J. F. NELSON.

KNIT ARTICLE.

APPLICATION FILED DEC. 14, 1912.

1,166,147. Patented Dec. 28, 1915.

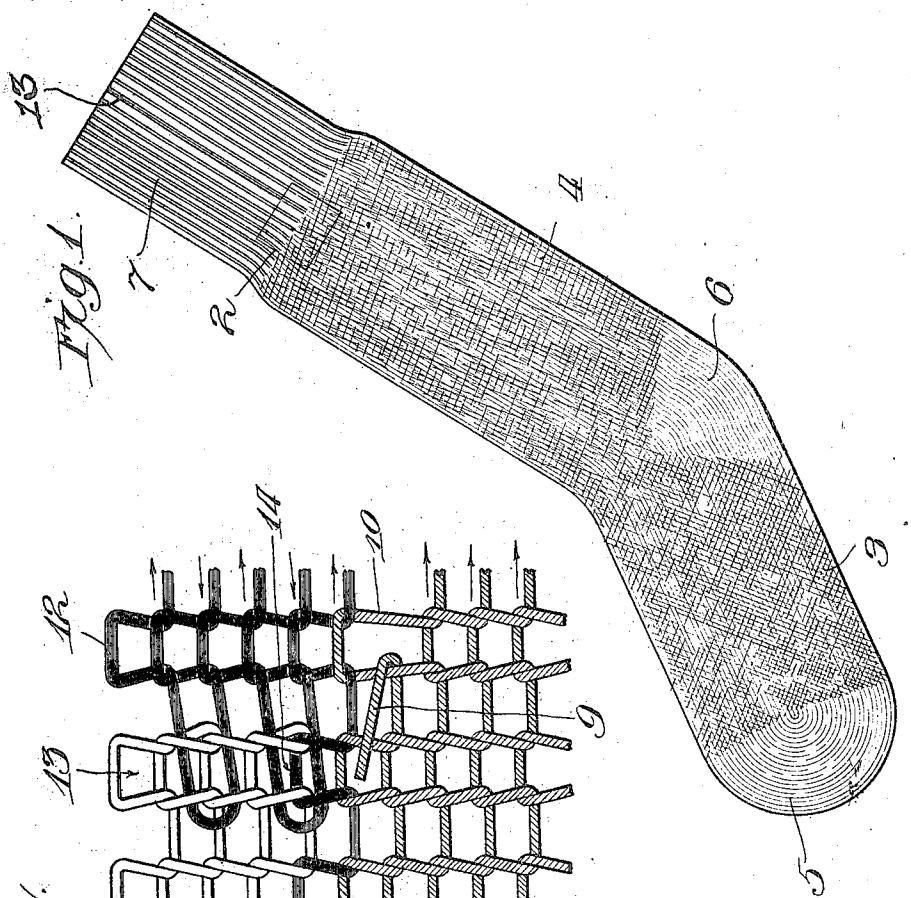


Fig. 1.

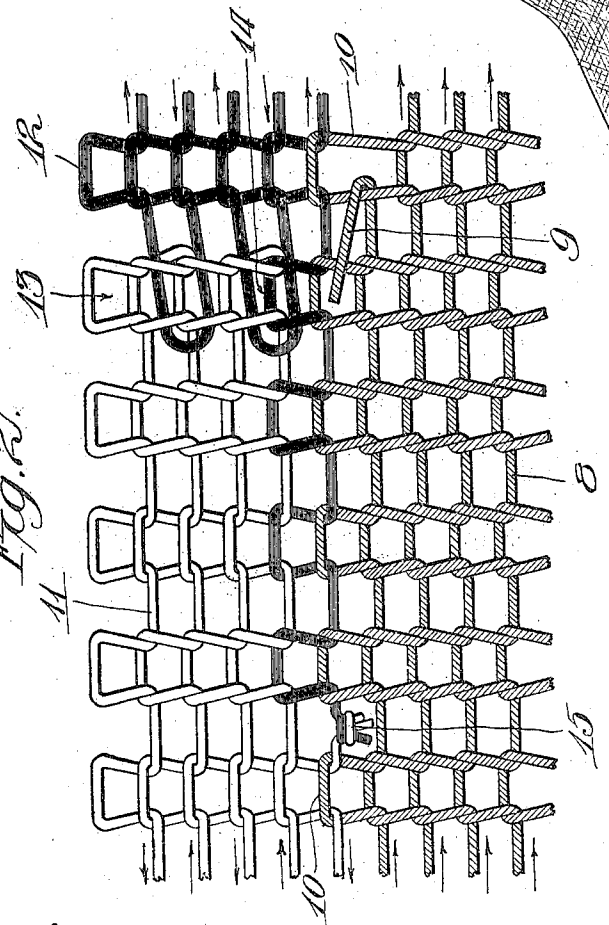


Fig. 2.

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UNITED STATES PATENT OFFICE.

JOHN F. NELSON, OF ROCKFORD, ILLINOIS.

KNIT ARTICLE.

1,166,147. Specification of Letters Patent. Patented Dec. 28, 1915.

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To all whom it may concern:

Be it known that I, JOHN F. NELSON, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Knit Articles, of which the following is a specification.

This invention relates to a new article of manufacture in the form of a knit product, such as a sock or stocking and has for its main objects to improve the quality and appearance of such product and to materially reduce the cost of manufacture thereof. There are at present in extensive use knit socks and stockings and like articles of apparel, portions of which are formed from two separate and distinct yarns, which yarns are simultaneously manipulated during the knitting process to produce a given portion of the product. Of this class, for example, are certain forms of ribbed-top socks and stockings. In knitting the ribbed portions of such articles, use is made of two separate yarns, each of which is carried back and forth, from side to side, or from front to rear of the article, the two yarns being interlooped each time they come together. When the knitting operation for this ribbed portion commences, the beginning ends of the two ribbing yarns are left free and disconnected, so that when the article is completed a point of weakness exists at the point where the ribbing operation commenced.

When such a product as the above has been completed, the beginning ends of the ribbing yarns are left projecting to the outside of the article. This is an objectionable feature and has heretofore been remedied by a hand operation, in which the free ends are caught by a hook or the like and drawn to the interior of the sock. However, even when this is done, the objectionable feature remains—that the ribbing yarns are entirely disconnected and the knitting is therefore weak at the point where the ribbing commences.

One of the main objects of the present invention is to provide an article of manufacture of the general type or class to which the present invention relates, and in which article the said ribbing yarns are permanently joined together by means of a knot or in any other suitable manner. Such an article will present the advantages of improved strength and quality as well as improved appearance and salability. Such an article is easily distinguishable by the presence of the knot or other connection or continuity between the two yarns from which the ribbed portion is constructed. This knot or other means of connection can be easily distinguished even when the fabric is in its completed condition, but under any circumstances the article can be easily distinguished by completely unraveling the ribbed portion, in which case it will be found that the ribbing yarns are joined together, or are a continuous piece of yarn.

As before stated, there are in use various knit socks and stockings in which the ribbed portion is knit from two separate and independent yarns, which yarns are carried back and forth and are interlooped each time they come together. As a rule, these points of interlooping lie on two vertically extending lines which may be called lines of interlooping. The lines generally stand at the sides of the product, although it would be possible to produce a product in which they stood at the front and rear. However that may be, the beginning ends of the two ribbing yarns almost invariably lie at the point where one of these lines of interlooping begins, said point being adjacent the body portion of the sock or stocking. At such point, these beginning ends are particularly conspicuous. It is a difficult matter to draw them to the interior of the sock in such a way that the appearance of the sock will not be injured. Furthermore, when the ends of these yarns are tied or otherwise joined together at this point of junction of a line of interlooping with the body portion, an unusual and serious enlargement is produced, which enlargement still further spoils the appearance of the product, reduces its wearing qualities, and is a source of inconvenience and discomfort to the wearer.

Therefore, another object of the present invention is to form or offset the beginning ends of the ribbing yarns to one side of a line of interlooping so that the junction or connection between said ends will not be unduly conspicuous, and will not cause such an enlargement as to reduce the wearing qualities of the article and be a source of discomfort to the wearer. Such an article can be readily distinguished by the fact that the point of connection between the ribbing yarns is offset with respect to a line of in-

terlooping, or by completely unraveling the ribbed top, in which case it will be found that the ribbing yarns are joined together and that the point of junction lies to one side of a line of interlooping.

Other objects and uses of the present invention will appear from a detailed description of the same which consists in the features of manufacture and the peculiarities of construction hereinafter described and claimed.

In the drawing: Figure 1 shows a completed sock embodying the features of my invention; and Fig. 2 shows a greatly enlarged detail of that portion of the sock included within the line 2 of Fig. 1.

For purposes of convenience in illustrating and describing one form of my invention, I have shown the same as embodied in a sock having a ribbed top. In this case, the portion of the product which is formed from the two yarns is the ribbed top, and each of the remaining portions of the sock may be knit from a single yarn. However, it will presently be seen that instead of limiting the double yarn knitting to the ribbed top, that such knitting might be used throughout the entire sock or any other portion of it without in any way departing from the spirit of my invention.

In the product illustrated, the foot 3 and body 4 are each knit from a single yarn, the courses of which completely encircle the sock. In like manner the toe 5 and heel 6 are each knit from a single yarn, but preferably a yarn of different color from that used in the foot and body. The numeral 7 designates the ribbed top.

In Fig. 2, which shows in greatly enlarged detail that portion of the sock contained within the line 2 of Fig. 1, I have shown one particular form of stitch, but particularly I have shown in said figure the junction between the two separate yarns which are used during the ribbing operation.

The shaded yarn 8 is the yarn of the body portion. It is knit in such way as to provide a plurality of circular courses which travel around the sock in the direction indicated by the several arrows. After the desired number of body courses have been completed, the body yarn is severed to provide the end 9, leaving the last row of loops 10 to be joined to the first row of loops of that portion of the sock which is knit from the two yarns—in this particular case the ribbed top.

The ribbed top is formed from the white yarn 11 and the black yarn 12. As a matter of fact these two yarns would in practice probably be of the same color, but for purposes of convenience in description and illustration, I have herein shown them as of contrasting colors. Each of the ribbing yarns travels back and forth on one side of the sock and is knit into the several courses of that side. The two yarns are, however, interlooped at the front and rear, or at the two sides, to provide the lines of interlooping 13, and a similar line on the other side of the sock. The knitting of this ribbed portion commences at the point 14 and travels in the two directions with the two yarns, as shown by the arrows adjacent the ribbing yarns. In socks of this class, as at present made and used, the two separate yarns commence at the point 14 where their free ends are left entirely disconnected, and said yarns are carried back and forth in the directions indicated by the arrows. It has previously been pointed out that such a product is weak and tends to break open or pull apart at the point 14, and that furthermore its appearance and salability are affected by the fact that the yarns at such points are disconnected. In the product of the present invention, however, the yarns are connected together or continuous at the point 14, so that this defect of previous articles of this class is remedied, and the appearance, salability, and durability of the product are greatly improved. Furthermore, as was previously stated, it has been necessary to draw the free ends at the point 14 to the interior of the sock so that the cost of its manufacture has heretofore been considerably increased by reason of this fact. This objection is also remedied in the present product, because obviously it is unnecessary to draw the ends to the interior if there are no ends as is the case in the present product.

From a study of the above, it will be seen that by joining or forming the ribbing yarns together at the point 14, so that they are continuous past said point and past all other points of the ribbed top, that the strength, durability, appearance, and wearing qualities of the product are materially improved, and that the cost of manufacture is reduced by reason of the fact that the hand operation heretofore necessary for the purpose of drawing the ends of the ribbing yarns to the interior of the sock is done away with.

It was stated that another object of the present invention is to form or offset the point of junction between the two ribbing yarns to one side from a line of interlooping so as to improve the appearance and wearing qualities of the article. As shown in Fig. 2 of the drawing, the point of junction, which in the product shown is the knot 15, is set to one side from the line of interlooping, so that the portion of yarn indicated as black between the points 14 and 15 is really a portion of the yarn 12, although said portion is handled in the knitting process precisely as though it were a portion of the yarn 11. As heretofore stated, in actual

practice both of these yarns 11 and 12 would generally be of the same color so that it would not be objectionable to offset the point of junction 15 to one side of the line of interlooping as illustrated in the figure.

As an example of a mechanism which will join together the ends of the yarns and which may also be used for offsetting the point of junction in the manner above described, I will mention Letters Patent of the United States, No. 1,087,545, issued February 17, 1914, on an application filed by me as inventor. Manifestly, however, many other types of machine than the one disclosed in the said patent might be used for accomplishing this result, if desired.

Manifestly, the amount or percentage of the article which may be knit from the two yarns, either by the particular stitch illustrated in Fig. 2, or any other stitch, is immaterial, for it is evident that either a small percentage of the product, or a large percentage thereof, or in fact all of the product, might be made from a double yarn stitch without departing from the spirit of my invention. Furthermore, it is evident that any other suitable stitch might be used in which two yarns are employed. The main feature of the present invention, however, consists in the joining together or forming integral of the two yarns at their beginning ends so as to improve the appearance and increase the durability and salability of the article, and so that when the two yarns from which that portion of the article is formed are unraveled, it will be found that they are joined or formed together in such way as to really constitute a single yarn, the two ends of which are knit with the proper stitch to produce the desired article.

I claim:

1. As a new article of manufacture, a knit sock or stocking comprising a body portion and a ribbed top, the ribbed top being formed from two yarns having their beginning ends joined together, said yarns being simultaneously used in a knitting operation and being interlooped on lines of interlooping at opposite sides of the product, the point of junction of said yarns being offset to one side from one of said lines of interlooping, substantially as and for the purpose set forth.

2. As a new article of manufacture a knit sock or stocking having a body portion and a ribbed top, the upper portion of the body being made from a single yarn knit constantly in the same direction, and the ribbed top being made from two yarns the beginning ends of which lie adjacent to the top edge of the body portion and are interlooped therewith, each of said two yarns being individually knit back and forth through one-half the periphery of the product, and the adjacent edges of the two portions so knit being joined together by oppositely disposed lines of interlooping, the ribs of the ribbed top facing alternately to the inside and to the outside of the product, and the beginning ends of the ribbing yarns being joined together, whereby the ribbing yarns are retained against unraveling from each other or from the body portion of the product.

3. As a new article of manufacture a knit sock or stocking comprising a body portion and a top portion, the top portion being formed from two yarns having their beginning ends joined together, said yarns being simultaneously used in a knitting operation and being interlooped on lines of interlooping at opposite sides of the product, the point of junction of said yarns being offset to one side from one of said lines of interlooping, substantially as and for the purpose set forth.

4. As a new article of manufacture a knit sock or stocking comprising a body portion and a top portion, the upper portion of the body being made from a single yarn knit constantly in the same direction, and the top portion being made from two yarns, the beginning ends of which lie adjacent to the top edge of the body portion and are interlooped therewith, each of said two yarns being individually knit simultaneously with the other of said two yarns, and the beginning ends of said two yarns being joined together at a point adjacent to the top edge of the body portion, whereby said two yarns are retained against unraveling from each other and from the body portion of the product.

JOHN F. NELSON.

Witnesses:
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