Nov. 5, 1963 L. W. GARROU ET AL 3,109,300

SEAMLESS KNIT GARMENT HAVING INCREASED LENGTH AND METHOD OF MAKING SAME

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Fig-1

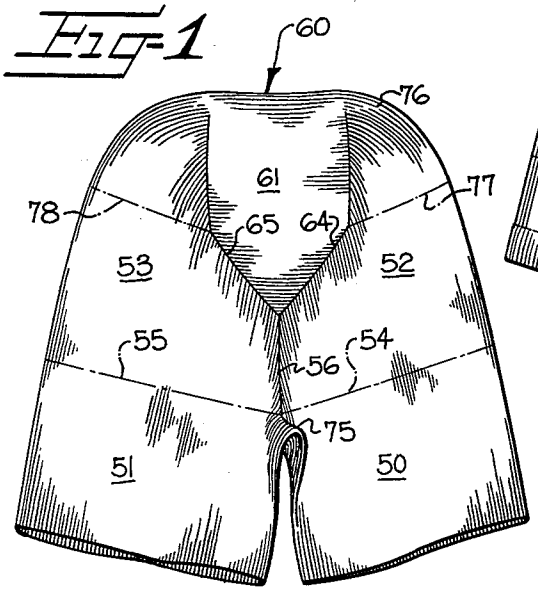


Fig-2

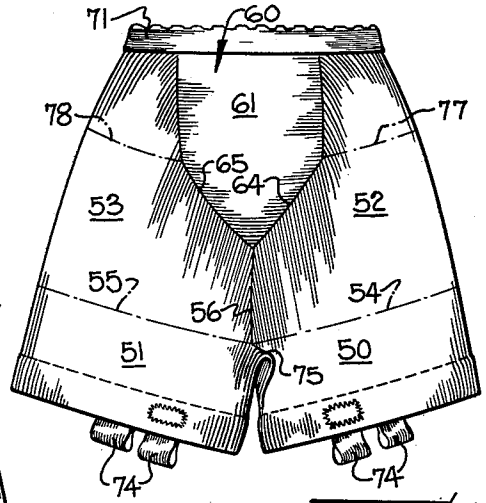


Fig-3

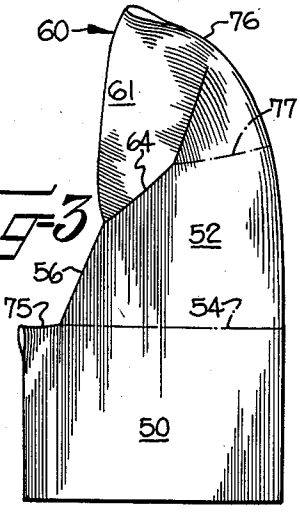
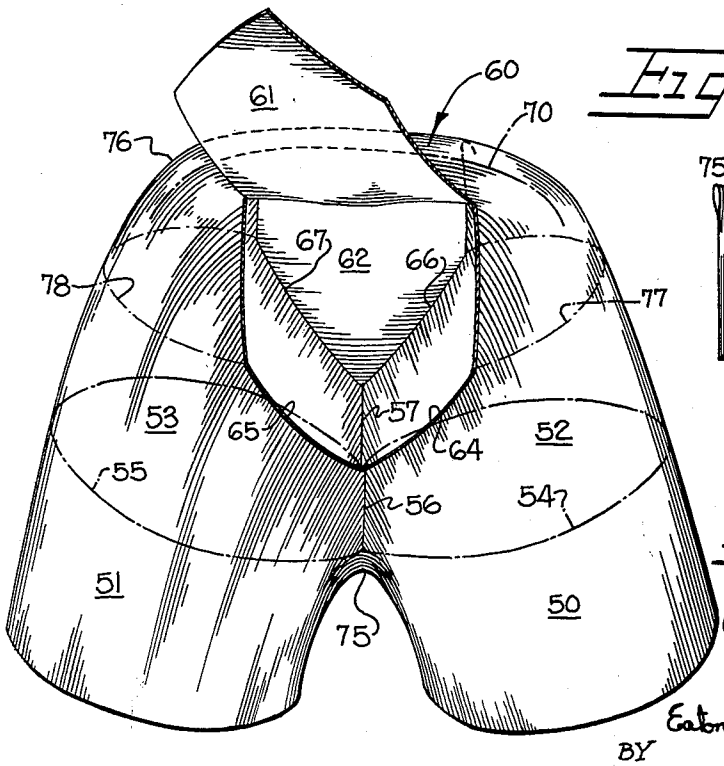


Fig-4



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FIG-5

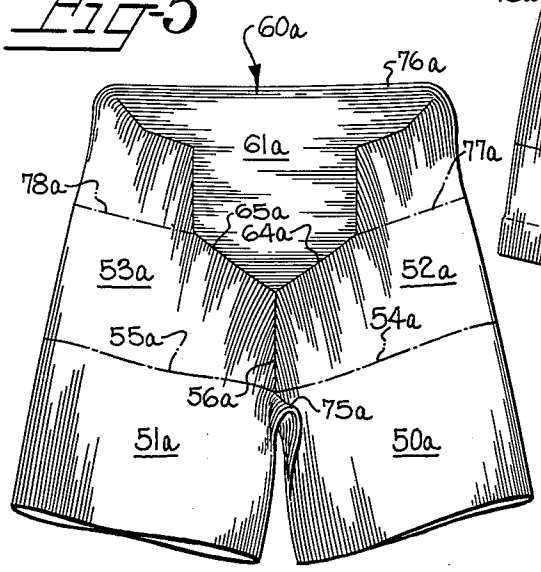


FIG-6

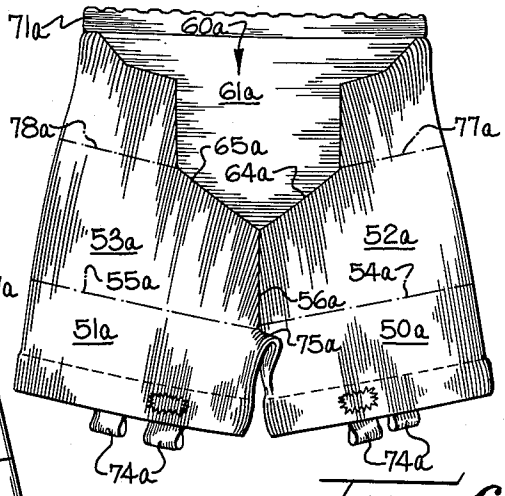


FIG-7

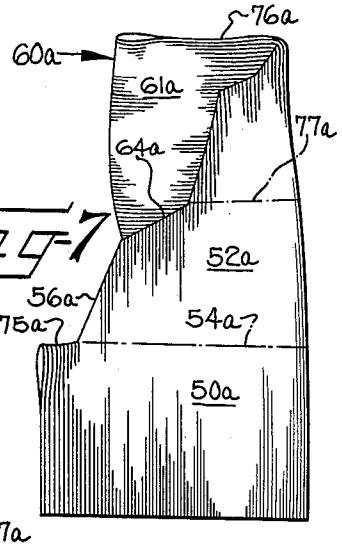
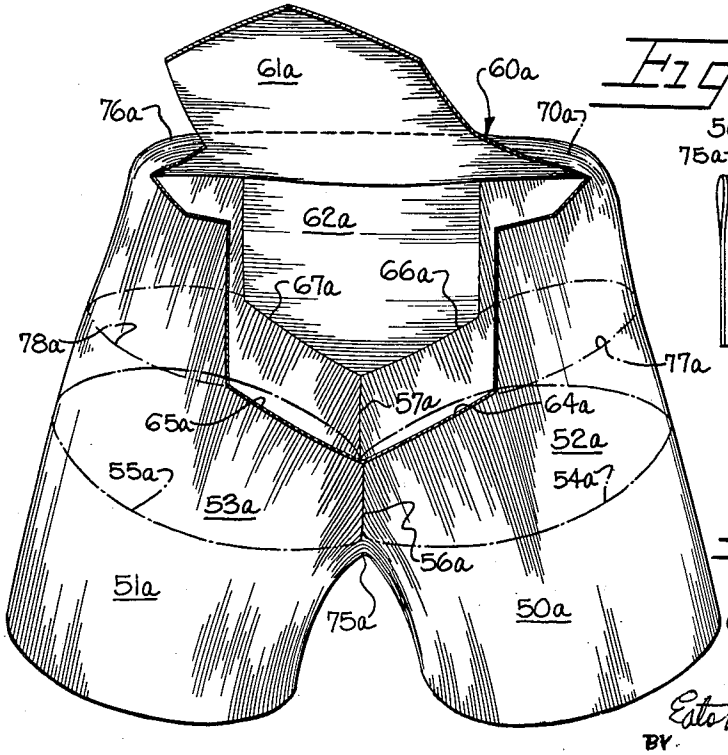


FIG-8



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United States Patent Office

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SEAMLESS KNIT GARMENT HAVING INCREASED LENGTH AND METHOD OF MAKING SAME

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Filed Sept. 12, 1960, Ser. No. 55,302
13 Claims. (Cl. 66—177)

The present invention relates generally to seamless knit two-legged lower body garments, such as panties, panty girdles, bathing suits and tights, or the like, and to the method of making the same. More particularly, the present invention relates to garments of the above type in which the width at the waist and/or the length from waist to crotch may be varied substantially.

In our copending application, Serial No. 840,407, filed September 16, 1959, now Patent No. 2,962,884, of which the present application is a continuation-in-part, a seamless knit garment and method of knitting the same is disclosed which is similar in some respects to the garment shown in the present application. For example, the garments shown in both applications have seamless knit leg portions in which the knit wales extend longitudinally of the legs, the legs have integrally formed tapered extensions, and integrally formed generally V-shaped front and rear body panels which connect the tapered extensions of the leg portions. However, in the garment disclosed in the above-noted copending application, the tapered leg extensions are only connected to the V-shaped body panels while in the garment disclosed in the present application, the tapered leg extensions are connected to each other as well as to the V-shaped body panels. By connecting the tapered leg extensions to each other as well as to the V-shaped body panels, the length of the garment, from the top of the waist to the crotch, can be varied. On the other hand, where the leg extensions are only connected to the V-shaped body panels, as is the case in the above-noted copending application, the length of the garment, from the top of the waist to the crotch, is dependent upon the diameter of the knitting machine upon which the garment is knit. In many instances, a relatively narrow garment having a relatively long length from the crotch to the top of the waist is desired and this result cannot be obtained in the garment disclosed in the above-noted copending application.

Also, in the form of garment shown in FIGURES 5–7 of our above-noted copending application, the tapered extensions of the legs and the body panels are fashioned by progressively activating and deactivating the same number of needles in succeeding partial courses of the leg extensions as well as in succeeding partial courses of the body panels. When this method of fashioning is used, the suture or gore lines connecting the body panels with the tapered leg extensions are straight and diverge outwardly and upwardly from each other to define an angle of approximately forty-five degrees therebetween. The resulting garment is substantially square, that is, the width across the hip portion is substantially the same as the width across the top of the waist and therefore a garment of this shape would properly fit only a person whose waist and hip measurements are the same. On the other hand, in the garment disclosed in the present application, the gore or suture lines, which define the edges of the body panels and the leg extensions, are not straight throughout their entire lengths. In the present garment, the shape of the garment is determined by at times varying the rate at which the fabric is widened and narrowed and at other times activating and deactivating groups of needles to fashion the tapered leg extensions and the body panels.

With the foregoing in mind, it is a primary object of the present invention to provide a one-piece seamless two-legged garment and novel method of fashioning the same during knitting so that the length, from the top of the waist to the crotch, may be varied and the width, at the top of the waist, may also be varied.

It is another object of the present invention to provide a fashioned seamless two-legged lower body garment which may be fashioned during the knitting thereof to conform to various predetermined body sizes and shapes in a simple and economical manner.

It is another object of the present invention to provide a seamless knit two-legged garment in which the length of the garment, from the crotch to the top of the waist, may be changed by joining the lower portions of the tapered leg extensions directly to each other while joining the upper portions of the tapered leg extensions to the body panels.

It is another object of the present invention to provide a seamless knit two-legged garment in which the width of the upper portion of the garment may be changed by varying the rate of increase and decrease in the width of the partial courses in the knitting of the tapered leg portions as well as in the knitting of the body panels and while at times suddenly increasing or decreasing the width of the fabric by a plurality of wales during the knitting of a single partial course.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds, when taken in connection with the accompanying drawings, in which—

FIGURE 1 is a front elevation of one type of seamless garment blank which may be knit in accordance with the present invention, illustrating the garment blank in flattened condition after it is removed from the knitting machine and prior to finishing the same;

FIGURE 2 is a view similar to FIGURE 1, showing a finished garment which is made from the garment blank shown in FIGURE 1;

FIGURE 3 shows the panty blank of FIGURE 1 with one leg thereof folded over onto the other leg and along a fold line extending vertically through the center of the blank shown in FIGURE 1;

FIGURE 4 is a perspective view of the garment blank shown in FIGURE 1 with the front panel cut along the gore or suture line which connects the panel to the upper tapered leg extensions, the front panel being raised to illustrate the appearance of the inside of the blank;

FIGURE 5 is a view similar to FIGURE 1 except showing a modified form of garment blank to illustrate a variation of overall shape which may be accomplished by varying the fashioning of the upper tapered extensions of the legs and the body panels of the blank;

FIGURE 6 is a view similar to FIGURE 5 showing a finished garment which is made from the garment blank shown in FIGURE 5;

FIGURE 7 shows the panty blank of FIGURE 5 with one leg thereof folded over onto the other leg and along a fold line extending vertically through the center of the blank shown in FIGURE 5;

FIGURE 8 is a perspective view of the garment blank shown in FIGURE 5 with the front panel cut along the gore or suture line which connects the panel to the upper tapered leg extensions, the front panel being raised to illustrate the appearance of the inside of the modified form of blank.

Referring to FIGURES 1, 3 and 4, it will be noted that the garment blank is knit in a shape suitable for forming a panty type article and the blank includes a pair of seamless tubular legs 50 and 51 having knit wales that extend substantially vertically or longitudinally thereof and knit courses that extend substantially horizontally

or transversely thereof. The garments shown in the drawings are shaded with lines which extend in the direction of the knit wales in various portions of the garment. The legs 50 and 51 are provided with integrally knit fashioned extensions 52 and 53, respectively, which are joined to and knit integrally with the upper ends of the legs 50 and 51 and extend upwardly from the respective dash-dot lines indicated at 54 and 55. The lower portions of the inner edges of the extensions 52 and 53 are connected together along respective front and rear vertically extending suture or gore lines 56 and 57 (FIGURE 4). Above the suture lines 56 and 57, the inner edges of the extensions 52 and 53 taper outwardly away from each other.

The upper portions of the inner edges of the extensions 52 and 53 are joined to opposite sides of a fashioned body gusset broadly indicated at 60. The body gusset 60 extends over the top of the blank and has respective front and rear panels 61 and 62 (FIGURE 4) at opposite ends thereof. The upper inner edges of the extensions 52 and 53 are joined to the front and rear panels 61 and 62 of the body gusset 60 during the knitting operation and in a manner to be later described, along respective front and rear suture or gore lines 64, 65 and 66, 67. The body gusset 60 is knit in such a manner that the knit wales thereof extend in substantially a horizontal direction in FIGURES 1 and 4, as opposed to the substantially vertically extending wales of the legs 50, 51 and extensions 52, 53.

After knitting of the garment blank is completed, the upper medial portion thereof is slit or cut along the dash-dot line indicated at 70 in FIGURE 4 to provide a waist opening. It will be noted that the slit extends walewise of the fabric and between the front and rear panels 61 and 62 and opposite ends of the slit also extend into the upper portions of the extensions 52 and 53. The waist opening may then be finished to prevent raveling by sewing a stretchable band 71 or the like to the edges (FIGURE 2). The lower ends of the legs 50 and 51 may be finished by turning the same upon themselves and sewing along the edges to form turned hems. The garment may also be provided with suitable garter support straps 74 which are sewed to the hems at the lower ends of the legs 50 and 51.

The finished garment (FIGURE 2) thus is completely devoid of any seams with the leg extensions 52 and 53 being joined to each other and to the body gusset 60 along suture or gore lines which are formed during the knitting operation. During the knitting of the garment blank, the leg extensions 52 and 53 and the body gusset 60 are fashioned by narrowing and widening the fabric, in a manner to be presently described.

Referring to FIGURE 4, it will be noted that when the blank is removed from the knitting machine, it defines a generally U-shaped tube having a crotch area 75 which extends between the lower ends of the gore lines 56 and 57 and connects together the seamless legs 50 and 51. The upper portion of the generally U-shaped tube defines a waist area indicated at 76 (FIGURE 1) which extends across the medial portion of the body gusset 60 and into the upper ends of the extensions 52 and 53.

As has been pointed out, the wales of the body gusset 60 run in substantially perpendicular relationship to the wales in the leg portions and by varying the length of stitches utilized in knitting different portions of the blank, the amount of stretchability of the different portions of the blank and the shape of the blank may be changed. Also, the body gusset 60 may be knit of a different yarn than that used to knit the leg portions 50 and 51 so that the fabric of the body gusset 60 may have different characteristics than the fabric of the legs 50, 51 and extensions 52, 53.

The panty type garment of the present invention will be described as being knit on a circular knitting machine

which is capable of rotary and reciprocatory knitting although it is to be understood that the garment may also be knit on other types of machines capable of knitting a tubular fabric, such as the Lamb type knitting machine in which a pair of angularly disposed needle beds are utilized.

When a circular knitting machine is used to knit the garment blank shown in FIGURES 1, 3 and 4, the needle cylinder will be supplied with the proper number of needles necessary to produce the desired diameter of seamless tubular fabric in the leg. Knitting of the blank may be started at the bottom of either of the legs 50 or 51 and will be described starting at the lower edge of the leg 50. Through conventional pattern control means, the needle cylinder is rotated continuously in one direction with all of the needles in active or knitting position so that when the desired type of yarn is fed to the needles, the tubular seamless leg 50 will be formed.

Rotary knitting is continued until the leg 50 is the desired length and in the present instance, rotary knitting continues until the dash-dot line 54 is reached. At this point, the machine switches into reciprocatory knitting and a group of the needles in the cylinder are moved to idle position with the remainder of the needles remaining in active position to start to knit the leg extension 52. The group of needles which are idled are positioned in the crotch area 75 of the garment and these needles will not again be active until the leg 51 is knit. During the knitting of the extension 52, partial courses are formed with each reciprocation of the needle cylinder and needles are successively removed from action during selected succeeding partial courses while retaining their stitch loops to produce a generally narrowed fabric.

It is preferred that the fabric of the extension 52 be narrowed very gradually throughout the first portion of the knitting thereof. In the present instance, one needle is removed from action during the knitting of each pair of succeeding partial courses during the first portion of the extension 52 or the section of fabric between the dash-dot line 54 and a dash-dot line 77.

As knitting of the extension 52 continues above the line 77, the fabric is narrowed at a faster rate than in the area below the line 77. In the present instance, one needle is removed from action during the knitting of each succeeding partial course to more rapidly narrow the fabric in the area above the line 77. Thus, the lower portion of the extension 52 is narrowed at a slower rate than the upper portion since one needle is idled every two partial courses in the area between the lines 54 and 77 while one needle is idled in every partial course in the area above the line 77. The extension 52 is gradually narrowed until only a relatively small predetermined number of needles remain active at the upper extremity of the tapered extension 52.

During the knitting of the first reciprocatory course of the body gusset 60, a group of needles adjacent each side of the previously active needles is brought back into action so that the first reciprocatory partial course of the body gusset 60 is knit on a much greater number of needles than the last partial course of the extension 52. The group of needles activated form the vertical portions of the front and rear gore or suture lines 64 and 66 which extend down to the dash-dot line 77 (FIGURES 1 and 4). Thus, the first reciprocatory partial course of the body gusset 60 extends across the top of the blank and down the front and rear, along the respective gore lines 64 and 66, to the dash-dot line 77. Following the knitting of the first pair of partial courses and as the partial courses of the body gusset 60 are gradually widened, the front and rear ends are connected to the fabric of the extension 52 along the inclined portions of the front and rear suture lines 64 and 66.

When the mid-point of the body gusset 60 is reached, one needle is removed from action during the knitting of succeeding pairs of partial courses to gradually reduce

or narrow the fabric. During this narrowing operation, one needle is removed from action during the knitting of each succeeding pair of partial courses and the front and rear ends of these partial courses are connected to the fabric of the extension 53 along the inclined portions of the front and rear suture lines 65 and 67. This narrowing operation is continued until the last partial course of the body gusset 60 is formed and then a group of needles at each end of the active needles is deactivated before knitting the first partial course at the upper portion of the extension 53. The first partial course of the extension 53 is reciprocatorily knit on a small group of needles to form a short partial course extending over the top of the blank and terminating at opposite ends at the upper ends of the front and rear gore lines 65 and 67. As knitting continues, one additional needle is brought back into action in each succeeding partial course to thereby gradually widen the fabric at a relatively fast rate.

As this widening operation continues, the partial courses of the upper portion of the extension 53 are connected to the last partial course of the front and rear body panels 61 and 62 of the body gusset 60 along the vertical portions of gore or suture lines 65 and 67 (FIGURES 1 and 4). When knitting of the upper portion of the extension 53 is completed, at the dash-dot line 78, the rate of increase or widening of the fabric is reduced and during the knitting of each succeeding pair of partial courses one additional needle is brought into action. Widening in this manner continues during the knitting of the partial courses between the dash-dot lines 78 and 55 and these partial courses are joined to the partial courses of the body gusset 60 along the inclined portion of the gore lines 65 and 67 as well as to the partial courses of the extension 52 along the gore lines 56 and 57.

When knitting of the lower portion of the leg extension 53 is completed, at the dash-dot line 55, all of the inactive needles in the cylinder are again activated and the machine switches into rotary knitting to again produce tubular seamless fabric and knit the tubular seamless leg 51. When all of the needles in the cylinder are again moved to active position, the group of needles which had been holding their stitch loops since the completion of the first seamless leg 50 are again activated to thereby join the two legs 50 and 51 together at the crotch area 75 of the blank. After knitting of the blank is completed, the upper end is slit along the dash-dot line 70 and the garment may be finished in the manner heretofore described.

Referring to FIGURES 5 through 8, a second form of garment is shown in which the manner of fashioning has been modified to provide a garment which has a wider waist than the first form of garment disclosed in FIGURES 1 through 4. However, the panty type garment shown in FIGURES 5 through 8 is knit in the same general manner as the garment shown in FIGURES 1 through 4 and includes substantially the same parts, therefore, parts of the second form of garment which are similar to corresponding parts of the first form of garment will bear like reference characters with the small letter "*a*" added.

In knitting the garment blank shown in FIGURES 5, 7 and 8, the leg 50*a* and the portion of the extension 52*a* up to the dash-dot line 77*a* is knit in an identical manner to the corresponding portion of the garment blank of the first form heretofore described. Thus, circular knitting is utilized to produce the leg 50*a* up to the dash-dot line 54*a* and then reciprocatory knitting, while gradually reducing the width of the fabric by one needle in each succeeding pair of partial courses thereof, is utilized to knit the lower portion of the extension 52*a* up to the dash-dot line 77*a*.

The upper portion of the leg extension 52*a*, above the dash-dot line 77*a*, is then knit by first gradually reducing the number of needles knitting in each partial course for a predetermined number of partial courses. Then a group of needles at each end of the active needles are deactivated during a single partial course to greatly reduce the number of needles knitting in the next succeeding partial course to greatly reduce the length of the succeeding partial course. This deactivation of groups of needles produces a substantially horizontal or coursewise extending portion on the inner edges of the extension 52*a*. Then, the gradual narrowing of the fabric is continued to complete the upper portion of the extension 52*a* until only a few needles remain in action.

Thus, in the knitting of the extension 52*a*, partial courses are formed with each reciprocation of the needle cylinder and the partial courses are knit on only a segment of the needles. During the knitting of the portion of the extension between the dash-dot lines 54*a* and 77*a*, the length of the partial courses progressively decreases by one needle or wale in each pair of partial courses and as is apparent in FIGURE 8, the length of the knit wales progressively increases as knitting progresses. During the knitting of the portion of the extension 52*a* above the dash-dot line 77*a*, the length of the partial courses progressively decreases by one needle in each partial course except when the groups of needles are deactivated at one time and then the length of the partial courses is greatly reduced. When the groups of needles are deactivated at one time, a group of wales at the front and rear sides of the extension 52*a* are formed which are the same length while the groups of wales at each side thereof progressively increase in length.

The body gusset 60*a* is then knit by gradually increasing the width of the fabric by one needle in each succeeding partial course in a widening operation. This gradual widening operation joins opposite edges of the body gusset 60*a* to the upper edges of the extension 52*a* along the upper inclined portions of the gore lines 64*a* and 66*a*. After a predetermined number of gradually widened partial courses are knit, a group of needles at each end of the active needles is made active during a single partial course to produce the vertically extending portions of the gore lines 64*a* and 66*a*. After activating the groups of needles, the width of the partial courses of the body gusset 60*a* is again gradually increased by activating an additional needle in each pair of succeeding partial courses.

As the first half of the body gusset 60*a* is knit, the edges of the front and rear panels 61*a* and 62*a* are joined to the edges of the upper portion of the extension 52*a* along the front and rear gore or suture lines 64*a* and 65*a* (FIGURE 8).

The second half of the body gusset 60*a* is then knit by first reducing the width of the fabric by one needle during each pair of succeeding partial courses in a narrowing operation. Then a group of needles at each side of the active needles is deactivated to produce the vertically extending portion of the gore lines 65*a* and 67*a*. Then one needle is deactivated in each succeeding partial course to gradually reduce the width of the fabric and complete the knitting of the gusset 60*a*. When knitting of the gusset 60*a* is completed, only a small number of needles are still active.

The upper portion of the extension 53*a* is then started by activating one additional needle in each succeeding partial course to gradually increase the width of the fabric while joining the inner edges of the upper portion of the extension 53*a* to the upper portion of the body gusset 60*a* along the front and rear gore or suture lines 65*a* and 67*a*. After knitting a predetermined number of gradually widened partial courses, a group of needles at each end of the active needles is activated to thereby form the horizontal or coursewise extending portions of the gore lines 65*a* and 67*a* (FIGURE 8). Then, gradual widening is continued down to the dash-dot line 78*a*. In the area between the dash-dot lines 78*a* and 55*a* the fabric is widened at a slower rate by activating one needle in each succeeding pair of partial courses.

During the gradual widening of the fabric between the dash-dot lines 78*a* and 55*a*, the partial courses are joined to the lower edge of the gusset 60*a* along the front and

rear suture lines 65*a* and 67*a* and then joined to the inner edges of the lower portion of the extension 52*a* along the front and rear suture lines 56*a* and 57*a* (FIGURE 8). When the extension 53*a* is completed to the dash-dot line 55*a*, all of the needles in the cylinder are again activated and the machine switches to rotary knitting to knit the seamless tubular leg 51*a* and complete the garment blank.

The panty blank may then be finished as shown in FIGURE 6 by transversely slitting the upper end of the blank along the dash-dot line 70*a* (FIGURE 8), and then sewing an elastic band 71*a* to the waist opening formed by the slit. The lower edges of the legs may be finished in any suitable manner, such as by turning the lower edges up inside of the legs and sewing to form hems. Then, suitable garter support straps 74*a* may be sewed to the hems at the lower ends of the legs 50*a* and 51*a*.

By referring to the forms of panty shown, it will be apparent that by changing the manner in which the body gusset and/or the leg extensions are widened and narrowed, the shape and size of the panty blank may be changed. For example, by changing the fashioning of the body gusset and the leg extension, the width of the waist area of the garment blank may be made greater or less to thus change the overall width of the upper portion of the panty blank. Also, the length of the garment from the waist to the crotch may be changed by varying the extent that the leg extensions are connected to each other below the body gusset.

It will be noted that in both forms of garment shown, the front and rear panels include a group of adjacent wales which are the same length and other groups of adjacent wales which successively decrease in length. In the garment shown in FIGURES 1–4, the group of adjacent wales which are the same length are positioned between the vertically extending parallel portions of the front gore lines 64, 65 and rear gore lines 66, 67 while the group of adjacent wales which successively decrease in length are positioned between the inclined lower portions of the front gore lines 64, 65 and rear gore lines 66, 67. In the garment shown in FIGURES 5–8, the group of adjacent wales which are the same length are positioned between the vertically extending parallel portions of the front gore lines 64*a*, 65*a* and rear gore lines 66*a*, 67*a*. In this garment, there is provided two groups of adjacent wales which successively decrease in length, one group being positioned between the inclined upper portions of the gore lines and the other group being positioned between the inclined lower portions of the gore lines.

It is to be understood that the seamless knit garment disclosed in the present application may be knit of any desired type of yarns to achieve the desired results in the garment. For example, the complete garment may be knit of either natural or synthetic, inelastic or non-stretchable yarn if stretchability of the garment is not desired. The complete garment may be knit of stretchable or elastic yarn if stretchability of the garment and support of the body of the wearer is desired. Various portions of the garment may be knit of stretchable yarn while other portions may be knit of non-stretchable yarn and some portions of the garment may be knit by combining stretchable and non-stretchable yarns. Also, the body gusset may be knit of two different yarns, so that, for example, the front panel may be knit of a stretchable yarn while the rear panel may be knit of a non-stretchable yarn.

Although only two panty type garment blanks have been illustrated and described, one of which has a relatively narrow waist portion and the other of which has a relatively wide waist portion, it should be apparent that garment blanks having waist portions of intermediate widths may be readily made without departing from the spirit of the invention and, also, it should be apparent that the length of the garment blank from waist to crotch may be varied from that shown in order to lengthen or shorten the garment.

In the drawings and specification there have been set forth preferred embodiments of the invention and, although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes of limitation, the scope of the invention being defined in the claims.

We claim:

1. A seamless knit panty or the like comprising a pair of interconnected seamless tubular legs, fashioned extensions knit integral with and extending upwardly from each of said tubular legs, the lower portions of said extensions connected to each other, and fashioned gusset panels knit integral with and connecting the fashioned extensions of each leg, the knit wales of said tubular legs and of said extensions extending longitudinally thereof and the knit wales of said gusset panels extending perpendicular to the wales of the legs and extensions, some adjacent wales of each of said gusset panels being of equal length, and the remaining wales of each of said gusset panels progressively varying in length.

2. A seamless knit panty or the like comprising a pair of interconnected seamless tubular legs, fashioned extensions knit integral with and extending upwardly from each of said tubular legs, the lower portions of said extensions connected to each other, and fashioned gusset panels knit integral with and connecting the upper portions of the fashioned extensions of each leg, the knit wales of said tubular legs and of said extensions extending longitudinally thereof and the knit wales of said gusset panels extending perpendicular to the wales of the legs and extensions, one group of adjacent wales of each of said gusset panels being of equal length, and another group of adjacent wales of each of said gusset panels progressively decreasing in length.

3. A seamless knit panty or the like comprising a pair of interconnected seamless tubular legs, fashioned extensions knit integral with and extending upwardly from each of said tubular legs, the lower portions of said extensions connected to each other, and fashioned gusset panels knit integral with and connecting the upper portions of the fashioned extensions of each leg, the knit wales of said tubular legs and of said extensions extending longitudinally thereof and the knit wales of said gusset panels extending perpendicular to the wales of the legs and extensions, one group of adjacent wales of each of said gusset panels being of equal length, and another group of adjacent wales of each of said gusset panels progressively decreasing in length, and positioned below said one group of adjacent wales.

4. A seamless knit panty or the like comprising a pair of interconnected seamless tubular legs, fashioned extensions knit integral with and extending upwardly from each of said tubular legs, the lower portions of said extensions connected to each other, and fashioned gusset panels knit integral with an connecting the upper portions of the fashioned extension of each leg, the knit wales of said tubular legs and of said extensions extending longitudinally thereof and the knit wales of said gusset panels extending perpendicular to the wales of the legs and extensions, one group of adjacent wales of each of said gusset panels being of equal length, another group of adjacent wales of each of said gusset panels progressively decreasing in length and positioned above said one group of adjacent wales, and a third group of adjacent wales of each of said gusset panels progressively decreasing in length and positioned below said one group of adjacent wales.

5. A seamless knit panty or the like comprising a pair of interconnected seamless tubular legs, fashioned extensions knit integral with and extending upwardly from each of said tubular legs, the lower portions of said extensions connected to each other, and fashioned gusset panels knit integral with and connecting the upper portions of the fashioned extension of each leg, the knit wales of said tubular legs and said extensions extending longitudinally thereof and the knit wales of said gusset

panels extending perpendicular to the wales of the legs and extensions, spaced apart groups of adjacent wales of each of said extensions being of equal length, and other groups of adjacent wales of each of said extensions progressively varying in length.

6. A seamless knit panty or the like comprising a pair of interconnected seamless tubular legs, fashioned extensions knit integral with an extending upwardly from each of said tubular legs, the lower portions of said extensions connected to each other, and fashioned gusset panels knit integral with and connecting the upper portions of the fashioned extensions of each leg, the knit wales of said tubular legs and said extensions extending longitudinally thereof and the knit wales of said gusset panels extending perpendicular to the wales of the legs and extensions, one group of adjacent wales of each of said gusset panels being of equal length, another group of adjacent wales of each of said gusset panels progressively varying in length, spaced apart groups of adjacent wales of each of said extensions being of equal length, and other groups of adjacent wales of each of said extensions progressively varying in length.

7. A seamless knit panty or the like comprising a pair of interconnected seamless tubular legs, fashioned extensions knit integral with an extending upwardly from each of said tubular legs, the lower portions of said extensions connected to each other, and fashioned gusset panels knit integral with and connecting the upper portions of the fashioned extensions of each leg, the knit wales of said tubular legs and said extensions extending longitudinally thereof and the knit wales of said gusset panels extending perpendicular to the wales of the legs and extensions, one group of adjacent wales of each of said gusset panels being of equal length, another group of adjacent wales of each of said gusset panels progressively decreasing in length and positioned above said one groups of adjacent wales, a third group of adjacent wales of each of said gusset panels progressively decreasing in length and positioned below said one group of adjacent wales, spaced apart groups of adjacent wales of each of said extensions being of equal length, and other groups of adjacent wales of each of said extensions progressively varying in length.

8. A seamless blank for forming a knit panty or the like comprising a substantially U-shaped seamless knit tube having tubular leg portions defining the openings of the U-shaped tube, a fashioned extension knit integral with each leg portion and connected thereto remote from the openings defined by the leg portions, each of said extensions having an inner edge, the leg extensions connected to each other along a portion of their inner edges, and a fashioned gusset knit integral with and connecting other portions of the inner edges of said extensions to define the central portion of the U-shaped tube, the knit wales in certain portions of said gusset being of equal length and the knit wales in other portions of said gusset progressively varying in length.

9. A seamless blank for forming a knit panty or the like comprising a substantially U-shaped seamless knit tube having tubular leg portions defining the openings of the U-shaped tube, a fashioned extension knit integral with each leg portion and connected thereto remote from the openings defined by the leg portions, each of said extensions having an inner edge, the leg extensions connected to each other along a portion of their inner edges, the knit wales in certain portions of said extensions being of equal length and the knit wales in other portions of said extensions progressively varying in length, and a fashioned gusset knit integral with and connected to other portions of the inner edges of said tapered extensions to define the central portion of the U-shaped tube.

10. A seamless blank for forming a knit panty or the like comprising a substantially U-shaped seamless knit tube having tubular leg portions defining the openings of the U-shaped tube, a fashioned extension knit integral with each leg portion and connected thereto remote from

the openings defined by the leg portions, each of said extensions having an inner edge, the leg extensions being connected to each other along a portion of their inner edges, the knit wales in certain portions of said extensions being of equal length and the knit wales in other portions of said extensions progressively varying in length, and a fashioned gusset knit integral with and connected to other portions of the inner edges of said tapered extensions to define the central portion of the U-shaped tube, the knit wales in certain portions of said gusset being of equal length and the knit wales in other portions of said gusset progressively varying in length.

11. A method of making seamless panties or the like comprising the steps of knitting a first tubular leg, knitting a plurality of partial courses to form a first leg extension knit integral with the first leg while fashioning to reduce the width of the partial courses of said extension, knitting a plurality of partial courses to form a body gusset integral with a portion of the first leg extension while fashioning to first increase and then reduce the width of the partial courses of the body gusset, joining a single partial course of the body gusset to a plurality of the partial courses of the first leg extension during the knitting of the body gusset, knitting a plurality of partial courses to form a second leg extension integral with the body gusset and a portion of the first leg extension while fashioning to increase the width of the partial courses of the second leg extension, joining a plurality of the partial courses of the second leg extension to a single course of the body gusset during the knitting of the second leg extension, knitting a second tubular leg integral with the second leg extension, and then slitting the fabric transversely of the body gusset to form a waist opening.

12. A method of making seamless panties or the like comprising the steps of knitting a first tubular leg, knitting a plurality of partial courses to form a first leg extension knit integral with the first leg while fashioning to reduce the width of the partial courses of said extension, knitting a plurality of partial courses to form a body gusset integral with a portion of the first leg extension while fashioning to first increase and then reduce the width of the partial courses of the body gusset, joining a plurality of the partial courses of the body gusset to a single partial course of the first leg extension during the knitting of the body gusset, knitting a plurality of partial courses to form a second leg extension integral with the body gusset and a portion of the first leg extension while fashioning to increase the width of the partial courses of the second leg extension, joining a single partial course of the second leg extension to a plurality of the partial courses of the body gusset during the knitting of the second leg extension, knitting a second tubular leg integral with the second leg extension, and then slitting the fabric transversely of the body gusset to form a waist opening.

13. A method of making seamless panties or the like comprising the steps of knitting a first tubular leg, knitting a plurality of partial courses to form a first leg extension knit integral with the first leg while fashioning to reduce the width of the partial courses of said extension, knitting a plurality of partial courses to form a body gusset integral with a portion of the first leg extension while fashioning to first increase and then reduce the width of the partial courses of the body gusset, joining a plurality of the partial courses of the body gusset to a single partial course of the first leg extension during the knitting of the body gusset, then joining a single partial course of the body gusset to a plurality of the partial courses of the first leg extension during the knitting of the body gusset, knitting a plurality of partial courses to form a second leg extension integral with the body gusset and a portion of the first leg extension while fashioning to increase the width of the partial courses of the second leg extension, joining a single partial course of the second

leg extension to a plurality of the partial courses of the body gusset during the knitting of the second leg extension, then joining a plurality of the partial courses of the second leg extension to a single partial course of the body gusset during the knitting of the second leg extension, knitting a second tubular leg integral with the second leg extension, and then slitting the fabric transversely of the body gusset to form a waist opening.

References Cited in the file of this patent

UNITED STATES PATENTS

2,121,489	Rutledge et al.	June 21, 1938
2,511,720	Lacks	June 13, 1950
2,962,884	Garrou et al.	Dec. 6, 1960

FOREIGN PATENTS

444,429	Great Britain	Mar. 20, 1936