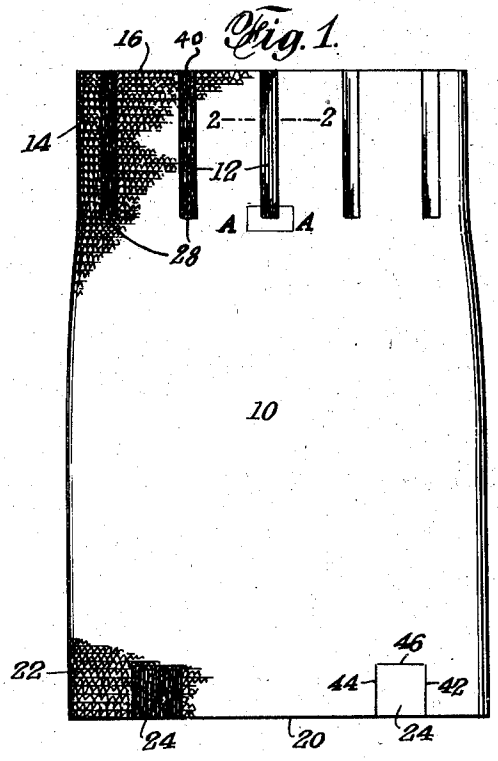
June 2, 1942. J. A. MARTIN 2,285,217

CONFINING GARMENT

Filed June 13, 1940

Fig. 1.



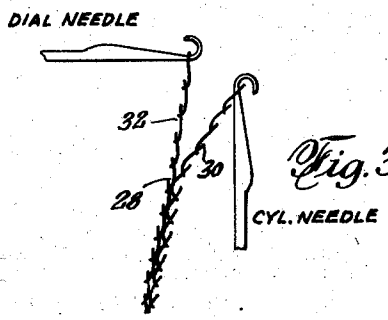


Fig. 3.

Fig. 2.

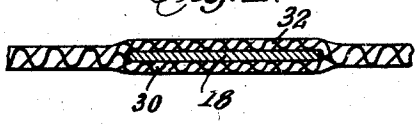
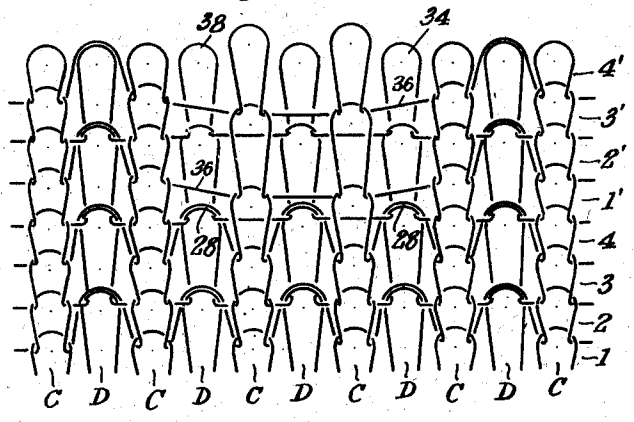


Fig. 4.



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CONFINING GARMENT

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3 Claims. (Cl. 66—176)

The present invention relates to confining garments, such as girdles.

Confining garments are customarily made from knitted fabrics in which some times is incorporated, in many different ways, elastic thread or yarn to give to the garment the desirable stretch sought for in it.

The edges or free ends of confining garments, particularly those provided with resilient stretching characteristics such as a girdle, tend to curl or roll over upon themselves. This gives rise to unsightly bulges under the dress or overgarment and makes the confining garment or girdle uncomfortable to the wearer.

Attempt has been made in the past to overcome this tendency by sewing around the edges of the garment relatively narrow stiffening bands to prevent the free ends from rolling over. Such stiffening bands must be sewed upon the garment after it has been completed, thereby adding to the cost of manufacture by requiring additional operation to complete the garment. Further, the threads securing the stiffening bands to the garment tend to unravel or break causing the stiffening bands to become loose and separated from the garment.

My invention, therefore, is directed to integrally stiffening the ends or edges of confining garments to prevent the curling or rolling thereof when the garment is worn. My invention contemplates the arrangement of the stiffening means in the fabric itself, which comprises the garment, as an integral part thereof.

My invention further contemplates the formation of receiving pockets for the stiffening means, which pockets are formed integrally with and as a part of the fabric comprising the garment.

My invention further contemplates the provision of such pockets during and as a part of the conventional knitting operation, and the arrangement in the thus formed pockets of the stiffening means during the knitting operation.

My invention still further contemplates the provision of a method of forming a stiffened free end or edge of a confining garment or girdle.

My invention still further contemplates the provision of garter receiving pockets adjacent the lower edge of a girdle, which pockets likewise are formed integrally with and as a part of the fabric during the conventional knitting operation.

It will be understood that my invention is applied to confining garments formed from a double knitted fabric having an outer or front face or web knit by one set of needles and an inner or back face or web knit by another set of needles, the inner and outer faces or webs of the fabric being interknit by the interaction of both sets of needles.

The fabric and confining garment herein disclosed and claimed may be knitted upon any suitable knitting machine, whether flat or circular, but is preferably knitted upon a circular machine having both cylinder and dial needles, which is well known in the art and is conventionally used to knit a formed fabric such as a confining garment or girdle. In the accompanying illustration, which I have followed in actual practice, the fabric forming the confining garment is knit with a "half cardigan" stitch, though it will be understood that any other suitable knitting stitch by which a double fabric is manufactured may be used. A knit stitch in which certain courses of yarn have tuck loops in selected wales superimposed on held regular loops in a preceding course of yarn is conventionally known in the trade as a "half cardigan" stitch or knit.

My invention will now be described with reference to the drawing, in which

Fig. 1 is an elevation of a girdle embodying my invention.

Fig. 2 is a cross section along the line 2—2 of Fig. 1.

Fig. 3 is a diagrammatic view illustrating the relative position of the dial and cylinder needles when the pockets for retaining the stiffening means are formed.

Fig. 4 is a diagrammatic fragmentary view of the fabric in the area A—A of Fig. 1, the fabric being in stretched position to illustrate the relation of the stitches in adjacent wales and courses.

Referring now to the drawing, the confining garment or girdle 10 is provided with a plurality of spaced pockets 12 arranged equidistantly about the upper end 14 of the garment and terminating substantially at the edge 16 thereof. These pockets are an integral part of the garment fabric and, as will be hereinafter described, are formed when the fabric is knitted or woven on a conventional machine.

After the pockets 12 are formed and knitted to the desired length and before they are closed by continued knitting or weaving operations, a stiffening rib or stay 18 formed from steel, bone or any other suitable material is arranged therein.

If desired, similar pockets and stays may be arranged at the edge 20 of the lower end 22 of the garment.

If desired, pockets 24 for receiving conventional garters customarily secured to girdles may be provided at the lower end 22 of the girdle, which pockets terminate at the lower edge 20 of the girdle. Such garter pockets are formed in the course of the garment knitting or weaving operation in the same manner as the stay-receiving pockets 12, except that a stay 18 is not inserted therein.

It will be understood that my invention is applied to a double knit or woven fabric; that is, one having an inner and outer face or web which is interknit or interwoven to form a single fabric. In practice, I have applied my invention to the conventional rib or circular machine fabric knit with "half cardigan" stitches, though it is to be understood that my invention can be applied to any other suitable double knit or woven fabric.

Referring now more particularly to Fig. 4, which illustrates the fabric as being stretched to show the wales forming the inner or rear face or web of the fabric (which in unstretched position would be hidden by the wales forming the outer or front face or web of the fabric), the double knit fabric forming the body of the girdle is, as stated, knitted in the conventional manner on a circular machine having cylinder and dial needles to form the garment.

In the accompanying illustration, the wales marked "C" are knit by the cylinder needles and form the front face or web of the fabric. These wales will hereinafter be referred to as cylinder needle wales.

The wales marked "D" might be termed "filling" wales and are knit by the dial needles to form the rear face or web of the fabric. These wales will hereinafter be referred to as dial needle wales.

The cylinder needle wales and the dial needle wales in which the various courses are interknit are formed by the interaction of the cylinder and dial needles.

Course 1 is knitted on all dial and cylinder needles, the cylinder and dial needles taking on yarn and clearing the preceding stitch. All stitches of this course are therefore regular stitches.

The second course is knitted likewise on both the dial and cylinder needles. The dial needles, operating along wales D are in tuck position, that is they do not clear the preceding stitch but take on additional yarn and continue to hold in these wales the yarn picked up in course 1, the yarn of the second course on these dial needles being superimposed on the yarn in course 1. The yarns in courses 3 and 4 are knitted in the same manner on the cylinder and dial needles as the yarns in courses 1 and 2. The above four courses heretofore described and their relative arrangement are repeated with every revolution of the knitting machine as shown in courses 1', 2', 3', 4', though it will be understood that this may be varied as desired.

It will be noted that in courses 1 and 3 the cylinder needles knit regular loops in wales C and in those courses the dial needles knit regular held loops in wales D. In courses 2 and 4, the cylinder needles knit regular loops in wales C and in those courses the dial needles knit tuck loops in the wales D, which tuck loops are superimposed on the held loop of the preceding course.

It will at once be apparent that I have provided a double knit fabric which comprises two faces or webs which are interknit by the interaction of the dial and cylinder needles. It will be, of course, understood that the desired double knit fabric may be formed by other known stitches, to which my invention will apply.

The fabric, as pointed out, throughout the body of the girdle is regularly knitted on a circular machine with all "half cardigan" stitches until a selected point 28 below the edge 16 is reached, after a complete revolution of the knitting machine, at which point it is desired to commence the formation of the pockets. In the accompanying illustration, this point will be after course 4 is completed. For purposes of illustration, the courses of yarn for a complete revolution of the knitting machine, which form the walls 30 and 32 of the pocket 12 will be referred to as 1', 2', 3' and 4'.

It will, of course, be understood that the formation of pockets in the fabric must always commence in that course which follows after a course in which the tuck loops are knitted.

It will, of course, be also understood that the position of this point 28 may be varied depending upon the length of pocket or stay that is desired.

In order to form the stiffening means receiving pockets 12 at a selected wale 34 and at a selected distance 28 below the lower edge 16 of the garment, commencing with the course of yarn fed at that point, in the illustration referred to as 1', the interknitted stitches are separated by putting out of interaction, by any well known conventional means, a selected number of contiguous dial and cylinder needles which operate together to form the double knit fabric. At this point, the selected number of contiguous cylinder and dial needles, which have been put out of interaction, perform only regular knitting. These cylinder and dial needles are held out of interaction for a selected number of courses of yarn. All of these courses of yarn, namely 1', 2', 3' and 4' throughout the wales and for the number of courses for which dial and cylinder needles are kept out of interaction, have regular knitted stitches which are not interlooped in the wales designated in the drawing as "D."

It should be here noted that the straight lines in these four courses shown in the drawing and which are in some places indicated by the like reference character 36 indicate the yarns in courses 2' and 4', which, because the dial and cylinder needles are held out of interaction, are not interknit in the wales D as tuck loops superimposed on the regular held loops of yarn of the courses 1' and 2' and which, because the fabric is illustrated as stretched, assume in the drawing straight lines.

To put it another way, when the dial needles are put out of interaction with the cylinder needles, they are prevented, throughout a selected number of contiguous wales, from superimposing tuck loops on the regular held loop of the preceding course. In this way, the wales D formed by dial needles and the wales C formed by the cylinder needles each form separated knitted webs of cloth forming respectively the back wall 32 and the front wall 30 of the pocket 12.

The cylinder and dial needles are kept out of interaction until a selected wale 38 is reached, after which the needles forming the stitches in the succeeding wales are again put into interaction and the regular "half cardigan" stitch again knitted throughout the garment until it is desired to form the next succeeding pocket 12. The width of the pocket may be varied as desired by keeping the needles out of interaction for any selected number of wales. It will be understood that when it is desired to provide a

single pocket arranged completely throughout the perimeter of the garment, all the cylinder and dial needles will be put out of interaction throughout a complete revolution of the knitting machine.

It will be understood that contiguous cylinder and dial needles operating in those wales which form the separated webs of knitted fabric comprising the front and back walls of the pocket; that is, from wale 34 to wale 38, at spaced intervals around the fabric forming the girdle, will be kept out of operation through as many courses as is required to reach the upper edge 16 of the garment. As pointed out in the accompanying illustration, this will preferably be after a course 4' is completed. In this manner, any desired length of pocket may be provided.

When the desired pocket length is formed, a stiffening stay 18 is inserted in the formed pockets either by manual or mechanical means, which latter need not be described here since it forms no part of the present invention.

After the stays are inserted in the pockets, the contiguous dial and cylinder needles which knit the wales of the separated webs of fabric forming the inner and outer walls of the pocket, are again put into interaction and the regular "half cardigan" knitting continued from point 40 on through a selected number of courses, which in the illustration are preferably two to four, to thereby close the upper end of the pocket with the stiffening means or stay encased therein.

It will be understood that the garment is shaped in the conventional well known manner by putting the proper tension on the yarn to form the somewhat narrower upper end 14.

Knitting of the fabric may then be continued to form the body of another girdle. At the course which forms the lower edge 20 of the garment and at that wale which forms the side 42 of the garter-receiving pocket 24, contiguous dial and cylinder needles may again be put out of interaction to form such garter-receiving pocket. Those dial and cylinder needles are kept out of interaction until the wale forming the other side 44 of the pocket 24 is reached and through to that course which forms the inner end 46 of the pocket 24. In this manner, separately knitted webs of cloth are formed as a part of the garment to thereby form the garter-receiving pockets 24. Upon cutting the fabric of this garment along the edge 20 to separate it from the fabric of the preceding knitted garment, the ends of the garter-receiving pockets are opened.

After the separated webs of cloth have been knitted along the selected number of contiguous wales of the fabric and through the selected number of successive courses of yarn, the needles are again put into interaction to form the body of the girdle until a point corresponding to 28 or the inner end of a pocket 12 on this next knitted garment is reached, at which time the operation is again repeated by putting out of and returning to (when the stays are inserted) interaction selected groups of contiguous dial and cylinder needles at specified intervals about the cylinder of the machine, each group forming a spaced pocket 12, of those around one end 16 of the garment as illustrated in Figure 1.

It will, of course, be understood that pockets 12 and stiffening stays may be, in the manner described, arranged at the lower end 22 of the garment and garter pockets positioned as desired adjacent thereto.

It will be apparent that formed garments having stiffened edges and suitably arranged garter pockets may be consecutively and continuously knitted on conventional machines such as the cylinder and dial type. They may then be separated by conventional cutting means, the lower ends 22 being cut along edges 20 which are below the closed ends of any formed stay pockets and at the edges of the garter pockets, to simultaneously form the edges 16 of the upper ends 14, which are similarly above the closed ends of any stay pockets formed thereadjacent.

It will be further understood that my invention may be applied to fabrics which are knit with elastic yarns, whether or not such elastic yarns are laid in the fabric as floats or knitted into the fabric. Where the elastic yarn is laid in the fabric. with my invention, it will float between the separately knit webs of cloth forming the inner and outer faces or walls of the pockets. Knitted elastic yarn will be incorporated in the separately knitted webs of cloth, as the yarn described in the accompanying illustration.

It will be apparent that I have provided a confining garment or girdle in which stiffening means for the free ends thereof are arranged in the fabric itself as an integral part thereof.

It will be further apparent that I have provided pockets integral with the fabric for receiving such stiffening means, which pockets are formed in the course of the conventional garment knitting operation, and which stiffening means are arranged in the thus formed pockets during the knitting operation.

It will be further apparent that I have provided a novel method of forming a stiffened free end or edge of a confining garment or girdle.

It will be further apparent that I have provided garter-receiving pockets adjacent the lower edge of the girdle and which pockets are formed integral with and as a part of the fabric in the course of the conventional fabric knitting operation.

While I have described my invention in detail, the example given is illustrative and is not given as a limitation since other modifications within the spirit and scope of the invention will be apparent to those skilled in the art.

Hence, the invention is to be understood as limited only as indicated in the appended claims in which the intent is to set forth all the novelty over the prior art.

I claim:

1. A seamless knitted girdle comprising a unitary sheath or tube of knitted stretchable fabric, a free end of the girdle having a tendency to curl or roll over upon itself when the girdle is worn, said fabric having an outer web and an inner web interknit along alternate wales to form a double faced fabric, one set of alternate wales constituting the outer web of the fabric and the other set of wales constituting the inner web of the fabric, said inner and outer webs being interknit throughout the girdle at alternate wales except at selected spaced portions thereof adjacent said free end of the girdle to form thereat separated knitted outer and inner webs of fabric constituting the walls of spaced pockets extending down from the free end of the girdle a selected distance, and a stiffening means arranged in and encased by each pocket whereby said free end of the girdle is prevented from curling or rolling over upon itself when the girdle is worn.

2. A seamless knitted girdle comprising a unitary sheath or tube of knitted stretchable fabric,

a free end of the girdle having a tendency to curl or roll over upon itself when the girdle is worn, said fabric comprising an outer web and an inner web, said outer web composed of a series of wales and said inner web composed of another series of wales, wales comprising the inner web being positioned in the fabric between the wales of which the outer web is composed, the courses of yarn comprising the outer web being interknit with the courses of yarn comprising the inner web along alternate wales of the fabric to provide a double faced fabric, said courses of yarn interknit throughout the fabric along selected adjacent wales of the fabric except at selected portions adjacent said free end of the girdle to form thereat separated knitted outer and inner webs of fabric which constitute the walls of spaced pockets, extending down from the free end a selected distance, and a stiffening means arranged in and encased by each pocket whereby said free end of the girdle is prevented from curling or rolling over upon itself when the girdle is worn.

3. A seamless knitted girdle comprising a unitary sheath or tube of knitted stretchable fabric, a free end of the girdle having a tendency to curl or roll over upon itself when the girdle is worn, said fabric comprising an outer web and an inner web, said outer web composed of a series of wales and said inner web composed of another series of wales, wales comprising the inner web being positioned in the fabric between the wales comprising the outer web, the courses of yarn comprising one of the webs, as tuck loops, being superimposed on regular held loops of the yarns comprising the other web to thereby interknit the webs along alternate wales of the fabric and provide a double faced fabric, except at selected portions adjacent said free end of the girdle to form thereat separated knitted outer and inner webs of fabric which constitute the walls of spaced pockets extending down from the free end a selected distance, and a stiffening means arranged in each pocket whereby said free end of the girdle is prevented from curling or rolling over upon itself when the girdle is worn.

JOSEPH A. MARTIN.