap threads to substantially all of the wales of the front of the fabric will limit the stretch of the fabric walewise and will also provide a pleasing design therefor, this is specially desirable in those articles of manufacture, whether apparel or otherwise, in which a lengthwise pull or strain is exerted thereon during the use thereof. It will be obvious from an inspection of the drawing that each of the separate lengths of tubular fabric shown in the belt and in the suspenders is flattened and is secured, at each end thereof, to other parts of the belt and to other parts of the suspenders, thus becoming an integral part thereof. It will also be obvious that the lengthwise strain or pull normally present in these articles of apparel in use causes each length of the tubular fabric including the wrap threads to be under walewise tension for substantially the length thereof which extends between the said other parts of the belt and the suspenders and to which the lengths of tubular fabric are secured. It will be obvious that the stretch of the fabric could be still further limited by the use of wrap threads on all of the wales thereof, both front and back, but for most purposes it is sufficient if substantially half of the wales are wrapped, and if this half is the front of the fabric, the wrap threads also provide an ornamental design. It is preferred that the wrap threads be on adjacent wales as this aids in limiting the stretch for then the wales, which are widened due to the plating thereon, cannot crowd too close together and excessively reduce the width of the tubular fabric. It will be obvious that the resistance of the tubular fabric to walewise lengthening and coursewise contraction will vary in accordance with the number of wrap threads present in the fabric, the more wrap threads the greater the resistance and vice versa.

A modification is shown in Figures 5 and 6, in the former which shows a diagrammatic cross section of the fabric, the stitches in the rear of the fabric are represented by the double short lines 21, 21 while the stitches of the front of the fabric are represented by the single short lines 22, 22 and by the double short lines 23, 23. The stitches 21, 21, and all the wales of the rear of the fabric, each have individual wrap yarns, as shown in Figure 6, but these wrap yarns 19 and 20, are not plated on the fabric of yarn 18, but are tied in unknit in each stitch of the fabric comprising the rear of the fabric. The stitches 21, 21 of Figure 5 differ from the stitches 17, 17 of Figure 3 in that in the latter the wrap yarns are plated on the stitches of the front of the fabric to make the stripes 11 and to limit the stretch of the fabric whereas in the former the wrap yarns are tied in unknit in the stitches of the rear of the fabric to limit the stretch thereof. The tied in unknit wrap yarns are barely visible from the front of the stitches and may be of the same color as the body yarn. To ornament the front of the fabric of Figure 5, if that is described, walewise extending wrap thread plated stitches 23, 23 may be placed wherever desired. The plated stitches 23, 23 are like the plated stitches 17, 17 in stitch construction.

While the plated stitches in each wale have been described as forming vertically extending lines, it will be obvious that the plated design need not be so limited as in the case where the wrap yarns selectively knit and float in each wale, according to plan, in order to provide a composite design extending over the face of the fabric.

The tubular fabric herein described may be of any diameter but preferably the fabric is of the small diameter normally used in the present manufacture of such articles of apparel as belts, neckties, suspenders and the like wherein it is desirable that a means of limiting the stretch of the fabric, which otherwise becomes permanently longer and narrower in use, be provided. In the present invention the walewise extending wrap threads which are provided to limit the stretch of the tubular fabric also provide a very desirable means of ornamentation.

I claim:

1. An article of apparel of the type subject to lengthwise strain in use such as suspenders, belts and the like, which includes as an integral part thereof one or more separate lengths of tubular knitted fabric each of which has a plurality of walewise extending wrap threads incorporated therein for substantially the full length thereof, each of said lengths of tubular fabric including the said wrap threads being under walewise tension substantially throughout the full length thereof during the wearing of the article, the walewise lengthening and the coursewise contraction under the said tension being limited by the said wrap threads.

2. An article of apparel of the type subject to lengthwise strain in use such as suspenders, belts and the like, which includes as an integral part thereof one or more separate lengths of tubular knitted fabric each of which has a plurality of walewise extending wrap threads incorporated therein for substantially the full length thereof, each of said lengths of tubular fabric being secured at each end thereof to other portions of the article in such manner that the fabric including the wrap threads is under walewise tension substantially throughout the full length thereof during the wearing of the article, the walewise lengthening and the coursewise contraction under the said tension being limited by the said wrap threads.

3. An article of apparel of the type subject to lengthwise strain in use such as suspenders, belts and the like, which includes as an integral part thereof one or more separate lengths of tubular knitted fabric each of which has a plurality of walewise extending wrap threads incorporated therein for substantially the full length thereof, the wrap threads ornamenting the fabric by plating, each of said lengths of tubular fabric including the said wrap threads being under walewise tension substantially throughout the full length thereof during the wearing of the article, the walewise lengthening and the coursewise contraction under the said tension being limited by the said wrap threads.

4. An article of apparel of the type subject to lengthwise strain in use such as suspenders, belts and the like, which includes as an integral part thereof one or more separate lengths of flattened tubular knitted fabric each of which has a plurality of walewise extending wrap threads individual to the wales and plated thereon in the wales and courses of at least one face of the fabric for substantially the full length thereof, each of said lengths of tubular fabric including the wrap threads being under walewise tension substantially throughout the full length thereof during the wearing of the article, the walewise lengthen-

ing and the coursewise contraction under the said tension being limited by the said wrap threads.

5. A tubular knitted fabric for articles of apparel of the type subject to lengthwise strain in use such as suspenders, belts and the like, said fabric having a plurality of walewise extending wrap threads incorporated therein for substantially the full length thereof, the wrap threads ornamenting the fabric by plating, each of one or more separate lengths of the fabric being adapted to be secured at each end thereof in the said article in such manner that each length of the fabric including the wrap threads is under walewise tension substantially throughout the full length thereof during the wearing of the article, the walewise lengthening and the coursewise contraction under the said tension being limited by the said wrap threads.

6. An article of apparel of the type subject to lengthwise strain in use such as suspenders, belts and the like, which includes as an integral part thereof one or more separate lengths of flattened tubular knitted fabric each of which has a plurality of walewise extending wrap threads individual to the wales and plated thereon in substantially all of the wales and all of the courses comprising one face of the fabric for substantially the full length thereof, the said face of the fabric having a lesser number of wales than the opposite face thereof, each of said lengths of tubular fabric including the wrap threads being under walewise tension substantially throughout the full length thereof during the wearing of the article, the walewise lengthening and the coursewise contraction under the said tension being limited by the said wrap threads.

7. An article of apparel of the type subject to lengthwise strain in use such as suspenders, belts and the like, which includes as an integral part thereof one or more separate lengths of flattened tubular knitted fabric each of which has a plurality of walewise extending wrap threads individual to the wales for substantially the full length thereof, certain of the wrap threads being incorporated unknit in substantially all of the wales and all of the courses comprising one face of the fabric for substantially the full length thereof, other of the wrap threads ornamenting the opposite face of the fabric by plating, each of said lengths of tubular fabric including the wrap threads being under walewise tension substantially throughout the full length thereof during the wearing of the article, the walewise lengthening and the coursewise contraction under the said tension being limited by the said wrap threads.

NATHAN LEVIN.