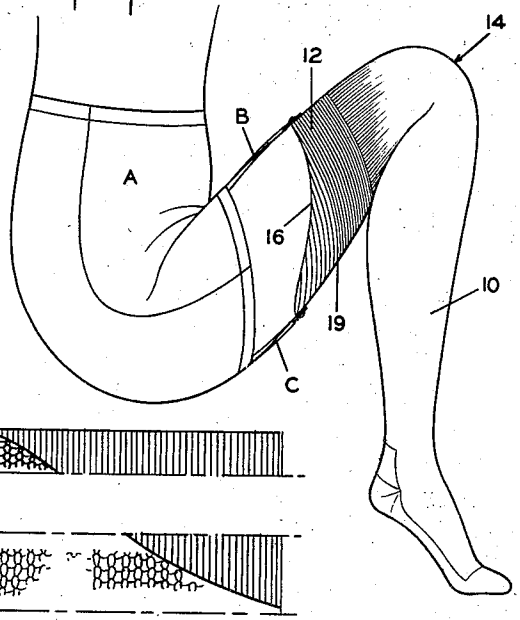
May 24, 1938. E. O'CONNOR 2,118,102

STOCKING

Filed May 20, 1936

Fig. 2.



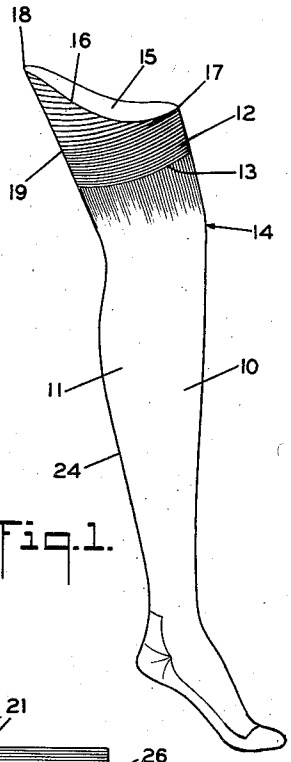


Fig. 1.

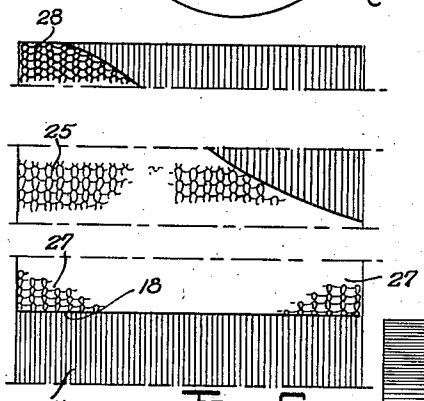


Fig. 6.

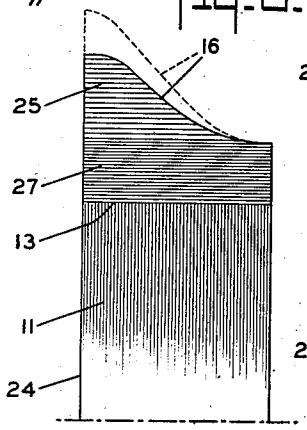


Fig. 3.

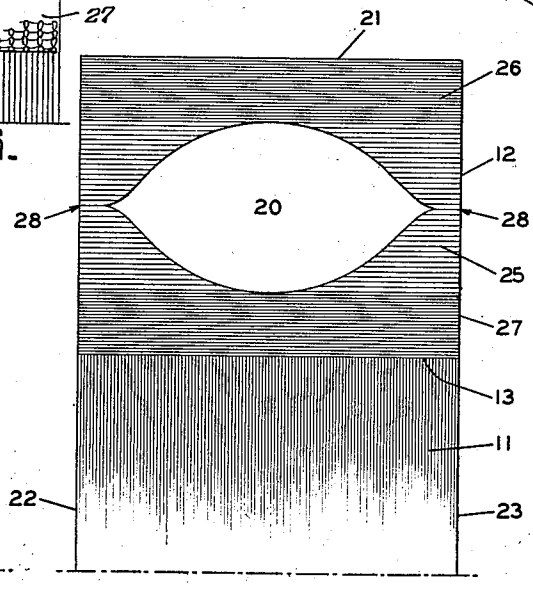
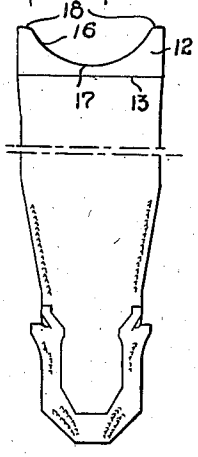


Fig. 4.

Fig. 5



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Patented May 24, 1938 2,118,102

UNITED STATES PATENT OFFICE

2,118,102

STOCKING

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Application May 20, 1936, Serial No. 80,688

18 Claims. (Cl. 66—173)

The invention relates to ladies' stockings of the long type which extend above the knee.

The primary object of the invention is to provide a simplified form of ladies' stockings which will tend to distribute tearing strains which may develop under prevailing service conditions and thus tend to eliminate "runs", tears, breaks and the usual weakening of the fabric structure of the stocking to which such articles are at present subjected.

It is a common practice among women at present to adjust their stockings in position on the leg and to hold them in place under at least a slight degree of tension while in standing or walking position. In most cases this is attained by fastening the tops of the stockings at two or more points, usually by means of a front and a rear garter suspended from a corset, girdle or similar body engaging garment and stretched under tension between the girdle and the stocking. This arrangement is also intended to be utilized at present for the additional purpose of holding the girdle or corset in position fitting snugly over the hips and to defeat the usual tendency of such garments to ride or curl upwardly on the body when in use. This tendency of the corset or girdle to move upwardly places additional strain on the anchoring stocking with the result that there eventually develops during the course of the day a severe strain on the stockings so that the stockings are usually stretched taut, especially in the areas adjacent the points engaged by the garters.

With the stocking thus under tension initially, it is appreciated that when the user flexes her upper leg forwardly relative to her body, as in the acts of sitting, squatting and stooping, there is produced two major areas of localized strains: first, a pulling of the fabric along the front of the stocking across the knee thus forming more or less of a pocket at this front portion of the stocking. It has been suggested heretofore to relieve the tension across the knee in several ways such, for instance, as by providing an area of loose or coarse knitting at the knee portion. However, this only partly remedies the strained condition and is no part of the present disclosure, except as the invention herein featured tends somewhat to minimize the front knee pocket-forming strain.

Second, the greatest strain under the sitting, squatting and stooping, or body bending conditions above suggested, occurs not at the front of the knee, but at the rear portion of the upper part of the stocking along the underside of the wearer's thigh and in the area below the point where the stocking is grasped by the rear garter. Usually this rear garter engages, in the case of full fashioned stockings, the welt portion. The strains under such conditions are not confined strictly to the welt portion but extend beyond the welt over an area which extends almost to the crotch of the knee. Thus the strain extends into the usual fine gauge material in the region above the knee crotch and below the welt and in an area which cannot easily, nor comfortably, nor aesthetically, be reinforced.

The present invention features a form of stocking the open top of which is formed lower in front than it is in the rear, or, differently expressed, the invention may be defined as a high back stocking. This construction has the effect of maintaining the necessary amount of material to cover the user's knee as present styles require, but minimizes the amount of material above the knee and on top of the thigh thus tending to eliminate the binding of the upper portion of the stocking to the wearer's skin during the formation of the knee pocket. At the same time, the construction extends the underside of the stocking for a material distance upwardly under the thigh so as to approach more or less the rear portion of the corset or girdle. This provides more material than usual at the rear of the stocking and as this material is stretchable, even as ordinarily knitted, the greater length of material will, of course, provide for a greater degree of stretchability and incidentally a greater degree of elasticity. By this arrangement any elongation of the upper rear portion of the stocking under the pulling strain of the rear garter will, of course, tend to further elongate the stocking with incidental reduction in circumferential width and as abnormal strains are released the fabric tends to regain its initial form and without in any way modifying the normal snugness of fit of the major portion of the stocking considered from and including the knee downwardly.

The present invention also contemplates that these areas of increased stretchability at the rear of the stocking be confined to the welt, which, due to its usual more rugged construction is better capable of meeting these variable conditions than is the more finely knitted leg portion.

Another object of the invention and featuring economy in manufacturing costs is to provide a form of ladies' long stocking which will eliminate material in that portion of the upper front of the stocking which is not required nor necessary for coverage.

Still another object of the invention is to pro-

vide a form of long stocking which will function more efficiently than known forms of similar stockings in its ability to anchor and thus hold the rear portion of the girdle from riding upwardly and which will act to distribute the upward pulling strains on the stocking caused by the upwardly shifting girdle over a materially increased area at the back of the welt and in this way tend to prevent the localizing of the girdle pull to a small highly strained area of the welt as is usual at present.

Accordingly, the present invention features at the upper rear of the stocking the formation of an area of approximately triangular form having at its apex a rear garter engaging point, the garter pull on which is distributed and spread over an increasingly wider area of frictional contact between this stocking area and the skin of the user.

Various other objects and advantages of the invention will be in part obvious from an inspection of the accompanying drawing and in part will be more fully set forth in the following particular description of one form of stocking embodying the invention, and the invention also consists in certain new and novel features of construction and combination of parts hereinafter set forth and claimed.

In the accompanying drawing:

Fig. 1 is a perspective view of a stocking constituting a preferred embodiment of the invention and slightly bent at the knee to show the location of the knee;

Fig. 2 is a side view of a person wearing the stocking of Fig. 1 and with her knee elevated to show the position of the stocking when so used with its garters attached;

Fig. 3 is a view in side elevation of the upper portion of the stocking of Fig. 1 showing in full lines the normal position of the line defining the upper end of the stocking and showing in dotted lines the top line stretched into a slightly elevated position corresponding to the position shown in Fig. 2;

Fig. 4 is a plan view of the upper portion of a full fashioned stocking blank before the welt is turned or the stocking seamed up the back to form the Fig. 1 showing;

Fig. 5 is a full fashioned stocking blank without a turned welt and from which the device of Fig. 1 may be formed; and

Fig. 6 is an enlarged flat view of the upper portion of Fig. 3 showing enlarged fragmentary portions of the three types of knitting used in the welt.

In the drawing and referring first to Fig. 2, there is disclosed a corset or similar body garment A provided with a long front garter B and a relatively short rear garter C depending therefrom as is usual in such cases. A full fashioned stocking 10 of the type which extends above the knee is held in its usual tensioned position by having its upper end engaged by the garters B and C. These garters are adjusted, or preset, to meet the particular requirements of the user and to compensate for the shrinkage to which stockings are subjected after they have been in use for a while and after they have been washed and to make the necessary adjustments for stockings of various lengths.

The stocking comprises a leg portion 11 of a single thickness of knitted material and which may be assumed to be a fine gauge gauze. The upper end of the stocking is defined by a welt 12, in this case shown to be of double thickness of material and which may be formed from the blank as illustrated in Fig. 4, and hereinafter more fully described. The welt is secured to the leg portion 11 along a welt line 13 positioned above the knee indicated at 14.

The distinctive feature of this disclosure is that the stocking, considered as a whole, is of greater length, measured from some plane of reference such as the level of the knee, at its rear than at its front portion. Differently described, the open top 15 terminates along a line 16 which is downwardly and forwardly inclined and preferably curved in a flat S form curve as shown, with its lowermost point 17 positioned at the front of the stocking and preferably a slight distance above the knee, but not so close to the knee as to make the stocking uncomfortable to those who insist on what is generally known as "long" stockings. The high rear point 18 is at the center rear of the stocking and forms a clamping area or tab designed to be engaged by the rear garter C. Similarly the low point 17 at the front of the stocking is designed to be engaged by the front garter B. It is intended that these stockings will be sold in different lengths so as to provide as near as possible a custom fit to the individual user and thus avoid the usual practice of turning down the welt to provide the necessary adjustment in length for attaching to the preset garter length.

In stockings as at present constructed, the garters which are usually two or more engage the top of the stocking at points more or less equidistantly spaced from the top. In a short time the upwardly moving girdle pulls along the lines of the several garters and this pull is transmitted to the stocking tending to elevate the usual circular upper edge along the line of pull. The stocking in its frictional engagement with the skin of the wearer tends to hold the stocking in place between the lines of pull with the result that the top edge is looped into a series of concaved lines defining the top edge. There is thus developed in the area at the top of the stocking alternate lines of vertically directed strains which are present even when the wearer is standing or walking without bending at the knees. If then with these known forms the wearer should stoop, or elevate the knee, into the position shown in Fig. 2, and thus insert additional pull, particularly on the already strained lines at the back of the stocking, it is not very long before either the stocking tears, or "runs" develop, or after a few wearings and washings the fabric forming the strained areas becomes permanently distorted and strained and this part of the stocking wears out more rapidly than would otherwise be the case.

The present disclosure features a construction which tends to eliminate these strained areas or rather reduces them in extent. This is attained first by omitting from the top of the thigh as far as possible the skin resistance to the shifting of the stocking top as it tends to form the knee pocket and, second, by the massing of strain distributing material to the rear portion of the top where it is in position to function to distribute the major strains on the rear of the stocking over a relatively larger area of frictional engagement between the stocking and the wearer's skin and thus tend to spread the rear strains.

In comparison with known forms of stockings it is suggested that the region below the rear garter and designated herein as 19 be of sufficient strength to resist the normal upward pull of the girdle when the wearer is in the normal

upright wearing position and that it possess sufficient capacity to stretch and give under conditions of abnormal pull as suggested in the Fig. 2 showing.

For the purpose of increasing the flexibility or stretchability in those areas 19 where such give in the material is required, it is suggested that in the rear area 19 and between the high point 18 and the welt line 13 the welt material be knitted a little more coarsely or loosely than the balance of the welt, or otherwise conventionally knit the welt or upper rear portion of the leg of the stocking so as to provide for the requisite give or stretch of the stocking to release abnormal strains on the fabric.

It is herein suggested that the welt be of the double layer type and in order to form the open top 15 that the stocking blank be formed at its upper portion as indicated in Fig. 4. As shown the courses of the knitting are interrupted in their traverse in forming the threads to form the lemon shaped opening 20. It is understood that the welt is formed conventionally by turning the upper edge 21 down to the welt line 13 and knitting these edges together along this line as is well known in the art. Also following conventional practices in this respect it is understood that the long side edges of the full fashioned blank 22 and 23 are sewed together to form the usual rear seam 24. It will be noted from the showing in Fig. 4 that of the courses which form the welt, the courses in the area indicated by the reference character 25 which form the extreme top of the finished stocking are a little more coarsely knitted than in the areas 26 and 27 on opposite sides thereof, and which form the area at the welt line 13 in the finished stocking. In other words, in order to give increased stretch at the portion of the stocking engaged by the rear garter C, the knitting is a little more loosely looped on opposite sides of the folding line 28—28 than in the area of the welt adjacent the welt line 13. It is further suggested as an additional refinement that two or three courses at the line 28—28 be closely knit or knitted with a little heavier thread or otherwise conventionally reinforced to provide a rugged area which will not tear from a severe rear garter pull.

In operation it will be understood that the stocking is put on conventionally, except that care is exercised to see that the points 17 and 18 are oppositely disposed on the leg and in position to be engaged respectively by the front and rear garters. When so positioned it will be assumed that the stocking is in the position indicated by the full lines in Fig. 3. Now suppose that the knee is flexed upwardly as indicated in Fig. 2, there will be promptly exerted a pull in the region 19 at least some part of which will, of course, be absorbed by the elongation of the garter C, and part will be absorbed by the stretching of the fabric particularly in the region marked 19 in the welt.

By means of a stocking of the character outlined there has been effected a saving of material in the upper front portion of the stocking and at the same time there has been minimized, at least to some extent, the skin friction resistance to the upper front portion of the stocking creeping downwardly to form the knee-pocket. With most persons there is a slight bulge just above the knee which elevates the upper front portion of the stocking and this tends with stockings now in general use in developing circumferential strain which the high back and low front stocking featured in this disclosure is endeavoring to minimize. So long as the knees are covered and there is no possibility of the knee accidentally slipping out of the stocking under usual wearing conditions, there is no requirement at present for an abnormally high front to the stocking as at present formed. The massing of the material to the rear of the thigh increases the frictional area between the stocking and the skin of the wearer at this place and even though there may be a severe pull from the rear garter this pull is spread over an increased area of skin engagement which has the effect, of course, of minimizing the localizing of the strain at one limited area of skin.

The type of knitting material forming the welt may be selected, having due regard for the present style of light weight stocking to provide a knit which will not stretch, or at least which will not stretch very much, under normal wearing conditions with the usual garter pull, but which is capable of stretching and giving at least slightly under the abnormal strain imposed on the stocking by the rear garter, or garters, when in the abnormal, strained position herein illustrated in Fig. 2.

While there have been shown, described and pointed out in the annexed claims, certain novel features of the invention, it will be understood that various omissions, substitutions and changes in the form and details of the stocking illustrated and in its operation may be made by those skilled in the art without departing from the spirit of the invention.

I claim:

1. A lady's stocking of the full fashioned type which extends above the knee, comprising a leg portion of a single thickness of knitted material and a welt of a double thickness of knitted material, said welt defining the open top of the stocking and having its maximum vertical width at the rear and gradually reducing in its vertical width towards the front of the stocking whereby the open top is inclined downwardly from rear to front, said stocking as a whole having a greater length at its rear than at its front side, and the material forming at least a portion of the rear part of the welt being more loosely or coarsely knitted than the balance of the welt thereby to provide for increased stretchability at the upper rear than at the upper front portion of the stocking.

2. A lady's stocking of the full fashioned type which extends above the knee, comprising a leg portion of a single thickness of knitted material and a welt of a double thickness of knitted material, said welt defining the open top of the stocking and having its maximum vertical width at the rear and gradually reducing in its vertical width towards the front of the stocking whereby the open top is inclined downwardly from the rear to front, and said stocking as a whole having a greater length at its rear than at its front side.

3. A lady's stocking having its upper open end terminating in a line downwardly and forwardly inclined and having the lowermost point of said line located at the front of the stocking above the knee and the upper rear portion of said stocking being knitted differently from the upper front portion to provide greater degree of yield to vertical pull on the rear of the stocking than at the front of the stocking.

4. A lady's stocking of knitted material hav-

ing greater length at its rear than at its front portion, measured above the level of the knee, said upwardly extended rear portion providing a clamping area to be engaged by a rear garter and said longer length at the rear tending to release tearing strain on the upper rear portion of the stocking when the user flexes her upper leg forwardly relative to her body.

5. A stocking comprising a leg portion of relative thin gauge material extending above the knee and a top portion of relatively thicker gauge material, said top portion being relatively higher at the rear than at the front, and said top portion possessing greater elasticity at the rear portion than at the front portion.

6. An upper leg portion of a lady's stocking provided at the rear portion of its open top with a triangular area fashioned to fit flat against the underside of the leg of the wearer and having an apex at its top forming a garter engaging area extending circumferentially from the rear to opposite sides and progressively increasing in width below the apex towards the front of the knee portion of the stocking, and said triangular area knitted sufficiently close and having structural strength to resist distortion under normal wearing conditions and capable of giving slightly under tension of any abnormal pull on the garter engaging area.

7. A stocking having its open top defined by a welt higher at its rear portion than at its front portion, the courses forming the upper portion of the welt being relatively closely knit at the extreme rear top, then relatively more loosely knit immediately therebelow and then again more closely knit therebelow and adjacent the welt line.

8. A substantially rectangular blank for forming a welt for a stocking, said blank comprising a single thickness of knitted material having an opening extending therethrough adjacent the center of the blank and said blank adapted to be folded on itself along a line intersecting the opening to form a two-layer form of welt, and the knitting on opposite sides of said opening and adjacent said line being more coarsely knitted than the portion of the blank more remote from said line.

9. A substantially rectangular blank for forming a welt for a stocking, said blank comprising a single thickness of knitted material having an opening extending therethrough adjacent the center of the blank and said blank adapted to be folded on itself along a line intersecting the opening to form a two-layer form of welt.

10. A knitted blank for forming the top of a stocking comprising three superposed areas of differently formed knitted lines, the intermediate area being more loosely knitted than the areas on opposite sides thereof and said blank provided in said intermediate area with an opening approximately lemon-shape in outline.

11. A blank for forming a full fashioned stocking having opposite long side edges adapted to be sewed together to form the stocking, said blank including a leg-forming portion and a welt forming portion, a part of the welt forming portion defined along one edge by a concaved line centered between the long side edges.

12. A blank for forming a full fashioned high back stocking including a portion fashioned to form the top of the stocking when the opposite long edges of the stocking are conventionally sewed together, said blank provided with a concaved recessed edge having its lowermost point located mid-width between said opposite edges and curving upwardly from said point towards said opposite edges.

13. A blank for forming a full fashioned high back stocking including a portion fashioned to form the top of the stocking when the opposite long edges of the stocking are conventionally sewed together, said blank provided with a concaved recessed edge having its lowermost point located mid-width between said opposite edges and curving upwardly from said point towards said opposite edges, and said blank in the area between the opposite ends of said curved edge and the adjacent long edges providing a rugged area which will tend to resist tear from a rear garter pull.

14. A lady's stocking including a leg portion of relatively thin gauge material extending above the knee and an area of relatively thicker gauge material extending above the leg portion adapted to lie flat and in frictional engagement with the adjacent surface of the wearer's leg, said area of thicker gauge material forming a welt visually contrasting with the leg portion extending higher at the rear than at the front of the stocking.

15. A lady's stocking fashioned in the entire area of the part above the knee to fit the wearer's leg snugly and the upper portion of the stocking being normally of conventional tubular form, substantially of equal diameter or width when laid flat, in the portions below the open top, provided with inclined strain transmitting means extending from the center rear portion of the open top downwardly and forwardly to the front portion of the stocking above the knee.

16. A lady's stocking including a leg portion and a reinforced area above the leg portion contoured conventionally to fit snugly the portion of the wearer's leg with which it contacts, said area in the end part thereof adjacent the leg portion being normally of ring-like form simulating a welt and the top edge of the reinforced area being normally of greater length than the perimeter of any other cross section through said reinforced area being of greater depth at the rear than at the front of the stocking.

17. A stocking formed solely of a leg portion and a foot portion, the part of the leg portion above the knee being normally of tubular form of substantially equal diameter between the open top and the knee and having an inner leg engaging surface of a single thickness of material contoured without stretching distortion to the portion of the wearer's leg which it engages and terminating in an opening higher at the rear than at the front.

18. A full fashioned stocking formed solely of two portions integrally connected and forming at one end a foot portion and at the opposite end a leg portion having its upper end terminating along an edge downwardly and forwardly inclined so that the rear portion of the stocking above the knee crotch extends above the front portion thereof and terminates at its upper end in a tab forming area adapted to be engaged by a rear garter.

ETHEL O'CONNOR.