

UNITED STATES PATENT OFFICE

JOSEPH A. HARRON, OF ELKINS PARK, AND JAMES J. DIAMOND AND GUSTAV BLEY, OF
PHILADELPHIA, PENNSYLVANIA

PROCESS OF TREATING YARN

No Drawing.

Application filed May 14, 1930. Serial No. 452,515.

This invention relates to the knitting of full-fashioned hosiery, and particularly to the knitting of full-fashioned hosiery from crepe yarn.

5 Crepe yarn has a definite and distinguished meaning in the trade and consists of twisting two or more strands of silk to the right sixty or more times per inch; twisting two or more other strands to the left sixty or
10 more times per inch, and then twisting the two twisted members together so as to form a unit.

Now, crepe thread, if not under tension and where slack is allowed in the same, will
15 snarl, that is, will twist into a number of individual loops, and for this reason, has never been heretofore successfully used for knitting full-fashioned hosiery, where yarn is drawn from cones, and where there is al-
20 most always a certain amount of slack between the needles and the cone.

A stocking knit heretofore from crepe yarn, when complete, will be found to have
25 knitted throughout the body of the same a multitude of the loops, twists or snarls, so that the garment is so defective that it could not possibly be commercially used.

For sometime past, hosiery, without lustre, or a dull finished hose, has been quite popular, and women in particular have demanded
30 the same. Various means and methods have been employed for producing lustreless stockings, but many experiments throughout various mills of the country have proven the im-
35 practicability of using crepe yarn, although such yarn would be highly desirable.

This is true particularly because of the great number of twists in the pairs of strands which gives a fabric which offers great resist-
40 ance to wear, and if it were possible to knit crepe hosiery, same would find an almost instantaneous demand on the open market.

In order to give the effect of crepe, or rather a lustreless stocking, ordinary tram
45 silk hosiery has been treated with chemicals for removing the lustre and giving to the finished hose a dull appearance. This is objectionable from two standpoints; first, it will be found that after treatment with the
50 chemicals, the interstices of the knitted stock-

ing will retain a certain amount of the chemicals in the form of a powder, and as the stockings are washed from time to time, the powder will be washed out and the fabric will again present a lustrous appearance; second, it is considered that the chemicals possibly
55 do injure the silk strands and in any event, do not help the same.

Even with this chemically treated tram silk stocking, the goods will not have the same soft finish which a crepe silk stocking
60 has.

Now, bearing in mind that the crepe silk stocking is the desirable one, but on account of its twisting and snarling, the threads heretofore have not been susceptible of being
65 knitted into an acceptable fabric for full-fashioned hosiery, there has been developed a substitute for crepe and which is known throughout the trade as Grenadine, and
70 which is composed likewise of one or more strands of silk twisted thirty to forty times to the inch to the right and one or more strands twisted thirty to forty times to the
75 inch to the left, and the two twisted members then twisted together to form a unit.

Now, while this hosiery has found a ready market, it is not a crepe silk hosiery because crepe silk, as before stated, has a definite
80 meaning and must have its strands twisted, as before explained, to produce strictly crepe yarn. Therefore, Grenadine will not give the same lustreless effect as crepe, nor will the wearing qualities of Grenadine be nearly so
85 great as a stocking knit from pure crepe silk yarn.

It has also been suggested, and in some instances it has been adopted, to treat the Grenadine silk knit stocking with chemicals to endeavor to make the same appear like
90 crepe, but, as before stated, this chemically treated goods has its objections and moreover, Grenadine stockings, even when chemically treated, will not be as soft and smooth
95 as a crepe silk stocking.

The object of this invention is to provide a method of treating crepe silk yarn in order that it may be successfully knit into full-fashioned hosiery.

Many experiments have been diligently 100

pursued for preventing the slack thread between the knitting needles and the cones, such as tension devices and the like, but all have proven of no utility.

According to the invention, yarn during coning is treated with a compound to stabilize the same and after such treatment is again treated with a muscilaginous sizing compound which must be of such a nature as to penetrate and permeate the entire yarn body on the cone, and when knit into full-fashioned hosiery, must be of such a nature as to readily wash from the yarn so as to leave nothing but the pure crepe silk fabric.

The muscilaginous substance will cause the yarn to be drawn from the cones by the needles only in the exact quantity that such needles requires the same, and after many experiments, perfect crepe hosiery has and is being daily produced by the invention herein set forth.

The muscilaginous sizing compound must be of such cementing strength only as to permit it to be readily pulled from the cone by the needles without providing any tension of any moment, otherwise the strands will be broken.

By sizing is meant any suitable substance which will produce the desired amount of cohesion to effect the above stated result.

The initial treating compound consists of conditioning oils while the muscilaginous compound may be composed of any suitable ingredient which will produce exactly the proper amount of tension, so that a slight pull on the same by the needles will only cast just enough thread for utilization by the needles and will allow no slack between the needles and the cones for the formation of snarls, twists and loops.

Of course, the process of treating crepe yarn for knitting full-fashioned hosiery, as described, is susceptible of slight modifications and changes without departing from the invention herein set forth and hereafter claimed.

The invention is hereby claimed as follows:

1. A size impregnated yarn package for use in knitting machines, consisting of convolutions of yarn of a type having an inherent tendency to snarl or loop in an untensioned state, said convolutions of yarn adhering to each other due to the cementing properties of the size so as to resist being too readily unwound from the package.

2. A size impregnated crepe yarn package for use in knitting machines, the convolutions of yarn adhering to each other due to the cementing properties of the size so as to resist being too readily unwound from the package.

3. A size impregnated yarn package for use in knitting machines, consisting of convolutions of yarn of a type having an in-

herent tendency to snarl or loop in an untensioned state, said convolutions of yarn adhering to each other due to the cementing properties of the size so as to resist being too readily unwound from the package, said size being soluble in water.

4. A size impregnated crepe yarn package for use in knitting machines, the convolutions of yarn adhering to each other due to the cementing properties of the size so as to resist being too readily unwound from the package, said size being soluble in water.

5. The process of knitting comprising using a size impregnated yarn package, said package consisting of convolutions of yarn of a type having an inherent tendency to snarl or loop in an untensioned state where, by means of such a size tending to adhere the convolutions of yarn to each other, a tension is applied to the yarn as it is fed between the package and needles.

6. The process of knitting comprising the use of a crepe yarn package impregnated with size where by means of such size tending to adhere the convolutions of yarn to each other a tension is applied to the yarn as it is fed between the package and needles.

7. The process of knitting hosiery comprising using a size impregnated yarn package, said package consisting of convolutions of yarn of a type have an inherent tendency to snarl or loop in an untensioned state where, by means of such a size tending to adhere the convolutions of yarn to each other, a tension is applied to the yarn as it is fed between the package and needles.

8. The process of knitting hosiery comprising the use of a crepe yarn package impregnated with size where by means of such size tending to adhere the convolutions of yarn to each other a tension is applied to the yarn as it is fed between the package and needles.

9. In the process of knitting a full-fashioned stocking from crepe yarn, the use of a yarn package impregnated with size tending to adhere the convolutions of yarn to each other to resist being too readily unwound from the package.

10. A stocking knit from crepe yarn sized in the package, said sizing tending to adhere the convolutions of yarn in the package to each other, so as to resist being too readily unwound from the package.

11. A full-fashioned stocking knit from crepe yarn sized in the package, said sizing tending to adhere the convolutions of yarn in the package to each other, so as to resist being too readily unwound from the package.

In testimony whereof we have signed our names to this specification.

JOSEPH A. HARRON.
JAMES J. DIAMOND.
GUSTAV BLEY.