March 31, 1936. E. O. NEBEL 2,035,826

STOCKING WELT

Filed March 12, 1934

Fig. 1.

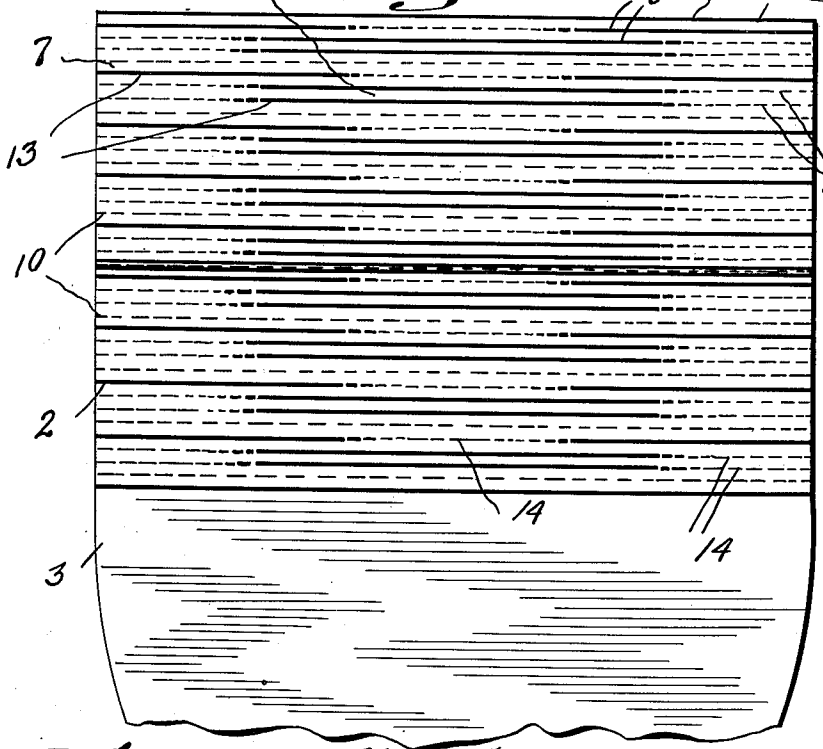



Fig. 4.

Fig. 2.

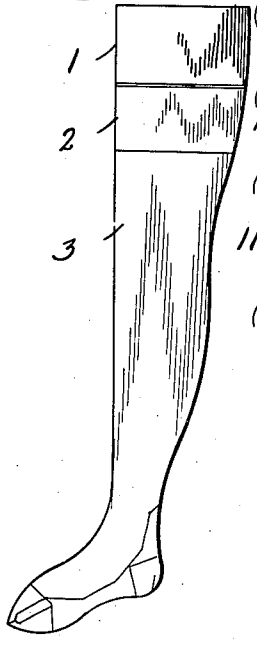
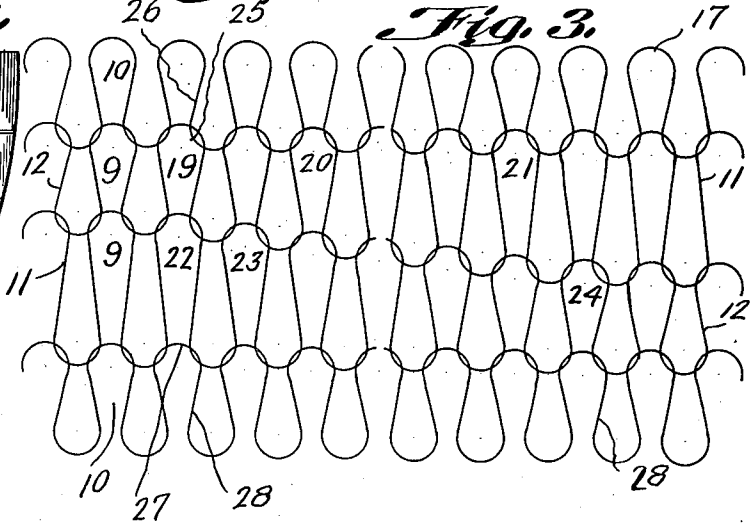



Fig. 3.




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# UNITED STATES PATENT OFFICE

2,035,826

## STOCKING WELT

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Application March 12, 1934, Serial No. 715,043

2 Claims. (Cl. 66—173)

This invention relates to a knitted stocking and, more particularly to the welt structure thereof, and has for its primary object the knitting of the welt portion of the stocking in a manner that the same will have greater stretch without sacrificing the desired elasticity thereof.

An object of the invention resides in the novel manner of constructing and arranging the loose courses in relation to each other and in relation to the tight courses so that various portions of the welt may have different degrees of stretch and elasticity.

A feature of the invention resides in the novel manner of knitting the knee portion of the stocking so that the same will have greater stretch than other parts of the stocking fabric but still retain the desired degree of elasticity to retain the shape of the welt portion of the stocking.

My invention is distinguished in the novel manner of forming companion loose courses so that the fabric will be properly balanced to have the required appearance.

My invention is also distinguished in the increased number of loose courses in the front panel fabric when compared with the rear panel fabrics, the loose courses of the front knee panel being arranged in overlapping relation with the loose courses of the rear panel fabrics to give increased stretch to the knee portion of the welt.

With these and other objects in view, the invention will be better understood from the following detailed description taken in conjunction with the attached drawing, wherein:—

Figure 1 is a fragmentary view of the upper portion of the stocking.

Figure 2 is a side elevation of the stocking.

Figure 3 is a diagrammatic view of the knitted loops.

Figure 4 is a vertical sectional view of the upper portion of the stocking.

Again referring to the drawing, illustrating one of the many constructions of my invention, 1 designates the welt; 2 designates the welt extension, and 3 designates the leg of the stocking, knitted either on a full fashion machine or upon a circular knitting machine.

The welt (1) is provided with an outer ply (4) and an inner ply (5) whereas the welt extension (2) is of single thickness. In the knitting of the welt portion of the stocking, I provide a front knee panel (6) and rear panels (7 and 8) knitted in a manner to have different relative degrees of stretch and elasticity.

Referring to Figure 1, I have diagrammatically illustrated loose courses (9) and tight courses (10) arranged over the entire area of the welt and welt extension, each loose course (9) being knitted as shown in Figure 3 to provide groups of loose loops (11) and groups of tight loops (12) the groups of loose loops (11) being diagrammatically illustrated in Figure 1 by heavy lines (13) and the groups of tight loops (12) being diagrammatically illustrated by dotted lines (14).

Attention is called to the fact that in Figure 1 a greater number of groups of loose loops are arranged in the front panel than are arranged in the rear panels and, further, a greater number of groups of tight loops are arranged in the rear panels than in the front knee panel. Thus I am able to obtain greater stretch in the knee panel than can be obtained in the rear panels but the elasticity of the rear panels is greater than the elasticity of the knee panel and thus I combine this variation in stretch and elasticity existing between the various panels in providing the welt and welt extension as a unit with the required degree of stretch and elasticity.

It will also be noted by referring to Figure 1 that the end loose loops of the groups arranged in the knee panel fabric are arranged in overlapping relation with the end loose loops of the groups arranged in the rear panels, thereby materially increasing the stretchability of the edge portions of the front knee panel fabric.

I have found, from the manufacture and commercialization of my invention, that my type of welt meets all requirements of the trade in relation to durability, extra stretch, and elasticity and, further, broken loops are reduced to a minimum due to the novel manner of knitting and associating the loose and tight courses as well as the loose and tight loops.

Referring to Figure 3, I have diagrammatically illustrated a pair of loose courses (9) connected to a pair of tight courses (10). In the knitting of the first loose course (9) I begin with a group of tight loops (19) and then knit a set of loops (20) of varying lengths so as to connect the group of tight loops with the group of loose loops (21). In the knitting of the second of the pair of loose courses, I start with a group of loose loops (22) and then knit a set of loops (23) of varying lengths for connecting the group of loose loops with the group of tight loops (24).

Due to the arrangement of the sets of loops of varying lengths, I am able to establish a more uniform connection between the pairs of loose

loop courses and, further, the deep portions (25) of the needle loops (26) of the first course of each pair of loose courses are ranged on a plane paralleling that of the deep portions (27) of the sinker loops (28) of the second course of the pairs of loop courses, thereby enabling the tight courses to be ranged in parallel relation with each other for the production of a fabric of more uniform texture.

I am aware of the fact that an increased degree of stretch has been given the stocking welts by providing loose courses or by providing transferred loops or elongated loops but, in such cases, increased stretch has been accomplished at a sacrifice in elasticity, particularly where the maximum amount of stretch is obtained. I have found that with my particular invention the novel arrangement, design, and corelation of the groups of loose courses in relation to each other and in relation to a predetermined selected number of tight courses is such that I accomplish an increased degree of stretch without sacrificing the required degree of elasticity, and, further, with my invention, the welt fabric is afforded its greatest degree of stretch at the point of greatest stress, that is, the portion of the fabric covering the knee of the wearer.

In concluding, I wish to call attention to the fact that various numerical combinations of loose courses and tight courses may be used other than illustrated and described and the numerical relation between the loose and tight courses and the relative position of the groups of loose loops and tight loops may be varied to a great extent without departing from the spirit of my invention. For instance, I may start the knitting of the knee panel fabric and the rear panel fabrics by constructing the first course as a loose course with the sets of loose loops arranged in the rear panel fabrics and the sets of tight loops arranged in the knee panel fabric; then knit the second course with the sets of tight loops in the rear panel fabrics and the set of loose loops in the knee panel fabric; then knit the third course entirely of tight loops and then knit the fourth course as a loose course with the sets of tight loops arranged in the rear panel fabrics and the set of loose loops arranged in the front knee panel, and then repeating this knitting of the four courses throughout the area of the rear panel fabrics and the knee panel fabric. I also wish to state that it is within the scope of my invention to provide a group of loose courses in very close proximity to each other at the picot edge of the stocking before knitting the rear panel fabrics and the knee panel fabric, each of the loose courses at the picot edge of the stocking being constructed entirely of loose loops throughout the entire length thereof. With this construction, it will be appreciated that I provide a degree of stretch in the rear panel fabrics greater than the plain knitted fabric of the stocking, provide a stretch in the knee panel fabric greater than that of the rear panel fabrics and, finally, provide a stretch at the picot edge of the stocking greater than that of the front knee panel fabric, thereby providing three degrees of stretch in the welt according to the strains created in the use of the stocking. Therefore, I do not desire to be limited in protection in any manner whatsoever except as set forth in the following claims.

What I claim is:

1. A full fashioned welt and welt extension fabric consisting of tight courses and loose courses, said tight courses extending from selvedge edge to selvedge edge of the welt fabric and consisting entirely of tight loops and said loose courses extending from selvedge edge to selvedge edge of the welt fabric and consisting of rows of loose loops and rows of tight loops, the end set of loops of the rows of loose loops varying in length and connecting and merging the rows of loose loops into the rows of tight loops.

2. A full fashioned welt fabric consisting of tight courses and loose courses, said tight courses extending from selvedge edge to selvedge edge of the welt fabric and constituted entirely of tight loops, and said loose courses extending from selvedge edge to selvedge edge of the welt fabric and including rows of loose loops and rows of tight loops, certain of said loose courses having their rows of loose loops arranged at the intermediate portion of the fabric and the remaining of said loose courses having their rows of loose loops disposed at the selvedge edges of the fabric, the end set of loops of the rows of loose loops varying in length and connecting and merging the rows of loose loops into the rows of tight loops.

ERNST OSCAR NEBEL.