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Sarmiento

[11] **3,710,599**

[45] **Jan. 16, 1972**

[54] WARP KNIT COMBINATION ELASTIC FABRIC HAVING INTEGRALLY KNIT TWO-WAY STRETCH AND ONE-WAY STRETCH PORTIONS, AND METHOD OF MAKING SUCH FABRIC

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[63] Continuation-in-part of Ser. No. 21,409, March 20, 1970.

[52] **U.S. Cl.** **66/193**

[51] **Int. Cl.** **D04b 23/08**

[58] **Field of Search** ..... 66/172 E, 190, 177, 173

[56] **References Cited**

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[57] **ABSTRACT**

The invention is directed to a continuation elastic fabric of warp knit construction, as distinguished from circular knit, woven, etc., which is comprised of distinct but integrally knitted portions having two-way elasticity and one-way elasticity, respectively, and being characterized particularly by the ability of the fabric to lay flat in its relaxed condition for handling and cutting. In one of its most advantageous forms, the new combination elastic fabric is constructed in the form of a girdle fabric having a body portion of two-way elasticity and selvedge portions of one-way elasticity. One selvedge portion constitutes a waistband elastic, while the other selvedge portion constitutes a leg band elastic. The thus integrally knitted combination fabric may be conveniently handled, cut and sewn to construct a girdle or panty girdle, realizing significant economies relative to conventional manufacturing processes.

The new combination fabric of the invention is characterized by the fact that the different component portions of the fabric can have significantly different characteristics of extensibility. For example, the selvedge portion may have a significantly greater extensibility than the body portion and one selvedge portion may have a significantly greater extensibility than the other, as may be desired in the construction of a garment having waistband and leg band selvedges, for example.

The fabric of the invention incorporates elastic yarns in its construction. However, in each instance, the elastic yarn is laid in, rather than knitted in, to the fabric structure. In the one-way stretch portions of the fabric, the elastic yarns are laid in across one needle space; in the two-way stretch portions of the fabric, the elastic yarns are either laid in across more than one needle space, or a bidirectional stretch is derived from a ground stitch extending across more than one needle space. In addition, certain important relationships are maintained between yarn weights and knitting tensions, in order to achieve the desired different degrees of extensibility in the various component portions of the fabric, while, at the same time, retaining the critically important ability of the fabric to lay flat in its relaxed condition.

7 Claims, 3 Drawing Figures

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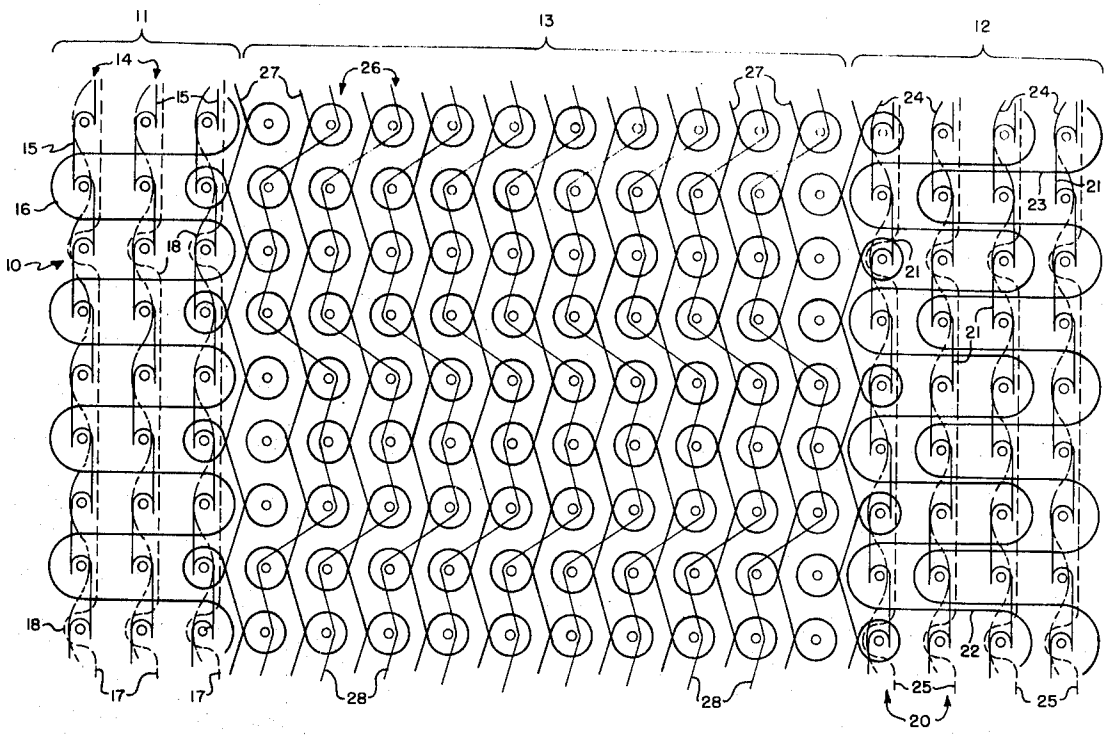
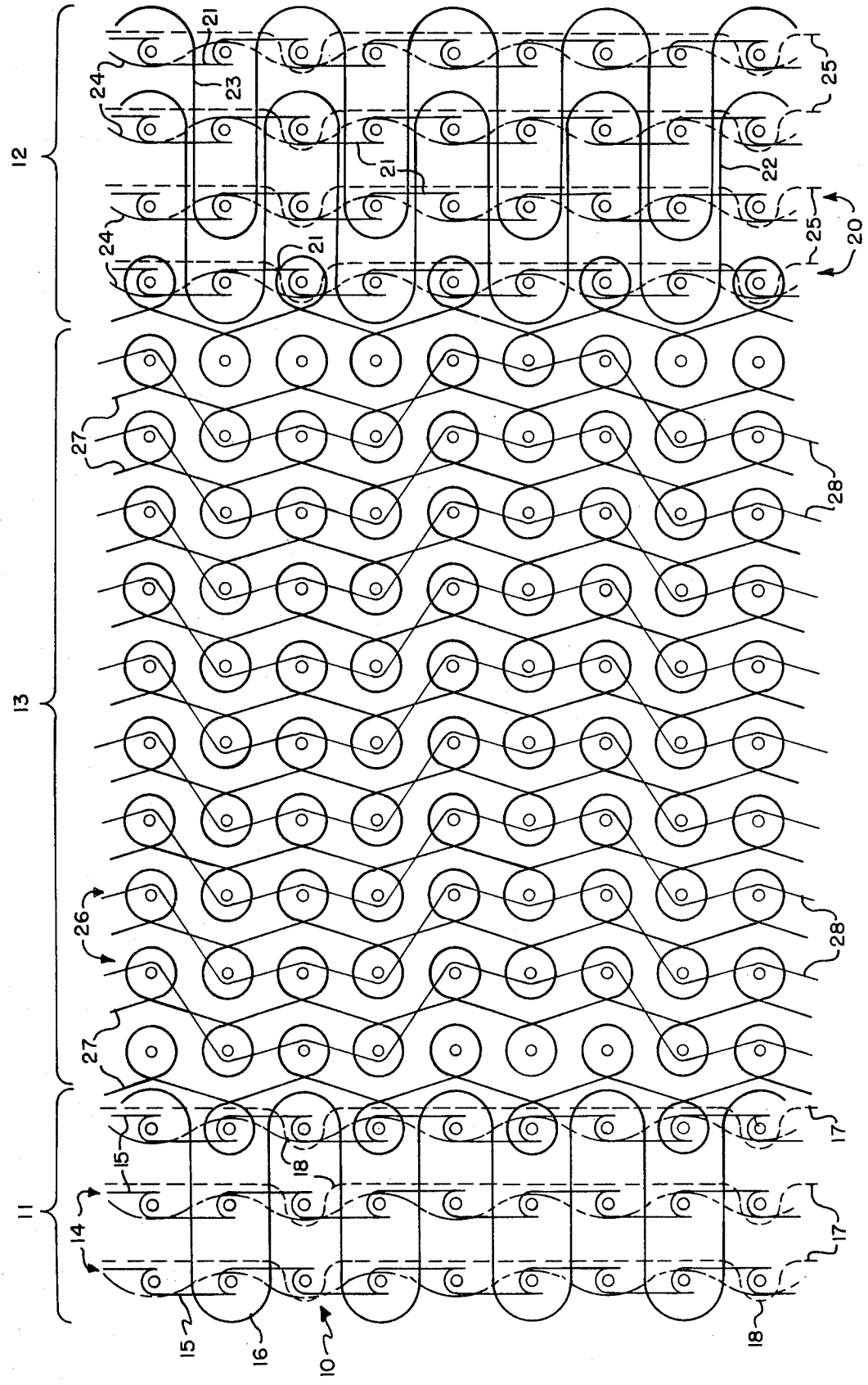


FIG. 1



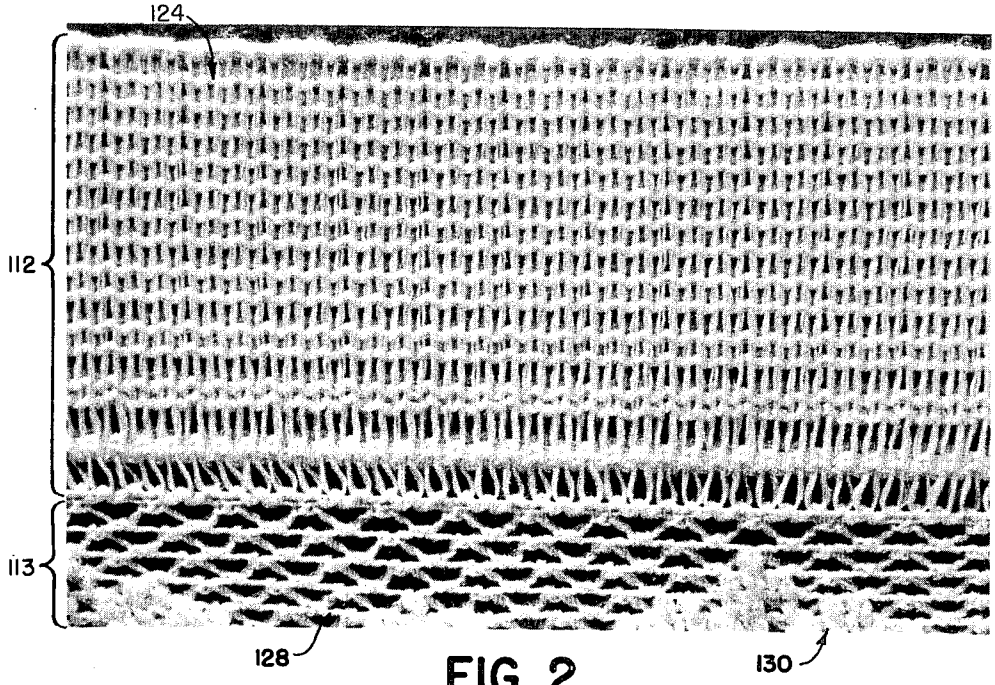


FIG. 2

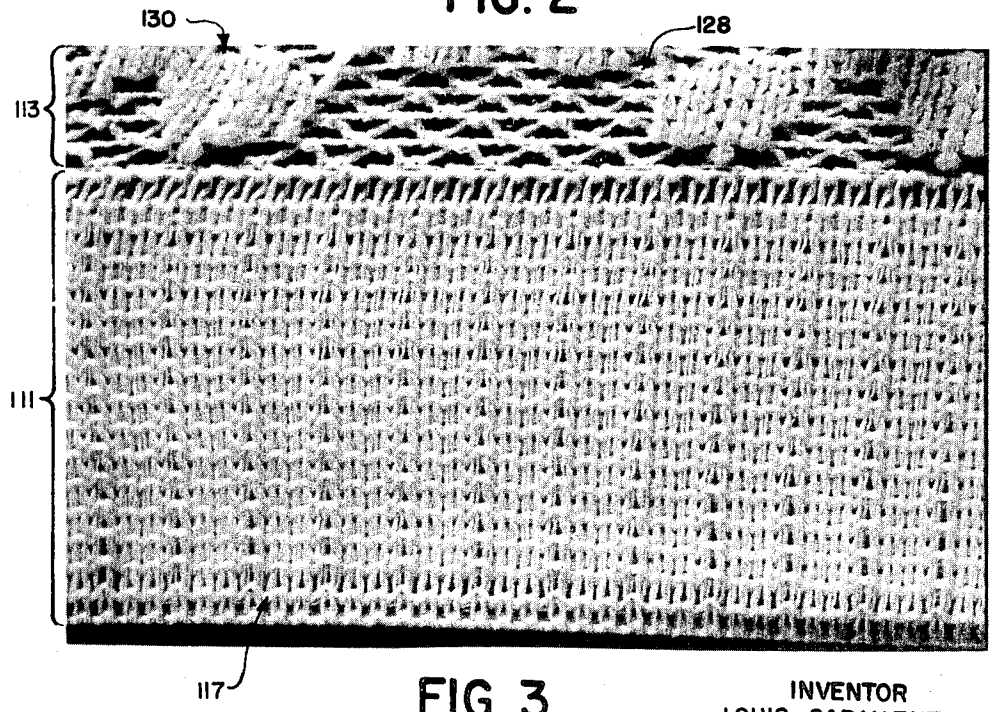


FIG. 3

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WARP KNIT COMBINATION ELASTIC FABRIC HAVING INTEGRALLY KNIT TWO-WAY STRETCH AND ONE-WAY STRETCH PORTIONS, AND METHOD OF MAKING SUCH FABRIC

RELATED APPLICATIONS

This application is a continuation-in-part of my copending application Ser. No. 21,409, filed Mar. 20, 1970.

BACKGROUND AND PRIOR ART

In the manufacture of garments, such as girdles, panty girdles, and the like, it has been conventional practice to separately cut and assemble sections of elastic fabric and elastic banding, to provide garments incorporating components having various dissimilar characteristics. For example, in a typical girdle, there may be incorporated a waistband elastic, having a high degree of extensibility and one-way stretch characteristics, a body portion having a more limited degree of extensibility and two-way stretch characteristics, and leg band portions having an intermediate degree of extensibility and one-way stretch characteristics. It has long been proposed in the past to construct a fabric which includes, as it emerges from the knitting machine, the several principal fabric components knitted together in an integral relation. Such a fabric could, of course, simplify the garment manufacturing operation.

Notwithstanding the obvious desirability of a combination elastic fabric of the type mentioned, such a fabric has not been made commercially available heretofore, because of the extraordinary difficulties which arise in the actual manufacture of such a product. For example, the leg band, waistband, and body portions of a combination elastic girdle fabric all should have differing characteristics of extensibility. At the same time, fabric must lay flat in its relaxed condition, so that it may be handled, cut, sewn and otherwise processed in a convenient and satisfactory manner and also so that it will have a saleable appearance. Heretofore, these enormously inconsistent requirements have not been met, and the industry has not, heretofore, been provided with a suitable combination elastic fabric.

Typical examples of prior art attempts to construct combination elastic fabrics are represented by the Mendel et al. U.S. Pat. No. 2,147,169, and the Reinthal U.S. Pat. No. 2,114,004. In both of these prior art disclosures, however, the fabric structure is basically the same in the several principle component portions of the combination fabric, except for a selective substitution, in the elastic portions, of elastomeric yarns in place of the conventional, non-elastomeric yarns utilized in the construction of the remainder of the fabric. Such a simple substitution does not enable a commercially useful product to be achieved. The Boysen et al. U.S. Pat. No. 2,074,119 reflects an effort to construct a fabric having non-elastic portions joined to bidirectionally elastic portions. The bidirectional elasticity of the Boysen et al. fabric is derived from a construction which includes a combination of straight and sinuously disposed elastomeric yarns. The fabric of the Boysen et al. patent provides for separate, bidirectionally elastic areas of similar stretch characteristics, and does not reflect in a helpful manner on the problem, solved by the applicant, of providing a fabric having bidirectional and unidirectional elasticity and different degrees of extensibility, yet which lies flat in its relaxed state.

The more recent Garson U.S. Pat. No. 3,177,875 discloses a girdle fabric having adjacent portions of different elastic characteristics, derived from utilizing a greater or lesser number of elastic yarns in the construction of the garment. The fabric of the Garson patent does not incorporate integrally joined portions of bidirectional and unidirectional elasticity.

SUMMARY OF THE INVENTION

In accordance with the present invention, a unique fabric is provided, useful especially in girdles, panty girdles and the like, which incorporate in an integral fashion and in immediate adjacency, at least one bidirectionally elastic portion and at least one unidirectionally elastic portion, with both elastic portions having different degrees of extensibility. The invention provides such a fabric, of wrap knit construction, which will lay flat or substantially flat in its fully relaxed condition, so that the fabric can be cut, sewn and otherwise handled in a completely conventional manner. The essence of the present invention resides in so constructing the combination elastic fabric that the differing, and to a considerable degree, inconsistent elastic characteristics of the different fabric portions can be constructed into the fabric in such manner as will permit the fabric to be free of the distortions in its relaxed condition.

In the rudimentary form of the fabric, the unidirectionally elastic portions thereof are constructed to have a ground stitch structure of chain-like wrap rows, which are laterally independent. These independent warp rows are connected by lateral running yarns, which are laid in over two or more needle spaces and provide for lateral non-extensibility and a desirable degree of wall strength to minimize rolling or curling. Elastomeric yarns are incorporated into warp rows by laying in along a single needle space. The bidirectionally elastic portion of the new fabric includes a ground stitch structure in which the adjacent warp rows are laterally interconnected (e.g., as in a tricot stitch) to provide a structural relationship of length width interdependency. Elastomeric yarns are incorporated in this bidirectionally elastic portion by being laid in to the ground stitch structure across two or more needle spaces.

A significant aspect of the invention resides in the maintaining of predetermined relationships in the yarn tensions of the various fabric portions during the construction thereof, which enables the desired elastic properties to be incorporated in the combination fabric and yet, at the same time, enables the fabric to be free of distortion in its relaxed condition. To this end, the elastomeric yarns for the unidirectionally elastic fabric portions are laid in to the ground stitch structure under a higher yarn tension than the elastomeric yarns for the bidirectionally elastic portion. The ground stitch structure, on the other hand, has an opposite tension relationship. That is, the ground stitch for the bidirectionally elastic portion desirably is constructed under a higher yarn tension than the ground structure for the unidirectionally elastic portion.

In addition to the above mentioned yarn tension relationships, the fabric of the invention advantageously observes certain yarn size relationships, in order to achieve optimum characteristics. In this respect, the ground stitch yarn for the unidirectionally elastic portion should be at least 50 percent heavier than the ground stitch yarn incorporated in the bidirectionally elastic portion. Likewise, the lateral running yarns incorporated to provide wall strength and lateral non-extensibility to the unidirectionally elastic portions should be substantially heavier than the ground stitch yarns.

In one of its most advantageous forms, the fabric of the invention is constructed for use in the manufacture of girdles and panty girdles and includes a bidirectionally elastic body fabric portion and unidirectionally elastic selvedge portions forming waistband and leg band elastics. The waistband elastic has greater extensibility than the leg band elastics, and both unidirectionally elastic portions have greater extensibility than the bidirectionally elastic body portion. Nevertheless, the fabric in its relaxed condition lays flat and is easily cut and handled.

The combination elastic fabric of the invention is readily adaptable to the incorporation of additional deluxe features, such as fancy, lacy patterns, functional facing on the inside of the waistband and elastic band portions, etc. Thus, the fabric of the invention can be constructed to suit the requirements of a variety of markets, including low budget and deluxe levels.

While the fabric of the invention is particularly well suited for the manufacture of girdles and panty girdles, for example, it will be readily appreciated that the fabric may be used in many other ways.

For a better understanding of the invention, reference should be made to the following detailed description and to the accompanying drawing.

DESCRIPTION OF THE DRAWING

FIG. 1 is a simplified, schematic representation of a rudimentary form of warp knit combination elastic fabric incorporating the principles of the invention.

FIGS. 2 and 3 are enlarged photographic representations of edge portions of a fabric of the type shown in FIG. 1, illustrating the unidirectionally elastic selvedges and portions of the bidirectionally elastic body.

DESCRIPTION OF A PREFERRED EMBODIMENT

Referring now to the drawing, and initially to FIG. 1 thereof, the reference numeral **10** designates generally a combination elastic fabric according to the invention, which is provided with unidirectionally elastic selvedge portions **11, 12**. Where the fabric **10** is used in the construction of girdles, for example, the selvedge **11** may constitute a leg band elastic and the selvedge **12** may constitute a waistband elastic. As will appear, these elastic selvedges will, in such case, be constructed to have different characteristics, and may also be of different widths.

The reference numeral **13**, in FIG. 1, designates generally a bidirectionally elastic portion of the fabric. In the case of a girdle fabric, for example, the bidirectionally elastic portion **13** will constitute the body fabric portion.

In accordance with the invention, the unidirectionally elastic portion **11** comprises a plurality of warp rows **14** of laterally independent, chain-like stitches. Advantageously, the warp rows **14** may be constructed of non-elastomeric yarns **15**, according to the warp knitter's notation 0–2, 2–0, 0–2 (etc.). This will form a series of longitudinally interconnected chain-like stitches in the adjacent warp rows, with each of the stitch rows being confined to a single needle space in the knitting machine. The adjacent warp rows **14**, which constitute the ground stitch structure of the leg band elastic **11**, are laterally interconnected by means of lateral running yarns **16**, which are laid in during the warp knitting process and extend laterally over at least two needle spaces. In the rudimentary fabric illustrated in FIG. **1**, the lateral running yarns **16** extend across three needle spaces and, advantageously, are constructed into the fabric according to the warp knitter's notation 0—0, 6—6, 0—0, 6—6, (etc.). In a typical commercial fabric, the leg band elastic **11** may be comprised of a considerably larger number of warp rows **14** than is illustrated in FIG. **1**, in which case the lateral running yarns **16** may extend laterally a distance less than the entire width of the fabric portion **11**. In such cases, additional lateral running yarns (not shown) as provided in laterally overlapped relation. In all instances, the lateral running yarns will have a lateral traverse of at least two needle spaces and will overlap with any lateral extension by at least one needle space. This will be further illustrated in connection with the description of the waistband elastic portion **12**.

In the fabric of the invention, the lateral running yarns **16**, as well as the ground stitch yarns **15** for the warp rows **14**, are non-elastomeric. Thus, while the leg band selvedge **11** will have a desired degree of extensibility and contractibility as a function of the stitch loop construction of the warp rows **14**, the selvedge will be substantially non-extensible laterally, because of the generally straight lateral traverses of the yarns **16**.

To impart the unidirectional elasticity to the leg band selvedge **11**, each of the warp rows **14** incorporates an elastomeric yarn **17**. In accordance with the invention, the elastomeric yarns **17** are not knitted in to the fabric and do not form part of its ground stitch structure. Rather, the elastomeric yarns are laid in during the warp knitting procedure. Each of the elastomeric yarns **17** is confined to a single needle space, and advantageously is laid in according to the warp knitter's notation 0—0, 2—2, 0—0, 2—2, (etc.). As will be more fully described, the elastomeric yarns **17**, are maintained under substantial tension during the laying-in procedure, such that the elastic selvedge portion **11** is knitted in an elastically extended condition. Upon completion of the knitting process and longitudinal relation of the fabric, the elastomeric yarns will contract in length, collapsing the ground stitch structure of the selvedge down to a predetermined relaxed length.

Desirably, where the fabric **10** is intended for use in the manufacture of panty girdles, the leg band elastic **11** is constructed to incorporate a plurality of yarns **18**, which are formed of bare rubber and have extended exposure along the inner surface of the fabric. The rubber yarns **18** are incorporated in each of the warp rows **14** by laying in. Typically, the knitting machine guide bar for the rubber yarns may be shogged according to the

warp knitter's notation 0—0, 2—2, 0—0, 0—0, 0—0, 0—0, 0—0, 2—2, 0—0 (etc.). This causes the rubber yarns to have extended, exposed floats along the inside of the fabric, enabling the leg band elastic to grip and retain the upper portion of a stocking and thus function, in effect, as a garter.

In the fabric illustrated in FIG. 1, the unidirectionally elastic portion 12, which for purposes of illustration may be considered as a waistband elastic selvedge for a girdle fabric, is illustrated to have four warp rows 20 constructed of non-elastomeric yarns 21, it being understood, of course, that a commercial fabric typically will have a much larger number of warp rows. As in the case of the leg band elastic 11, the warp rows 20, are of laterally independent, chain-like stitch structure, advantageously according to the warp knitter's notation 0—0, 2—2, 0—0, 2—2, (etc.). These independent warp rows 20 are connected together by lateral running yarns 22, 23, which are laid in during the knitting operation.

In the illustrated fabric, the waistband elastic 12, incorporates lateral running yarns 22, 23 which extend over less than the entire width of the elastic selvedge. In this respect, the lateral running yarns 22, extend over three needle spaces, according to the warp knitter's notation 0—0, 6—6, 0—0, 6—6. In this illustrated selvedge construction, a second lateral running yarn 23, is overlapped with first, their being a two needle space overlap in the illustrated arrangement. The lateral running yarn 23, has the same warp knitter's notation as the yarn 22, but is carried by an adjacent yarn guide of a common guide bar of the knitting machine, as will be understood. The overlapping arrangement of the lateral running yarns 22, 23, provides for lateral non-extensibility of the entire width of the elastic selvedge 12, and also imparts desired wall strength thereto to resist curling or rolling when longitudinally extended.

Each of the warp rows 20, of the waistband elastic 12 has incorporated therein an elastomeric yarn 24. The yarns 24, as in the case of the elastomeric yarns 17 of the leg band elastic, are laid into the warp rows according to a 0—0, 2—2 warp knitter's notation, so that these yarns do not overlap the knitting needles and become part of the ground stitch structure. Also, as in the case of the elastomeric yarns 17, the yarns 24 are laid in through the warp rows 20 while maintained under substantial tension. Most advantageously, the tension in the elastomeric yarns 17 and 24 is the same. Indeed, it is convenient to draw both sets of elastomeric yarns from a common yarn beam, driven by a suitable positive drive automatic let-off system.

In a typical girdle fabric, the waistband elastic selvedge 12 will desirably incorporate plush yarns 25, in the warp rows 20. The plush yarns 25 are laid in desirably in the same manner as the bare rubber yarns 18 of the leg band elastics. That is, 0—0, 2—2, 0—0, (repeated five times), 2—2, (etc.). The plush yarns 25 thus advantageously may be laid in to the waistband selvedge 12 by means of the same guide bar used in the laying-in of the bare rubber yarns 18. The plush yarns 25 improve the comfortability of the waistband elastic against the skin of the wearer.

While the leg band and waistband elastic selvedges 11, 12 are constructed to have unidirectional elasticity only, the body portions 13 of the new fabric is constructed to have bidirectional elasticity. As a practical matter, this provides omnidirectional elasticity, as will be understood. In the illustrated fabric, the body portion 13 has a ground structure comprised of warp rows 26, formed of non-elastomeric yarns 27. The structure of the warp rows 26 is such as to provide interconnection of adjacent warp rows, so as to impart a length-width interdependency to the body fabric portions as a whole. To this end, the stitch structure of the warp rows 26, extends across more than one needle space. A convenient yet simplified form of stitch illustrative of this arrangement is the conventional tricot stitch, which is constructed according to the warp knitter's notation 2–4, 4–2, 2–4, 4–2, (etc.). Thus, each warp row has alternate stitch loops in the adjacent warp row.

In accordance with the invention, the body fabric 13 incorporates elastomeric yarns 28, which, like the elastomeric yarns 17, 24 are laid in by underlapping shogs only, rather than being knitted in with overlapping shogs. However, the elastomeric yarns 28 for the body fabric are most advantageously laid in across more than one needle space. In the illustrated fabric structure, utilizing a tricot ground stitch for the body fabric, the elastomeric yarns 28 advantageously are laid in across two needle spaces, according to the warp knitter's notation 0—0, 2—2, 0—0, 4—4, 2—2, 4—4, 0—0, (etc.). These elastomeric yarns 28 are laid in under considerable tension and, after the stitch is formed, the elastomeric yarns 28 assume a substantially straight line condition. In doing so, they of course laterally displace certain of the lateral courses of stitches relative to adjacent courses.

Of course, a number of bidirectionally elastic fabric construction may be utilized for the construction of the body fabric 13, so long as certain basic criteria are observed. For one, the elastomeric yarn must be laid in, and not overlapped about the knitting needles. For another, at least the ground stitches, and preferably also the elastomeric yarns, must extend across more than one needle space. Most advantageously, both the ground stitch yarn 27 and the elastomeric yarn 28, extend across more than one needle space. However, in certain instances, such as in power net constructions, for example, a bidirectional stretch characteristic may be achieved while laying in the elastomeric yarn in a single needle space.

In the construction of the fabric of the invention, it is essential that a certain relationship be observed in the structuring of the several principal components, in order to achieve a finished fabric, which, while having the several independent characteristics desired, will still lay flat in its relaxed condition. If the fabric tends to buckle or gather, it becomes unsightly and is marginally saleable (if at all) as a commercial girdle fabric.

One essential condition of a girdle fabric is that the elastic selvedges 11, 12 have a greater extensibility than the body section 13. To this end, several relationships are observed in the knitting. First, the non-elastomeric yarns 14, 21, used in the ground stitch structure of the selvedges 11, 12 are knitted in under lower yarn tensions than the non-elastomeric yarn 27 utilized in the ground structure of the body fabric 13. Second, and conversely, the elastomeric yarns 17, 24 for the elastic selvedge portions are laid in under greater yarn tension than the elastomeric yarns 28 for

the body section **13**. Third, the elastomeric yarns **28**, are of a lighter weight than the elastomeric yarns **17**, **24**. For example, the yarns **17**, **24** for the elastic selvedges typically may be of 50 gage covered rubber, whereas the elastomeric yarns **28**, for the bidirectionally elastic body portion typically may be spandex yarns of 280 to 560 denier. The heavier denier spandex desirably is utilized for conventionally sized garments, with the lighter denier spandex being utilized where the fabric is intended for lower priced "one-size-fits-all" garments. In addition to the foregoing, in a typical commercial girdle fabric, a greater degree of extensibility is desired in the waistband elastic than in the leg band elastic. This is accommodated, in accordance with the principles of the present invention, by knitting the ground structure of the waistband elastic under a lower yarn tension than for the leg band elastic. Thus, in a typical commercial girdle fabric, the elastic modulus is maximum for the waistband selvedge, somewhat lower for the leg band selvedge and lower still for the body fabric.

In the fabric of the invention, the non-elastomeric yarns utilized in the leg band and waistband selvedges are in all cases significantly heavier than the non-elastic yarns utilized in the ground structure for the body fabric. Desirably, the selvedge ground structure yarns **15**, **21** are at least 50 percent heavier in denier than the yarns **27** for the body fabric ground structure. In a typical commercial girdle fabric, the ground structure yarns **14**, **21** for the selvedges may be on the order of 100 denier nylon. For the tricot ground stitch of the body portion, the yarns **27** may typically be of 50 denier acetate or 50 – 70 denier nylon, for example. The lateral running yarns, **16** in a case of the leg band elastic and **22**, **23** in the case of the waistband elastic, are, in accordance with the invention, significantly heavier than the other non-elastomeric yarns. In a typical commercial fabric, these lateral running yarns are of 200 denier nylon, for example. Often, the lateral running yarns may be the same for both selvedges. However, in some instances, heavier yarns may be utilized for the lateral yarns **22**, **23** of the waistband elastic than for the leg band elastic.

The new combination elastic fabric of the invention represents an extraordinary advance in the art of manufacturing commercial girdle fabrics and the like. Such combination elastic fabrics have long been known to be desired, and many attempts have been made to construct such fabrics. However, the widely diverse elastic characteristics of the several principle fabric components heretofore have been overpoweringly inconsistent with the need to achieve a fabric which will lay flat in its relaxed condition, enabling it to be handled, cut and sewn in conventional ways. The fabric of the invention, and the process for making it, establish and take into consideration a number of critical relationships among yarn sizes, yarn tensions, elastic moduli, stitch configuration, and the like which, in the end, enable this extraordinary result to be realized.

The new fabric lends itself well to the production of esthetically attractive fabrics. As reflected in the photographic representations of FIGS. **2**, and **3**, for example, lacy designs **130** may be incorporated into the body portion of the fabric without detrimentally affecting its bidirectionally elastic characteristics. Similar designs may be incorporated in the unidirectionally elastic portions if desired. This is a significantly advantageous marketing consideration. It will also be evident in FIGS. **2** and **3** that the elastomeric yarns **128** assume a substantially straight line configuration in the finished fabric. This is also true of the elastomeric yarns **117**, **124** of the leg band and waistband elastics **111**, **112**.

It would be understood, of course, that the specific forms of the new fabric herein illustrated and described are intended to be representative only, as many specific variations may be made therein within the skills and tastes of the fabric designer. Accordingly, reference should be made to the following appended claims in determining the full scope of the invention.

I claim:

1. A warp knit combination elastic fabric comprising

a. at least one unidirectionally elastic portion;

b. said unidirectionally elastic portion comprising a ground stitch structure of chain stitch wales formed of non-elastomeric yarns and non-elastomeric lateral running yarns laid into said stitch structure and interconnecting said wales;

c. first elastomeric yarns laid in along the wales of said unidirectionally elastic portion;

d. said first elastomeric yarns being laid in each of said wales;

e. first elastomeric yarns, in the relaxed condition of the fabric, laying substantially in the wales in which they were laid;

f. at least one bidirectionally elastic fabric portion integrally knitted together with said unidirectionally elastic portion;

g. said bidirectionally elastic portion having a ground stitch structure of non-elastomeric yarns in which individual non-elastomeric yarns form stitches in more than one wale, laterally interconnecting said wales;

h. the non-elastomeric yarns forming the ground stitch structure of the said unidirectionally elastic fabric portion being of at least about fifty percent higher denier and having a looser stitch construction than the non-elastomeric yarns forming the ground stitch structure of the said bidirectionally elastic portion;

i. second elastomeric yarns, of lower denier than the first elastomeric yarns, laid in along the wales of the bidirectionally elastic portion under lower tension than said first elastomeric yarns;

j. said second elastomeric yarns being laid in across a plurality of wales;

k. said second elastomeric yarns, in the relaxed condition of the fabric, lying substantially in a single wale;

l. the said lateral running yarns of said unidirectionally elastic portion extending across at least two stitches and being at least about twice the denier of the other non-elastomeric yarns of the fabric, to impart a substantial wall stiffness to said unidirectionally elastic portion.

2. A warp knit combination elastic fabric according to claim **1**, further characterized by

a. said fabric comprising, principally, a single body fabric portion of bidirectionally elastic fabric bounded on both lateral edges by selvedge portions of unidirectionally elastic fabric.

3. A warp knit combination elastic fabric according to claim 1, further characterized by

a. said lateral running yarns being on the order of 200 denier or heavier.

4. A warp knit combination elastic fabric according to claim 1, further characterized by

a. said fabric having a second selvedge formed of unidirectionally elastic fabric and intended to function as a leg band elastic;

b. the ground stitch structure for said leg band elastic having a looser stitch construction than the ground stitch for said body fabric portion; and

c. the ground stitch stitch structure of said waistband elastic having a looser stitch construction than said leg band elastic.

5. A warp knit combination elastic fabric according to claim 4, further characterized by

a. said waistband elastic incorporating a plurality of laid-in plush yarns having extended floats along the interior fabric surface;

b. said leg band elastic incorporating a plurality of laid-in bare rubber yarns having extended floats along the interior fabric surface.

6. The method of constructing a warp knit combination elastic fabric having at least one bidirectionally elastic portion and at least one unidirectionally elastic portion, in which said portions have different degrees of elastic extensibility, and where the fabric lays substantially flat in its relaxed condition, which comprises

a. knitting first non-elastomeric yarns to form a ground structure for said unidirectionally elastic portion comprising a plurality of adjacent wales of chain stitches;

b. laterally interconnecting said warp rows by laying in, across two or more needle spaces, one or more lateral running second non-elastomeric yarns in the lateral courses of chain stitches;

c. incorporating first elastomeric yarns in said wales of chain stitches by laying in said first elastomeric yarns in a single needle space;

d. Knitting third non-elastomeric yarns to form a ground structure for said bidirectionally elastic portion comprising a plurality of rows of ground stitches;

e. said first non-elastomeric yarns being of at least about fifty percent higher denier than, and being knitted under lower yarn tension than the third non-elastomeric yarns forming the said ground structure of said bidirectionally elastic portion;

f. said third non-elastomeric yarns being constructed to form stitches in a plurality of wales and thereby effecting lateral interconnection of adjacent wales; and

g. incorporating second elastomeric yarns in said bidirectionally elastic portion by laying said elastomeric yarns into the last mentioned ground stitches across a plurality of needle spaces;

h. said second elastomeric yarns being of lower weight than the first and being laid in under lower tension than the laying in of said first elastomeric yarns forming said unidirectionally elastic portion.

7. The method of claim 6, wherein the combination elastic fabric has a bidirectionally elastic body portion and unidirectionally elastic selvedge portions along each side of said body portion forming, respectively, waistband and leg band elastics, characterized by

a. knitting the ground stitches for the waistband elastic under lower yarn tension than the ground stitches for the leg band elastic;

b. knitting the ground stitches for the leg band elastic under lower yarn tension than the ground stitches for the body fabric portion, and

c. laying in the elastomeric yarns for the leg and waistband elastics under substantially equal yarn tension.

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