M. J. FISHER.

KNITTED FABRIC.

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1,001,629. Patented Aug. 29, 1911.

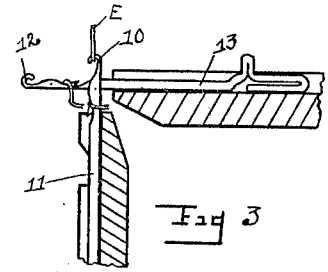

Fig 3

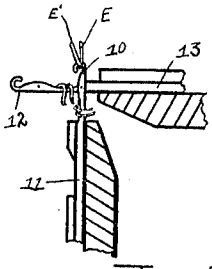

Fig 5

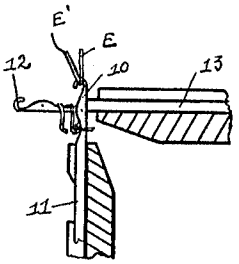

Fig 2

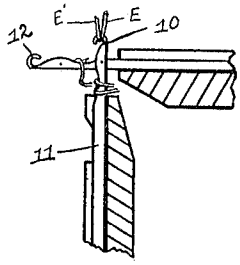

Fig 4.

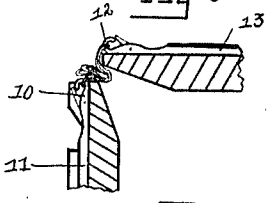

Fig 6

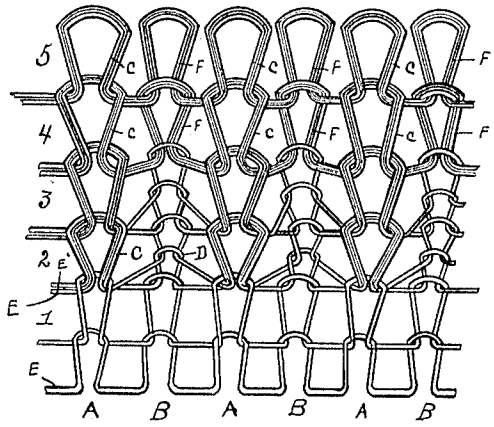

Fig 1

WITNESSES:

T. L. Wilder

H. M. Clark.

INVENTOR

Michel J. Fisher.

BY Risley & Love

ATTORNEYS.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

MICHEL J. FISHER, OF UTICA, NEW YORK.

KNITTED FABRIC.

1,001,629. Specification of Letters Patent. Patented Aug. 29, 1911.

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To all whom it may concern:

Be it known that I, MICHEL J. FISHER, citizen of the United States, residing at Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Knitted Fabric, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to a knitted fabric and I declare the following to be a full, clear, concise and exact description thereof sufficient to enable any one skilled in the art to which it appertains to make and use the same reference being had to the accompanying drawings in which like reference characters refer to like parts throughout.

The object of the invention is to provide a rib knitted fabric that will have three different widths and thicknesses all made by the same yarn. Such a fabric can be readily produced upon a circular knitting machine by the automatic shifting of the cams to correspond with the different widths and thicknesses.

The fabric is adapted for use in making women's waists but may be employed for various other uses.

In the drawings Figure 1 shows a view greatly magnified of a fragment of a one and one rib fabric made in accordance with my invention; Fig. 2 is a fragmentary view of the cylinder and dial of a knitting machine showing the cylinder needles casting single loops and the dial needles double loops; Fig. 3 is a fragmentary view of a dial and cylinder of a knitting machine showing the dial and cylinder needles knitting a plain rib fabric; Fig. 4 is a similar view to Fig. 3 showing the cylinder needles forming double loops and the dial needles forming single loops; Fig. 5 is a like view showing both cylinder and dial needles forming double loops; Fig. 6 is similar to Fig. 3 showing the needles just after they have drawn in to cast the double loops.

Referring more particularly to the drawings the plain stitch or cylinder needle wales are represented by A and the rib stitch or dial needle wales are represented by B. The web in courses or strands 1, 2, 3, etc., represents a one and one rib fabric. In courses or strands 1 and 2 there is shown the ordinary plain rib fabric which will obviously be the narrowest and thinnest part of the fabric, for the reason that it contains a single yarn to the loop. In courses 2 and 3 the cylinder needles A are shown as casting double loops and holding double loops as at C, the dial needles B, however, are casting single as at D. In other words the cylinder needles take the thread at every other feed but are not retracted to knit and therefore tuck or hold their taken thread without interlooping it at alternate feeds. To accomplish this effect it will be well to add by way of explanation that the cylinder cams of the knitting machine are at the proper time automatically shifted, so that the cylinder needles cease to form single loops at each movement upward and downward but instead, as the cylinder needles 10 move upward and the loops are shoved back on the shank 11 of the needles 10 said needles catch the thread E and then descend a very short distance where they remain in constant vertical position until after the next movement outward of the dial needles 12, at which point or time the cylinder needles take on a second thread E′ as shown more clearly in Fig. 4. The cylinder needles 10 then draw both threads E and E′ through the loops already formed on the shanks 11 of said needles 10, as said needles move down again to their lowest or casting position. The movements of the cylinder and dial needles just described whereby the cylinder needles form two loops and cast two and dial needles form one loop and cast one, make the second thickness and width of the fabric.

The fabric made from the above described stitches differs from the ordinary half-cardigan stitch in that the fabric employs a one and one rib or Derby rib in its texture, as modified by the effect of the alternate needles, throughout a portion of the fabric, taking on thread at every feed and casting off double at the alternate feeds, while the remaining needles are knitting normally, and as modified at another portion of the fabric where each of the needles takes on thread at every feed and casts off double at the alternate feeds. The proper actuation of the needles to accomplish the above described effect is controlled by the automatic shifting of the cams of the knitting machine at regular intervals. A single thread is fed at each feed of the machine.

In courses 4 and 5 I there show both cylinder and dial needles casting double loops and holding double loops which effect is ac-

complished by both sets of needles, the cylinder and the dial, going through the same movements just described concerning the cylinder needles. To explain still further, when the proper time arrives to add the third or maximum thickness and width to the fabric the dial cams are automatically shifted so that the dial needles as well as the cylinder cast double loops and hold double as shown more clearly in Figs. 5 and 6, and as indicated at F on Fig. 1. In this last effect the cylinder needles as above described move up to take on the thread E and simultaneously the loops formed in the hooks of said needles 10 move back upon the shanks 11 of said needles, said needles then move downward a very short distance and there remain in constant vertical position until after the movement outward of the dial needles 12, so as to hold the two loops on the shanks 11 of said needles 10 until the movement of said dial needles 12 outward at which time the needles 10 take on the second thread E′ and then draw both threads E and E′ through the two loops already formed on the shanks 11 of said needles 10, similarly the dial needles 12 move outward to take the thread E and there remain, after moving in a very short distance, so as to hold the two loops formed on the shanks 13 of said needles 12 until after the next movement upward of the cylinder needles 10, at which time said needles 12 take the second thread E′ and then move inward to casting position drawing both threads E and E′ through the two loops already formed on the shanks 13 of said dial needles 12.

In Fig. 2, I have shown the movement of the dial needles and cylinder needles reversed. In this figure the dial needles are forming two loops and the cylinder needles are forming one loop, this being the mere reversal of the movement of the dial and cylinder needles I consider it within the scope and spirit of my invention.

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

1. In a fabric, a portion having a single yarn one and one rib fabric, a portion having its face wales fully interlooped of two yarns each, and the complementary wales consisting of twice as many interknit single loops of each of said yarns alternately.

2. In a fabric of the character described, a portion having a single yarn one and one rib fabric, a portion having its face wales fully interlooped of two yarns each, and its complementary wales consisting of twice as many interknit single loops of each of said yarns alternately, and a portion having a double yarn one-and-one rib fabric, substantially as described.

In testimony whereof I have hereunto affixed my signature in the presence of two witnesses.

MICHEL J. FISHER.

Witnesses:
L. M. HESLAN,
T. L. WILDER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."