

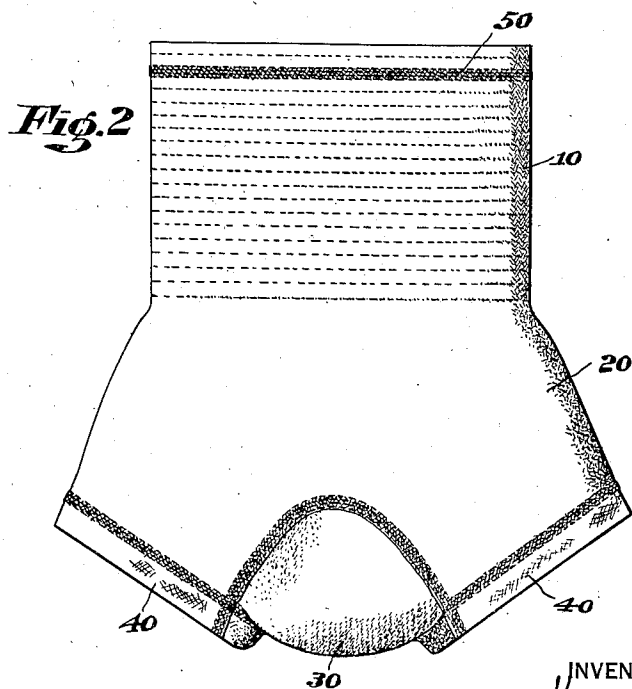
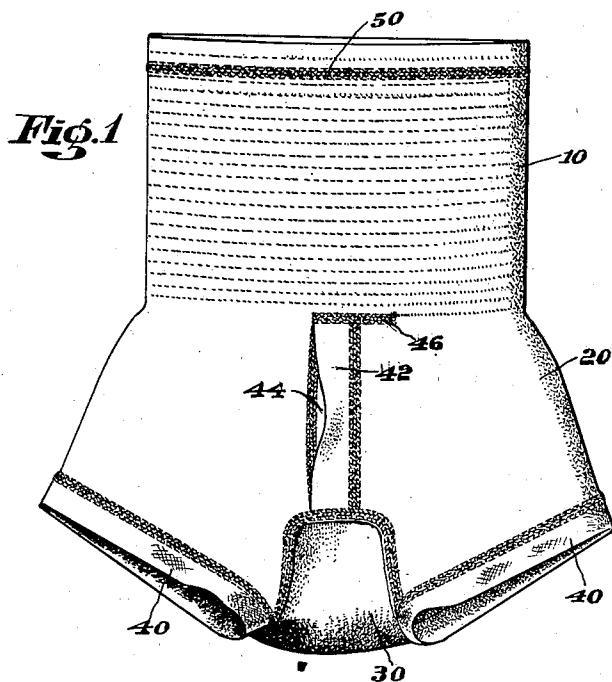
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H. A. CARTER
GARMENT CONSTRUCTION

2,249,198

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2 Sheets-Sheet 1



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2 Sheets-Sheet 2

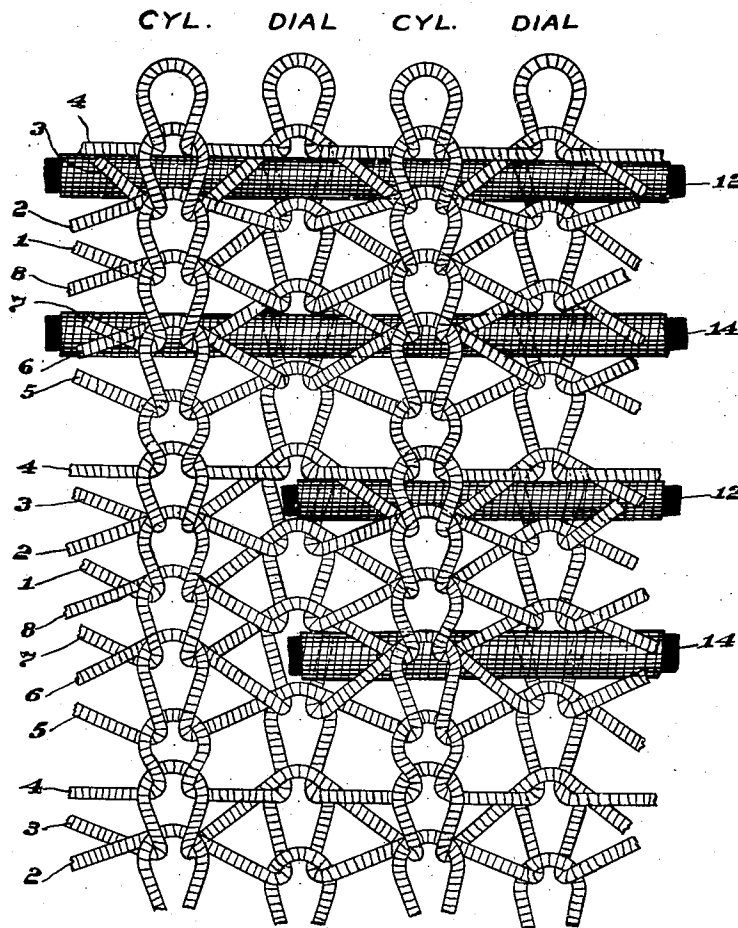


Fig. 3

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GARMENT CONSTRUCTION

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This invention relates to garment construction and more particularly to the construction of a pant or short-type garment which includes a constricted girdle-like portion having a substantial circumferential elasticity.

The garment of my invention is formed from a blank cut from tubular knit fabric. The girdle-like portion of the garment is constricted and receives circumferential elasticity through the incorporation of elastic yarn in a section of the fabric during the knitting operation and preferably includes a continuous elastic yarn or yarns extending spirally of the fabric throughout a limited section thereof. Such yarn or yarns may be incorporated in tubular knit fabrics in a variety of manners known to the art, illustrative examples of which will be described hereinafter.

In accordance with my invention, such elastic yarn or constricted section of fabric terminates in a lower leg-forming fabric section knit directly to the constricted section. A fly front and crotch insert construction may be conveniently incorporated in or associated with the non-constricted section.

The garment of my invention has the highly advantageous feature of presenting a minimum number of seams, thus not only permitting economical manufacture of the garment by reason of minimizing hand labor seaming operation, but also insuring qualities of comfort and durability in the finished garment. Thus my garment may be formed from a blank cut from a tubular knit fabric comprising alternate constricted sections and non-constricted sections, thereby requiring seaming operations only in the fly and crotch constructions and in the binding or hemming operations on edges of the blank. Such a construction avoids entirely any side seams on the garment or any circumferential seams remote from the top and bottom edges thereof. Since seaming operation is a relatively expensive item in garment manufacture, it will be understood that the utilization of such tubular seamless fabric reduces the cost of the garment to the ultimate consumer, yet provides all of the features which are required by those who demand a pant type of undergarment having an elastically constricted abdominal band.

A preferred form of my garment is illustrated in the accompanying drawings in which,

Fig. 1 is a front view of my garment;

Fig. 2 is a back view of the garment of Fig. 1, and

Fig. 3 is an enlarged representation of a fabric which may be conveniently used in the fabrica-

tion of a garment in accordance with my invention.

As previously stated, the fabric from which my garment may be formed may constitute any tubular seamless fabric having a constricted section which has circumferential elasticity imparted thereto by the incorporation of elastic yarn, which constricted section is knit directly to a non-constricted knit fabric section.

Thus, in Fig. 1, I illustrate an upper constricted garment portion 10 directly knit to a lower leg-forming portion 20. As shown the lower portion is suitably slit in front to form a fly construction and recessed centrally in front and in back to permit the insertion of a crotch member 30 extending from the lower edge of the fabric in front to the lower edge of the fabric in back thereby joining the front and back of the tubular fabric to form leg openings. As shown, the fly construction and crotch member insertion require the use of seams as shown or of a similar nature. In the particular garment illustrated in Figs. 1 and 2 I have shown additionally leg opening bindings which may conveniently comprise woven or otherwise fabricated elastic or inelastic webbing 40. I have also illustrated a finished top for the garment by reason of a hemming operation including the circumferentially extending stitch 50.

The crotch member 30 may be formed of any convenient fabric, although I prefer to use a knit fabric which has some elasticity widthwise of the garment. It is to be understood that other forms of crotch members or crotch construction may be utilized in the formation of the garment of my invention, the particular crotch construction shown being an illustrative example of a suitable construction.

Likewise the fly construction may vary according to the particular desires of the manufacturer and may even be omitted if desired, the particular construction shown including overlapping fabric sections 42 and 44, one of which may, if desired, comprise a portion of the tubular seamless knit fabric blank and the other of which may comprise an added fabric inserted by the use of the fly seams as shown.

As indicated by the dotted lines of Figs. 1 and 2, the constricted section 10 includes an elastic or elastic yarns which are omitted from the portion of the blank which forms the lower portion 20 of the garment.

Preferably, the fabric from which the garment is made should include a constricted section which has either a minimum of longitudinal

stretch or at least controllable longitudinal stretch and may comprise conveniently elastic yarn inlaid between the cylinder and dial wales of a ribbed knit fabric of inelastic yarn. While the invention is not limited to the use of a ribbed fabric, or to the use of inlaid elastic yarn, as distinguished from elastic yarn knit in selected wales and courses, I have found that the longitudinal stretch in inlaid ribbed fabrics is of such controllable character as to fulfill the requirements of this type of garment to the highest degree. Thus, for instance, the constricted section may be formed of fabric of the type shown and described in Patent No. 2,090,910 to C. E. Drumheller, the elastic yarn being omitted from the fabric after a predetermined number of courses have been knit, thus providing a constricted fabric section terminating in a non-constricted fabric section knit directly to the constricted fabric.

As a further example of a highly suitable fabric, I have shown in Fig. 3 an enlarged representation of a ribbed knit fabric of inelastic yarn having inlaid elastic yarn. This Fig. 3 represents the fabric in greatly stretched condition. The particular fabric shown may be conveniently knit on a circular 8-feed rib machine having an equal number of dial and cylinder needles. Inelastic yarns fed at each feed are numbered 1 to 8 in Fig. 3, and as will be seen, the fabric is formed by operating the machine in a manner well known in the art with the cylinder needles knitting at feeds 1, 3, 5 and 7; with the dial needles tucking at feeds 1, 3, 5 and 7; with the cylinder needles tucking at feeds 2, 6 and 8; with the dial needles knitting at feeds 2, 6 and 8; with both cylinder and dial needles knitting at feed 4; and with one end of elastic yarn 12 inlaid between feeds 2 and 3 and with another end of elastic yarn 14 inlaid between feeds 6 and 7. During such operation, the elastic yarns 14 and 12 may be cut by well known automatic mechanism so that the machine continues to knit the eight inelastic yarns without inlaying the elastic yarn; and inlaying of the elastic yarn may be resumed at will to provide a fabric having a section of inelastic yarn only knit directly to a section having inlaid elastic yarn. As represented in Fig. 3, the cessation or resumption of the inlaying operation of each elastic yarn may be so timed that in the fabric, each of the two elastic yarns will commence or end at substantially the same wale. While the commencement or termination of the two elastic yarns need not necessarily be at the same wale, I find it convenient to have the two elastic yarns commence or end in approximately the same position in the fabric to secure superior finish as well as for a reason which will be referred to hereinafter.

While I have illustrated each feed as a single yarn for simplicity in the representation of the fabric, it will be understood that one or all feeds may be supplied with a plurality of ends of inelastic yarn.

Variations in this stitch may be made, as desired, as by substituting welt stitches, by inserting additional tuck or plain stitches, or by the use of other than a 1 and 1 ribbed fabric. To impart designs to the fabric, stitch variations on recurrent needles may be carried throughout the fabric in selected wales or in selected courses or both.

While the elastic yarn which I prefer to use is of a rubber or rubber-like character wound with inelastic threads of the type known as "Lastex," any elastic yarn may be substituted. Where, as

with "Lastex," the rubber thread is wound with yarn I find that in the fabric of the type illustrated in Fig. 3 the elastic yarn will be firmly held in place by the inelastic knit fabric due to the interlocking so to speak of the inelastic threads of the fabric with the inelastic threads wound on the rubber thread.

However, to insure that the ends of the elastic yarn do not run through the fabric, I find it convenient to cut the tubular blank in fabricating the garment so that the top fly seam 46 shown in Fig. 1, which may be, if desired, an extensible seam, overlies or more technically stitches through the two ends of the two elastic yarns, thereby anchoring them at the bottom. It is for this reason that I prefer that the elastic yarns if more than one terminate in the same section of the fabric so that the single seam 46 may act to anchor both of the elastic yarns. The hem seam 50 acts to firmly anchor the other ends of the elastic yarns. In Fig. 1, for convenience the dot and dash line indicates only one elastic yarn, whereas, in fact, in the preferred form of my garment, a fabric having two ends of elastic yarn is utilized as above described, the particular number of ends being unimportant so long as an elastic yarn extends in a continuous circumferential spiral from the bottom of the constricted section to the top thereof, which may be the top of the garment, as shown in my preferred garment thereby forming an elastic waistline hem, or which may be spaced from the top of the garment dependent upon the character of garment desired.

I claim:

1. A pant type garment comprising a tubular seamless unitary and integral knit fabric, a continuous elastic yarn incorporated throughout and circumferentially constricting a limited section of said fabric whereby the garment presents an abdominal band of tubular constricted fabric knit directly to a lower non-constricted fabric section, and a crotch member joining a lower central edge of said fabric in front to a lower central edge of said fabric in back to form leg openings for said garment.

2. A pant type garment comprising a tubular seamless unitary and integral knit fabric, a fly construction in the front of said garment, a continuous elastic yarn incorporated throughout a limited section of said fabric and extending upwardly from the top of said fly in a circumferential spiral constricting said fabric whereby the garment presents an abdominal band of constricted tubular fabric knit directly to a lower non-constricted fabric section, and a crotch member joining a lower central edge of said fabric in front to a lower central edge of said fabric in back to form leg openings for said garment.

3. A pant type garment comprising a tubular seamless unitary and integral knit fabric of inelastic yarn, a fly construction in the front of said garment, a continuous elastic yarn incorporated throughout a limited section of said knit fabric and extending upwardly from an anchorage at the top of said fly in a circumferential spiral constricting said fabric whereby the garment presents an abdominal band including both inelastic and elastic yarn of tubular constricted fabric knit directly to a lower non-constricted fabric section, and a crotch member joining a lower central edge of said fabric in front to a lower central edge of said fabric in back to form leg openings for said garment.

HORACE A. CARTER.