Feb. 22, 1966 N. J. ALEXANDER ETAL 3,236,241

GIRDLE

Filed Oct. 31, 1961

Fig. 1.

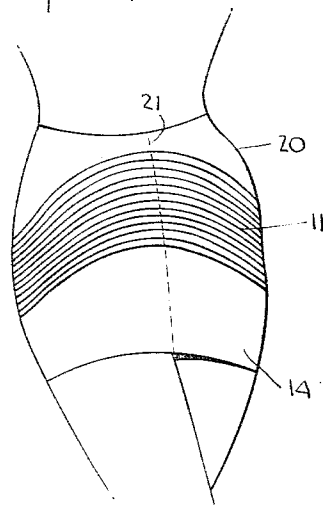


Fig. 2.

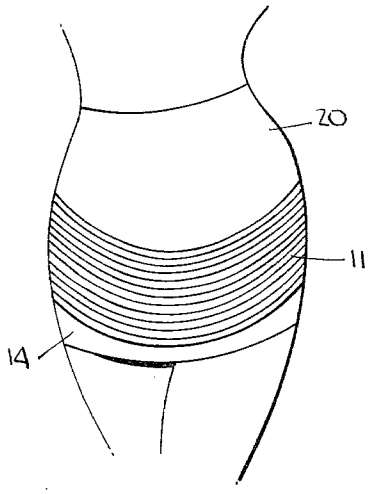
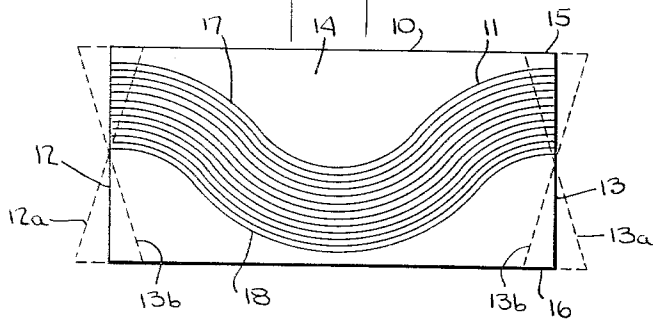


Fig. 3.



INVENTORS
NORMAN J. ALEXANDER
HERBERT A. KRUG

BY Kenyon & Kenyon
ATTORNEYS

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3,236,241
GIRDLE

Norman J. Alexander, 50 Sutton Place S., New York, N.Y., and Herbert A. Krug, 402 Semino Road, Northvale, N.J.

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5 Claims. (Cl. 128—555)

This invention relates to girdles and more particularly relates to a fabric girdle having an arrangement of interlineated threads adapted to properly support the human torso and to a fabric for constructing same.

Modern girdles are made primarily of fabric and attempt to control and support certain portions of the human anatomy. As is well known to those skilled in the art, the basic problem in girdle construction is to provide a single girdle-garment that upon wearing will exert varying degrees and directions of pressure and control upon the various parts of the body encompassed thereby. For instance, the stomach must be held in, the posterior must be flattened, and the hips must be slimmed. Moreover, a commercially acceptable item must accomplish these ends while remaining comfortable to the wearer, washable, and sufficiently expansive to allow easy and natural body movements.

Prior art girdle constructions have accomplished the control and support of the various body areas by means of panels inset into the girdle fabric. The presence of such inset panels at certain areas has altered the overall circumferential elasticity of the girdle in a way designed to apply the aforesaid proper pressure and support at each appropriate encompassed body area. However, the cutting, fitting, and sizing of such panels has been a major cost in girdle manufacture, and moreover it has been difficult to offer a complete range of girdles for every shape as well as size figure, because the permutations of possible panel combinations required to do so has been too high for manufacturing economy. A limited number of sizes has rather been offered, and women having contour as well as size problems have to some extent been consequently compromised.

Finally, the seams necessitated by such fitted panels have required special and expensive expedients to avoid the embossing of the wearer's skin, or the showing through the clothing as ridges, or both. Moreover, these seams naturally afford wear points subject to failure especially upon the customary frequent washing.

It is therefore a principal object of the present invention to provide a girdle construction having a continuous fabric various areas of which are adapted to properly support and control various encompassed areas of the wearer's torso.

Another object of the invention is to provide such a girdle exerting such control and support by virtue of the arrangement of threads interlineated through the circumference thereof.

Another object of the invention is to provide such a girdle characterized by economy and simplicity in manufacture and comfort and durability in use.

Another object of the invention is to provide a girdle of the aforesaid characteristics that in addition has very few seams to chafe, show or separate.

Another object of the invention is to provide a fabric for constructing such a girdle.

These and further objects and advantages of the invention will become more apparent to those skilled in the art upon inspection of the following detailed description of one illustrative embodiment of the invention when taken with the appended drawings wherein like characters identify like parts in all views thereof, and wherein:

FIGURE 1 is a perspective view of a front of a girdle according to the present invention when being worn;

FIGURE 2 is a perspective view of the girdle of FIGURE 1 when viewed from the rear; and

FIGURE 3 is a plan view of a planar fabric adapted to be assembled into the girdle configuration of FIGURES 1 and 2.

Referring now to the drawings, and particularly to FIGURE 3, a fabric **10** is produced having a cyclic pattern **11** thereupon. Pattern **11** is constantly repetitive in the bolt of fabric (not shown) as produced, and a single cycle of pattern **11** is segregated for a purpose hereinafter described by the cutting of cloth **10** from the continuous bolt along lines **12** and **13**.

The background **14** of fabric **10** is essentially similar to the band of fabric used in the prior art girdles of circumferential tensioning and known as a "power band." As is well known to those skilled in the art, the characteristic of such a power band fabric background **14** is that it exerts forces in all directions within its plane due to its multidimensional stretch when donned by a wearer. In the usual prior art girdles this force complex was given the proper local values to hold in the stomach, hips, etc., as need be, by the aforesaid panels of non-stretch cloth with all the attendant disadvantages.

In the present invention a pattern of non-stretchable threads **11** is interlineated into the stretchable power band background **14** as an integral fabric. By interlineated we mean the threads **11** are woven or knitted into the background fabric **14**. The pattern shown is generally sinusoidal in outline, but other continuous cyclical patterns that oscillate from side **15** to side **16** may be employed as will be better understood hereinafter.

The effect of weaving or knitting non-stretchable threads into stretchable background **14** is to reduce the local stretch characteristics in a manner related to the local area and density of such non-stretchable threads. When the term non-stretchable threads is used herein, it will be understood by those skilled in the art to define threads appreciably less elastic than those used in the usual power band, for instance cotton, wool, rayon or nylon. The more non-stretchable threads are included in an area, the more the usual stretch characteristics of that area of power band background **14** is interfered with. This effect is caused by the bulk-frictional and tensile effects of the local presence of the non-stretchable threads.

By weaving or knitting techniques well known to those skilled in the art, pattern **11** may have its extreme edges **17** and **18** "faded" into the bordering areas of background **14**. Thus the density of non-stretchable threads in pattern **11** will decrease gradually at borders **17** and **18** rather than having a sharp local contrast in density. The profile of stretch characteristics will therefore also be more gradual and consequently more comfortable to the wearer.

In order to assemble girdle **20** from fabric **10**, a single seam is formed of ends **12** and **13**, thus forming a sheath. Ordinary sheaths cannot act as an appropriate girdle, because the pressure they exert depends only on the surface profile of the torso encompassed. In other words, the pattern of control desired by girdle wearers cannot be exerted by an ordinary sheath with uniform stretch characteristics. This fact has led to the prior art girdles with the aforesaid panels and disadvantages.

However, when a sheath **20** according to the present invention is assembled from fabric **10**, the proper local pressures are supplied. As shown in FIGURE 1, seam **21** formed from ends **12** and **13** of fabric **10** is located at the front of the assembled girdle. It will be understood that seam **21** could alternatively appear at the rear of the girdle (shown in FIGURE 2) by virtue of selecting a portion of continuous pattern **11** such that ends **13** and

12 would have pattern 11 at side 16 instead of at side 15 as shown in FIGURE 3.

FIGURE 1 shows the upwardly arching portion of pattern 11 passing across the stomach of the wearer, while FIGURE 2 shows the downwardly arching portion of pattern 11 passing across the wearer's posterior. This arrangement creates non-stretch areas appropriate to pressure and support the area of the torso thereunder to produce the desired effect. The hips of the wearer are also correctly pressured because of the intermediate nature of the pattern 11 at the hips. This latter effect can be enhanced even further by the aforesaid "fading" of the non-stretch threads at the hip portions so that a smooth pressure profile and contour is assured there.

In order to raise or lower the arch of pattern 11 in FIGURE 1, ends 12 and 13 of fabric 10 need only be cut on a slight bias. Thus to vary both the intensity and direction of stomach support afforded by the girdle 20, ends 12 and 13 need only be cut on a bias before assembly. As shown in FIGURE 3, bias cutting along lines 12*a* and 13*a* will raise the front arch of girdle 20 shown in FIGURE 1, while cutting along lines 12*b* and 13*b* will lower the front arch. When the portion intercepted of pattern 11 of fabric 10 is selected so that seam 21 appears at the rear of the girdle, as discussed above, then the rear support may be varied by such bias cutting.

The advantages of the present girdle are several. A continuous bolt (not shown) of fabric 10 may be produced having a continuously repetitive pattern 11. The single cycle portion shown in FIGURE 3 may then be bias or non-bias cut from the continuous bolt and assembled as shown in FIGURES 1 and 2. A succession of portions 10 may thus be cut from the bolt and assembled into girdles. Only two cutting operations are thus necessary, and these are very simple. Only one seaming operation is necessary. The continuous nature of the production, and the simple nature of the assembly render the instant girdle extremely economical to produce. The absence of seams fosters durability during use and moreover presents less potential discomfort and ridges showing through outerwear. Various interlining and decorations may be added if desired.

Those skilled in the art will find this specification a complete illustration of what is at present believed to be the best means for practicing the invention. However, it will be apparent that certain modifications will be made in the arrangements of the parts without departing from the scope of the invention which has been merely illustrated, not limited, by the embodiment shown herein.

What is claimed is:

1. A girdle comprising a power-band sheath, and a circumferential band of threads interlineated within the fabric of said sheath, the interlineated threads of said circumferential band being less stretchable than the threads of the fabric of said sheath, said circumferential band occupying a portion of the area of said sheath in a generally sinusoidal pattern of one circumferential cycle, said sheath having a front portion wherein is encompassed the upwardly arched portion of said cycle of said circumferential band and a rear portion wherein is encompassed the downwardly arched portion of said cycle of said circumferential band, the cyclical portion of the area of said sheath occupied by said circumferential band having a lower stretchability than the remainder of the area of said sheath.

2. A girdle comprising a power-band sheath, and a circumferential band of threads interlineated within the fabric of said sheath, the threads of said circumferential band being less stretchable than the threads of the fabric of said sheath, said circumferential band occupying a portion of the area of said sheath in a generally sinusoidal pattern of one circumferential cycle, said sheath having a front portion wherein is encompassed the upwardly arched portion of said cycle of said circumferential band and a rear portion wherein is encompassed the downwardly arched portion of said cycle of said circumferential band, the cyclical portion of the area of said sheath occupied by said circumferential band having a lower stretchability than the remainder of the area of said sheath, said circumferential band area being faded into said sheath area at the boundaries therebetween so that a stretchability gradient exists at said boundaries.

3. Fabric for girdles comprising a continuous power-band, and a band of threads interlineated within the fabric of said power band, said band of threads being less stretchable than the threads of the fabric of said power band, said interlineated threads occupying a portion of said power band in a generally sinusoidal pattern from one lateral side thereof to the other side thereof along the entire length thereof.

4. An individual swatch of fabric for assembly into a girdle comprising a length of power band having a top-side, a bottom side, and two end-sides, and a band of threads interlineated within the fabric of said power band, said interlineated threads being less stretchable than the threads of the fabric of said power band, said band of threads occupying a portion of said power band in a generally sinusoidal pattern from the top-side thereof to the bottom-side thereof along the length thereof and describing one cycle of said pattern.

5. An individual swatch of fabric in the form of a sheath for assembly into a girdle comprising a length of power band, a top-side, a bottom side, and two end-sides, and a band of threads interlineated threads being less said power band, said interlineated threads being less stretchable than the threads of the fabric of said power band so that the area occupied by said band of threads is less stretchable than the remaining area of said power band, and band of threads occupying a portion of said power band in a generally sinusoidal pattern from the top-side thereof to the bottom side thereof along the length thereof and describing one cycle of said pattern, said band of threads being faded into said sheath area at the boundaries therebetween so that a stretachability gradient exists at said boundaries.

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ADELE M. EAGER, *Primary Examiner.*

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,236,241 February 22, 1966

Norman J. Alexander et al.

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 4, line 39, after "interlineated" insert -- within the fabric of said power band, said interlineated --; line 40, strike out "said power band, said interlineated threads being less"; line 44, for "and band" read -- said band --.

Signed and sealed this 31st day of January 1967.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

EDWARD J. BRENNER
Commissioner of Patents