April 25, 1961 J. M. R. REYMES-COLE ET AL 2,980,981

LADIES' STOCKINGS

Filed Nov. 19, 1956 3 Sheets-Sheet 1

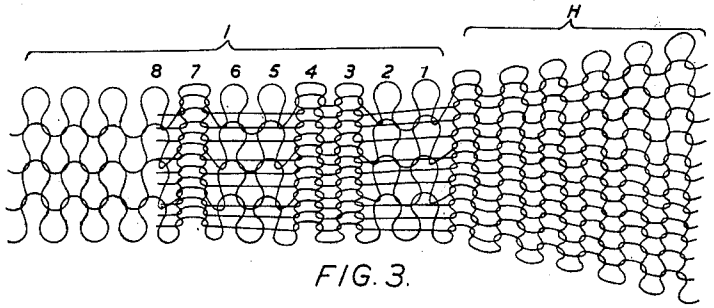



FIG. 3.

FIG. 6.

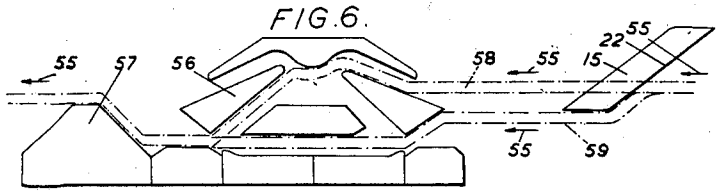
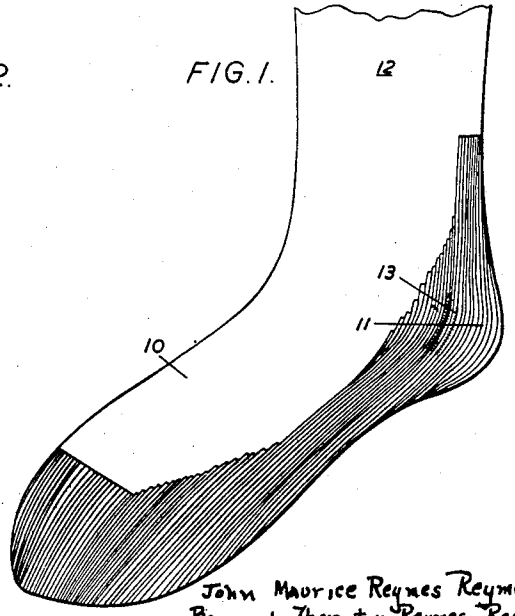



FIG. 2.




FIG. 1.




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LADIES' STOCKINGS

Filed Nov. 19, 1956 3 Sheets-Sheet 2

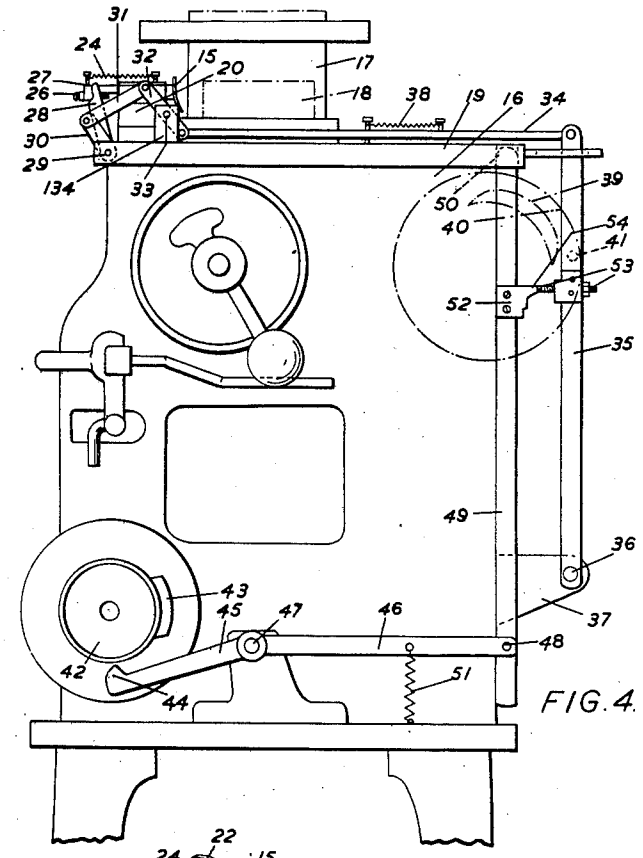



FIG. 4.

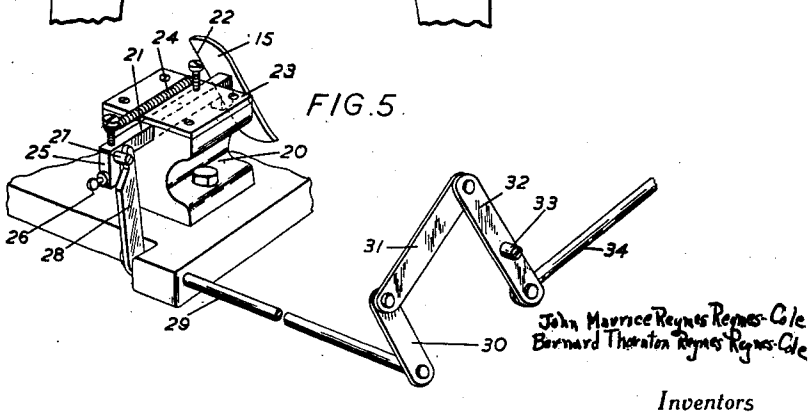



FIG. 5.

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LADIES' STOCKINGS

Filed Nov. 19, 1956 3 Sheets-Sheet 3

FIG. 7.

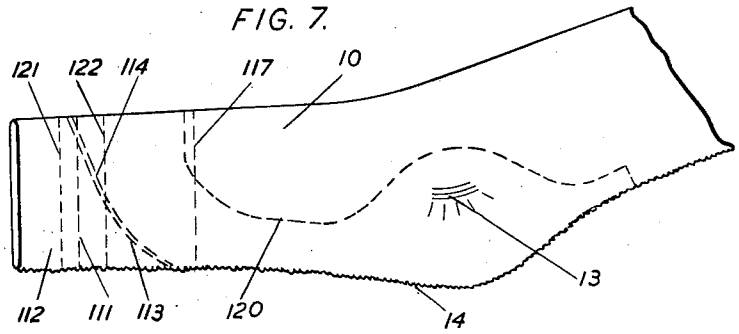



FIG. 8.

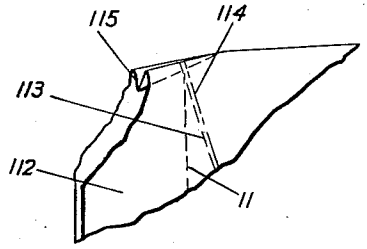



FIG. 9.

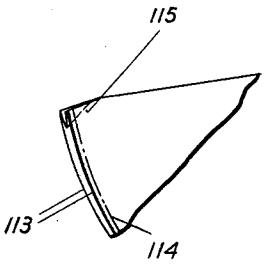
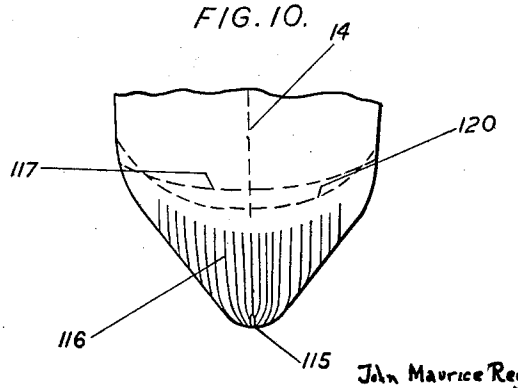



FIG. 10.




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2,980,981

# LADIES' STOCKINGS

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Filed Nov. 19, 1956, Ser. No. 623,005

7 Claims. (Cl. 28—72)

This invention concerns ladies' stockings and particularly seamless stockings. In the manufacture of ladies' stockings it is usual to form a pouch at the heel by the provision of additional fabric at this location. In the case of fully fashioned stockings there are various well known methods of providing this additional fabric. In the case of a seamless stocking it is customary to provide the additional fabric in pouch form, the pouch being knitted by reciprocation on approximately half the number of needles, and the toe is shaped by the formation of a similar pouch. These known methods of producing the heel and toe by reciprocatory knitting necessarily involve some reduction in the production rate, and one object of the invention is to provide a method of producing the heel in a ladies' stocking which may be practiced without appreciable reduction in the speed at which the heel and toe parts of the stocking are knitted as contrasted with the speeds of production of the adjacent parts of the foot and leg. Another object is to provide a seamless stocking having a heel of improved appearance.

To achieve the desired result the invention makes use of the known properties of synthetic thermo-plastic yarn (and primarily that yarn which is known as nylon and other yarns of man-made fibres possessing setting properties) viz. that a fabric knitted from this yarn may be distorted to take up a predetermined shape and may be caused to set in that shape by a proper heat treatment (itself well known).

The invention therefore provides a method for the production of a ladies' stocking which comprises knitting the foot, heel part, toe and leg by rotational knitting in form of a tube, at least the heel part being knitted from a thermo-plastic yarn, closing the toe by joining together superposed portions of the tubular fabric and removing surplus fabric beyond the join line, and subsequently forming the heel shaping at least partially by drawing the stocking on to a form having the desired heel contour thereby stretching the heel part width-wise to shape and afterwards setting the heel part to the desired shape by the application of heat. If desired only the heel part is knitted of the thermo-plastic yarn, the foot and leg being knitted of natural or artificial silk or lisle. This involves the knitting of part of each of successive courses of the thermoplastic yarn and the other part thereof of the other yarn. Preferably, however, the thermo-plastic yarn is used throughout, and the invention therefore provides a method for the production of a ladies' stocking which comprises knitting the foot, heel part, toe and leg from a thermo-plastic yarn by rotational knitting in the form of a tube closing the toe by joining together superposed portions of the tubular fabric and removing surplus fabric beyond the join line, subsequently stretching the heel part to a pouched shape at least partially by drawing the stocking on to a form having the desired contour and subsequently setting the heel part to the shape dictated by the form by the application of heat. It will therefore be appreciated that since the heel and toe parts of the stocking are, like the adjacent parts of the foot and leg, knitted by rotation the speed at which the stocking is produced on the knitting machine is substantially greater than that at which a conventional seamless stocking is produced.



The production of the desired pouch shape for the heel may be facilitated by the adoption of one or both of the following expedients, viz. the loops around the back of the heel may be knitted with slack stitches, and/or spaced courses may be omitted from the instep.

Preferably in carrying out the invention spaced courses are omitted from the instep during the knitting of the stocking at the heel location. When knitting the stocking in this way the instep and heel fabrics having different numbers of courses may be caused to be connected at a plurality of wales. For example certain spaced needles in the instep portion of the course near its junction with the heel portion of the course may be brought into knitting operation with the heel needles while intervening needles among the instep needles are brought into and out of knitting action with the main group of instep needles. This will serve to anchor the partial courses to the full courses at a plurality of spaced wales.

In closing the toe end of the stocking the sides of the tubular fabric are conveniently seamed together along a curved line extending across the course lines between the sole of the foot and the toe extremity. To avoid the formation of an objectionable "dog ear" at the toe extremity of the finished stocking a small tuck may be formed in the fabric at the toeward end of the line of seaming, or the toe extremity fabric may incorporate a thermoplastic yarn possessing stretch properties and caused to be shaped to the desired form on the board and set in that form.

The invention thus provides a ladies' stocking having the foot, heel part, toe and leg knitted by rotational knitting, at least the heel part being knitted from a thermo-plastic yarn, the shaping of the heel pouch having been effected at least partially by stretching the heel portion width-wise on a shaped form and setting the heel to such shape.

The invention further includes a circular knitting machine organised to knit the foot, heel part, toe and leg of a ladies' stocking by rotational knitting and having a group of heel needles used for knitting the heel pouch and certain needles adjoining them and separated by intervening needles operable by means of butts of one length and other needles including said intervening needles used for knitting the forward or instep portion opposite the heel operable by means of butts of a different length, and a selecting cam movable towards and away from an operative selecting position in relation to the needle cylinder in advance of the stitch cam in which selecting position the said selecting cam serves by selective deflection of needles to cause the needles operable by said different length butts to be withheld from knitting activity while the remaining needles are caused to knit.

The aforementioned and other features of the invention are more fully set out in the following description of a preferred manner of carrying out the invention given by way of example with reference to the accompanying drawings in which:

Figure 1 is a view of the lower portion of a stocking made in accordance with the invention;

Figure 2 shows on a smaller scale in perspective a knitted tube of fabric from which the stocking is formed;

Figure 3 is a greatly enlarged view of a portion of the fabric on one side of the heel of the stocking shown in Figure 1;

Figure 4 shows in side elevation a knitting machine having mechanism applied thereto for carrying out the invention;

Figure 5 is an enlarged perspective view of certain parts of the mechanism shown in Figure 4, and

Figure 6 is a diagrammatic development view of a cam arrangement employed in the machine;

Figure 7 is a view of the foot end of a stocking knitted as a seamless tube as it appears before the toe end has been closed;

Figures 8 and 9 are detail views on a substantially enlarged scale of a portion of the toe end showing the formation of a tuck, part of the fabric being broken away in Fig. 8, and

Figure 10 is a plan view of the toe end of the stocking as it appears with its upper face laid flat, indicating the final outside appearance thereof.

In Figure 1 there is shown the foot portion of a ladies' stocking, the foot proper being indicated at **10**, the heel pouch at **11** and the leg at **12**. The shaping of the heel is effected at least partially by stretching the heel portion width-wise on a shaped form and then setting the fabric to the desired shape by the application of heat in the performance of the preboarding operation. In so shaping the heel the widthwise stretch imparted to it is substantially greater than any width-wise stretch applied to other parts of the stocking. The stocking is knitted throughout by rotation, thus permitting the heel to be knitted at substantially the same speed as the remainder of the stocking. By rotational knitting the tube of fabric as shown in Fig. 2 open at both ends is first formed, knitting preferably being performed commencing at the toe end and proceeding along the foot and up the leg portion. After completion of the tube the toe end is cut to shape and seamed and then the stocking is stretched on a form to bring it to the desired final shape and set.

As shown in the drawings the heel pouch is partially formed during the knitting of the stocking, though it is within the invention, in appropriate circumstances, to knit the complete stocking as a plain tube, i.e. without any heel pouch formation. The partially formed pouch is preferably formed by arranging that at the heel a greater number of courses are knitted by the heel needles than by the remaining needles from which the instep portion of the fabric is knitted. In those courses in which the heel needles only are active to knit, a length of loose yarn extends from end to end of the heel courses inside the stocking; such loose lengths of yarn are subsequently removed by cropping. The group of heel needles which remain always in knitting activity during knitting of the heel may be equal to, but is preferably less than the number of the remainder of the needles which are withdrawn periodically from knitting activity during the knitting of the heel. In the knitting of the stocking shown the heelward group represents about a quarter of the total number of needles around the cylinder, the remainder being referred to for convenience as instep needles, although some of them serve to knit fabric at the sides of the heel. In the knitting of the heel it is found that an appropriate partial pouch formation is produced by holding the instep needles out of knitting activity for three out of every four courses at the heel.

In the most preferred way of carrying out the invention the heel of the stocking is knitted in such a way that certain selected ones of the instep needles near the ends of the group of instep needles are caused to be active with the heel needles while other instep needles between said selected ones are brought into and out of knitting activity with the instep needles. This ensures that at the junction between the heel wales and the wales of the instep group at the sides of the stocking formed during the knitting of the heel, the portions of fabric having different numbers of courses are connected at a plurality of wales and the subsequent stretching of the tubular fabric on the form will be much less liable to cause dragging of thin places between the wales such as would tend to mar the appearance and wearing qualities of the finished stocking.



Figure 3 shows an enlarged view of a portion of the fabric containing the junction between the heelward portion and the instep portion at the heel, and a number of heel wales are indicated at H while a group of instep wales is shown at I. The eight wales on the instep side adjoining heel fabric H are numbered **1** to **8** and it will be seen that numbers **1**, **2**, **5** and **6** have knitted loops at every fourth course as in the case of wale **8** and the other instep wales, while wales numbered **3**, **4** and **7** have knitted loops at every course as in the case of the heel fabric H.

During intermediate courses when no loops are formed at wales **1**, **2**, **5** and **6**, the yarn is floated on the inside of the fabric. By proceeding in this manner the finished stocking has at each side of the heel a marking indicated at **13** in Figures 1 and 2 where the junction between the heel fabric H and the instep fabric I occurs. Such marking is not unduly obtrusive, being little more predominant than the suture marking caused by shaping on fully fashioned stockings and the heel of the stocking shown in Figure 1 has a general appearance not greatly differing from that of the heel of a fully fashioned stocking.

The stocking shown in the drawing is provided with a mock seam **14** and may have mock fashioned marks incorporated in it or may be fashioned in any known manner.

Figures 4 to 6 illustrate how a known form of circular knitting may be modified to enable knitted courses as shown in Figure 3 to be formed while knitting the heel portion of the stocking. For this purpose the heel needles for knitting wales as indicated at H in Figure 3 are provided with butts which are shorter than those of the remaining needles with the exception of those used for knitting on each side of the stocking, wales corresponding to those indicated at **3**, **4** and **7** in Figure 3; and an additional selecting cam is provided and brought into operation during the knitting of the heel so as to engage all of the longer needle butts in advance of the stitch cam and depress them so that they will pass below the stitch cam. Such additional cam is indicated at **15** in Figures 4 and 5.

Referring to Figure 4, the machine comprises a main framework **16** and a rotating needle cylinder **17** which is rotated during operation of the machine in an anticlockwise direction as viewed from above. The cam box for operating on the needle butts to perform the knitting operation is indicated diagrammatically by chain lines at **18**. On a table **19** on the machine there is mounted a block **20**, the upper face of which is grooved to form a slideway for a short bar **21** carrying the cam **15** in the form of a plate which is curved somewhat as viewed in plan to conform to the needle cylinder and has an inclined cam edge **22** engageable with needle butts in a manner later described. The groove in the upper part of the block **20** is closed by a cover plate **23**. The bar **21** is urged by a spring **24** in the direction to move the cam **15** towards the needle cylinder **17** and has a depending projection **25** carrying an adjustable stop screw **26** for engaging the block **20** to determine the inward position of the cam **15**. On the bar **21** there is a lateral pin **27** engaged by a co-operating finger on a lever **28** secured to a rock shaft **29** carrying a further lever **30** coupled by a link **31** to a double-armed lever **32**. The latter carries a pivot pin **33** by which it is pivoted to the bracket **134** on the table **19**. Coupled to the lower arm of the lever **32**, is a link **34** anchored at its rear ends to the upper end of an upstanding lever **35** the latter being pivoted at its lower end at **36** to a bracket **37** secured to the back of the machine frame **16**. The link **34** is spring urged by a spring **38** to urge it forwardly so as to move the lever **28** toward the needle cylinder and thereby permit the cam **15** to be urged towards the cylinder by the spring **24**.

The stop screw 26 associated with the bar 21 is adjusted so that in its most inward position towards the needle cylinder the cam 15 will lie in the path of the longer needle butts but spaced outwardly from the cylinder sufficiently to avoid contact with the short needle butts. Thus when the cam 15 is in its inmost setting such needles as have longer butts are withdrawn downwardly by engagement with cam edge 22 sufficiently to miss the stitch cam. Needles having short butts will not, however, be deflected downwardly and will engage with the stitch cam in normal manner. When the cam 15 is withdrawn to an outward position none of the needle butts will be engaged by it and all needles will be permitted to be operated by the stitch cam for normal knitting. It will be seen that the arrangement is such that the cam 15 is moved to its operative selecting position by spring action and withdrawn from such position by operation of the lever 35 to rock it rearwardly. The lever 35 is adapted to be rocked in this way by means of a cam projection 39 secured to a gear wheel indicated at 40, said projection 39 being adapted to engage with a pin 41 projecting from the far side of the lever 35 as viewed in Figure 4. The gear wheel 40 forms part of the normal mechanism of the machine and is geared to the needle cylinder in such a way that the gear 40 makes one rotation in every four rotations of the needle cylinder 17. It will be noted cam 39 extends only around approximately a quarter of the circumference of the wheel 40 and it is so timed that the lever 35 is rocked rearwardly when the heel group of needles is passing the cam 15 and is permitted to return forwardly at the succeeding corresponding position after the needle cylinder has completed one rotation. Thus during the knitting of the heel the cam 15 is effective for three rotations of the needle cylinder in every four and out of operation during the fourth rotation.

As the operation of the mechanism so far described is required to occur only during knitting of the heel portion of the stocking means is provided under the control of a usual pattering arrangement (for example a patterning chain) to maintain said mechanism out of operation during the knitting of other portions of the stocking. For this purpose the usual control drum which is indicated at 42 is provided with an extension having a cam projection 43 arranged to co-operate with a follower 44 on a double armed lever 45, 46 pivoted at 47 to a bracket on the machine frame. The rear end of the arm 46 is pivoted at 48 to a vertically movable slide 49 guided in a lower guide (not shown) and in a slot 50 in the rear of the table 19. The slide 49 is urged downwardly by a spring indicated diagrammatically at 51 as being attached to the lever arm 46, and the slide carries a stepped abutment 52 to co-operate with a stop screw 53 adjustably mounted in a bracket on the lever 35. The arrangement is such that with the slide in its downward position, as shown, the peak 54 of the stepped bracket 52 engages the screw 53 to hold the cam 15 away from the needle cylinder. When the cam projection 43 rocks the lever 45, 46 so as to raise the slide 49, the lever 35 is drawn inwardly by spring 38 to bring the pin 41 into the path of the cam member 39. This action is arranged to take place at the commencement of knititng of the heel portion and on completion of the heel the follower 44 rides off the projection 43 and the spring 51 urges the slide 49 downwardly so that when the lever 35 is again rocked rearwardly by the cam 39 the peak 54 of the projection 52 is permitted to engage with the screw 35 and thereby hold the cam 15 away from the needle cylinder during the knitting of the remainder of the stocking.

Figure 6 illustrates diagrammatically the arrangement of cams as viewed looking outwardly from the needle cylinder the paths of the needle butts being shown in chain lines and the arrows 55 indicating the direction of movement of the needle butts in relation to the cams.



The usual switch cam is indicated at 56 and the upthrow cam at 57. Assuming the cam 15 shown on the right of Figure 6 is in its inmost setting, the path of the butts of short butt needles is indicated by the chain lines at 58, and that of all the longer butt needles is indicated by the chain lines at 59. It will be seen that the longer butt needles are deflected downwardly by the cam 15 so as to miss the stitch cam 56 and pass forwardly below it so that these needles are maintained out of knitting activity. The short butt needles, however, are missed by the cam 15 and they pass in the normal way to the stitch cam 56 to perform knitting action. The arrangement of the butts on the needles is such that the group of needles from which the wales extending round the heel group are knitted (these being the wales corresponding to those indicated at H in Figure 3) have short butts while the remaining needles which may be referred to as the instep group, with certain exceptions have longer butts. The exceptions just referred to are spaced needles in the instep ground near the ends thereof which may for example be the needles for knitting wales corresponding to those shown at 3, 4 and 7 in Figure 3, these needles having short butts so that they remain in knitting activity with the heel group. It will thus be seen that with the machine arranged as shown in Figures 4 and 5 knitting of the heel portion to produce a partial heel pouch, as shown in Figure 2 with a fabric structure each side of the heel the same as, or closely similar to that shown in Figure 3 may be effected automatically.

It will be appreciated that the particular needles selected from among the instep group for knitting with the heel needles during the heel formation may be varied as desired. While Figure 3 shows an arrangement wherein the needles for knitting wales Nos. 3, 4 and 7 have been selected for this purpose any other desired arrangement of selected needles from among the end needles of the instep group may be employed, it being preferred to arrange matters so that there are at least two needles of the instep needles interposed between needles which are active with the heel needle group during the heel formation. It will also be appreciated that the instep needles having the longer butts may be arranged with butts of different lengths in any desired arrangement for patterning or other purposes, in which case some instep needles may have long butts and others medium length butts, while the heel needles and those arranged to be brought into knitting action with them have short butts the cam 15 being arranged to engage both the long butts and the medium butts but miss the short butts when in operative position for selection of needles for knitting and non-knitting at the heel.

In forming the heel pouch partially by knitting more courses at the heelward portion than at the forward or instep portion of the stocking the relative number of heelward courses and instep courses may be varied as desired. Arrangements may also be made whereby the selected needles near the ends of the group of the instep needles which are caused to knit when other instep needles are inactive are brought into knitting action only at selected ones of the heelward courses knitted while the instep group of needles is inactive. This can for example be arranged by providing additional butts at a different level on the selected instep needles and providing an additional cam to engage such butts during the knitting of the heel to depress the said needles out of knitting activity for such courses of the heel part during which the selected instep needles are not required to be active. Such an additional cam can be operated by mechanism similar to that used for operating the cam 15.

The yarn employed for the stocking is preferably nylon but any other synthetic linear polyamide filament such for example as that known in the trade as Perlon or that sold under the Registered Trade Mark "Terylene" may be employed. When the stocking has been taken from the machine and the toe of it completed the stock-

ing is drawn onto a conventional form or shape and while thereon is submitted to heat (desirably above 100° C.) and is then permitted to cool. The form distorts the stocking in the region of the heel to the required shape and the heat renders the filament plastic so that the knitted fabric readily assumes that shape and upon cooling the fabric sets to the assumed shape. Thereafter the stocking can be submitted to any lower temperature without distorting the shape.

Certain preferred ways of completing the toe end of a stocking will now be described with reference to Figures 7 to 10. As shown in Figure 7 the foot **10** formed as a seamless tube preferably incorporates a marker course **111** knitted of contrasting yarn to define the position of the toe extremity and a few courses **112** of tubular fabric extending forwardly of the course **111** provided as a margin for later trimming. To complete the toe end the stocking is turned inside out and the foot brought to a flat condition by being folded along the approximate centre lines of the instep and sole and the toe end is cut and seamed to shape respectively along lines **113** and **114** curving forwardly and upwardly from the middle of the width of the sole of the foot up to the middle of the width of the top portion at a point lying on or just in front of the marker course **111**. Before the toeward end of the seam is formed a narrow tuck **115** of rearwardly tapering shape is formed across the marker course on the line of the centre of the instep so that portions of the sides have inserted between them a central folded-in portion of V section formed from the top of the fabric giving an over-lap of about 1/16" to 1/8" in depth at the marker course. This tuck is then secured by the toeward end of the seam which serves to stitch the overlapped parts together. It will usually be found convenient to commence seaming from the middle of the sole and the tuck **115** is then formed immediately before the seam is completed at the toe end. Alternatively seaming may be performed in the reverse direction, the small tuck **115** at the top being formed just before commencing seaming.

A convenient procedure is to form the toe end by seaming and cutting along the lines **114** and **113** at the same operation using a sewing machine fitted with a trimming attachment, the toe end, after being turned inside out, being fed to the machine, so that it is both seamed and trimmed close to the seam during its passage through the machine. The stocking is afterwards reversed, subjected to the usual pre-boarding for shaping it and then dyed in the usual way. The result of forming the small tuck **115** and seaming the parts together as described is to produce in its final form a toe end as shown in Fig. 3 wherein a non-pointed toe extremity is shown which is devoid of the troublesome and unsightly "dog ears" which are often associated with a toe end formed by cutting and seaming. It will be seen from Fig. 10 that the wale lines **116** extend towards the seam and converge in a smooth and regular manner so that there is no tendency for puckering of the fabric.

Instead of fixing the small tuck **115** in the fabric by passing the seam **114** through the tuck, the seam may be completed first and the tuck formed afterwards on reversing the stocking for application to the board. The tuck is retained on the inside of the toe when the stocking is drawn on to the board and is set in that location so that no "dog ear" is present at the toe of the finished stocking.

In a further alternative method of forming the toe end portion, at least that part of the tubular fabric which is to form the toe extremity is knitted to incorporate in it a thermoplastic yarn possessing stretch properties and the toe end is closed by cutting and seaming the fabric along the lines **113** and **114** shown in Fig. 7 (without the formation of a tuck). The stocking is then subjected to preboarding and setting treatment to determine and fix the shape of the toe end. By employing at least in the toe extremity a yarn having setting as well as stretch properties the formation of a protuberance or "dog ears" can be avoided. The yarn having setting and stretch properties may be incorporated only for a short distance say ½" to 1" at the toe extremity, say between the lines **121** and **122** in Fig. 7, or it may extend throughout the whole of the shaping at the toe end, or be continued throughout the foot, or be substituted in place of the usual splicing thread in the toe and if desired along the foot bottom. Preferably the incorporation of stretch yarn at the toe extremity is effected in such a way that such yarn is knitted with only a small degree of tension so that the fabric incorporating it has good stretch properties in all directions enabling it to be drawn snugly against the toe extremity of the board or form on to which the foot is stretched and on which it is set at the pre-boarding operation. If desired the foot may be made somewhat shorter than is normal for the particular size of footwear so that the fabric incorporating the yarn with stretch properties is tensioned all over when the foot is drawn on to a board or form appropriate to the size.

A suitable yarn for incorporation in the toe extremity is a bulked nylon yarn possessing stretch properties, though other bulked yarns composed of man-made fibres and possessing stretch properties may be employed for the purpose. The stretch yarn may be incorporated either as an additional yarn which is knitted in with the main yarn (e.g. as a splicing yarn) or as a yarn used in place of a main yarn from which the major portion of the foot is knitted. The main yarn may be of ordinary nylon (i.e. one not processed to impart to it stretch properties) or any analogous yarn which is capable of being set by heat treatment. The presence of the stretch yarn in the toe end portion ensures that when the foot is drawn on to a board or form in the pre-boarding and setting treatment the toe end portion will be caused to cling to the form and can then be set in the correct shape, with avoidance of any "dog ear."

It is preferred in forming the stocking to knit from the toe end along the foot towards the heel and upwards along the leg. By knitting in this manner the tendency for runs or ladders to develop heelwardly along the foot is reduced, since laddering in this direction would be confined to the non-exposed sinker wales. The resistance to such runs from the toe end is preferably further enhanced or made complete by incorporating in the first courses of knitting a locking thread in such a way that such thread interlocks with the sinker loops and thereby resists or prevents ladder runs from occurring heelwardly in the sinker wales. Such locking thread is preferably incorporated at least up to a line as shown at **117** so as to extend about one or two inches beyond the line of cutting **113** in forming the toe. The incorporation of the locking thread may occur if desired throughout a considerable portion or the whole of the foot.

The stocking may if desired be knitted with the artificial or mock seam **14** running centrally along the bottom of the foot as well as up the back of the leg and the seam **114** is conveniently arranged to join up with such mock seam and form a continuation thereof. The stocking may also have its toe and sole portions reinforced by splicing for example up to a line as shown at **120**.

It will be appreciated that the manner of toe formation described facilitates the rapid production of a stocking toe with a shapely end by permitting knitting of the foot to be performed entirely by rotation thereby eliminating the slow stage of reciprocatory knitting at the toe end as well as at the heel. The manner of completing the toe is moreover one which can be effected rapidly since it avoids the need for a time-consuming linking operation.

The invention may be practised in connection with stockings or footwear knitted in conventional manner from welt to toe in which case sufficient resistance to ladders developing from the toe end may be secured by

employing a cotton or other fibrous thread as the normal splicing or reinforcement thread and/or as an additional thread for incorporation at least in the toeward region rearwardly beyond the location where the toe is to be closed.

What we claim is:

1. A method for the production of a ladies' stocking which comprises knitting the foot and leg from a thermoplastic yarn by rotational knitting on a circular row of needles composed of a group of instep needles and a group of heel needles, into the form of a tube of fabric having the same number of wales throughout, and during the performance of such knitting partly forming the desired pouch shape for the heel in rotational knitting by omitting at spaced intervals at least one course from the instep so that the instep and heel fabrics have different numbers of courses which are joined at a plurality of spaced wales by causing spaced needles separated by intervening needles near the ends of the group of instep needles to be brought into knitting action with the heel needles while intervening needles among the said spaced needles are brought into and out of knitting action with the remainder of the instep needles, closing the toe by joining together superposed portions of the tubular fabric and removing surplus fabric beyond the join line, stretching the heel part to final pouch shape by drawing the closed tube of fabric on to a form having the desired contour, and subsequently setting the heel part to the shape dictated by the form by the application of heat.

2. A method for the production of a ladies' stocking which comprises knitting the foot and leg from a thermoplastic yarn by rotational knitting in the form of a tube having the same number of wales throughout, forming the toe end of the foot of the stocking by cutting and seaming together the tubular fabric to a tapering shape along a curved line extending across the course lines between the centre line of the sole of the foot and the toe extremity, forming a small tuck in the fabric at the toeward end of the line of seaming, subsequently stretching the heel part to a pouch shape at least partially by drawing the fabric tube on to a form having the desired contour, and afterwards setting the heel part to the shape dictated by the form by the application of heat.

3. A method according to claim 2, wherein the seam formed at the toe end is caused to extend through the said tuck.

4. A method according to claim 2, where in the tuck is formed of tapering shape by turning the material of the upper part of the toe end inwardly between the side portions thereof preferably for a short distance of up to about one-half inch along the seam line.



5. A method according to claim 2, wherein the stocking is knitted with a marker course defining the position of the toe extremity and with additional courses for subsequent trimming forwardly of said marker course and, in forming the toe end, the curved line of cutting and seaming is caused to terminate on the marker course at the middle of the upper or instep wales.

6. A ladies' stocking having the foot and leg knitted rotationally with the same number of wales from the central part of the foot to the top of the leg, at least the heel part being knitted from a thermoplastic yarn, and having the toe end of the foot beneath the toe extremity shaped by being cut and seamed along a line curving forwardly and upwardly across the course lines from the sole to the toe and having a central tuck formed in the upper part of the fabric at the toe extremity and held in place therein, the shaping of the heel pouch having been effected at least partially by stretching the heel portion widthwise on a shaped form and setting it to the shape thereof.

7. A ladies' stocking having the foot and leg knitted rotationally with the same number of wales from the central part of the foot to the top of the leg, at least the heel part being knitted from a thermoplastic yarn, and having the heel pouch formed partially by the omission of at least one course at spaced intervals from the instep portion opposite the curve of the heel so that at the heel the heelward courses are greater in number than the instep courses, the instep and heel courses being joined at a plurality of spaced wales, the remaining shaping of the heel pouch having been effected by stretching the heel portion widthwise on a shaped form and setting it to the shape thereof.

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