Feb. 13, 1940. W. KOPS 2,190,030

APPAREL GARMENT

Filed July 28, 1938 3 Sheets-Sheet 1

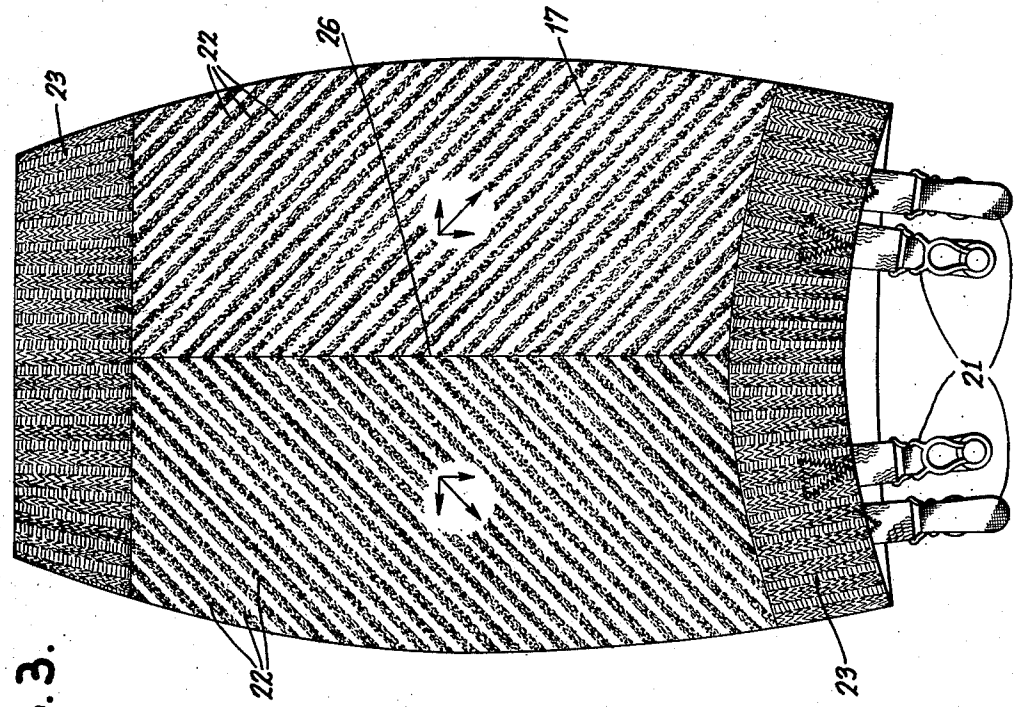

FIG. 3.

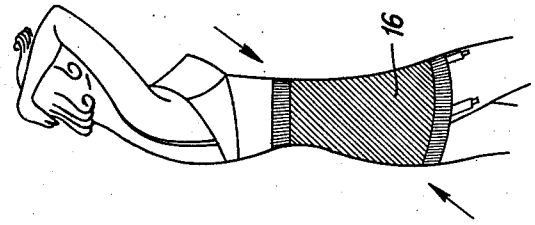

FIG. 2.

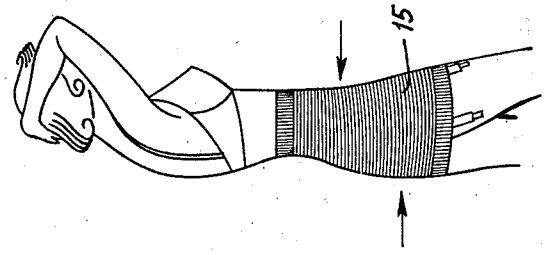

FIG. 1.

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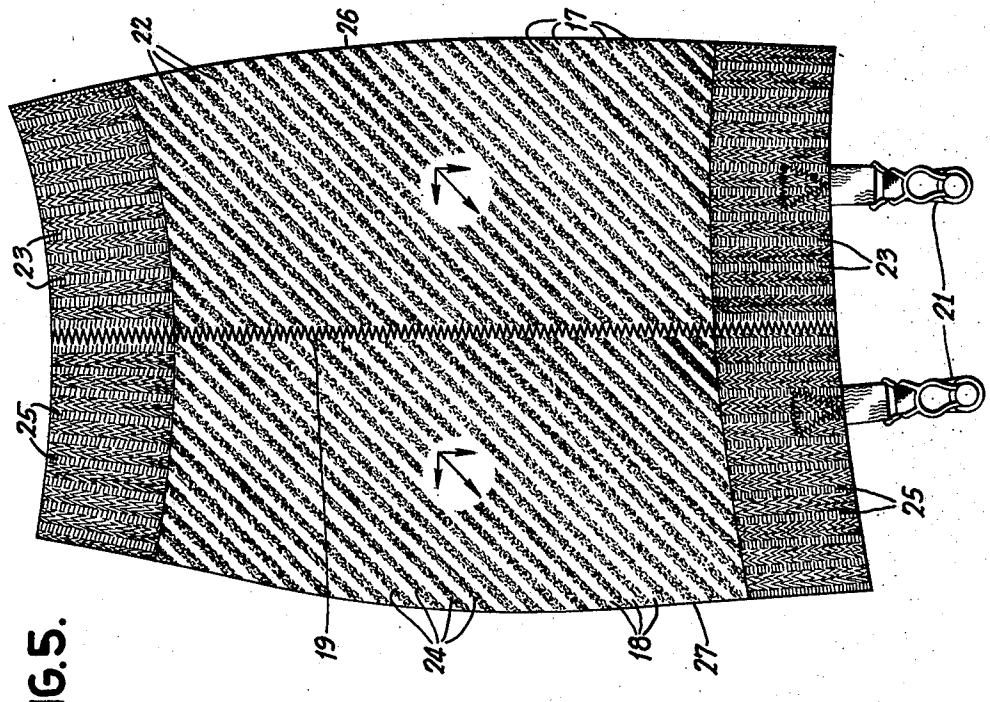

FIG. 5.

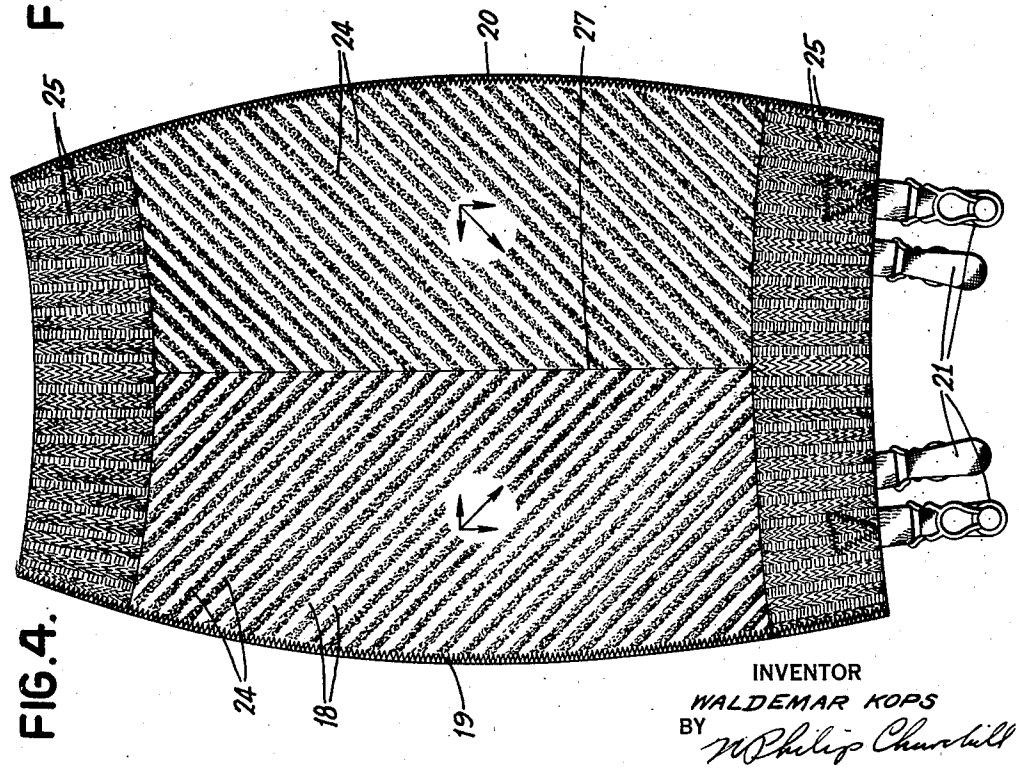

FIG. 4.

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FIG. 7.

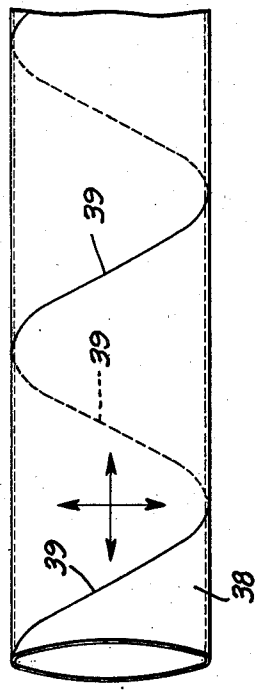


FIG. 9.

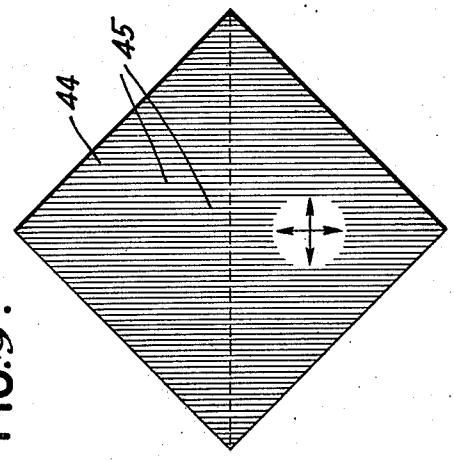


FIG. 6.

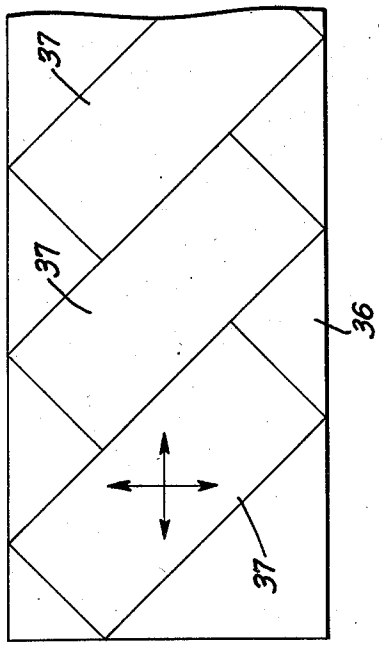
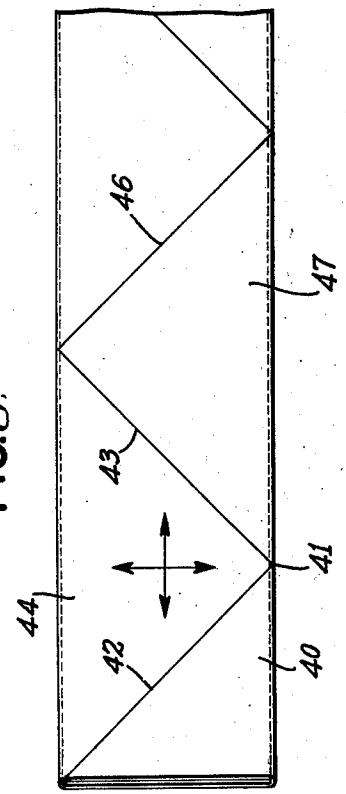


FIG. 8.



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2,190,030

UNITED STATES PATENT OFFICE

2,190,030

APPAREL GARMENT

Waldemar Kops, New York, N. Y., assignor to Kops Brothers, Inc., New York, N. Y., a corporation of New York

Application July 28, 1938, Serial No. 221,698

2 Claims. (Cl. 2—37)

This invention relates to improvements in apparel garments of the girdle or corset type for improving the figure. More particularly, the invention is concerned with garments made of fabrics containing rubber or other elastic filaments so disposed in the garments as to impart improved figure molding properties thereto.

Foundation garments such as corsets, girdles and the like have been made wholly or partially of fabrics known as one-way and two-way stretch fabrics, i. e., containing rubber filaments or threads so woven or knitted into the fabric as to give it the desired stretch and resistance to stretch. Such garments, however, have been limited in their figure molding properties since the principal tension of the rubber threads has been applied either longitudinally or circumferentially of the body of the wearer, or both. Attempts have been made by designers in cutting the garments to provide a flattening of the abdomen and the backline, but such cutting requires a very high degree of skill and has been only partially successful in accomplishing this object.

It is an object of this invention to overcome the foregoing difficulties by providing a garment made of two-way stretch fabric having elastic threads so placed that tension is exerted along a diagonal line.

Another object is to provide a figure molding garment in which at least the side portions surrounding the hips of the wearer are constructed of two-way stretch woven or knitted fabric having rubber threads so arranged as to exert the principal tension diagonally of the garment.

A garment in accordance with this invention may be fashioned entirely of two-way stretch elastic fabric with elastic threads providing a diagonal tensioning effect in the garment, or garments may be made of various combinations of elastic, or combinations of elastic and inelastic sections provided with one or more side panels at each side having the diagonal tension. I have found that by utilizing two-way stretch fabric on the bias, a garment is produced which has new and improved figure molding qualities. The foregoing and additional objects and advantages of the invention will be more fully understood by reference to the embodiments thereof illustrated in the accompanying drawings.

Figure 1 is a diagrammatic view of the right-hand side of a girdle of the kind known heretofore and illustrated as it is worn.

Figure 2 is a similar diagrammatic view of the right-hand side of a girdle such as illustrated in Figures 3, 4 and 5 embodying this invention.

Figure 3 is a front view of a girdle made entirely of elastic knitted fabric and in accordance with this invention.

Figure 4 is a rear view of the girdle illustrated in Figure 3.

Figure 5 is a view of the right side of the girdle illustrated in Figure 3.

Figure 6 illustrates one manner of cutting elastic fabric for use in garments constructed according to my invention.

Figure 7 illustrates one manner of cutting tubular knit or woven elastic fabrics for use in garments of my invention with less waste of fabric.

Figure 8 shows another manner of cutting tubular knit or woven elastic fabrics without substantial waste.

Figure 9 illustrates a section or panel of elastic fabric suitable for incorporation into a garment of my invention.

Referring more particularly to Figures 1 to 5, girdles and similar garments made heretofore of fabrics containing elastic or rubber threads, have been made with rubber threads either in one or more panels or throughout the garment, extending circumferentially of the body as illustrated by the lines 15. Such garments, or the inserts in such garments, exert a pull at right angles to the body as shown by the arrows in Figure 1.

My invention accomplishes an improved flattening and smoothing of the backline and abdomen, exerting a pull diagonally of the body as indicated by the arrows in Figure 2, by providing elastic threads 16 at least in the side portions of the garment so disposed as to produce a diagonal tension when the garment is worn.

The girdle shown in Figures 3, 4 and 5 is made entirely of knitted fabric including rubber threads arranged to provide a two-way stretch. The girdle may be conveniently made of two or more pieces of fabric such as the front section 17 and the rear section 18 sewed together at the sides along the seams 19 and 20. If desired, however, the garment may be made of a single piece of fabric with only one seam at the side. Hose supporters 21 of any suitable type may be attached to the front and rear sections of the girdle.

The front section 17 of the girdle may be conveniently cut from a strip of fabric knitted in one piece. Front section 17 is so knitted that the main portion of the section contains rubber

threads arranged to exert their principal tension diagonally downward from the center of the front section in the direction of the ribs 22. Rubber threads are preferably also included to provide sufficient stretch both circumferentially and longitudinally of the garment, as indicated by the groups of arrows in Figure 3. The top and bottom of the front section preferably comprise bands, in which rubber threads extend circumferentially of the garment at right angles to the ribs 23. Some vertical stretch may be provided in the upper and lower bands if desired, although this is not necessary.

The rear section 18 of the garment may be knitted similarly in one piece, with the main portion containing ribs 24 extending diagonally upward from the center of the rear section in the form of upright V's. The central or main portion of the rear section 18 is likewise preferably made of material containing rubber threads exerting their principal tension in the direction of the ribs 24, together with sufficient stretch and some tension circumferentially and longitudinally of the garment as indicated by the groups of arrows in Figure 4. Bands also may be knitted integrally with this section along the upper and lower edges thereof and provided with rubber threads extending circumferentially of the garment at right angles to the ribs 25.

The garment flattened out and in side elevation will then contain in the main portions of the fabric, rubber threads so arranged as to exert their principal tension along lines disposed diagonally downward on each side of the garment from the center line 26 of the front section 17 to the center line 27 of the rear section 18, as indicated in Figure 5. By providing two-way stretch material in the main portion of the garment, an additional amount of circumferential stretch of the garment is provided as compared with the use of one-way or two-way stretch material as heretofore used, while at the same time the desired diagonal tensioning due to arrangement of the rubber threads serves to produce in a simple but effective manner, a smooth and graceful flattening of the abdomen and backline. Furthermore, any given garment having this construction achieves the desired figure molding with greater comfort to the wearer.

Attempts have been made to accomplish these results in the cut of the garment, but such attempts have been only partially successful. The diagonal pull of the rubber threads provides a bias effect such as is employed with inelastic material to make a dress or the like adaptable to several different figures. This advantage is also present in the garments of my invention with the additional advantages due to the arrangement of the rubber threads, providing for a smoother molding action of the garment. Molding of the garment over the hips may be easily obtained without any seaming. The diagonal tension serves, in addition, to improve the posture of the wearer, and because of the greater flexibility of the garment, alteration work is lessened along with the improved figure molding due to the angled tension.

The garments of this invention are preferably made of two-way stretch fabric, either knitted or woven, and may be cut from an elongated strip of two-way stretch fabric, such as the strip 36 in Figure 6. In order to cut panels or sections of fabric with the elastic threads disposed to provide a tension diagonally of the fabric, the pattern may be placed diagonally on the strip 36, and the sections may be cut out to provide rectangular sections 37 with the rubber threads extending in general directions diagonally of the sides of the rectangular sections. Such a process of cutting, however, involves considerable waste of fabric, and it is considered impossible to weave fabric with rubber threads extending diagonally thereof. To avoid these difficulties, a fabric, either woven or knitted, in tubular form, such as the tubular fabric 38 illustrated in Figure 7 may be provided. This tubular fabric may then be cut along a continuous line 39 extending spirally around the tube to provide an elongated strip of fabric having rubber threads exerting a tension diagonally thereof. Sections may be cut from this strip in the usual manner with no more than the usual waste.

Another form of cutting a two-way stretch fabric for use in my invention is to provide a length of tubular knitted or woven two-way stretch fabric and to flatten this tube as shown at 40 of Figure 8. The flattened tube 40 may then be cut through both thicknesses thereof, starting from a common point 41 at one edge, and extending diagonally across the tube along the lines 42 and 43. This leaves a substantially square section 44 which, when opened up, has the elastic threads exerting their tension diagonally thereof, as indicated by the arrows in Figure 9 and the lines 45. In a similar manner, the tube may be cut transversely along the line 46 to provide a second square 47, and this process may be repeated as many times as desired. The sections of fabric obtained by this method of cutting are suitable for use in garments in accordance with my invention with but very little waste.

By the term "two-way stretch fabric" I intend to include not only woven and knitted fabrics in which rubber threads permit stretch and exert a tension in two directions at right angles to each other, but also fabrics in which stretch is provided in both directions, although the principal tension of the rubber threads may be exerted only in one direction, as for instance in a leno woven construction.

The terms and expressions which I have employed are used as terms of description and not of limitation, and I have no intention, in the use of such terms and expressions, of excluding any equivalents of the features shown and described or portions thereof, but recognize that various modifications are possible within the scope of the invention claimed.

I claim:

1. A garment of the class described comprising a body-encircling member extending over the hips, a portion of said member extending from substantially the medial line at the front to substantially the medial line at the back around each side of the body being formed of material having elastic yarns disposed therein to provide elasticity in directions at right angles to each other, a part of said elastic yarn being arranged to extend generally in a diagonal direction downwardly along lines running from the medial line at the front toward the medial line at the back and to impart to said portion of said member its principal tension in said diagonal direction, said member having bands above and below said portion with elastic yarns stretchable and extending at least in part circumferentially of the garment to provide elasticity in a direction around the body for anchoring the garment to the body.

2. A garment of the class described compris-

ing a body-encircling member extending over the hips, a part of said member extending around each side from substantially the medial line at the front to substantially the medial line at the back being formed of knit material having elastic yarn disposed therein to impart elasticity thereto in directions at right angles to each other, at least a portion of said elastic yarn being arranged to extend generally in a diagonal direction downwardly from the front to the back of said part of said member around each side, said member having bands above and below said part with elastic yarns stretchable and extending at least in part circumferentially of the garment to provide elasticity in a direction around the body for anchoring the garment to the body.

WALDEMAR KOPS.