

UNITED STATES PATENT OFFICE

AUGUSTE MOUTHE, OF LYON, FRANCE, ASSIGNOR TO FRANCISQUE DAMON, OF LYON, FRANCE

VARICOSE STOCKING

Application filed February 7, 1928, Serial No. 252,575, and in France April 11, 1927.

The present invention relates to varicose stockings of the type knit to grip or hug the leg, which, as is generally known, are made with an opening for the heel in order that the upper part of the stocking may not be dragged toward the foot, which would decrease its gripping pressure around the leg. These openings have heretofore been formed by hand, after the stocking has been knitted, the two edges being whip-stitched; but such method has not proven satisfactory not only for the reason that the stitches constitute weak points in the stocking but also, and above all, because the aforesaid edges have a tendency to fold back and form ridges during walking, which is extremely uncomfortable and sometimes painful.

According to this invention, the heel opening is produced on the knitting machine itself, without whip-stitching, and it is surrounded by a zone or region in which the fabric is doubled, thereby reinforcing the edges of the opening and preventing the formation of ridges. Moreover, this doubled zone or region is restricted to the rear half of the stocking, so that the front part of the latter is not given a peculiar appearance. As regards the portion of the stocking comprising the aforesaid opening, such portion, zone or region is made essentially of three parallel fabrics, one forming a continuation of the front part of the stocking which can be knitted separately and afterwards sewed at its edges to the two others, the latter forming a kind of closed pocket; the opening being produced by stopping the knitting operation in the central part of the aforesaid portion.

In this same double or two-ply zone, it is also possible, on the other hand, to fasten together the two main or elementary fabrics at a plurality of points by means of rows of connected loops; such fastening serving to attach the two elementary fabrics more intimately one to the other, so that they will act exactly like a single fabric of double thickness.

Finally, instead of forming a heel-opening more or less roughly in the rear face, it is possible to provide a central part which constitutes a strap that divides the opening in

two. This strap is likewise made directly on the machine itself, without seams or whip-stitching, by means of suitable decreases in the width of the knitting which result in forming a central knitted strip. The knitting operation is stopped along the edges of the said rear face and then taken up again when the length of the central strip is deemed sufficient. This strip, band or strap, like the rear face of the stocking in the region of the heel, is a fabric knitted in two thicknesses which are adapted to be fastened together at definite points by rows of connected loops, as explained above.

In the accompanying drawings:

Figure 1 is a side view, partly broken away, of a varicose stocking in use;

Fig. 2 shows the heel opening according to the invention;

Fig. 3 is a perspective view of the zone containing the opening;

Fig. 4 is a section on line 4—4 of Fig. 2;

Fig. 5 is a view of the rear face of a modified form of stocking provided with a heel strap;

Fig. 6 is a fragmental section on line 6—6, Fig. 5, showing the connection between the two elementary fabrics;

Fig. 7 is a plan view of the rear face, the knitting being supposedly cut at C—C and D—D to permit the fabric to be flattened out.

A varicose stocking, as is generally known, is a sort of flexible tube having an opening, indicated at 1 in Fig. 1, for the heel of the wearer; this opening having been made, up to the present, by hand and after the stocking has been knit. It may, for instance, be formed by dropping two loops to determine the ends of the opening, unraveling the part between the two holes thus produced, and then whip-stitching the two edges of the opening. These edges, however, tend to roll up and form ridges under the foot which are apt to hurt the wearer, as has been stated. The stocking of the present invention is provided with a slit or opening 5 (Figs. 2 and 3) which is produced directly by the knitting itself and, hence, without whip-stitching or similar binding. Moreover, it is rein-

forced around this slit by means of a second fabric 3 which lines the first one on the rear half of the stocking for a distance of a few centimeters above and below the said slit.

As will be apparent from Fig. 1, the reinforcement or lining 6 is restricted to the rear part of the stocking and does not show at the front of the leg, so that it is hardly visible at all; moreover, it avoids the formation of ridges, thus overcoming a substantial defect. Also, it prolongs the life of the stocking and preserves all its flexibility in the region of the heel.

The stocking described is manufactured as follows, reference being had to Fig. 4: Knitting proceeds in the direction of the arrow on an ordinary machine until the point 7 is reached, whereupon the front half of the knitting is fixed (by means of a comb or otherwise) and the work is recommenced by connecting together the loops of the two needle banks at the first pass, thus producing a new tubular knitted part 6-8 which is closed at its upper end and which is formed in continuation of one half only of the original tube.

The opening is produced at the point 9, for instance, by fastening the knitting at its central portion by chain-stitching and not putting it back on the needles of the region affected; the chain-stitching being done either by hand or on the machine. The knitting is caught up again automatically after the opening is formed; and at the point 10 the loops of the two banks are again connected in order to close the two faces 6 and 8. Then the front face 11, which was fixed at the point 7, is again picked up, but is knitted only far enough to bring it to the point 10, whereupon the normal working is resumed.

To finish the stocking, it is merely necessary to connect the edges of the front face 11 with those of the double rear face 6-8, which can readily be done either by hand or by machine by an operation well known in the manufacture of ordinary ribbed stockings.

The stocking illustrated in Figs. 5-7 is similar to the one described above, excepting as regards the attachment or strap 12 which divides in two the opening 5 and which is long enough to pass around the heel without, in so doing, pulling down the stocking in an unusual way.

This strap 12, it should be understood, might be utilized in connection with a stocking of the kind previously described, for the purpose of supporting the two edges of the opening 5. But in that event, uncomfortable seams would necessarily be formed, producing ridges which might be painful.

The said strap, however, is formed directly by knitting in the following manner:

Proceeding always in the direction of the

arrow, there is formed, after the point 9 has been reached, a series of reductions in width in the rear part of the knitting until a narrow strip 12 is produced; and when this strip has reached a suitable length the workman takes back on the machine needles the loops C, C: that is to say, a certain number of lateral loops on the tapering portion, six for instance on each side. On resuming the knitting operation over the whole width of the face, these loops C, C are joined to new loops D, D, and the fabric represented in Fig. 5 is obtained.

Figs. 5 and 7 show a series of lines 13 which represent rows of loops common to the two main or elementary fabrics that constitute the rear face (Fig. 6). These connections insure a satisfactory attachment of the two fabrics and avoid slipping and folding; and, at the same time, the stocking thus formed tends to adopt the shape of the heel itself which gives it an artistic appearance.

The above description is not to be considered as limitative, but merely as indicating one way in which the invention can be carried out. Consequently, if conditions so require, it is possible to modify the procedure more or less in respect of details; and in particular, it is obvious that, contrary to the method described, the front face 11 (Fig. 4) can be made before the rear face 6-8. The heel can, of course, be knitted with single or double loops, or in any other preferred manner, without departing from the invention.

I claim as my invention:

1. A knitted varicose stocking, embodying a two-ply heel portion provided with a heel opening which is formed in the course of the knitting operation and a single edge of which is fastened by chain-stitching which passes through the loops of the knitting and forms a loose knot at each loop.

2. In a method of knitting varicose stockings, the steps of knitting the front face of the stocking; then knitting the rear face in the form of a tubular fabric closed at its opposite ends; and then fastening the two faces together by lateral seams.

3. A knitted varicose stocking, provided with a heel opening which is formed in the course of the knitting operation, and a fabric for reinforcing the border of said opening restricted to the rear part of the stocking, said reinforcing fabric lining the stocking fabric on the rear half of the stocking.

4. A stocking according to claim 3, in which the reinforcing fabric lines the first one for a distance of a few centimeters above and below the said opening.

In testimony whereof I affix my signature.

AUGUSTE MOUTHE.