Jan. 3, 1939. E. J. BERGER 2,142,489

STOCKING

Filed March 13, 1936

FIG. I.

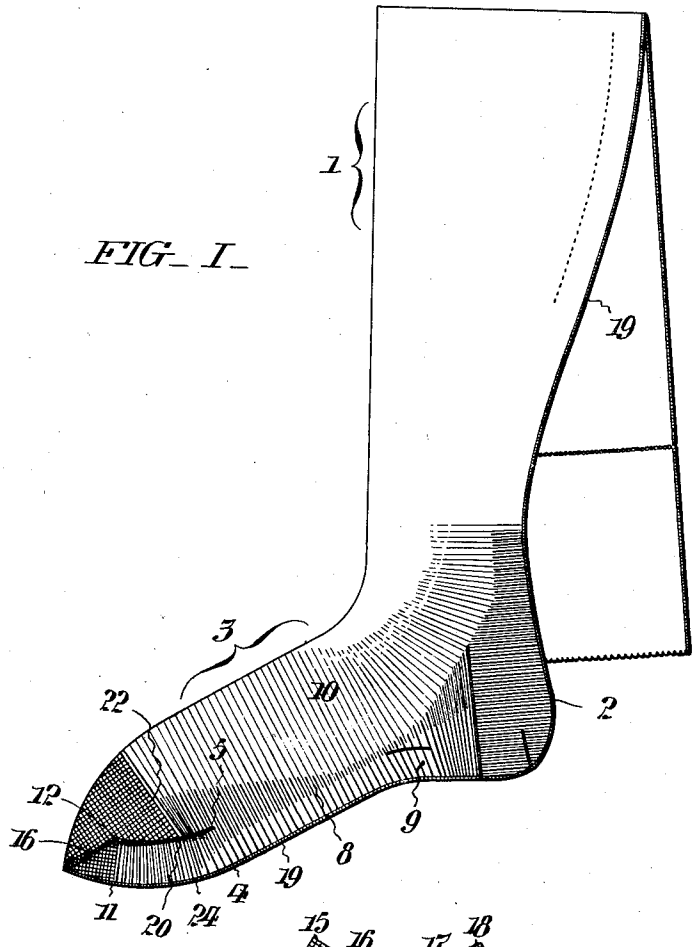
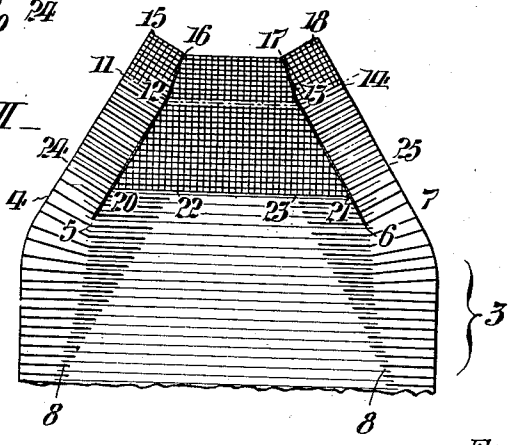


FIG. II.



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Patented Jan. 3, 1939 2,142,489

UNITED STATES PATENT OFFICE

2,142,489

STOCKING

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Application March 13, 1936, Serial No. 68,633

8 Claims. (Cl. 66—182)

This invention relates to stockings; and it has reference more particularly to full fashioned stockings.

Blanks for stockings of the kind specifically referred to are usually formed with what are known as "diamond" point toes which, while attractive in appearance, lack the necessary fullness at the toe region to fit properly across the toes of the human foot.

My invention is directed toward overcoming the above drawback, that is to say, I am to provide a stocking with a toe of improved shape which conforms more clearly to the natural configuration of the foot, and which lends itself to production by a simplified method wherein only single narrowing is resorted to in the shaping thereof at each side of the stocking blank instead of the double narrowing requisite to the formation of the usual diamond point toe.

Another object of my invention is to provide, incident to the knitting of a stocking having the above attributes, specially reinforced areas at the top and the bottom of the toe for capacity to effectively resist wear at these regions by rubbing with the contacting portions of the shoe upper.

A further object of my invention is to embody the above improvements in a stocking constructed generally in accordance with the method disclosed in U. S. Patent 2,038,407 granted me on April 21, 1936 in which the stocking is provided at opposite sides of its foot between its instep and sole with longitudinal reinforced areas which are relatively narrow through the greater part of their lengths but which flare toward the toe and at their other ends merge with reinforced areas in the heel.

Other objects and attendant advantages will appear from the following detailed description of the attached drawing, wherein

Fig. I is a view showing my improved full fashioned stocking; and

Fig. II is a fragmentary diagrammatic view showing a part of the foot portion of the blank for my improved stocking.

The leg 1, the heel 2, and the intermediate cradle foot portion 3 down to the line 4—5—6—7 of the stocking herein illustrated, may be produced on a flat knitting machine of the "Cotton" type after the manner disclosed in the patent above referred to, with incidental formation of double thickness longitudinal reinforcements 8 along opposite sides of the foot due to variant overlap in the traverse of a carrier feeding a relatively heavy yarn for the sole section 9 and three alternately operative carriers feeding the sheer yarns for the instep section 10, the split knitting being continued to the line 20—21.

Beginning at the line 4—5—6—7, I produce, in accordance with my present invention, a tapering advance toe portion 4—5—6—7—14—13—12—11, (Fig. II) by employing only the usual large point combs of the footing machine, and by consistently transferring, at definite recurrent intervals during the knitting, equal numbers of end loops inwardly into the instep field from opposite sides of the blank. As a consequence, there are formed coextensive flanking marginal portions 4—5—12—11 and 6—7—14—13 at opposite sides of a tapering center portion 5—6—13—12 of an advance toe section, said center portion being defined by sutures 5, 12 and 6, 13 which extend parallel with the sloping segments 4, 11 and 7, 14 respectively of the side edges of the blank. Beyond the line 11—12—13—14, I form a toe tip by continuing the narrowing, still with the large combs of the footing machine alone but at a slower rate than before and with progressive decrease in the number of end loops, to a terminal line 15—16—17—18. Due to this procedure there results a center tip portion 12—13—17—16 which tapers at a lesser angle than the center portion 5—6—13—12 of the advance toe section and co-extensive tapering flanking marginal portions 11—12—16—15 and 13—14—18—17. As shown, the center portion 12—13—17—16 is defined by comparatively short sutures 12, 16 and 13, 17, which are continuous with the sutures 5, 12 and 6, 13 and symmetrically inclined to the latter in obtuse angular relation. The stocking is closed as ordinarily by seaming together the selvage edges of the blank as at 19 in Fig. I; and it is to be particularly noted that in the finished stocking shown in Fig. I, the sutures 5, 12, 6, 13 are parallel with the seam 19 and incline upwardly toward the toe tip, while the connecting shorter sutures 12, 16 and 13, 17 lie in the longitudinal medians at opposite sides of the foot.

In order to adequately reinforce the upper part of the toe against wear by rubbing with the shoe upper, I begin at a line 20—21 well in advance of the knitting of the toe tip and well to the rear of the intersections 12, 13 of the meeting suture segments, to employ three yarns, two of which for example, may be of the body yarns used in knitting the leg and intermediate foot portions of the stocking and an additional yarn of heavier gage. Upon reaching the line 11—12—13—14 through the junctures 12, 13 of

the sutures at opposite sides of the toe, I resort to "ring" knitting with the three yarns above indicated to form the toe tip 11—12—13—14—18—17—16—15. The center portion 20—21—17—16 of the toe which is bounded by the sutures 5—12—16 and 6—13—17 respectively, and the flanking portions 11—12—16—15 and 13—14—18—17 of the tip are thus triply reinforced. The double thickness side reinforcements 8 of the foot are relatively narrow through the greater parts of their lengths but flare toward the toe, and at their other ends merge with the reinforced areas of the heel 2 as in the previous application hereinbefore referred to. The upper (inner) boundary lines of the reinforcements 8 terminate in the present instance at the points 22, 23 (Fig. II) in the line 20—21; while the lower (outer) boundary lines cross the suture segments 5, 12 and 6, 13 respectively and intersect with the edges of the blank at points 24, 25. For the purposes of ready distinction, the triply reinforced areas of the stocking toe have been conventionally indicated by cross hatching; while the double reinforced portions are indicated by interlapping transverse lines as in the co-pending application supra.

The toe portion of a stocking thus made more accurately fits the human foot and therefore affords the wearer added comfort. As a result, there is less likelihood of the toe nails being poked through the toe tip, which contingency is moreover precluded by the heavy reinforcement at the upper center part of the toe section, as well as the under portion of the toe tip. The reinforced areas 8 in my improved stocking have been made as small as possible consistent with adequate strength at the vulnerable points, the stocking being thus lighter in weight than stockings whereof the entire under-toe portion and sole are heavily reinforced. The angular form of the sutures at the opposite sides of the toe and the broken boundary lines of the tripple toe reinforcements obviously characterize my stocking in such a way that it can be readily distinguished from full fashioned stockings made in the usual way.

Having thus described my invention, I claim:

1. A stocking formed from a flat knitted blank having an advance toe portion with a tapered center area defined at the sides by convergent single lines of fashioning marks, and with flanking edge areas of uniform width beyond said lines; and a toe tip portion with a center area of sharper taper defined at the sides by single convergent lines of fashioning marks respectively at an angle to the first mentioned lines of fashioning marks, and with tapering flanking edge areas beyond the second mentioned lines of fashioning marks.

2. A stocking formed from a flat knitted blank having an advance toe portion with a tapering center area defined at the sides by convergent single lines of fashioning marks and with flanking areas of uniform width beyond said lines; and a toe tip portion with a center area of sharper taper defined at the sides by convergent single lines of fashioning marks which connect at an angle with the first mentioned lines of fashioning marks, and with tapering flanking areas beyond the second-mentioned lines of fashioning marks.

3. A stocking according to claim 1, wherein the lower portion of the toe is reinforced back to a transverse plane substantially through the inner ends of the first mentioned lines of fashioning marks.

4. A stocking according to claim 1, wherein the lower portion of the toe is reinforced back to a transverse plane substantially through the inner ends of the first mentioned fashioning lines, and wherein the upper portion of the toe is reinforced rearwardly beyond said transverse plane.

5. A stocking according to claim 2, wherein the lower portion of the toe is reinforced back to a transverse plane substantially through the junctures of the fashioning lines at opposite sides of the blank.

6. A stocking according to claim 2, wherein the lower portion of the toe is reinforced back to a transverse plane substantially through the junctures of the lines of fashioning marks at opposite sides of the blank, and wherein the upper portion of the toe is reinforced rearwardly beyond said transverse plane.

7. A stocking formed from a flat knitted blank having a reinforced heel; an instep; an advance toe portion with a tapered center area defined at the sides by convergent single lines of fashioning marks, and with flanking areas of uniform width beyond said fashioning lines; a toe tip portion with a center area of sharper area than that of the advance toe portion defined by convergent single lines of fashioning marks connecting respectively at an angle with the first mentioned lines of fashioning marks and with tapering flanking areas beyond the second-mentioned fashioning marks; a reinforcement at the upper portion of the toe extending to a transverse plane inwardly beyond the junctures of the lines of fashioning marks at opposite sides of the blank; and medial reinforcements longitudinally of opposite sides of the foot, said areas being comparatively narrow for the greater part of their lengths but flaring forwardly and meeting the toe reinforcement at the transverse plane aforesaid.

8. A stocking according to claim 7, wherein the foot is split knit with the two yarns employed in the knitting variantly overlapping in the longitudinal reinforcements at opposite sides of the foot.

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