W. L. SIEWERS.

KNIT GARMENT.

APPLICATION FILED MAR. 19, 1920.

1,374,155.

Patented Apr. 5, 1921.

2 SHEETS—SHEET 1.

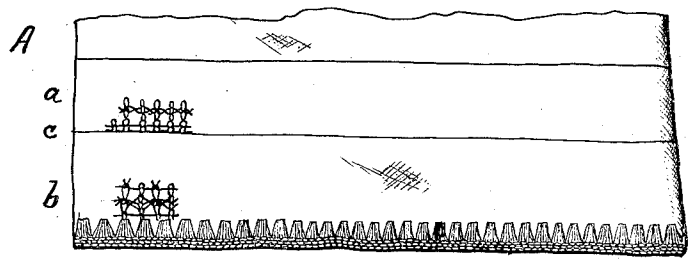


Fig. 1

Fig. 2

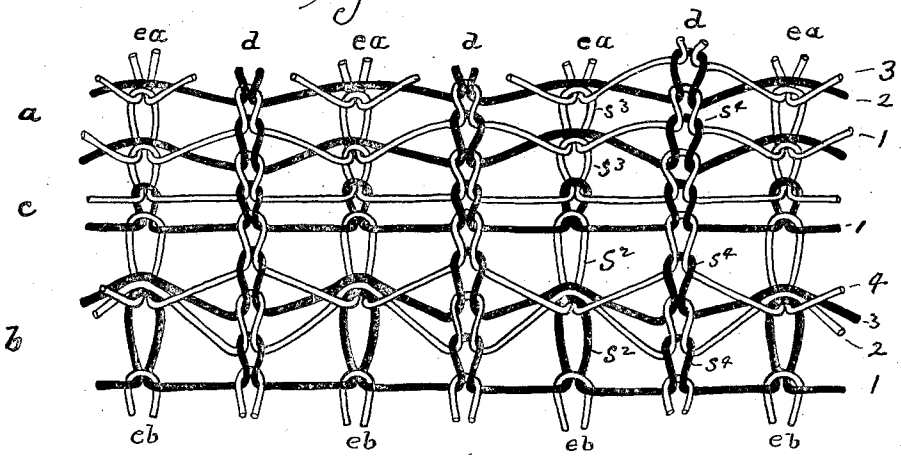
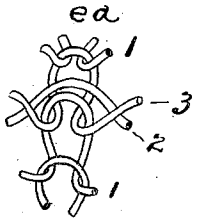


Fig. 5



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2 SHEETS—SHEET 2.

Fig. 3

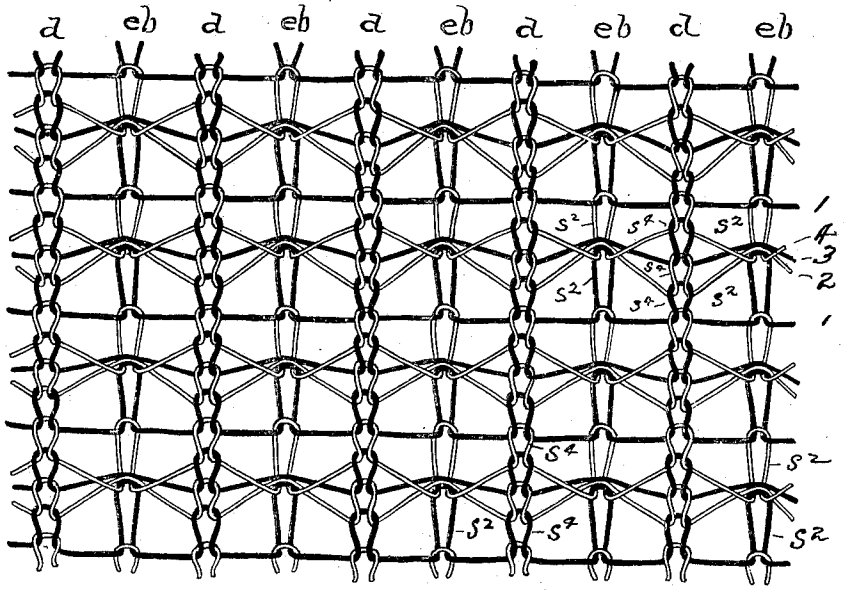
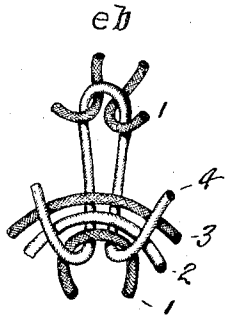


Fig. 4



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UNITED STATES PATENT OFFICE.

WALTER L. SIEWERS, OF WINSTON-SALEM, NORTH CAROLINA, ASSIGNOR TO THE INDERA MILLS, OF WINSTON-SALEM, NORTH CAROLINA, A COPARTNERSHIP COMPOSED OF W. L. SIEWERS AND F. H. FRIES.

KNIT GARMENT.

1,374,155. Specification of Letters Patent. Patented Apr. 5, 1921.

Application filed March 19, 1920. Serial No. 367,263.

To all whom it may concern:

Be it known that I, WALTER L. SIEWERS, citizen of United States of America, residing at Winston-Salem, in the county of Forsyth and State of North Carolina, have invented certain new and useful Improvements in Knit Garments; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

A commonly observed characteristic of knit fabrics is their tendency to curl or roll toward the face of the fabric lengthwise thereof, that is, in the direction in which the wales extend. This characteristic is an annoyance, particularly in close fitting tubular knit garments.

An object of this invention is to prevent the curling or rolling of the end margin of a knit fabric toward the face thereof.

The invention comprises a knit fabric having a marginal non-curling zone or border transverse of its wales, which is composed of yarn courses knitted in a yarn pattern different from that of the body of the fabric, the yarn courses being interlooped and tensioned so as to resist or apply a counter force to the wales that tend to curve outward.

In the drawing, Figure 1 illustrates conventionally a portion, including one end margin, of a tubular knit garment whereof the body portion and marginal end portions are knit in different combinations of stitches; Fig. 2 illustrates in exaggerated open formation the yarn pattern or stitch formation of the body and marginal portions, and the zone of transition from one to the other; Fig. 3 illustrates similarly the yarn pattern or stitch formation of the marginal portion; Fig. 4 is a detail of the interlooped yarn courses that form the back wales of the margin; Fig. 5 is a detail of the interlooped yarn courses that form the back wales of the body portion.

Similar reference characters indicate corresponding parts throughout the several views.

A tubular fabric embodying this invention may be made on a standard type of circular rib knitting machine in which there is one series of primary latch needles disposed in cylindrical formation, the needles being adapted to reciprocate parallel with each other and with the axis of the cylinder defined by their arrangement; and another series of secondary latch needles disposed in a common plane and adapted to reciprocate radially with respect to the axis of said cylinder.

In the drawings, A designates a fragment of a tubular rib knit fabric which may be, for example, an underskirt, slip or shirt. The body of the fabric is designated *a*, the margin at one end, *b*, and the connecting zone where the body stitch merges with the margin stitch is indicated by *c*.

The face rib wales of both body and margin are designated *d*, the back rib wales of the body *ea*, and the back rib wales of the margin *eb*. The face rib wales *d*, as shown, are made by successively interlooping the yarn of each course, drawing the yarn toward the face of the fabric. The face ribs are formed by the cylinder needles which cast the loop on each successive feed; said face ribs alternate with the back ribs, and each is of the same formation in both body and margin and extends in continuity from body to margin.

The back rib wales *ea* and *eb* are made by the dial needles which draw a loop in the yarn of one course through a loop in another course toward the back of the fabric. In the body fabric shown the back wales are formed of two interlooped yarns out of three courses, and in the margin fabric of two interlooped yarns out of four courses. In the back wales of the body fabric the yarn of the single intermediate course of each three courses passes over the face of the loop in course three to form what has been designated a single tuck stitch or yarn interlace; in the back wales of the margin fabric the yarns of the two intermediate courses pass over the face of the loop in course four to form what has been designated a double tuck or bird's eye stitch or yarn interlace. In knitting the body, each dial needle forms a loop on one feed and casts on the next, and in knitting the margin each dial needle forms a loop on each of two successive feeds and casts them on the third feed.

Fig. 2 shows, in the body portion *a*, the yarn of course (or feed) 1 interlooped with the yarn of course 3 in the back rib wales

ea, to form loops S^3, and the yarns of each course 2 respectively stretching from the wales *d* across the face of each loop S^3, said yarns of courses 2 being looped to form one of the loops S^4, in the wales *d*, as is every yarn course, but not looped in the wales *ea*. In the margin portion *b*, the yarns of courses 1 and 4 are interlooped in wales *eb* to form the loops S^2, and the yarns of courses 2 and 3 pass from wales *d* across the face of loop S^2, and are formed into loops S^4 in wales *d*, but are not looped together in wales *eb*.

The result of the described action of the cylinder needles during the knitting of the margin *b* in casting a loop at each feed or in each successive course of yarn, in coöperation with the action of the dial needles in drawing two loops on successive feeds and casting them on the next course or feed, produces a fabric of the construction shown in Fig. 3, consisting of a yarn pattern of open squares bounded longitudinally of the fabric by face ribs, and transversely of the fabric by the first course of every four successive courses of yarn; while the sides formed by the courses 1 are linked together by the two loops S^2 at the center of the square, and the yarns 2, 3 and 4 radiate from this center to successive loops S^4 of the face rib wales *d*, thus tending to flatten and straighten the rib wales *d*, and restrain the tendency of these wales to curl or roll longitudinally toward the face of the fabric, while the back rib wales *eb* follow their normal tendency to cause the fabric to curl toward the back and assist the said radiating yarns to overcome the normal bias of the wales *d*.

By the term loops in the foregoing description and appended claims, is meant the loops indicated by the characters S^2, S^3, and S^4, which are loops interlaced singly one with another, as distinguished from the formation existing by reason of the crossing of a yarn or of yarns from one wale to another across the face or back of an intermediate wale.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A knit fabric comprising a body and a marginal portion, having rib wales on its face, and intervening rib wales on its back, the proportion of the number of loops in each face rib wale to the number of loops in each back rib wale being three to two in the body portion, and as two to one in the marginal portion of the fabric.

2. A knit fabric comprising a body and a marginal portion of different stitch pattern, respectively, the marginal portion having face rib wales and back rib wales, the proportion of the number of loops in each face rib wale to the number of loops in each back rib wale being as two to one.

3. A fabric having a rib knit border in which successive courses of yarn are interlooped to form face ribs, and groups of the yarn courses radiate to the face rib loops from points in the back ribs intermediate of said face ribs.

4. A knit fabric having a body and a marginal portion of different stitch pattern, respectively, said marginal portion being composed of alternate wales of interlooped yarn of successive courses, and intermediate wales, from separated points of which certain of the yarn courses radiate to the loops of said alternate wales.

5. A rib knit fabric in which the yarns of successive courses are interlooped in full stitches to form face rib wales, and the yarns of every first and fourth course are interlooped to form back rib wales alternating with said face rib wales, the yarns of the second and third intervening courses crossing the faces of the loops formed by the yarn of the fourth course in said back rib wales to form double tucks.

In testimony whereof I affix my signature.

WALTER L. SIEWERS.