Dec. 26, 1922. 1,440,267

H. T. BALLARD.
KNITTED RIB FABRIC.
FILED APR. 29, 1922.

Fig. 1.

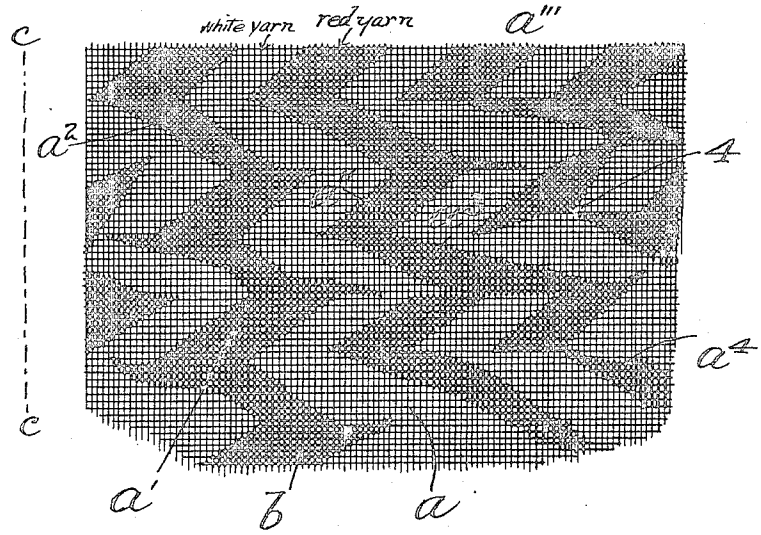
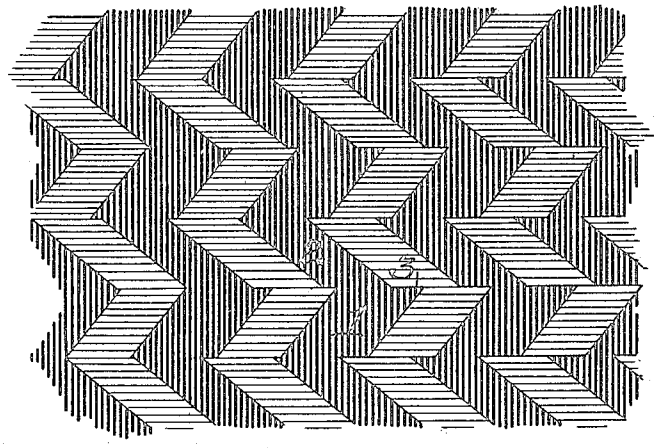


Fig. 2.



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UNITED STATES PATENT OFFICE.

HERBERT T. BALLARD, OF NORRISTOWN, PENNSYLVANIA.

KNITTED RIB FABRIC.

Application filed April 29, 1922. Serial No. 557,492.

To all whom it may concern:

Be it known that I, HERBERT T. BALLARD, a subject of the King of Great Britain, and resident of Norristown, county of Montgomery, and State of Pennsylvania, have invented certain new and useful Improvements in Knitted Rib Fabrics, of which the following is a specification.

The invention is a fabric made up in part of plain rib and in part of tuck stitches.

The fabric is shown in the accompanying drawing which represents in Fig. 1 part of a tubular fabric in which the courses of knitting extend horizontally and therefore the needle wales extend vertically.

Fig. 2 is a diagram of conventional form showing the way the fabric is produced.

The fabric is produced on a circular rib knitting machine with the attachment such as described in application for Letters Patent of the United States filed by me January 15, 1920, Serial No. 351,702.

The pattern in the fabric is produced by shifting the wing cam of the dial in and out radially so that rib and tuck stitches will be produced in the courses in alternation, but the time of shifting the wing cam in relation to the revolution of the machine is such that for a certain number of courses the changing of the wing cam will lag in respect to the revolutions of the machine so that in these courses the changes will occur on say succeeding wales and consequently spiral stripes will be produced running around the fabric in one direction and after the prescribed number of courses have been knit the timing of the changes in the wing cam's position will occur so as to advance from wale to wale instead of lagging from wale to wale and consequently there will be produced a continuation of the stripes first mentioned but running around the fabric in a spiral direction opposite to the direction of the spiral portions first mentioned. Therefore, stripes of substantially zig zag form will be produced of alternating tuck and plain rib stitch.

In the drawing a represents plain rib and b tuck or cardigan. The cardigan has a portion a' running at an inclination or spirally in one direction in respect to the length of the fabric indicated by the line c—c and also a portion a^2 joining the portion a' but running spirally or at an inclination in the other direction and the plain rib has the same form so that in the particular structure illustrated there is a zig zag stripe of tuck or cardigan made up of the part a', a^2 and intermediate zig zag stripes of plain rib. If red and blue yarns are knitted in, the blue at the special feed and red at the ordinary feed, there will appear a zig zag stripe with blue predominating in the tuck and a stripe of plain rib with alternate course of red and blue will appear.

It will be observed that the tuck portion a' is spirally in line with other tuck portions a'', a''', while the tuck portion a^2 is spirally in line with the tuck portions a^3, a^4, the spiral line a', a'', a''', being interrupted by plain rib portions, which is true also of the spiral line a^2, a^3, a^4.

The mechanism for making the changes in the knitting in the courses is such that for a certain number of adjacent or successive courses forming the stripes running one way, the changes will occur at lesser intervals apart than in the courses in which the stripes run in the opposite direction. This is represented conventionally in Fig. 2. The diagonals or substantially rhomboid forms 1 will merge in more or less degree with the oppositely inclined rhomboids 2, but a portion of one will extend beyond the portion of the other as at 3 and at some points a break may occur as at 4. Therefore an irregular zig zag formation will be produced leaving portions of the forms projecting and these irregularities will be accentuated because of the distortion of the fabric due to the fact that it is made up of alternating portions of plain rib and tuck stitches and the general effect will be substantially like Fig. 1.

It will be understood of course that the fabric is preferably made of different colored yarn. At any rate it is produced with two yarns and I have marked one portion "white yarn" and the other portion "red yarn."

I claim:

1. A rib fabric having a plurality of separate yarns forming courses, with changes in the stitch at one feed advancing in respect to the wales in a certain group of courses and lagging in respect to the wales in an adjacent group of courses, making diagonal lines of changes running in opposite directions, each diagonal line of changes being broken by intermediate plain rib portions of the fabric, the lines of changes running one

way being spaced apart at different distances in respect to the spacing of the lines of changes running the other way, substantially as described.

2. A rib fabric having a plurality of separate yarns forming courses, with changes in the stitch at one of the feeds advancing in respect to the wales in one direction in certain courses and lagging in respect to the wales in certain other courses, making diagonal lines of changes running in opposite directions, each diagonal line of changes being broken by intermediate plain rib portions of the fabric, substantially as described.

3. A fabric made up of a plurality of yarns with alternating portions of tuck and plain rib in a series of successive courses forming diagonal portions running one way and other diagonal portions running in the opposite directions, said portions matching each other irregularly, substantially as described.

In testimony whereof I affix my signature.

HERBERT T. BALLARD.