

Jan. 6, 1970

S. C. SAFRIT ET AL

3,487,662

THREE PIECE PANTY HOSE GARMENT

Filed May 15, 1968

3 Sheets-Sheet 1

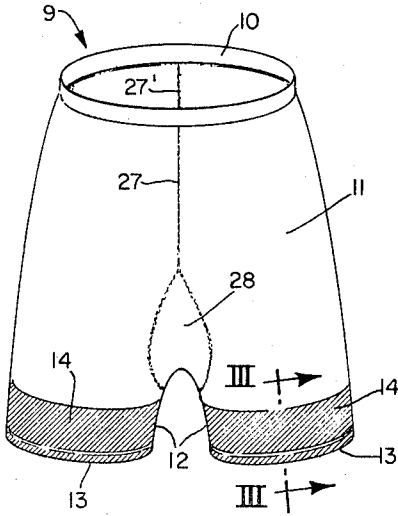


Fig. 1

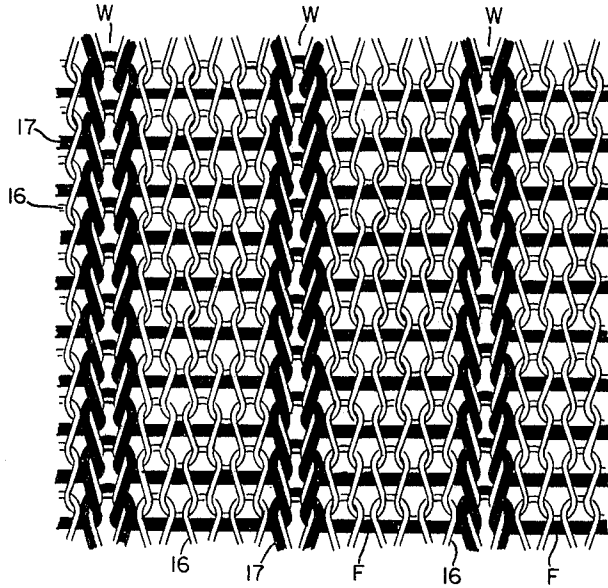


Fig. 2

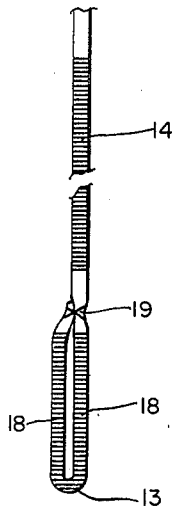


Fig. 3

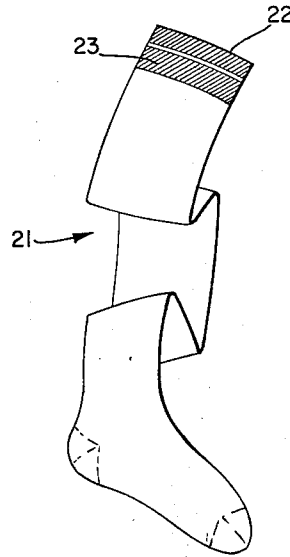


Fig. 4

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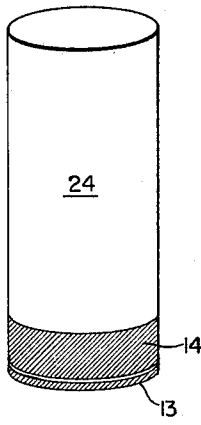


Fig. 5

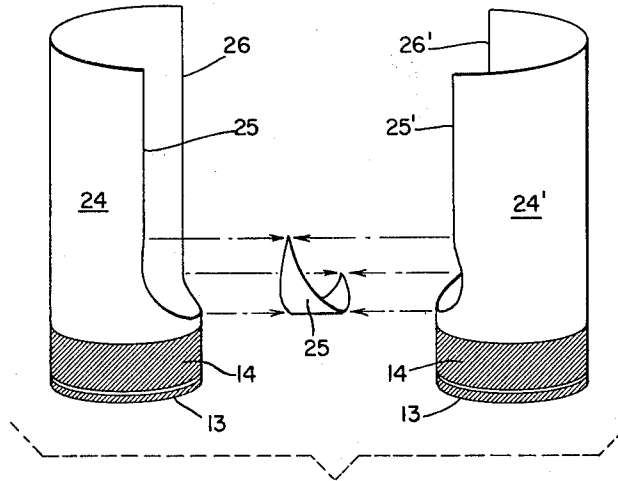


Fig. 6

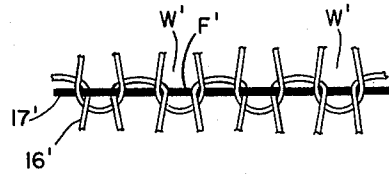
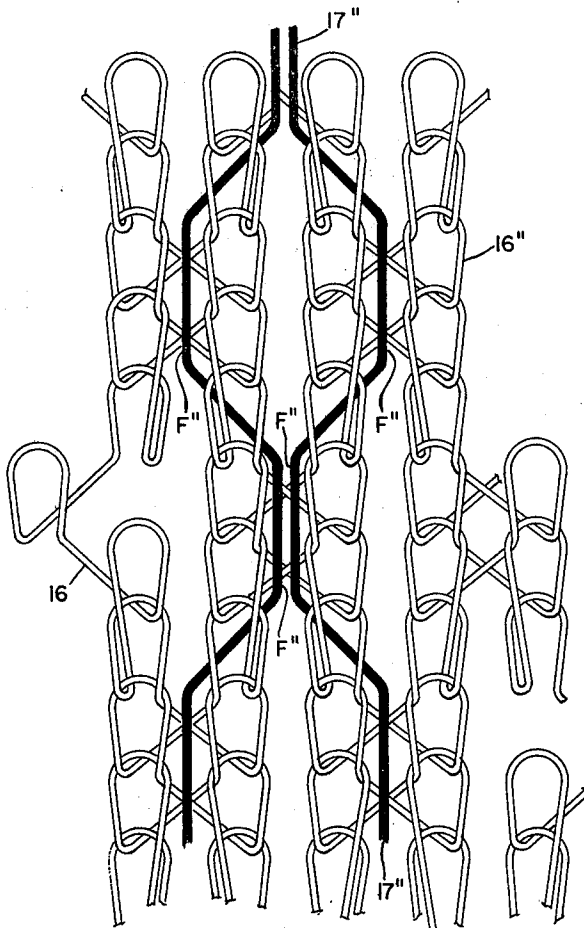


Fig. 7

Fig. 8

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3 Sheets-Sheet 3

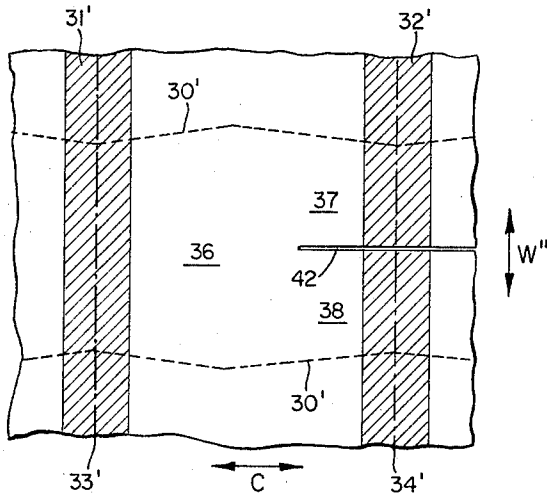


Fig. 10

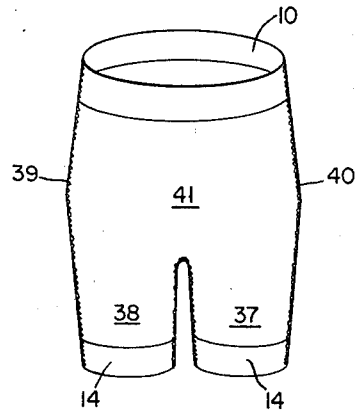


Fig. 11

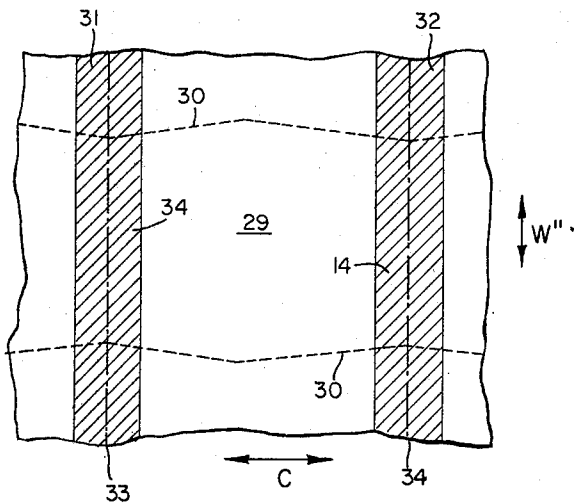


Fig. 9

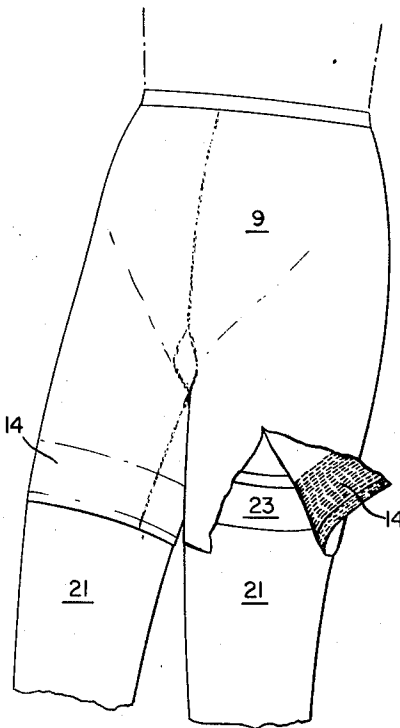


Fig. 12

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THREE PIECE PANTY HOSE GARMENT

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U.S. Cl. 66—173

10 Claims

ABSTRACT OF THE DISCLOSURE

A knitted three piece panty hose garment comprising a separable panty portion and two separable stocking portions. The panty portion has two legs, each of which terminates in a turned edge and has a circumferentially extending elastic area adjacent its turned edge. The elastic areas incorporate bare elastic yarn forming coursewise and walewise spaced floats and, when the garment is worn, engage and support the stocking portions during wear. The turned edge includes elastic yarn knit in a float pattern.

In recent years garments known as "panty hose" have become very much in demand by women wearing high style clothing. The demand has arisen, in part, because women's dresses and skirts tend to become shorter and expose more leg than heretofore.

Panty hose usually comprise an integrally made garment composed of a panty portion and two stocking portions. Such garments, while increasing in popularity and providing highly sheer, elegant and most comfortable wear, suffer from a disadvantage due to the fact that if a run or other damage develops in one of the stocking portions, the entire garment must be replaced.

To overcome this problem, attempts have been made to design panty hose whereby the stocking portions are separable from the panty portion, so that if a run occurs, or a stocking is otherwise damaged, it can be replaced without discarding the entire garment. Examples of such garments are found in U.S. Patents Nos. 3,249,110, 3,253,599, 3,359,571 and 3,362,029. However, such attempts have not been successful in practice. Either the resulting garments have failed to provide adequate stocking support, or have proven to be uncomfortable during wear by reason of the character of the stocking support provided.

Accordingly, the primary object of this invention is to provide a new and improved three piece panty hose garment comprising separate body and stocking portions wherein the panty portion is provided with elastic fabric means to engage and support the stockings during wear.

A further object is to provide a knitted panty garment for supporting a pair of stockings during wear which incorporates elastic areas having spaced yarn floats for engaging the stockings during wear.

It is a further object of this invention to provide a new and improved panty hose garment having separable panty and stocking portions whereof the panty supports the stockings during wear by knitted elastic fabric means which provides a mild, gentle, but secure support for the stockings.

Other objects and attendant advantages of this invention will be apparent from the following specification wherein:

FIG. 1 is a perspective view of the panty portion of the invention, with the elastic fabric areas thereof shaded.

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FIG. 2 is an enlarged, fragmentary, schematic stitch diagram of the elastic fabric, knit on a weft knitting machine.

FIG. 3 is a fragmentary schematic section looking in the direction of the arrows III—III of FIG. 1, showing the elastic areas shaded.

FIG. 4 is a perspective view of a stocking portion of the invention.

FIGS. 5 and 6 illustrate steps in the manufacture of the panty portion.

FIG. 7 is a schematic stitch diagram of an alternative construction of the elastic fabric, knit on a weft knitting machine.

FIG. 8 is a schematic stitch diagram showing a second alternative construction of the elastic fabric, knit on a Raschel or warp knitting machine.

FIG. 9 is a fragmentary, schematic illustration of a sheet of warp knitted fabric, with the outline of a panty blank indicated thereon.

FIG. 10 is a view similar to FIG. 9, illustrating an alternate type of panty blank.

FIG. 11 is a perspective view of a panty portion made from panty blanks of the type illustrated in FIG. 10.

FIG. 12 is an enlarged fragmentary view in perspective illustrating the invention during wear.

Throughout the specification and claims hereof, the term "stretch yarn" shall indicate any of the well known synthetic, thermoplastic, heat-settable yarns which have capacity to elongate and contract, but have virtually no power in contraction. Such yarns include "Agilon," "Cantrece" 880 or 881, false twist S and Z yarns, S and Z twist yarns of the type disclosed in U.S. Patent No. 2,771,733 and "Duotwist" yarn of the type disclosed in U.S. Patent No. 3,091,908.

The term "elastic yarn" as used herein shall mean any yarn having an inherent capacity to elongate under tension, and having an inherent tendency to contract from an elongated condition with a degree of power in contraction. Such yarns include rubber and spandex yarns, both bare and covered.

The panty 9 shown in FIG. 1 comprises a waistband 10, a body portion 11 and two leg portions 12, each of which terminate in a turned edge or welt 13. Each leg 12 has an annular or circumferentially extending band of elastic fabric 14 disposed adjacent its turned edge.

The fabric of the panty portion may be knit on a ladies' multi-feed circular hosiery knitting machine. Preferably, the garment is knit throughout with one of the many well known stretch yarns. In the elastic areas 14, a bare elastic yarn such as spandex, is incorporated with the stretch yarn.

A preferred form of weft knitted elastic fabric, composed of stretch yarn 16 and bare elastic yarn 17, is shown in FIG. 2. The elastic yarn 17 is knit in every fourth wale W and is floated across the three intervening wales to form floats F. Of course, the elastic yarn 17 need not be disposed in all courses of the elastic fabric areas 14, but may be incorporated in alternate courses, or every third or fourth course, etc., as desired. Similarly, if desired, the elastic yarn 17 may be knit in alternate wales or every third wale, or otherwise as desired, as explained in U.S. Patent No. 2,261,595. In any event, the floats F are spaced coursewise and walewise throughout fabric areas 14.

FIG. 3 is a schematic section taken along the arrows III—III of FIG. 1. The elastic area 14, knit of the fabric

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of FIG. 2, is shown as shading in FIG. 3. If desired, elastic yarn 17 also may be knit in the turned edges 13 of the legs 12 of the panty garment, as indicated by the shading 18 in FIG. 3. The turned edge is secured by a seam of stitching 19 in any well known manner, or may be knit as a welt in the usual manner employed in ladies' circular hosiery knitting machines. The welts or turned edges 13, 22 may be formed on a hosiery knitting machine by a rotatable dial and its accompanying bits in the usual manner, or simply may comprise a hem secured by a seam of stitching, such as overlock or other sewn stitches. By way of example only, such welts or turned edges may consist of a plurality of stretch yarn courses after the makeup courses, followed by about sixty courses including elastic yarn together with stretch yarn. Preferably, about four courses precede the transfer course and about eight courses are formed subsequent to it, all without elastic yarn 17 therein. The annular elastic areas 14, 23 may contain any selected number of stretch yarn courses incorporating elastic yarn, for example, eighty courses in all, either by knitting or interlacing, as desired. The precise number, spacing and arrangement of courses containing elastic yarn 17 is a matter of selection, as is the incorporation of elastic yarn either by knitting or interlacing into spaced wales.

The stocking 21 shown in FIG. 4 has its open, upper end formed with a welt or turned edge 22 in the usual manner. Spaced from the turned edge of the stocking is a circumferentially extending elastic area 23 knit of a fabric like that shown in FIG. 2.

If desired, the fabric forming the turned edge 22 of stocking 21 may incorporate elastic yarn in the manner illustrated in FIG. 2. In such event, the cross section view of the upper fabric portion of stocking 21 would be similar to that shown schematically in FIG. 3.

The manufacture of the panty 9 is similar to the technique disclosed in U.S. Patent No. 2,826,760. First, two tubular fabric portions 24, like that illustrated in FIG. 5, are knit. Each has a lower portion terminating in an annular elastic area 14 and a turned edge 13. Two such tubes 24 and 24' then are each cut along a wale of the fabric from the top thereof to a point just above the beginning of the elastic areas 14, as shown in FIG. 6. Thereupon, the opposing cut edges 25-25', 26-26' of the two tubular portions 24, 24' are joined together by sewing in any well known manner, producing seams 27, 27' (FIG. 1). If desired, crotch piece 28 may be inserted between the two tubular portions 24, 24'. The waistband 10 then is added to produce the garment shown in FIG. 1.

If desired, the elastic yarn in the elastic fabric areas 14 and 23 may be interlaced in the fabric, as shown in FIG. 7, in the manner taught in U.S. Patent No. 2,344,350. FIG. 7 shows elastic yarn 17' interlaced so as to pass behind alternate wales W' of stretch yarn 16' to form spaced floats F'. However, any well known interlacing arrangement may be employed, e.g., where the yarn floats pass behind two, three or even more consecutive wales of the fabric.

The fabric of panty 9 and stocking 21 may be warp knit rather than weft knit. FIG. 8 shows a preferred warp knit fabric made on a Raschel knitting machine having a single needle bar and four yarn guide bars. This fabric incorporates stretch yarn 16'' and walewise extending bare elastic yarn strands 17'' forming spaced floats F''. The elastic yarn strands 17'' are laid in the fabric and zigzag back and forth across their respective wales, thereby disposing the floats F'' of each strand in staggered relationship walewise of the fabric.

FIG. 9 illustrates schematically a sheet of warp knit fabric like that of FIG. 8, from which panty blanks 29 would be cut and then sewn together in pairs to produce the panty 9 of FIG. 1. The courses of this fabric extend in the direction of the arrows C and the wales in the direction of the arrows W''.

In FIG. 9, the broken lines 30 indicate the outside edges of each individual blank 29. Two such cut blanks

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are sewn together to produce the finished panty in a manner well known in the art. The shaded areas 31 and 32 indicate walewise extending elastic fabric areas, which incorporate the elastic yarn strands 17''. In making a panty blank, the fabric is cut along lines 30 and also lines 33 and 34 which are disposed intermediate, respectively, of the elastic areas 31 and 32. When thus cut, the portion of elastic area 32 of blank 29 becomes, in the finished panty 9, an elastic area 14. However, the elastic area 34 of blank 29, comprising a part of elastic area 31, becomes a portion of the waistband 10 of panty 9. Of course, if desired, knitted elastic band 31 may be omitted from the fabric of FIG. 9, in which case a separate elastic band 10 would be added to the fabric to complete it.

It will be noted, from FIG. 9, that the individual panty blanks extend coursewise of the fabric. The blanks are disposed in alternate inverted order across the fabric, so that alternate elastic bands, such as bands 32, provide elastic areas 14 for the leg portions of adjacent blanks, while the intervening elastic areas 31 provide waistband portions for adjacent blanks.

FIGS. 10 and 11 show an alternate panty made from warp knit fabric. In this case, the panty blanks 36 are oriented 90° from those shown in FIG. 9, and are cut so as to shape the individual leg portions 37 and 38. The fabric is knit with warpwise extending elastic areas 31' and 32' which are cut, respectively, along intermediate lines 33' and 34'. Two such blanks 36 are superimposed and joined together along their opposing edges 30' in any suitable manner, to produce side seams 39 and 40. Panty 41 shown in FIG. 11 would have the same elastic areas 14 as the panty of FIG. 1, and the same elastic band 10, which may either be knitted fabric from elastic fabric area 31', or a separate band sewn to the waist of the fabric. It is to be noted that, in cutting blank 36 of FIG. 10, it is necessary to slit the fabric in the crotch area 42 to produce leg portions 37 and 38.

FIG. 12 illustrates a preferred garment of this invention during wear. It will be noted that the elastic fabric portions 14 of panty 9 overlap the fabric portions 23 of the stockings 21. By reason of the numerous coursewise spaced and walewise spaced floats F of bare elastic yarn, which frictionally engage the portions 23 of the stockings, the stockings are supported and maintained on the leg in a wrinkle-free condition during wear. The elastic yarns in the fabric portions 14, by reason of their floats F, provide a mild, gentle, but secure support for the stockings 21.

Preferably, the yarn floats of the panty portion and (if any) of the stocking portions of the garment are disposed on the inside of the fabric, as illustrated by the broken away portion of panty 9 in FIG. 12. However, the invention works equally well if the floats of elastic yarn in the fabric portions 14 of panty 9 are disposed on the outside of the fabric, and the stockings 21, with the floats disposed on the inside of the fabric thereof, are pulled over the leg portions of the panty. Alternatively, the floats in the elastic portions 14 of the panty may be disposed on the inside of the fabric, while floats in the elastic portions 23 of the stockings may be disposed on the outside of the fabric. In such event, the floats of the respective portions will be in opposing contiguous relationship when the garment is worn.

It will be understood, of course, in weft knit fabric, in order to dispose yarn floats to the outside of the fabric, it is necessary to turn the fabric inside out. FIG. 2 shows the face or outside of the fabric, with the floats disposed on the inside thereof.

If desired, the elastic yarn 17 may be omitted altogether from the stocking portions 21, and plain knit stockings may be worn and supported by the panty portion 9.

It will be obvious that many modifications and variations may be made in the construction of the three piece panty hose garment of this invention without departing from the spirit and purpose of this invention. It is to be understood, therefore, that such modified forms of the

invention are included in the claims which are set forth below.

In view of the foregoing specification, the following is claimed as the invention hereof:

1. A weft knitted panty garment for supporting a pair of stockings, said panty comprising:
 - (a) a body portion and
 - (b) two leg portions,
 - (c) said leg portions including seamless stocking supporting areas integrally knit therewith for engaging and supporting the stockings during wear,
 - (d) said supporting areas each comprising a single ply of knit fabric having bare elastic yarn knit therein to form a series of exposed, spaced floats arranged circumferentially around the leg portion,
 - (e) said leg portions each terminating in a turned welt comprising a double ply of knit fabric having elastic yarn knit in at least one of said plies to form a series of spaced floats arranged circumferentially around the welt, whereby said welts also engage and support the stockings during wear.
2. The panty garment of claim 1 knit of stretch yarn.
3. The panty garment of claim 2 wherein the bare yarn floats are disposed on the inside of the fabric.
4. The panty garment of claim 2 wherein the bare yarn floats are disposed on the outside of the fabric.
5. The panty garment of claim 1 wherein the turned welts incorporate bare elastic yarn.
6. A weft knitted, three piece panty hose garment comprising a separable panty portion and two separable stocking portions wherein:
 - (a) the panty portion includes two leg portions and said leg portions include seamless stocking supporting areas integrally knit therewith for engaging and supporting stockings during wear, said areas comprising a single ply of knit fabric having bare elastic yarn knit therein to form a series of exposed, spaced floats arranged circumferentially around the leg portion, each of said panty leg portions terminating in a turned welt comprising a double ply of knit fabric having elastic yarn knit in at least one of said plies to form a series of spaced floats arranged circumferentially around the welt, whereby said welts also engage and support the stockings during wear, and
 - (b) each stocking includes a knitted top portion having bare elastic yarn incorporated therein to form a series of circumferentially arranged exposed spaced floats, said tops being engageable with said leg portions upon wearing.
7. The panty hose garment of claim 6 wherein the panty and stocking portions are knit of stretch yarn.
8. The panty hose garment of claim 6 wherein
 - (a) the bare elastic yarn floats incorporated in the panty portion are disposed on the inside of the fabric and

- (b) the bare elastic yarn floats incorporated in the stocking portions are disposed on the inside of the fabric.
9. The panty hose garment of claim 6 wherein
 - (a) the bare elastic yarn floats incorporated in the panty portion are disposed on the inside of the fabric and
 - (b) the bare elastic yarn floats incorporated in the stocking portions are disposed on the outside of the fabric.
10. The panty hose garment of claim 6 wherein
 - (a) the bare elastic yarn floats incorporated in the panty portion are disposed on the outside of the fabric and
 - (b) the bare elastic yarn floats in the stocking portions are disposed on the inside of the fabric.

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U.S. Cl. X.R.

2—240; 66—177; 128—519, 528, 535