No. 709,840. Patented Sept. 23, 1902.

L. N. D. WILLIAMS.

KNITTED FABRIC.

(Application filed Feb. 28, 1902.)

(No Model.)

Fig. 1.

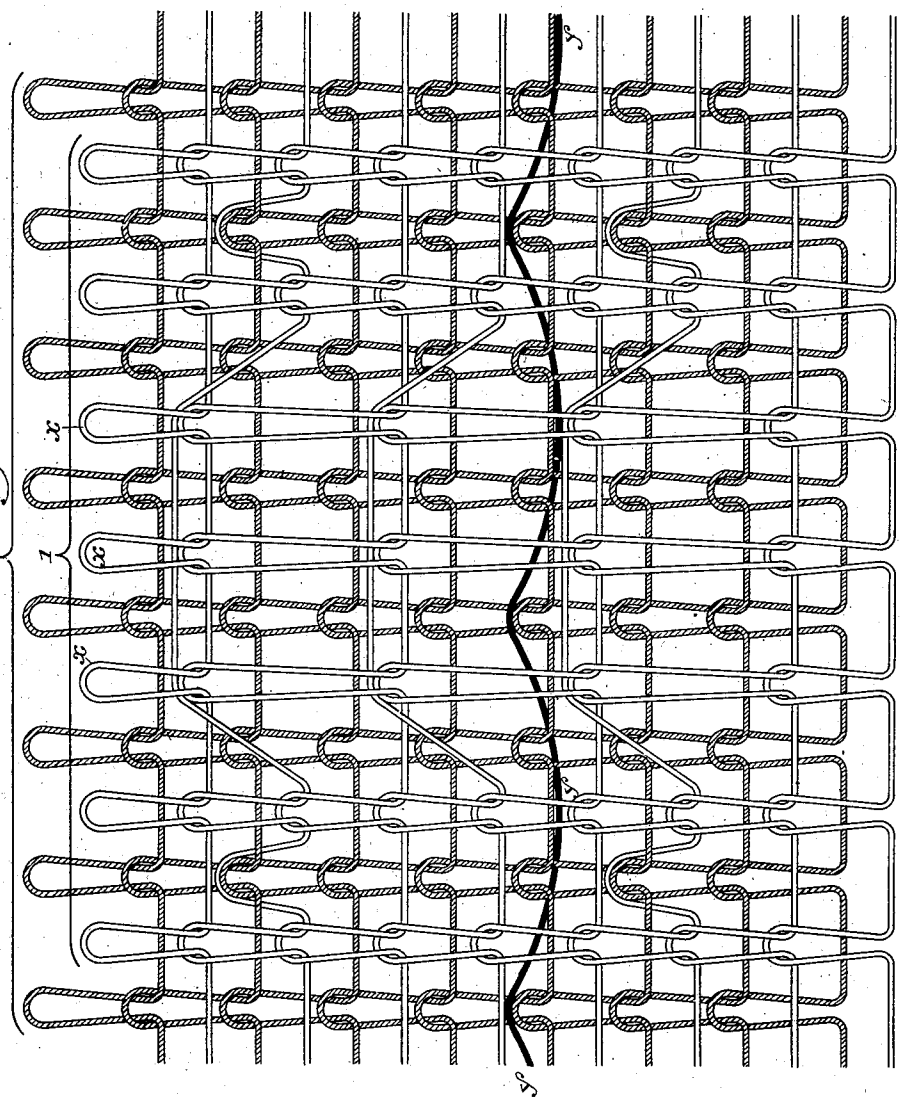
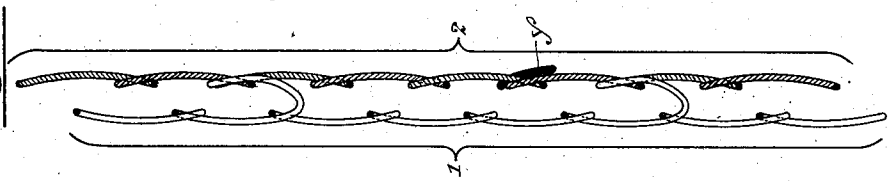


Fig. 2.



Witnesses:-
Herman E. Metius.
Wm. A. Barr.

Inventor:-
Louis N. D. Williams;
by his Attorneys;
Howson & Howson

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LOUIS N. D. WILLIAMS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO ROBERT W. SCOTT, OF PHILADELPHIA, PENNSYLVANIA.

KNITTED FABRIC.

SPECIFICATION forming part of Letters Patent No. 709,840, dated September 23, 1902.

Application filed February 28, 1902. Serial No. 96,091. (No specimens.)

To all whom it may concern:

Be it known that I, LOUIS N. D. WILLIAMS, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Knitted Fabrics, of which the following is a specification.

My invention comprises certain improvements in or modifications of that forming the subject of application for patent filed by David C. Bellis on the 15th day of February, 1902, Serial No. 94,194, said fabric comprising two webs practically independent of each other, but united at intervals by causing the yarn which constitutes one of the webs to engage with the other web, the two webs lying closely together, so as to provide a double web joined at the desired points.

One object of my invention is to permit of the production of ornamental effects in the fabric without the objections attending the same when produced in a plain knitted fabric, a further object being to prevent distortion of the double web when the yarn with which one of the webs is produced is of a character susceptible of greater shrinkage than that of the other web, and a still further object being to provide for the production of a fleece back upon the fabric without impairing the appearance of the face by the showing of the fleecing-yarn thereon. These objects I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is an exaggerated view of a piece of knitted fabric embodying my invention; and Fig. 2 is a sectional view of the same on the line *a a*, Fig. 1.

The fabric consists of two plain webs, each preferably tubular and one overlying the other, as shown at 1 and 2, these webs being united together at the desired points in the manner described in the application of Bellis, above referred to.

In the present instance the web 1 is to be regarded as the face web of the fabric and the web 2 as the back web, and it will be observed on reference to Fig. 1 that said face web is knitted with tuck-stitches in certain of the wales *x*, so as to produce an open or lace work effect, through which are visible the stitches of the back web, whereby supposing that the yarn of one web is different in color from that of the other a backing is provided for said lace or open work pattern of the face web which brings said pattern strongly into relief and has the further effect of protecting the wearer from cold and from the passage of dust and dirt through the open meshes of the face web, thus overcoming serious objections to ordinary plain fabrics having open-work patterns and providing for the production of stockings or other articles of apparel with such open-work patterns and which are available for use in cold weather as well as in warm weather.

For the sake of appearance the yarn of which the face web 1 is composed may be of silk, mercerized cotton, or the like, and for the sake of warmth the back web 2 may be composed of woolen or worsted yarn; but as the latter would have a greater tendency to shrink than the yarn of the face web the stitches of said back web are drawn somewhat longer than the plain stitches of the face web, as shown in Figs. 1 and 2, whereby a considerable margin of shrinkage is provided for. Hence said stitches of the back web will never become shorter or tighter than those of the face web, and no puckering or distortion of the latter will result from the greater shrinkage of the yarn constituting the back web.

When it is desired to form a fleece back upon the fabric by means of a yarn independent of the knitting-yarn, said extra fleecing-yarn is engaged with wales of the back web only and floats on the back of said back web over one or more wales intervening between those with which it is engaged, one course of such fleecing-yarn being at *y*.) Shown in Figs. 1 and 2.) Such fleecing-yarn may be introduced in every course of the back web or in every second, third, or other alternate course, as desired, and no part of it projects through the face web. Hence the appearance of the latter is not affected by the presence of the fleecing-yarn.

The fabric may be produced upon a machine having two needle-carriers, with one or more yarn-guides for each needle-carrier, one yarn-guide or set of yarn-guides feeding yarn to the needles of one needle-carrier to produce

one web and the other yarn-guide or set of yarn-guides feeding yarn to the needles of the other needle-carrier for the production of the other web, the needles of one needle-carrier engaging the yarn which is normally fed to the needles of the other needle-carrier at such points as it is desired to tie the two webs together.

It will be evident that my invention can be embodied in a fabric of the type shown in the application filed by Robert W. Scott on the 25th day of February, 1902, Serial No. 95,505—that is to say, one in which the two webs are united by yarns independent of those of which the webs themselves are composed.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. A knitted fabric comprising two webs one overlying the other and the webs being united at intervals, the face web having open-work portions and the back web having closely-knitted portions behind said open-work portions, substantially as specified.

2. A knitted fabric comprising two webs one overlying the other, said webs being united at intervals and one web being composed of yarn differing from that of the other web, the face web having open-work portions and the back web having closely-knitted portions behind said open-work portions of the face web, substantially as specified.

3. A knitted fabric comprising two webs one overlying the other, said webs being united at intervals, one web being composed of yarn having a greater degree of shrinkage than the yarn composing the other web, and the web composed of said first-mentioned yarn having longer stitches than those of the other web, substantially as specified.

4. A knitted fabric comprising two webs one overlying the other, said webs being united at invervals and one face of the fabric having projecting loops of fleecing-yarn which yarn is confined to the fabric by engagement with wales of that face web only, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS N. D. WILLIAMS.

Witnesses:
WALTER CHISM,
JOS. H. KLEIN.