

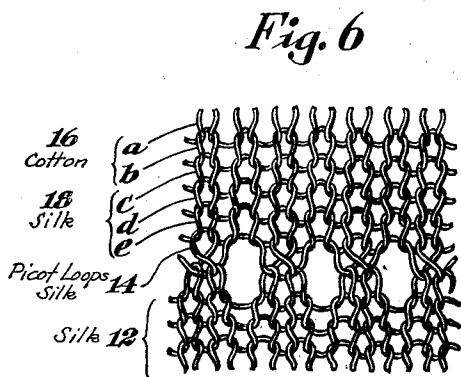
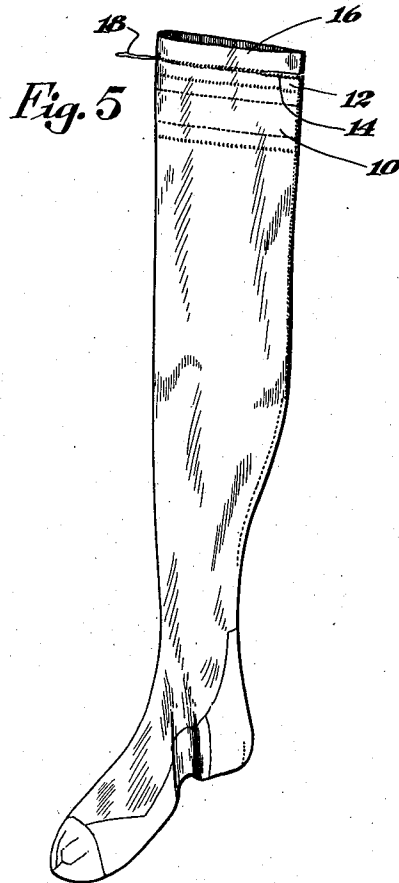
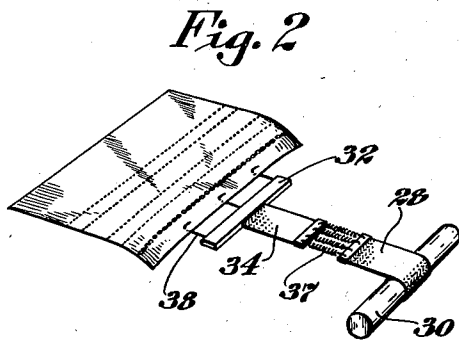
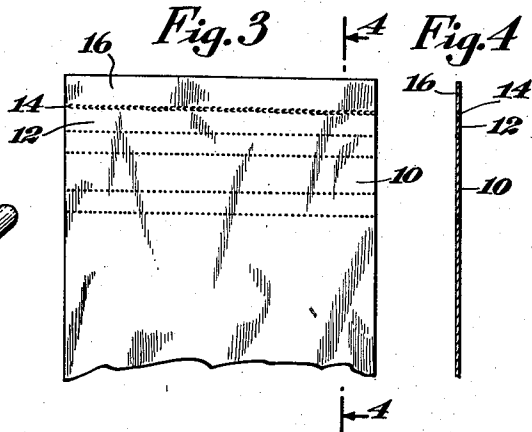
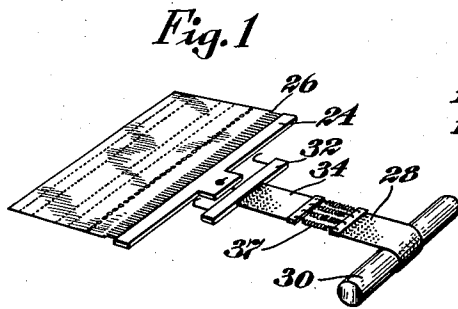
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2,119,663

FULL FASHIONED HOSIERY

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FULL FASHIONED HOSIERY

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8 Claims. (Cl. 66—172)

This invention relates to full-fashioned hosiery in which the uppermost portion, instead of being constituted by a "welt", of the customary type, having two layers of fabric, as in the ordinary type of full-fashioned hosiery, is of single layer construction, and coordinately therewith it relates to a method of manufacturing such hosiery.

While my invention has been disclosed in relation to its application to full-fashioned hosiery, it is to be understood that it may have other applications.

In the manufacture of full-fashioned stockings having single layer top portions, corresponding to the double layer welt portion of the ordinary stocking, it is customary to knit the top portions of silk, as it has been found that where the tops are made of cotton, although this is desirable from the standpoint of reducing the manufacturing cost, the product is not attractive, because of the curling or crinkling of the edge portions of the stocking tops. This curling tendency is present to a less degree in silken top portions, and in the case of silken tops may be overcome by the method of manufacture described in my Patent 1,833,705, November 24, 1931. The pertinent portions of this patent may be briefly summarized here, since it will serve to give a better understanding of my invention and its objects.

In accordance with the disclosure of said patent a section of fabric is first knitted on a flat-bed machine, the yarn for this section being of low cost, such as cotton, for example. Thereafter the yarn is changed to a "finish thread" of silk, artificial silk or the like, to knit a section that is to constitute the top portion of the stocking, whereas the section first knitted is a "ravel-off" section intended eventually to be removed from the finished stocking.

The first course or courses of the finish thread section are knitted of the ravelproof or selflocking type, such as customarily termed "picot" loops, so that when the ravel-off section is removed the upper end of the stocking will be defined by these picot loops.

In order to remove the ravel-off section, it is merely necessary to separate one of the end courses of the ravel-off section from the body of the fabric, as by cutting across the courses. On removing the loose course, so formed, by simply pulling it out, the ravel-off section separates from the stocking. This separation is not effected, however, until the stocking, after being folded and seamed, has been dried on a board so that it assumes a flat condition.

If it is attempted to knit the top portion of the stocking proper of cotton, it is found that, even when a ravel-off section is used, that the curling cannot be prevented. It is therefore among the objects of my invention to provide a stocking construction in which a single layer top portion, corresponding to the welt portion, may be knitted of cotton throughout the greater portion thereof, thereby reducing its cost, while the curling or crinkling tendency is minimized, if not entirely eliminated.

It has already been stated that my aforementioned patent contemplated the separation of the ravel-off section by separating and pulling out the course that is adjacent to the picot loops intended to form the top of the finished stocking. I have found, however, that where the pull course is interlooped with thread which is more or less rough on its surface, as is the case with cotton, that such roughness causes resistance to the removal of the pull thread, and because of such resistance may cause a curling of the stocking top.

This is particularly noticeable where the pull course is itself of rough thread, such as cotton.

It is therefore a further object of my invention to provide a construction whereby the tendency of the stocking top to curl, when the pull thread is removed, is almost, if not entirely, overcome.

It is also an object of my invention to provide for an efficient method for manufacturing full-fashioned hosiery, that is particularly adapted for use in connection with stockings of the type herein disclosed.

For the attainment of these objects and such other objects as may hereinafter appear or be pointed out, I have shown one embodiment of my invention and indicated one manner of practicing the same in the drawing, wherein:

Figure 1 is a perspective view showing one of the initial stages in my improved method of knitting hosiery;

Figure 2 is a view similar to Figure 1 showing a succeeding stage of manufacture;

Figure 3 represents the upper portion of a full-fashioned stocking blank such as used in making stockings in accordance with my invention;

Figure 4 is a section on the line 4—4 of Figure 1, looking in the direction of the arrows, and showing the single layer construction;

Figure 5 is a view in perspective of a finished stocking, showing the ravel course partly detached therefrom; and

Figure 6 is a detail view showing one manner of knitting the ravel-off section.

I will now proceed to a detailed description of my invention in all of its phases.

In Figures 1 and 2, I have shown apparatus and indicated a method by which the manufacture of full-fashioned stockings, having single layer top portions, such as constitute the subject of this invention, may be efficiently carried out, so as to effect a saving in time and cost.

In the practice of knitting full-fashioned stocking blanks, according to my invention, on a flat-bed machine, the initial loops may be formed on a bar, such as shown at 24 in Figures 1 and 2, having needles 25 for receiving the loops, this bar being similar to the well-known welt bar. After the first loops have been formed the needle bar 24 may be hooked to a strap 28 that passes over the roller 30 and the fabric is thereby placed under tension. This hooking may be effected by a hook bar 32 carried by an auxiliary strap 34 joined to the strap 28 by the tension equalizing springs 37.

Since the needle bar 24 is very heavy, it is desirable to eliminate it as soon as possible. Therefore as soon as sufficient fabric has been knitted to enable this to be done, the needle bar may be engaged directly with the fabric. This engagement should preferably take place at some distance inward from the initial loops, and the hooks 38 should be of sufficient length to permit this, as well as being sufficient in number and distributed over a sufficient lateral width to properly tension the fabric. Thereafter the knitting proceeds in the customary manner. This second stage is shown in Figure 2. It will be observed that it is at no time necessary to stop the operation of the machine. The advantage of this will be obvious to one skilled in the art who is familiar with the loss of time entailed when an expensive machine, such as a full-fashioned machine, must be stopped to permit of manual transfer operations that are necessary in the manufacture of the customary double layer welt stockings.

Referring now to Figures 3 and 4, it will be observed that I there show a blank for a full-fashioned stocking having a single layer plain knit top, corresponding to the double layer welt of an ordinary stocking, and this top consists of a section 10 of cotton yarn, joined to a narrow band 12, of silk yarn, which constitutes the extreme upper portion or edge portion of the finished stocking (as will appear on referring to Figure 5). The edge portion of the silken band 12 is finished off by one or more courses of self-locking loops, such as the picot loops 14.

A ravel-off section 16 is shown, as joined to the section 12, and in order to effectively attain the objects of my invention, a few courses 18 thereof serving to unite the section 16 and the picot loops 14 are made of a smooth thread such as silk or rayon, while the greater portion of the ravel-off section 16 may be of the cheapest material available that will be suitable for the purpose. It will therefore be seen that when that course of the ravel-off section, that is, interlocked with the picot loops, is removed, it will pull out with very little friction, and with very little disturbance of the silken band 12, such as might cause it to curl.

The details of one such construction are shown by way of example in Figure 6, in which are shown two courses, *a*, *b*, of cotton thread, constituting part of the cotton portion of the ravel-off section, and three courses of silk *c*, *d*, *e*, constituting the last courses of the ravel-off section. It will of course be understood that the cotton portion of the ravel-off section is not intended

to be limited to two courses, as shown in this figure. For instance, in actual practice the ravel-off section may amount to about twenty courses.

After the top portion 10 of the stocking is completed, the knitting may be continued in the customary manner to form a complete full-fashioned stocking blank, which may then be seamed to form a full-fashioned stocking. The stocking may then be dyed and boarded, as already explained hereinabove. Thereafter, the ravel-off section 16 may be removed as by cutting through the courses adjacent the picot loops and adjacent the seam, so as to separate the course passing through the picot loops, which is then pulled out, as indicated in Figure 5. The pulling out is conveniently effected by inserting the point of a pair of scissors under the course to be pulled, at the front of the stocking, that is, at the side opposite to the seam, and then pulling out the course.

While I have herein disclosed illustrative embodiments of my invention and an illustrative manner of practicing the same, it will be obvious that the same may be embodied in many other forms and practiced in many other ways, as will be obvious to those skilled in the art, without departing from the spirit thereof, and that I do not limit myself in relation to the scope of the disclosure herein other than as called for by the prior art.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent, is:—

1. As an intermediate product in the manufacture of full-fashioned hosiery, a blank comprising in the order named, a plurality of cotton ravel-off courses, a plurality of courses of loops of silk yarn at least one course of silk picot loops, and a plurality of silken courses constituting a narrow band, and said silken courses being followed by a portion of cotton yarn, and said last-named portion together with said silken courses corresponding to the welt of an ordinary stocking, but being of single layer construction, and said portion corresponding to the welt being followed by a leg and a foot portion of silk.

2. An intermediate product in the manufacture of full-fashioned hosiery, comprising in the order named, a series of ravel-off courses of cotton yarn, a series of courses of silk yarn, at least one course of silk picot loops, and a series of silken courses and said silken courses being followed by a single layer portion of cotton yarn, and by a leg and a foot portion of silk.

3. An intermediate product in the manufacture of full-fashioned hosiery, comprising in the order named, a series of ravel-off courses of cotton yarn, a series of ravel-off courses of silk yarn, a course of silk picot loops, and a plurality of silken courses, and said last-named silken courses being followed by a single layer welt or top portion of cotton yarn, and by a leg and a foot portion of silk.

4. In the manufacture of full-fashioned hosiery, an intermediate product comprising in the order named, a series of ravel-off courses of cotton yarn, a series of ravel-off courses of silk yarn, and a series of courses of silk yarn intended to form the top of the stocking, and said last-named series having its initial course, at its edge adjacent said ravel-off courses, constituted by a course of picot loops, said silken courses constituting a narrow band, and said silken courses being followed by a single layer portion of cotton yarn corresponding to the welt portion of a stocking, and by a leg and a foot portion of silk.

5. In the manufacture of full-fashioned hosiery, an intermediate product comprising in the order named, a series of cotton ravel-off courses, a series of silken courses associated with said ravel-off courses, a second series of silken courses, and said second series having its initial course constituted by a course of picot loops, and said silken courses being followed by a single layer portion of cotton yarn corresponding to the welt of a stocking, and by a leg and a foot portion of silk.

6. In the manufacture of full-fashioned hosiery, an intermediate product comprising in the order named, a series of cotton ravel-off courses, a first series of courses of loops of silk yarn associated with said ravel-off courses, a second series of silken courses joined to said first series by ravel-proof loops, and said second series of silken courses being followed by a single layer portion of cotton yarn, corresponding to a welt portion, and by a leg and a foot portion of silk.

7. An intermediate product in the manufacture of full-fashioned hosiery comprising, in the order named, a series of cotton ravel-off courses, a

series of courses of silk yarn associated with said cotton ravel-off courses by an intermediate series of ravel-off courses of silk yarn, said series of courses of silk yarn having its initial course, at its edge adjacent said intermediate silk ravel-off courses, constituted by a course of picot loops said courses of silk yarn constituting a band of a width of the order of one-quarter of an inch, and said silken courses being followed by a welt or top portion of cotton yarn, and by a leg and a foot portion of silk.

8. An intermediate product in the manufacture of full-fashioned hosiery comprising, in the order named, a series of cotton ravel-off courses of a number of the order of twenty courses, a number of courses of silk yarn, a course of picot loops formed of silk yarn, and a series of courses of loops of silk yarn, constituting a band of a width of the order of one-quarter of an inch, followed by a single layer portion of cotton yarn, corresponding to the welt of the stocking, and leg and foot portions of silk.

JOHN M. BOTTS.