June 14, 1955 J. J. McDONOUGH 2,710,531

STOCKING AND METHOD OF MAKING THE SAME

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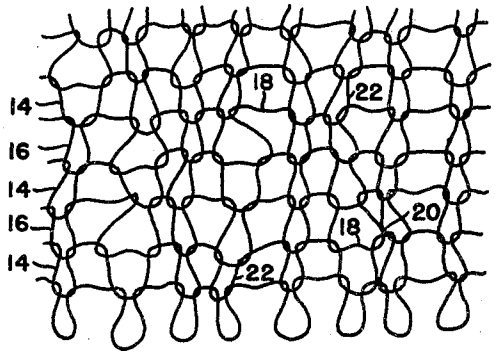

FIG. 2.

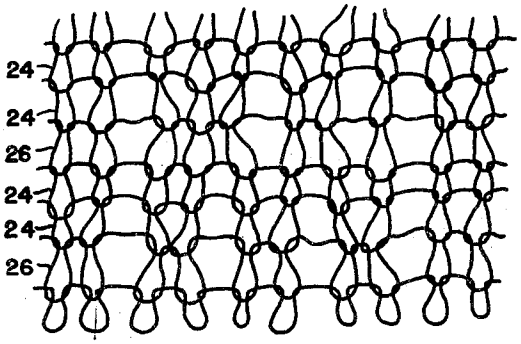

FIG. 3.

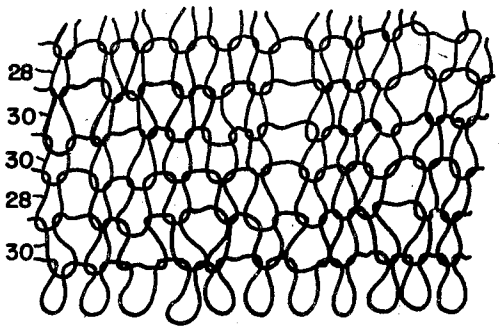

FIG. 4.

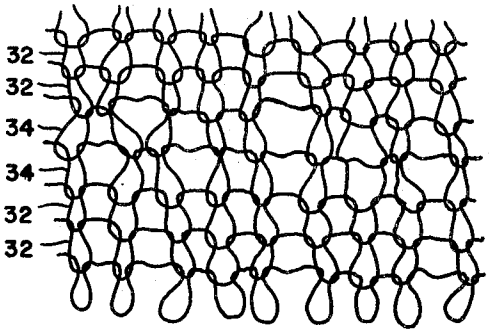

FIG. 5.

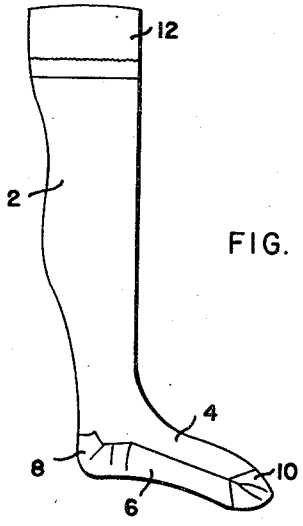

FIG. 1.

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STOCKING AND METHOD OF MAKING THE SAME

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21 Claims. (Cl. 66—178)

This invention relates to stockings and methods of making the same and more particularly to ladies' sheer hosiery knit from nylon or similar synthetic yarns.

In the knitting of sheer nylon stockings there arise certain difficulties which are peculiar to this art.

First, in knitting nylon on fine gauge machines, such as 400 needle circular machines, slight deviations of the elements such as needles and sinkers immediately concerned with the stitch formation due to wear or any imperfections will produce noticeable streaks or shadows in the stocking when it is worn, and it is extremely difficult to avoid these entirely. Secondly, the resulting plain knit stockings exhibit a sheen which most wearers dislike.

A solution to these problems is disclosed in the patent to Frank R. Page, No. 2,601,451, dated June 24, 1952. In accordance with this patent various portions of sheer ladies' hosiery are knit utilizing crinkled nylon or similar yarn. Even though plain knitting is involved, there is produced irregular stitch structure which successfully avoids the appearance of vertical streaks or shadows. Stockings which are provided in accordance with said patent when examined closely have a crepe-like appearance; but when worn this crepe-like appearance is substantially invisible while, nevertheless, the structure which gives rise to it prevents any appearance of regular structural defects which show up as streaks.

Also, while the crepe-like appearance is unnoticeable, the irregularity of the stitches breaks up the reflection of light to such extent that a sheen is not apparent even when the yarn used is of monofilament type.

In accordance with said patent, the use of crinkled yarn may occur in the leg and instep to provide the foregoing advantages but crinkled yarn may also be used in the knitting of the welt. The welt of a stocking generally shows up defects in stitch formation more than the leg. By the application of the invention of said patent to the formation of the welt, the welt is given an overall crepe appearance so that local irregularities of stitches are not apparent as they would be in the case of a plain knit welt formed solely of uncrinkled yarn. Furthermore, the susceptibility of the welt to slide downwardly on the leg is reduced.

The broad object of the present invention is to improve sheer stockings knit by the use of crinkled yarn. In said Page patent, the areas incorporating crinkled yarn are knit solely from the crinkled yarn. In accordance with the present invention improvements in the stockings knit from crinkled yarn result from knitting such yarn in only some of the courses, other courses being knit from plain uncrinkled yarn. For example, in accordance with the present invention, the leg and instep of a sheer ladies' stocking may be produced by two feed knitting on a circular machine, there being knit at one feed crinkled yarn and at the other feed plain yarn. In such case, alternate courses are formed from crinkled yarn and intermediate courses from plain yarn.

Various advantages result from this. In the case of knitting using crinkled yarn in all of the courses, there occur at random, but with some substantial frequency over the areas knitted, groups of abnormally large stitches which give rise to a mesh appearance to which customers may object, the objection being on the same basis as that found in the case of stockings involving tuck stitches or other stitch formations which give rise to visible mesh appearance, many women being unwilling to wear stockings having a pronounced mesh. Although stockings produced in accordance with the patent will not, in fact, show a mesh appearance when on the leg and viewed from any normal distance, a customer seeing the stocking in a store will assume that the mesh appearance there apparent will be visible when the stocking is worn.

Actually, large loops occurring at intervals are the result of knitting with cringled yarn and such large loops occur even in the practice of the present invention; however, if crinkled yarn and plain yarn are knit in alternate courses or, as will appear hereafter, in courses of one type of yarn interspersed with courses of another type of yarn, there is substantially eliminated any possibility that there can occur at any point of the areas knit in accordance with the invention any noticeably large mesh-type openings resulting from a grouping of a number of large loops.

Of even greater importance is the provision of better ankle fit of a stocking when knit in accordance with the present invention. In a plain knitted stocking having its ankle formed solely of plain yarn, expansion of the circumference may occur only by virtue of distortion of the loops, with lengthwise contraction attending the expansion. If the stocking, as is usual, is well tensioned lengthwise by garter support, expansion at the ankle is rather effectively prevented to maintain a proper tight fit. Crinkled yarn, however, provides another and additional possibility of expansion of the circumference of the stocking because the crinkles in the yarn may straighten out and expansion from this cause is not attended with the requirement for lengthwise contraction. The result is that, particularly when the ankles of the wearer are slim, there may occur objectionable looseness at the ankle.

In accordance with the present invention such looseness is materially reduced by the courses knit from plain uncrinkled yarn, these courses tending to maintain the desired tight ankle fit.

A further advantage resulting from the present invention is the reduction of tendency of the stocking to become snagged. When crinkled yarn alone is used a substantial "three dimensional" condition of the fabric exists, the distortions of the loops as contrasted with plain loops tending to throw them to some extent outwardly of the general surface of the fabric. The portions of the loops thus projecting tend to become snagged in contact with rough surfaces as compared with stockings knit from plain yarn. This condition becomes particularly pronounced where a group of loops of crinkled yarn tend to so occur together as to magnify the three dimensional characteristic of the fabric. In accordance with the present invention the presence of ordinary loops of plain yarn in closely recurring courses tends to minimize this result and maintain the fabric "thin" to a degree comparable with a stocking knit solely from plain yarn.

Another advantage provided in accordance with the present invention is that of lessening the cost of stockings knit from crinkled yarn, the crinkled yarn being relatively expensive as compared with plain yarn due to the additional processing required for crinkling.

While the advantages discussed above are attained in accordance with the present invention, there is no substantial diminution of the advantageous results attending the use of crinkled yarn alone. The loops formed of crinkled yarn have the desired irregularity resulting in

hiding knitting defects and the irregularity reduces the occurrence of the undesired sheen. Furthermore, the loops of plain yarn are distorted by the loops of crinkled yarn and also take part in hiding defects such as streaks or shadows which would appear in a stocking knit from plain yarn and also, by virtue of the irregularity of the stitches of plain yarn, they also contribute to the elimination of sheen. Thus substantial advantages are gained with no substantial diminution of the advantages resulting from the use of crinkled yarn only as described in said Frank R. Page patent. While the foregoing discussion has been directed primarily to the visible leg and instep portions of a sheer stocking, the same advantages occur if multiple feed knitting of the type indicated occurs in the welt, though the elimination of sheen in the welt is of little importance. In accordance with the present invention there is secured the advantage of irregular stitches not only to hide "crow's feet" or other irregularities but to promote friction to minimize slipping of the welt. Excessive "thick" feeling of the welt is also reduced.

While reference has been made particularly to two feed knitting such as would normally be used in the knitting of stockings on a circular machine, it will be evident that the same advantages will be gained on a circular machine if three feed knitting is involved utilizing crinkled yarn at two feeds and plain yarn at the third or plain yarn at two feeds and crinkled yarn at the third.

The foregoing advantages occur in the case of full fashioned knitting as well as in the case of circular knitting. In full fashioned knitting with the usual carrier arrangements alternate courses of plain and crinkled yarn cannot be produced. However, the same principles may be applied to full fashioned knitting in several alternative ways. Using the usual three carrier procedure, one carrier may supply plain yarn and the other two carriers may supply crinkled yarn; or one carrier may supply crinkled yarn and the other two carriers may supply plain yarn. The results then would be, respectively, that the resulting stocking would have plain yarn in every third course, the other courses being formed of crinkled yarn, or that every third course would be of crinkled yarn with the other courses of plain yarn.

The invention may also be used in two carrier full fashioned knitting, the result then being the formation of two successive courses of crinkled yarn fed from one carrier with two following successive courses knit from plain yarn fed from the other carrier and so on.

It has been found that substantially the same results are secured in all of the above alternative knitting procedures. The recurrence of courses formed from plain and crinkled yarn provides the advantageous results which are detailed above with maintenance, nevertheless, of the advantages which are secured by the use of crinkled yarn throughout. The mesh effect is somewhat reduced but proper for its purposes, the crinkled yarn causing distortion of the loops of the non-crinkled yarn, while the non-crinkled yarn tends to smooth out to some extent the crinkles in the crinkled yarn, there being avoided the appearance of coursewise stripes. Desirably, each course of crinkled yarn is interlinked with at least one course of plain yarn, and each course of plain yarn is interlinked with at least one course of crinkled yarn.

In any case, the final knitted stocking is boarded at elevated temperature in the usual fashion.

The foregoing discussion applies to both circular knit and full fashioned stockings, but in the case of circular knit stockings the invention involves still further improvements. One of the principal difficulties in connection with circular knit stockings is the matter of securing a tight fit at the ankle consistent with proper fit at the calf and welt. In a circular knitting machine, the fabric of the leg, including the ankle, is formed as a tube which, as it comes off the machine, is of substantially uniform circumference though the different parts, by control of

stitch formation, may be given different stretch characteristics. The variation of stretch characteristics between the calf and ankle is not, however, of sufficient degree to produce good ankle fit and in conventional nylon stockings the fit is improved by virtue of the boarding operation which serves to set the stitches and impart definite relationships to the circumference of the leg at different portions thereof lengthwise of the stocking. It is further common to use unshrunk nylon in the formation of the leg so that during the boarding operation shrinkage takes place as permitted by the contour of the form on which shrinkage occurs whereby differences in circumference are accentuated.

When crinkled yarn is used alone in the leg, it is already pre-shrunk to a considerable extent in view of the fashion in which it is produced, the shrinking taking place in the formation of the crinkles. The crinkled yarn is, therefore, not susceptible to further substantial shrinkage and will not contribute by shrinkage to improving the ankle fit of the stocking to the desired amount. In accordance with the present invention, the plain yarn which is used in association with the crinkled yarn is unshrunk. Then after the stocking is completed, shrinkage of this plain yarn takes place in the boarding operation resulting in drawing inwardly of the stocking to the extent permitted by the form on which boarding takes place. The result, therefore, is to secure proper gradation of circumference from the calf portion to the ankle portion despite the fact that the crinkled yarn does not shrink appreciably. In the case of the welt of such a circular knit stocking, however, it is not desired that the welt shrink and, consequently, the plain yarn in the welt, if the welt is knit from a combination of plain and crinkled yarn, should be pre-shrunk. Reference may be made to Faucette Patent No. 2,396,166 dated March 5, 1946, for a discussion of the matters of yarn shrinkage.

Various objects of the invention will be apparent from the foregoing, these objects having to do with the attainment of the desirable ends indicated. These and other objects of the invention particularly relating to details of procedure and fabric structure will become apparent from the following description read in conjunction with the accompanying drawing, in which:

Figure 1 is an elevation illustrating the parts of a stocking manufactured in accordance with the invention;

Figure 2 is an enlarged diagram showing the microscopic appearance of a leg portion of a stocking formed in accordance with the invention and involving alternate courses of plain and crinkled yarn as would be produced in accordance with the foregoing discussion by knitting on a two feed circular machine;

Figure 3 is a similar diagram showing a portion of the leg of a stocking involving repeats of two courses knit from plain yarn and one course knit from crinkled yarn such as would be produced by three feed knitting on a circular machine or by three carrier knitting on a full fashioned machine;

Figure 4 is a similar diagram but showing fabric involving repeats of two courses knit from crinkled yarn and one course knit from plain yarn as would be produced by three feed knitting on a circular machine or three carrier knitting on a full fashioned machine; and

Figure 5 is a similar diagram showing fabric involving repeats of two courses knit from plain yarn and two courses knit from crinkled yarn as would be produced by two carrier knitting on a full fashioned machine or by four feed knitting on a circular machine.

The parts of a stocking provided in accordance with the invention are conventional and for purposes of illustration the stocking is shown as comprising a leg portion **2**, instep portion **4**, sole portion **6**, heel **8**, toe **10** and welt **12**. As will appear, the stocking may have all of these parts of special types known to the art. The invention primarily relates to the fabrics which appear in some or

all of the areas indicated. The particular stocking illustrated in Figure 1 is of circular knit type but it will be evident that corresponding stockings would be produced by full fashioned knitting with suitable changes in the particular formations of the various areas, and with seaming up the back in usual fashion.

In carrying out the invention the crimping or crinkling of the nylon yarn which may be of monofilament or multifilament type may be accomplished in various ways, as described in said Frank R. Page patent, and the methods of crimping or crinkling need not be discussed here in further detail.

It will be understood that the term "nylon" is herein used in illustrative rather than a limited sense since the invention would be generally applicable to yarns formed of synthetic polymers or the like which, upon the application of heat, become softened so as to be capable of taking, upon cooling, a permanent set, including the crinkling referred to. The term "nylon" refers to commercial yarn comprising one of the usual synthetic long chain polymers having recurring amide groups in its chain. As will be evident, the invention is applicable to other yarns having similar physical properties. Furthermore, while the crinkled yarn must for permanence of the crinkles comprise nylon or the equivalent, the plain yarn which is involved in accordance with the present invention may well be of silk, rayon or the like, as well as of nylon or a similar plastic yarn.

It may here be noted that the advantages of the invention are apparent only in what are commonly known in the trade as sheer stockings which may well be defined as stockings having yarn of less than 30 denier in their ankle portions. Such sheer stockings may involve yarn of heavier denier in their welt portions, for example, 50 denier or even more, but the advantages of the invention will then still be involved, the result being a stocking having a crepe appearance in those portions knit in accordance with the invention. It has been known to imitate wool by the crinkling of yarn but such imitation of wool has been confined to relatively heavy socks such as worn by men or heavy ladies' sportswear stockings. Such stockings do not pose the same problems as the sheer ladies' stockings indicated in that neither the hiding of defects nor the elimination of sheen is involved.

In all instances in accordance with the present invention the crimped or crinkled yarn may be knit under conventional tensions in conventional machines. Under such tensions the crinkled yarn as it approaches the needles will be substantially straight. However, as soon as knitting occurs and the loops are formed, the permanent crinkles which have been produced in the yarn will reappear providing the irregular loops of crinkled yarn which are characteristic.

Reference to Figure 2 will serve to illustrate the characteristics of the fabric produced in two feed knitting when plain yarn is knit at one feed and crinkled yarn is knit at the other feed. The fabric here illustrated, is such as would form the leg of a stocking, if formed of 15 denier plain and crinkled nylon yarns knit on a 3¾ inch 400 needle cylinder machine. The crinkled yarn in this case was, as described in said Page patent, originally knit into a tube which was subjected to shrinking or setting action at a temperature of the order of 225° F. to 250° F. In this connection it may be remarked that in the case of the fabric pictured in Figure 2, as well as in the other fabrics herein pictured and described, the original knitting of the nylon yarn which was to provide the crinkled yarn was carried out, and should be carried out, in the fashion described in said Frank R. Page patent so as to insure frequency of recurrence of stitches along a course in the original knitting substantially different from that occurring in the final stocking to avoid substantial correspondence between the frequency of recurrence of the crimps and the frequency of recurrence of the final knitted loops in any area to avoid having the two frequencies fall in phase in certain areas and out of phase in others. Stated in another way, the frequency of recurrence of the permanent crinkles of the crinkled yarn along a course is different from, and anharmonically related to, but not very much greater nor very much less than, the frequency of recurrence of loops along that course. This avoids a repeat pattern such as indicated as undesirable in said Frank R. Page patent.

In Figure 2, courses of plain yarn are indicated at **14** and the intermediate courses of crinkled yarn are indicated at **16**. As will be evident from Figure 2, crinkles in the courses **16** show up as indicated at **18** as irregularities in the loops and, in some cases as indicated, for example, at **20**, the loops of crinkled yarn tend to be displaced out of the normal or average surface of the fabric producing, effectively, overlaps of portions of the loops. The loops of plain yarn will also be noted to be displaced substantially out of walewise alignment as indicated by the loops designated **22**. Figure 2 shows the fabric as it appears following boarding to set its stitches, this boarding taking place at elevated temperature in conventional fashion. When this is done the crinkles set in the crinkled yarn and the distortions of loops of the plain yarn are not eliminated but remain permanently in the finished stocking.

The fabric of Figure 2 has the advantages previously discussed not only similar to those secured in accordance with the knitting solely of crinkled yarn but those additional advantages referred to involving the elimination of open work mesh appearance, less tendency toward snagging, better control of circumference and reduction of cost by utilization of less crinkled yarn.

Referring to Figure 3, courses knit of plain yarn are indicated at **24** while courses knit of crinkled yarn are indicated at **26**. As will be evident, these occur in repeats of three courses. It will be noted that in general characteristics the fabric is quite similar to that illustrated in Figure 2, there being irregular loops of the crinkled yarn and distorted or displaced loops of the plain yarn.

In Figure 4, courses of plain yarn are indicated at **28** while courses of crinkled yarn are indicated at **30**. These occur also in repeats of three courses. Here again the characteristics are generally the same as those illustrated in Figures 2 and 3. It will be evident that the fabrics of Figures 3 and 4 may be produced by three carrier knitting in a full fashioned machine, the carriers making successive courses during their individual strokes.

In Figure 5, courses knit of plain yarn are indicated at **32** while courses knit of crinkled yarn are indicated at **34**. It will be noted that the two types of courses occur in pairs and the fabric involves repeats of four courses. Here again the general characteristics are the same as in the fabrics of the other figures. It will be evident that the fabric of Figure 5 may be produced in a full fashioned machine involving two carriers, each carrier undergoing a complete reciprocation to form two courses before the other carrier makes its complete reciprocation.

It will, of course, be evident that the fabrics illustrated in Figures 3, 4 and 5 may be produced on three and four feed circular machines.

The crinkled and plain yarns occur in repeats of small numbers of courses, the repeat being of two courses in Figure 2, of three courses in each of Figures 3 and 4, and of four courses in Figure 5. Desirably the repeats should not exceed five courses consistently with achievement of the desired results and, as pointed out above, each course of one kind of yarn should be interknit with at least one course of the other kind of yarn, thereby avoiding the appearance of coursewise stripes, as will tend to become evident if there are three or more successive courses of one type of yarn.

The fabrics illustrated in Figures 3, 4 and 5 were produced, to provide comparison with Figure 2, from 15

denier monofilament nylon yarns with the same number of stitches per inch coursewise so that the fabrics are comparable. In all cases the finally boarded fabrics are illustrated. It will be evident that while plain knit fabric has been illustrated, the invention may be applied to various other methods of knitting as described in said Frank R. Page patent and shown, for example, in the patent to Albert E. Page, No. 2,501,353. Mesh fabrics will lose to a substantial extent their mesh appearance due to the incorporation of the crinkled yarn and the resultant formation of irregular loops of the crinkled yarn and randomly displaced loops of the plain yarn.

To the extent of the foregoing description of the fabrics having the structures of Figures 2 to 5, inclusive, they may be involved in circular, or, with the exception of the fabric of Figure 2, in full fashioned stockings, and in the sheer (e. g. leg and instep) or heavier (e. g. high splice, heel, toe, reinforced sole or welt) parts thereof. The plain yarns may consist of unshrunk or preshrunk nylon or other plastic type or of silk, rayon, or the like. In all cases, the advantages discussed in detail above are secured.

In the case of circular knit stockings, however, it is desirable to use for the plain yarn or yarns in the leg unshrunk nylon while for the plain yarn or yarns in the welt preshrunk nylon should be used or, alternatively, another type of yarn not subject to shrinkage in the preboarding operation following the knitting.

Using one or more crinkled nylon yarns in association with one or more plain unshrunk nylon yarns in the repeats in the leg as described above, the boarding operation following knitting results in shrinkage of the plain yarn or yarns to a tight condition on the form to provide shaping in addition to that resulting from such variable stitch formation as may have occurred during knitting. The result is that despite the relatively less resiliency of the crinkled yarn the normal circumference of the ankle portion of the stocking is determined by the plain yarn or yarns after shrinkage; i. e. the ankle may stretch for passage of the foot as the stocking is placed on the leg, but the plain yarn loops will then resiliently return to their original form to secure a snug ankle fit. The crinkled yarn will not have the same resiliency for return, but that fact will not detract from the return of the plain yarn loops to a proper fit condition. When crinkled yarn alone it used such return is not so pronounced and poorer fit at the ankle may result. Instead of nylon, there may, of course, be used other unshrunk plastic yarns which will shrink upon boarding.

In the welt, however, preshrunk nylon or other yarn which will not shrink to a substantial degree should form the plain courses interspersed, as described, with the crinkled yarn courses. The welt may then be knit substantially to size. The resulting welt has stretchability to the desired degree. A crepe appearance is secured to render imperfections unnoticeable, as a result of the use of crinkled yarn, but at the same time there is avoided the increase of apparent thickness of the fabric which results if crinkled yarn alone is used. The same considerations apply to the shadow welt of a stocking which should also be knit of repeats of courses of crinkled and nonshrinking plain yarns of suitable weight.

The invention is applicable to the use of multifilament as well as monofilament yarns in the plain and crinkled courses.

It will be evident from the foregoing that the invention is of quite general applicability to both circular and full fashioned knitting and to many variations of each, and it is to be understood that the invention is not to be regarded as limited except as required by the following claims.

What is claimed is:

1. A sheer knitted stocking having an area thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from its being knitted from at least one yarn having permanent crinkles therein and at least one plain yarn, loops containing both of said yarns having such different sizes and shapes.

2. A sheer knitted stocking having an area thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from its being knitted from at least one yarn having permanent crinkles therein and at least one plain yarn, said yarns forming courses in repeats of a small number of courses.

3. A sheer knitted stocking having an area thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from its being knitted from at least one yarn having permanent crinkles therein and at least one plain yarn, said yarns forming separate courses in repeats of a small number of courses.

4. A sheer knitted stocking having an area thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from its being knitted from at least one yarn having permanent crinkles therein and at least one plain yarn, said yarns forming separate courses in repeats of a small number of courses, the yarns being knit in such sequence that each course of crinkled yarn is interknit with at least one course of plain yarn, and each course of plain yarn is interknit with at least one course of crinkled yarn.

5. A sheer knitted stocking having an area thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from its being knitted from at least one nylon yarn having permanent crinkles therein and at least one plain yarn, said yarns forming courses in repeats of a small number of courses.

6. A sheer knitted stocking having an area thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from its being knitted from at least one yarn having permanent crinkles therein and at least one plain nylon yarn, said yarns forming courses in repeats of a small number of courses.

7. A sheer knitted stocking having an area thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from its being knitted from at least one nylon yarn having permanent crinkles therein and at least one plain nylon yarn, said yarns forming courses in repeats of a small number of courses.

8. A sheer knitted stocking having an area thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from its being knitted from at least one nylon yarn having permanent crinkles therein and at least one plain nylon yarn, said yarns forming courses in repeats of a small number of courses, the yarns being knit in such sequence that each course of crinkled yarn is interknit with at least one course of plain yarn, and each course of plain yarn is interknit with at least one course of crinkled yarn.

9. A sheer knitted stocking blank having the leg portion thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from its being knitted from at least one yarn having permanent crinkles therein and at least one plain unshrunk nylon yarn, loops containing both of said yarns having such different sizes and shapes.

10. A sheer knitted stocking blank having the leg portion thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from its being knitted from at least one yarn having permanent crinkles therein and at least one plain unshrunk nylon yarn, said yarns forming courses in repeats of a small number of courses.

11. A sheer knitted stocking blank having the leg portion thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from its being knitted from at least one yarn having permanent crinkles therein and at least one plain unshrunk yarn of a type capable of being shrunk, loops containing both of said yarns having such different sizes and shapes.

12. A sheer knitted stocking blank having the leg portion thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from its being knitted from at least one yarn having permanent crinkles therein and at least one plain unshrunk yarn of a type capable of being shrunk, said yarns forming courses in repeats of a small number of courses.

13. A sheer knitted stocking blank having welt and leg portions thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from each being knitted from at least one yarn having permanent crinkles therein and at least one plain yarn, loops containing said yarns having such different sizes and shapes, said plain yarn in the leg being of a type capable of being shrunk, and said plain yarn in the welt being of a type substantially unshrinkable under conditions of shrinking the plain yarn in the leg.

14. A sheer knitted stocking blank having welt and leg portions thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from each being knitted from at least one yarn having permanent crinkles therein and at least one plain yarn, said yarns forming courses in repeats of a small number of courses, said plain yarn in the leg being of a type capable of being shrunk, and said plain yarn in the welt being of a type substantially unshrinkable under conditions of shrinking the plain yarn in the leg.

15. A sheer knitted stocking having the leg portion thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from its being knitted from at least one yarn having permanent crinkles therein and at least one plain yarn, loops containing both of said yarns having such different sizes and shapes, and said leg portion being further characterized by extensibility characteristic of shrinkage of the plain yarn following knitting of the stocking.

16. A sheer knitted stocking having the leg portion thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from its being knitted from at least one yarn having permanent crinkles therein and at least one plain yarn, said yarns forming courses in repeats of a small number of courses, and said leg portion being further characterized by extensibility characteristic of shrinkage of the plain yarn following knitting of the stocking.

17. A sheer knitted stocking having an area thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from its being knitted from one yarn having permanent crinkles therein and one plain yarn, said yarns forming alternate courses.

18. A sheer knitted stocking having an area thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from its being knitted from plain and permanently crinkled yarns, said yarns forming repeats each comprising two courses of yarn of one type and one course of yarn of the other type.

19. A sheer knitted stocking having an area thereof of crepe appearance characterized by the presence of loops of different sizes and shapes and of random distribution resulting from its being knitted from plain and permanently crinkled yarns, said yarns forming repeats each comprising two successive courses of yarn of one type and two successive courses of yarn of the other type.

20. The method of producing a sheer knitted stocking having a leg portion and a welt portion comprising knitting each of said portions of at least one yarn having permanent crinkles therein and at least one plain yarn, said plain yarn used in knitting the leg portion being susceptible to shrinkage and said plain yarn used in knitting the welt portion being of a type substantially unshrinkable under conditions of shrinking the plain yarn in the leg portion, and then shrinking said plain yarn used in knitting the leg portion.

21. The method of producing a sheer knitted stocking having a leg portion comprising knitting said leg portion of at least one yarn having permanent crinkles therein and at least one plain yarn, said plain yarn used in knitting the leg portion being susceptible to shrinkage, and then shrinking said plain yarn used in knitting the leg portion.

References Cited in the file of this patent

UNITED STATES PATENTS

2,095,069	Kugelman	Oct. 5, 1937
2,097,763	Hemmerich	Nov. 2, 1937