June 23, 1970 H. W. HEGGIE 3,516,266

CIRCULAR KNIT STOCKING WITH INTEGRAL GARTER LOOPS AND METHOD OF MANUFACTURING

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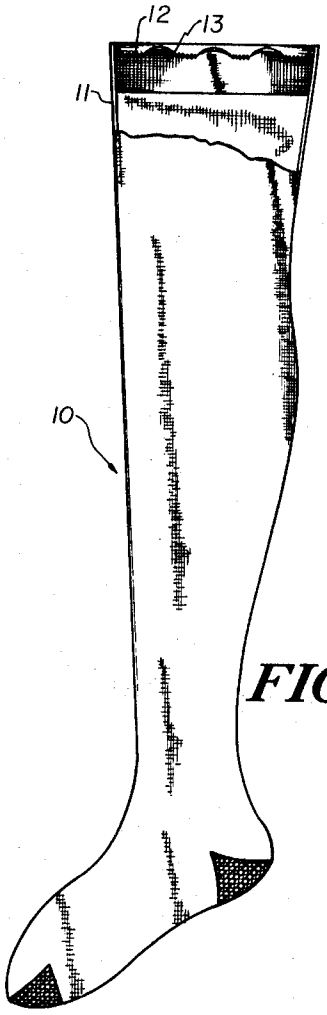


FIG.1

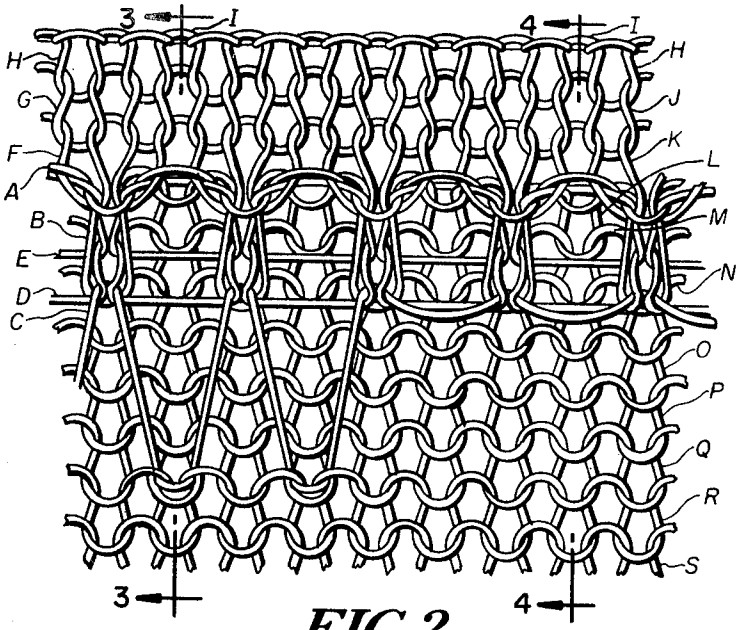


FIG.2

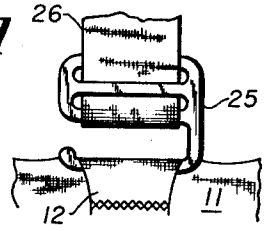


FIG.6

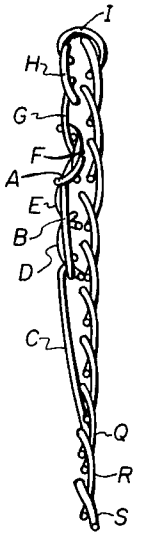


FIG.3

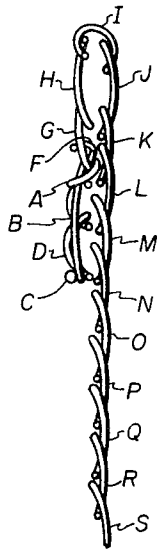


FIG.4

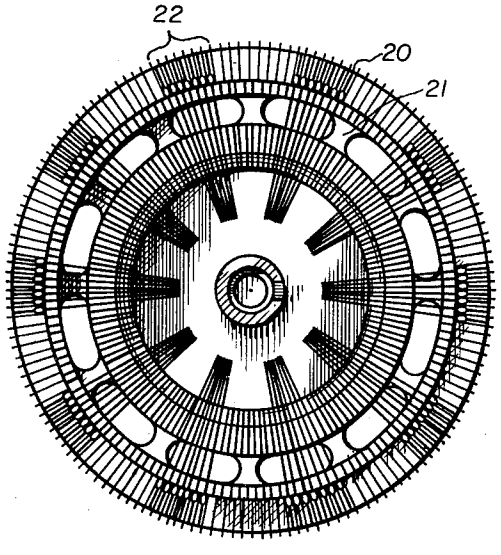


FIG.5

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CIRCULAR KNIT STOCKING WITH INTEGRAL GARTER LOOPS AND METHOD OF MANUFACTURING

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U.S. Cl. 66—41 4 Claims

ABSTRACT OF THE DISCLOSURE

A seamless stocking having a narrow and discontinuous welt, that is, having portions spaced about the circumference of the top of the stocking folded over and knit back into the fabric to form spaced portions in which the fabric is in a double layer alternating with areas where there is but a single layer, the doubled-over portions being open at their sides so that a flat garter hook may be inserted between the layers. Also disclosed is a method of forming a stocking having such spaced double welt portions which comprises holding stitches of one of the early courses of the fabric on transfer jacks until a number of courses have been knit, and then knitting the stitches held on the transfer jacks into the fabric, the transfer jacks being arranged in groups to effect the holding of stitches in spaced areas about the circumference of the stocking top.

Seamless hose is conventionally knit with a welt at the top thereof which consists of a layer of the fabric which has been doubled over and knit back into the fabric. Normally this welt portion is of considerable extent and provides an area in which supports for the stocking may be attached with a degree of assurance that the stocking will not be damaged by virtue of the strains exerted upon it due to the garter support. The welt portion of the stocking is normally knit of heavier yarn than the body portion and frequently a portion below the welt is also knitted of this heavier yarn.

In the past this arrangement has proved satisfactory, but recently the trend has been to shorter skirts and the result has been that the welt portion of the stocking tended to show and further, that because of the use of garter arrangements comprising a relatively thick button and clip, a "bump" was visible through the light clothing currently frequently worn.

The present invention provides a weltless stocking having a very narrow band at the top knitted of heavier yarns and having loops formed in the manner of a welt spaced about the upper periphery of the stocking, which loops are adapted to receive flat garter hooks so that the stocking may be readily attached at a plurality of points to a girdle or a panty girdle, with the top of the stocking lying in close proximity to the bottom of the girdle, thus minimizing the possibility that the relatively unsightly welt will be visible and likewise minimizing the possibility that the garter will produce an unsightly protuberance of the outer garments.

Amongst the objects of the present invention are the production of a stocking having spaced open loop portions at the top thereof adapted to receive garter hooks, and the method of producing such a stocking. Other objects and features of the invention will appear when the following description is considered in connection with the annexed drawings, in which:

FIG. 1 is a side elevational view of a stocking made in accordance with my invention having spaced garter hook-receiving loops about the top periphery thereof:

FIG. 2 is a fragmentary enlarged stylized view of the stocking top of my invention, a portion of that view showing the formation of the area of the hook-receiving loops

and the remainder showing the formation of the intervening non-folded-back areas;

FIG. 3 is a cross-sectional view of the fabric of FIG. 2, the view being taken on the plane of the line 3—3 of FIG. 2 and showing the folded fabric knit into the fabric;

FIG. 4 is a similar cross-sectional view taken on the plane of the line 4—4 of FIG. 2, illustrating the fact that the fabric in the intervening areas is not knit together to form two layers, but is open;

FIG. 5 is a top plan view showing the arrangement of conventional transfer jacks in groups on a transfer jack dial carried by the needle cylinder in the usual manner; and

FIG. 6 is a fragmentary showing indicating the mode of inserting a flat hook into one of the stocking loops.

Referring now to the drawings, and particularly to FIG. 1 thereof, there is shown at **10** a circular knit stocking of usual form which is provided with a narrow reinforced band of heavier yarn **11** at the top thereof. Also, at spaced areas about the top thereof double fabric areas **12** are formed, these being interspersed with areas **13** in which the fabric is not doubled, but is rather formed in a single layer.

It will be observed that there is a certain amount of folding-back of the fabric in the areas **13**, this resulting, however, not from the fact that the stitches of an earlier course are knitted into a later course in this area, but rather because the material at the top in the areas **13** tends to be folded in the generally arcuate form shown, due to the knitting-in of the adjacent portions **12**.

It is well-known in the art that a stocking may be produced without a doubled-over welt if the first few courses are knitted in a manner to cause the yarns to entwine and prevent raveling, this being particularly true if the yarns utilized are of the stretch nylon type.

It is of course equally well-known and is common practice to produce a stocking having a doubled-over welt by use of the customary dial transfer jacks to hold initial or later loops, and after knitting fabric, to transfer the held loops back to the needles to produce the welt or doubled area.

In knitting the stocking of my invention I utilize both of these known devices, modifying the arrangement of the transfer jacks to produce loops held at spaced areas about the upper circumference of the stocking. Thus, referring to FIG. 5, it will be seen that instead of having a pair of transfer jacks **20** located in each slot of the transfer jack dial **21** and thus corresponding to each alternate needle, I remove the jacks except in spaced slots so that groups of transfer dial jacks **22** are provided. In the present instance each group of jacks comprises seven pairs of jacks, there being ten groups in total, thus providing ten areas throughout the circumference of the top of the stocking in which folded-over welt portions are provided, which portions are available to insert garter hooks, as will be described hereinafter.

In this instance the needle cylinder comprises a total of 400 needles, although it will of course be understood that more or less needles may be provided and more or less transfer jacks may be included in each group in order to give the proper and desired proportioning between the non-welt portions and the welt portions.

Referring now to FIGS. 2–4, it will be seen that in the first course, designated A, no loops are formed on the odd-numbered needles since these needles are drawn down in a well-known manner so that they pass under both stitch cams and do not knit, whereas loops are formed on the even-numbered needles. In the second course, designated B, loops are formed on all of the needles, i.e., all needles take yarn, the loops of courses A and B being entwined so that they will not unravel. In the third course, designated C, no loops are formed

on the odd-numbered needles, since they are again drawn down and do not knit, leaving room for the transfer jack points to be introduced above spaced groups of even-numbered needles, which being drawn down, form loops which are held on these transfer jacks.

Continued operation of the knitting machine causes the fourth course, designated D, and a portion of the fifth course to be formed, the yarn again being knitted on even-numbered needles only, while the odd-numbered needles are drawn down, retaining the loops. Plain knitting on all needles then follows, the fabric being accumulated in folds in circumferentially spaced areas and the amount of fabric in the fold being determined by the number of courses which are knit at this time.

In the instance illustrated, after knitting courses designated A through Q respectively, all odd needles are taken out of action and the transfer jacks are moved out over the even needles. Then the needles rise up back of the loop laid over the transfer points in the third course and as soon as the needles rise to the proper height, the jacks are in the usual manner drawn back into the dial, leaving the third-course loops on these needles, which are then knitted into the fabric in the usual manner. Regular knitting of the ensuing courses then proceeds.

Reference to FIG. 4, particularly when taken in connection with FIGS. 2 and 3 (in FIG. 2 courses J and K are omitted in order to avoid confusion), shows that the fabric is folded over due to the knitting-back of course C into course Q so that at the top of the stocking there is a slight folding-over of the areas between the portions actually formed into a partial welt. Nevertheless, the sides of the looped-over portions **12** are open and as is clearly seen in FIG. 6, a flat hook such as that indicated at **25** may readily be inserted through the loop **12**, and when fastened by means of an elastic strap **26**, for example, to an undergarment such as a girdle, may be utilized as a support for the stocking, the number of such supports being variable as desired but usually constituting at least a front and rear hook.

It will be seen that by virtue of the construction described, a stocking is provided which has a top which does not tend to drop stitches due to the intertwining of the first courses knit and which is provided with spaced, folded-over portions providing loops which cooperate with flat hooks to support the stocking in the desired position. It will further be seen that by the use of this construction the ordinary garter clip or button has been eliminated and a flat hook provided in its stead, thus assuring that the stocking-supporting means will not form unsightly bulges or protuberances, and no indication of its presence will be given even though the garments worn thereover are extremely thin.

As has been indicated, the exact number of courses which are formed prior to holding loops of a particular course on the transfer jacks, as well as the number of courses produced prior to the return of the held loops to the needles, is variable within rather wide limits. Also, the number of groups of transfer jacks provided and the number of jacks in each group is variable within rather wide limits, thereby varying both the width and spacing

of the garter hook loops and the number of courses embodied therein.

It will be obvious therefore that the description given above is intended to be purely exemplary and that considerable variation is contemplated. I wish therefore, to be limited not by the foregoing description, but on the contrary, solely by the claims granted to me.

What is claimed is:

1. The method of knitting a seamless stocking having circumferentially spaced folded-back loops which comprises, knitting a first course on alternate needles only, knitting a second course on all needles, knitting a third course on said alternate needles only, holding said third course loops on transfer jacks spaced in groups about the circumference of the transfer dial, knitting at least a fourth course on said alternate needles only, knitting a plurality of courses of plain knitting, transferring said third course loops to the needles and completing the knitting of a stocking.

2. The method of knitting spaced garter hook loops in the top of a seamless stocking which comprises

(a) knitting at least two entwined courses of loops to form a ravel-proof selvedge,

(b) extending spaced groups of transfer jacks from a jack dial to hold correspondingly spaced groups of loops about the circumference of the dial,

(c) partially retracting the transferred jacks and held loops to allow continued knitting of the stocking,

(d) knitting a preselected number of courses to provide the desired length of folded-back fabric to form the aforesaid garter hook loops, and

(e) transferring the held loops from said transfer jacks to the knitting needles to knit said loops into the stocking to form the alternately spaced garter hook loops.

3. The method as claimed in claim **2** further comprising the step of knitting at least one course of loops on alternate needles immediately after the held loops are transferred to the knitting needles.

4. The method of claim **3** wherein said preselected number of courses which are knitted to provide the desired length of folded-back fabric for the garter hook loops is the minimum number required for fastening onto a flat garter hook.

References Cited

UNITED STATES PATENTS

Re. 18,279	12/1931	Nestler	66—173
1,172,622	2/1916	Minkos	66—178 XR
1,806,492	5/1931	Nestler	66—173
3,108,459	10/1963	Coile	66—41

FOREIGN PATENTS

6,619	9/1910	Great Britain.

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U.S. Cl. X.R.

66—172