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REENFORCED STOCKING TOE FABRIC

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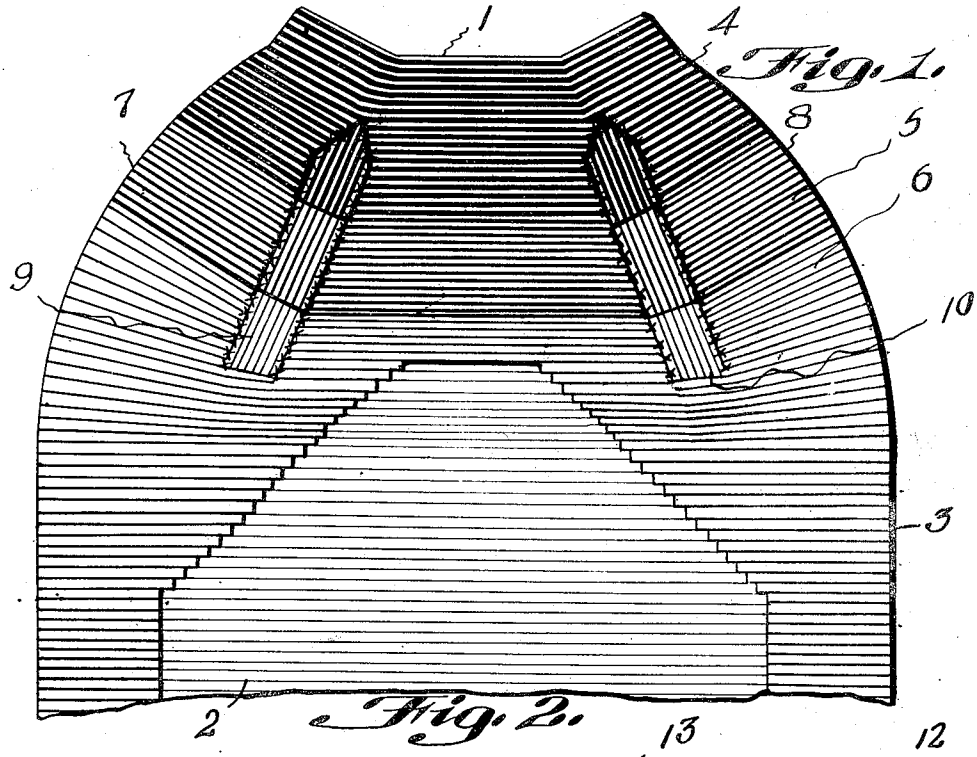


Fig. 1.

Fig. 2.

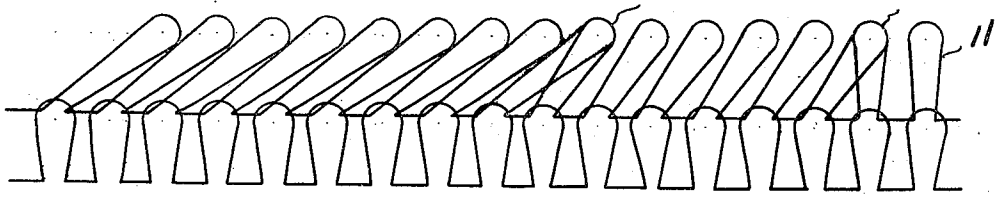
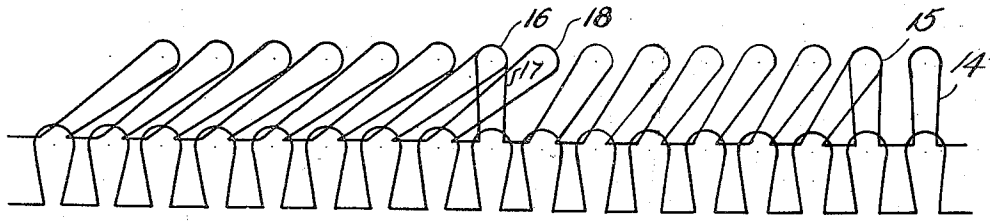


Fig. 3.



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REENFORCED STOCKING TOE FABRIC

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Application December 28, 1934, Serial No. 759,519

2 Claims. (Cl. 66—182)

This invention relates to improvements in knitted hosiery and more particularly to the toe construction thereof, such as is made on the mechanism forming the subject matter of my co-pending application, Serial Number 752,399 filed November 10, 1934. The invention has for its primary object the provision of a knitted fabric that is more heavily reenforced than is customary in the trade, and incorporates the usual narrowing gores.

An object of my invention resides in a design of stocking toe incorporating two or more heavily reenforced fabrics so arranged as to give greater wear to the extreme toe portion of the toe fabric.

Another object of the invention resides in the novel construction of the toe gores whereby the extreme portion of the toe of the stocking may be very heavily reenforced to withstand greater wear, without substantially increasing the knitting time in forming the toe.

A feature of my invention resides in the provision of toe gores incorporating two needle narrowing marks and single needle narrowing marks, thereby enabling various portions of the toe gores to be differently reenforced by the use of heavy reenforced threads.

My invention is also distinguished by a heavily reenforced toe patch that extends from selvedge edge to selvedge edge of the stocking and incorporating a portion of the toe gores of the stocking.

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

Figure 1 is a top fragmentary plan view of a portion of a full fashioned toe fabric constructed in accordance with my invention.

Figure 2 is a diagrammatic view illustrating one of the narrowed courses incorporating single needle narrowing marks.

Figure 3 is a diagrammatic view of one of the narrowing courses illustrating two needle narrowing marks.

Referring specifically to Figure 1, the numeral 1 designates the toe fabric; numeral 2 the instep fabric, and numeral 3 the sole fabric.

The toe fabric 1, incorporating the principal feature of my invention, consists of a reenforced outer toe fabric, or toe patch 4, an intermediate reenforced fabric 5, and an inner reenforced fabric 6. The fabrics, 4, 5, and 6, are knitted from different weight reenforced yarns, that is to say, the fabric 6 is knitted from a ten-thread yarn, the fabric 5 from a fourteen-thread yarn, and the fabric 4 from a twenty two-thread yarn. I wish it to be understood, of course, that the relative number of threads comprising the different yarns may be changed at will, as the main purpose to be accomplished is to provide a different degree of reenforcement between the various fabrics, particularly fabric 4, which is greatly reenforced to give better wearing qualities.

I wish to call particular attention to the fact that the three fabrics, 4, 5, and 6, are reenforced over their entire areas, that is, to say, the reenforcement extends from selvedge edge 7 to selvedge edge 8.

Heretofore, in the knitting of hosiery, the degree of reenforcement of the thread composing the toe patch 4 was limited, due to the use of two needle narrowings in the forming of the gores of the toe portion of the stocking. In other words, it is practically impossible to greatly increase the usual reenforcement of the toe end of the toe fabric from selvedge edge to selvedge edge, due to the fact that the spreading of the loops a two needle distance in accomplishing the two needle narrowing operation quite often breaks the reenforced thread and, due to the size of the thread, the needles are frequently distorted or broken. Besides, heavy reenforcing threads crowd the loops to such an extent that quite often the loops are dropped, thereby causing "runs" in the toe portion of the stocking.

I overcome these commercial disadvantages by providing a new construction of toe gores, 9 and 10. Broadly stated, each toe gore consists of single needle narrowing marks and double needle narrowing marks, the single needle narrowing marks being arranged in the heavily reenforced toe patch 4, and the double needle narrowing marks being positioned in the fabrics 5 and 6.

This arrangement of the single and double needle narrowing marks enables the fabric 4 to be knitted from a heavy reenforced thread due to the arrangement of the single needle narrowing marks in the fabric 4. By arranging the single needle narrowing marks only in the fabric 4 and the double needle narrowing marks in the fabrics 5 and 6, I facilitate the knitting operations, since the use of single needle narrowing marks in the toe portion of the stocking requires two successive operations of the narrowing mechanism of the knitting machine, one operation transferring all the loops the distance of one needle, and the second operation transferring certain of the loops the distance of an additional needle while the remaining loops remain in their one needle transferred position in the manner more particularly set forth in my co-pending application hereinbe-

fore identified, whereas the two needle narrowing operation requires only one operation of the narrowing mechanism, which simultaneously transfers all the loops.

In Figure 2, I have illustrated one of the narrowing courses 11, which courses, according to the present invention, are arranged only in the heavily reenforced fabric 4. Attention is called to the fact that the narrowing marks 12 and 13 respectively disposed on the opposite sides of the toe gores to constitute the fashion lines defining the same, embody single pairs of interengaging loops. It is particularly pointed out that as shown in Figure 2, no loops extends from the region outside the toe gore into the region inside the same, to cross the interengaged loops.

In Figure 3, I have illustrated one of the narrowing courses 14 employed in the inner and intermediate fabrics 5 and 6 of the stocking toe. It will be understood from the showing of Figure 3 that the narrowing course 14 is of a type usually formed by the two needle narrowing operation of the knitting machine which causes at least one loop 17 to remain on its original needle so that at the finish of the narrowing operation at least one loop 18 passes from the region outside the toe gore into the region inside thereof and completely crosses said untransferred loop 17. Because of this feature of the two needle narrowing, it will be appreciated that double thicknesses of threads exist in the narrowing mark 16. However, such double thicknesses have no serious consequences when threads of relatively low weights, such as the threads employed in fabrics 5 and 6, are knitted into the stocking toe, but with the use of heavily reenforced threads, such as employed in knitting the fabric 4, the double thicknesses would create objectionable inconveniences in that the fashion lines would become bulky and rugged, causing discomfort and annoyance to the wearer. These inconveniences are overcome in fabric 4 by constructing the narrowing courses thereof in accordance with this invention and as illustrated in Figure 2.

I am aware of the fact that single needle narrowed courses have been utilized in the narrowing of hosiery, but it is my belief that I am the first to provide a stocking with a greatly reenforced outer toe patch knitted from a reenforced yarn composed of at least twenty two threads, the reenforced yarn extending over the entire area of the toe patch from selvedge edge to selvedge edge of the stocking foot blank.

It is also my belief that I am the first to provide a heavily reenforced toe patch in which that portion of the toe gore arranged therein consists entirely of single needle narrowing marks, to enable the use of the heavily reenforced thread required in the heavy reenforcing of the toe patch 4.

I am further of the belief that I am the first to provide toe gores in the toe fabric of a knitted stocking consisting of two needle narrowing marks and single needle narrowing marks, the two needle narrowing marks being arranged in those fabrics reenforced to a lesser degree where the two needle narrowing marks may be used to advantage, and positioning the single needle narrowing marks in the more heavily reenforced fabrics where the two needle narrowing marks would be impractical from a commercial standpoint.

Of course, it is understood that the relative arrangement of the two needle narrowing marks and the single needle narrowing marks may be changed to meet manufacturing requirements and the degree of reenforcement of the fabrics may be changed to meet the specific requirements. Therefore, I do not desire to be limited in protection in any manner whatsoever except as set forth in the following claims.

I claim:

1. A reenforced full fashioned stocking toe consisting of a reenforced inner toe fabric, an intermediate toe fabric reenforced to a greater extent than the inner toe fabric, and an outer toe fabric more heavily reenforced than the intermediate toe fabric, said fabrics comprising a plurality of narrowing courses having loops transferred inwardly of the fabrics to provide toe gores therein, the loops forming said toe gores being transferred the distance of one wale and the loops outside the toe gores being transferred the distance of two wales, and fashion lines defining the sides of each gore, those portions of the fashion lines positioned in the heavily reenforced outer toe fabric including only single pairs of interengaging loops with no loop crossing the latter from the region outside the toe gore into the region inside thereof.

2. A reenforced full fashioned stocking toe comprising a reenforced inner toe fabric, an intermediate toe fabric, reenforced to a greater extent than the inner toe fabric, and an outer toe fabric more heavily reenforced than the intermediate toe fabric, said fabrics comprising a plurality of narrowing courses, each narrowing course of the heavily reenforced outer fabric consisting of a central group of untransferred loops intermediate groups of loops transferred the distance of one wale, one of said groups extending from each of the opposite extremities of said central group, and end groups of loops transferred the distance of two wales, one of said end groups extending from the outer extremity of each of said intermediate groups with the innermost one wale transferred loops of each intermediate group overlapping and engaging the adjacent untransferred end loop of the central group, and the innermost two wale transferred loop of each end group overlapping and engaging the adjacent one wale transferred loop of the associated intermediate group whereby to provide toe gore fashioning lines including only single pairs of interengaging loops with no loop crossing the latter from the region outside the toe gores into the region inside thereof.

RICHARD SCHLETTER.