

May 22, 1934.

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1,960,107

STOCKING IN THE CORRECT FORM MANUFACTURED ON THE FLAT HOSIERY
KNITTING MACHINE AND METHOD FOR MANUFACTURING THE SAME

Filed March 11, 1931

3 Sheets-Sheet 1

Fig. 1.

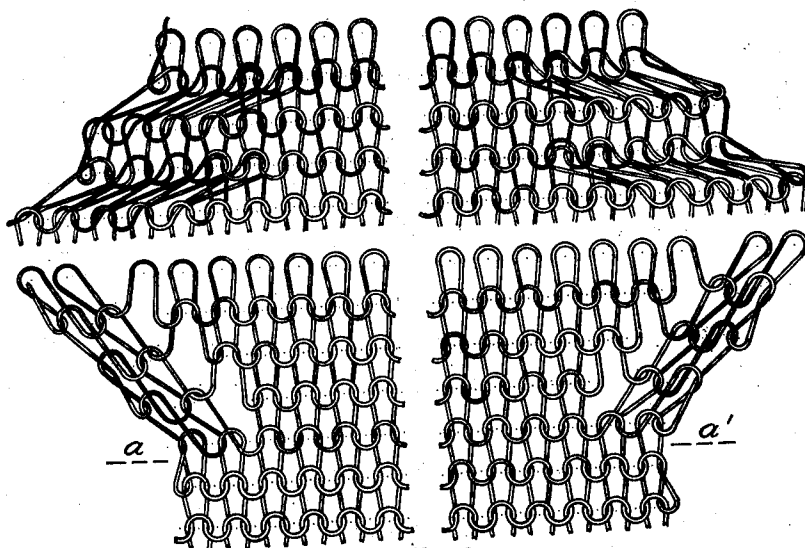
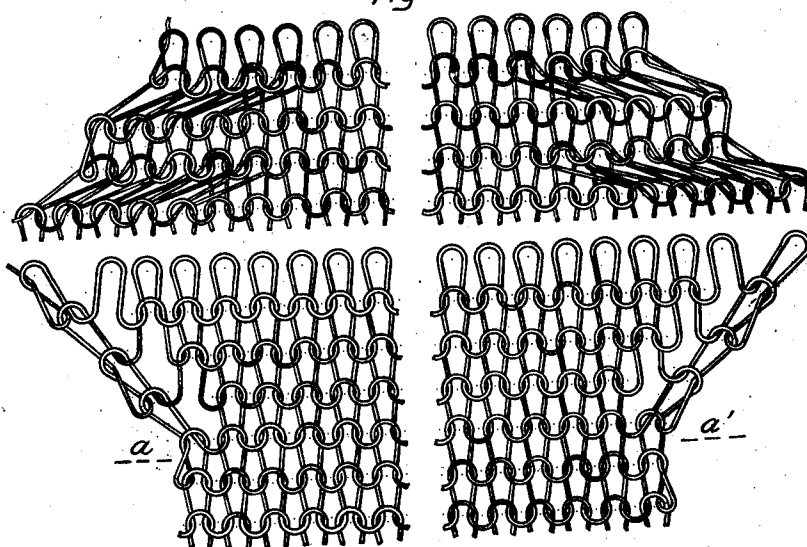


Fig. 2.



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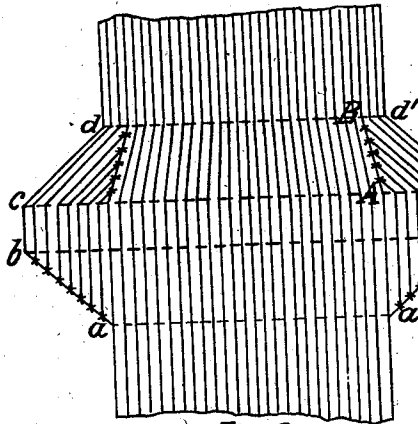


Fig. 3.

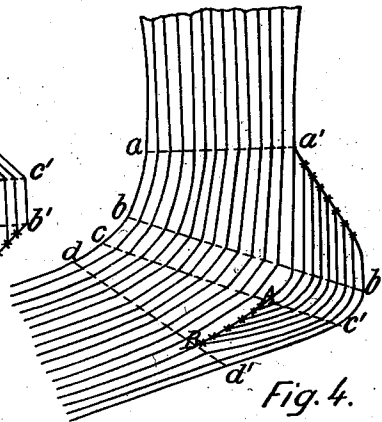


Fig. 4.

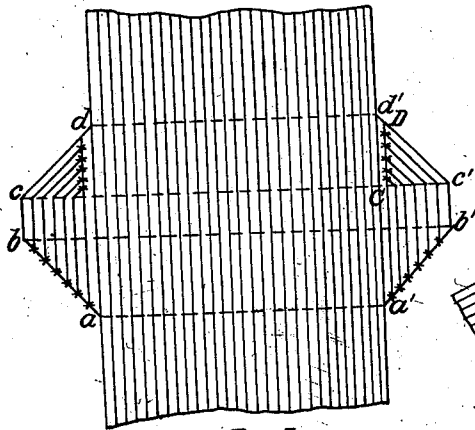


Fig. 5.

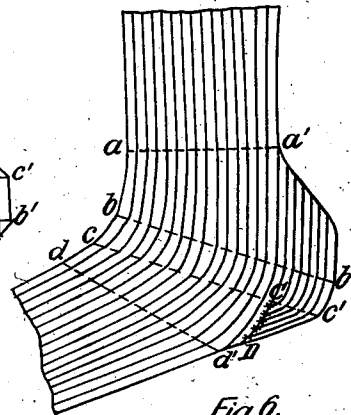


Fig. 6.

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3 Sheets-Sheet 3

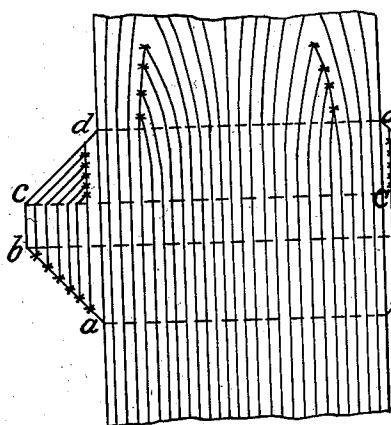


Fig. 7.

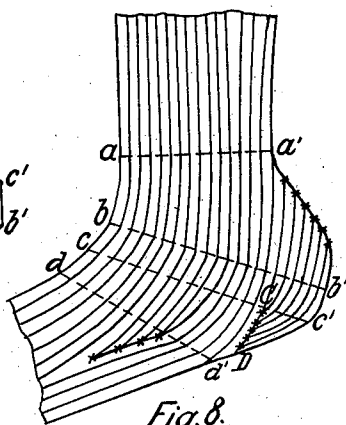


Fig. 8.

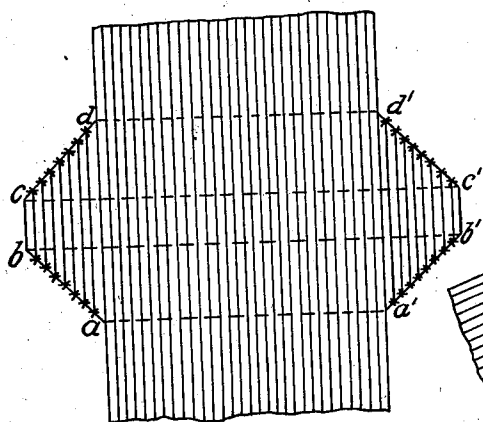


Fig. 9.

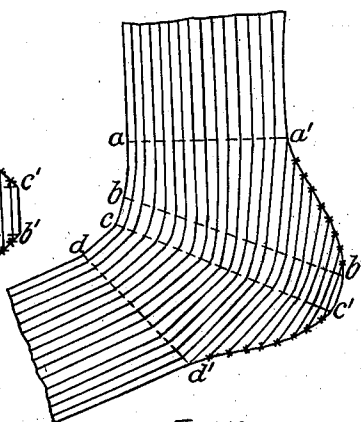


Fig. 10.

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UNITED STATES PATENT OFFICE

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STOCKING IN THE CORRECT FORM MANUFACTURED ON THE FLAT HOSIERY KNITTING MACHINE AND METHOD FOR MANUFACTURING THE SAME

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Application March 11, 1931, Serial No. 521,785
In Germany March 12, 1930

6 Claims. (Cl. 66—184)

This invention relates to hose such as stockings manufactured in the correct form in a flat hosiery knitting machine, the heel portions together with the instep portion connecting them being prepared simultaneously, and to a method for manufacturing the same.

The invention applies more particularly to the method in which the heel portions which are to be manufactured simultaneously with the foot portions are produced in this way that, for the purpose of widening the heel portion, a certain number of the heel loops are widened in outward direction. Stockings thus prepared have hitherto exhibited in the vicinity of the heel, for instance below or behind the ankle, some form of widening line which on the one hand is unsightly and which, moreover, on the other hand, also detrimentally affects the durability of the stocking, as the widening line is a line of open holes.

Another detrimental point is this that the loops, located in the proximity of the widening line are stretched in such a degree that fracture of the needles and defects in the knitted web arise. The finished stocking itself does not fit to the human foot; there appear folds in the instep of the upper part of the foot, behind and above the ankle etc.

All these disadvantages are obviated in the present invention, in that, for the purpose of widening the heel, the widening is performed in a novel and characteristic way; namely, the widening is effected only in the vicinity of the marginal loops, e. g. one or two marginal loops, whereby the widening can be securely sewn in with a proper marginal loop and is thereby made to disappear after the sewing.

How, after the heel has been widened in this manner, that is to say, after the desired size of the heel has been attained, the heel rounding and narrowing is effected is immaterial to the present invention. Thus, a few plain rows may be worked in immediate conjunction, or loops may be cast off, or narrowing may be effected at suitable points.

Some embodiments of the invention are shown schematically by way of example in the accompanying drawings.

Figure 1 shows the loop formation of a heel portion in the case of two widened marginal loops and Figure 2 the loop formation in the case of one widened marginal loop. In Figures 3 to 10, four different stocking portions are schematically shown at first in Figs. 3, 5, 7 and 9 as flat articles as obtained while the machine is run-

ning, and then in Figs. 4, 6, 8 and 10 in side view as completed portions of the stocking.

It appears from Figure 1, how, after the leg has been completed as far as the row $a-a'$, in every following row of loops two marginal loops are widened in each side by as much as one needle, whereas according to Fig. 2, in every row only one marginal loop is widened by a needle.

It is more advantageous for the purpose of obtaining a good seam and fitting to perform the widening of two loops to the extent of one needle in each course. The number of loops to be widened is preferably determined according to the count of the material and the gauge of the machine.

This widening of the marginal loops is effected until the desired heel widening or heel size has been attained. When the heel has been widened sufficiently, then rounding and contracting thereof may be effected in any desired manner, as has already been stated.

In the following some examples of various heel roundings and narrowings are described.

According to Figs. 3 and 4 there is, after the completion of the leg, the heel widening, effected in the described manner from the line $a-a'$ to the line $b-b'$ by stretching of the marginal loops, whereby the knitted web is widened to the desired size of the heel, and in immediate conjunction therewith a number of plain courses are worked up in order to obtain the correct rounding of the heel up to the line $c-c'$. The narrowing of the heel to the line $d-d'$ is attained by narrowing, preferably in every second course, whereby the narrowing line $A-B$ is attained.

According to Figs. 5 and 6, the heel narrowing is so changed as to extend from the line $c-c'$ to the line $d-d'$, in which case the narrowing line is placed outwardly in the manner of heel cap narrowing (line $C-D$). There may then take place, as is shown in Figs. 7 and 8, the usual wedge shape narrowing.

According to Figs. 9 and 10 the heel narrowing is attained by placing the narrowing line exactly like the widening line to the margin, so that it disappears in the seam and no widening or narrowing lines of any sort appear in the heel.

Whether with the heel rounding plain rows are worked depends upon the desired form of the heel. Instead of this kind of heel rounding and heel contracting by narrowing in any desired kind and at any desired place the shape of the lower part of the heel can be produced also by the casting off of loops, as has already been stated, or in any other manner.

The essential feature of the invention is the disposition of the widening line which can be sewn in with a correct marginal loop into the marginal loops, that widening line disappears when the heel has been sewn.

I claim:—

1. In a stocking manufactured in the correct form on a flat hosiery machine and having its heel portions made in one operation with the foot portion, widening loops connecting the heel portions and the foot portion and forming a widening line immediately adjacent the marginal loops to be sewn in, said widening line being located within the inner portion of the seam.

2. In a stocking manufactured in the correct form on a flat hosiery machine and having its heel portions made in one operation with the foot portion, widening loops connecting the heel portions and the foot portion and forming a widening line immediately adjacent the marginal loops to be sewed in, a few plain courses and thereafter a narrowing line lying in an oblique position below the ankle and following said widening loops, said widening line being located within the inner portion of the seam.

3. A stocking manufactured in the correct form on a flat hosiery machine and having its heel portions made in one operation with the foot portion, widening loops connecting the heel portions and the foot portion and forming a widening line immediately adjacent the marginal loops to be sewn in, a few plain courses and thereafter a narrowing line lying in the heel cap portion of

the stocking and following said widening loops, said widening line being located within the inner portion of the seam.

4. In a stocking manufactured in the correct form on a flat hosiery machine and having its heel portions made in one operation with the foot portion, widening loops connecting the heel portions and the foot portion and forming a widening line immediately adjacent the marginal loops to be sewn in, and a narrowing line likewise lying in the range of the marginal loops and following said widening loops, said widening line being located within the inner portion of the seam.

5. The method of manufacturing stockings in the correct form on a flat hosiery knitting machine, consisting in enlarging the heel by widening marginal loops located directly at the rim and adapted to be sewn in, and sewing said marginal loops with the widening line within the inner portion of the seam.

6. The method of manufacturing stockings in the correct form on a flat hosiery knitting machine, consisting in making the heel portions in one operation with the foot portion, connecting them and effecting the connection of the heel portions with said foot portion by widening loops in such a manner that the widening line is located immediately adjacent to the marginal loops to be sewn in, and sewing said marginal loops with the widening line within the inner portion of the seam.

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