No. 709,839. Patented Sept. 23, 1902.

L. N. D. WILLIAMS.

KNITTED FABRIC.

(Application filed Feb. 19, 1902.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

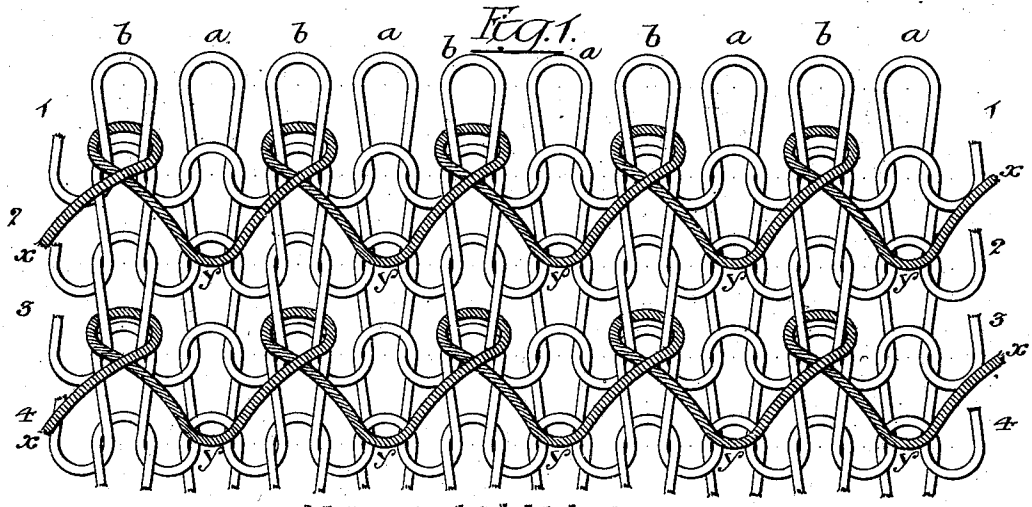
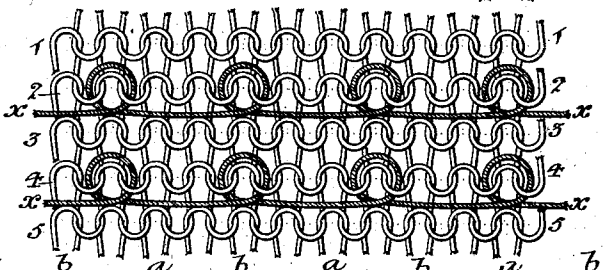


Fig. 3.



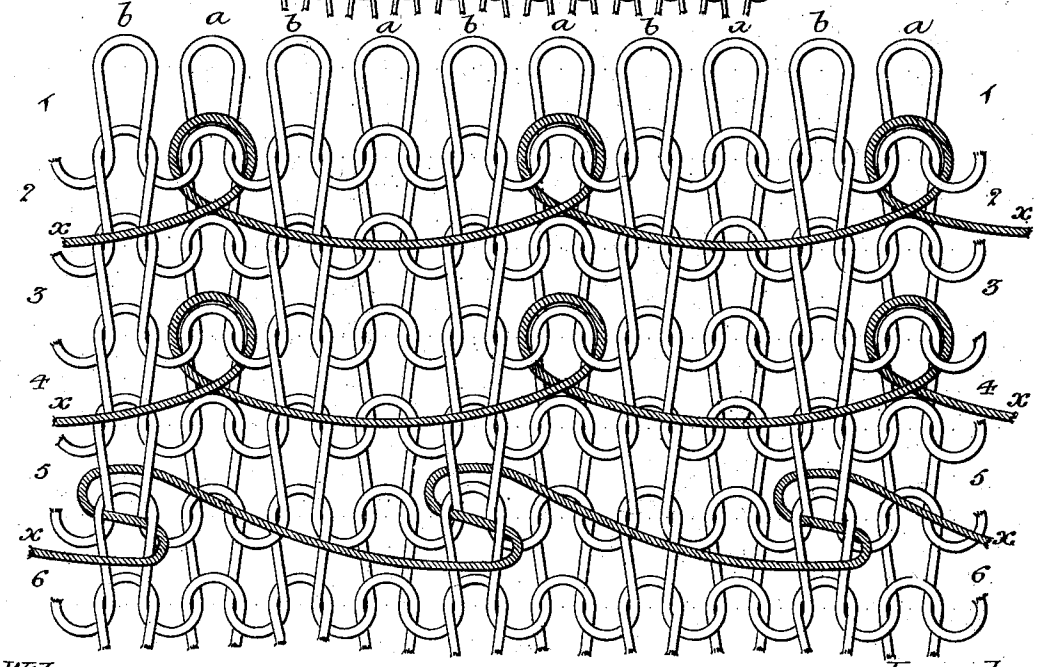


Fig. 2.

Witnesses:-
Louis M. Whitehead
Herman E. Metius.

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

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

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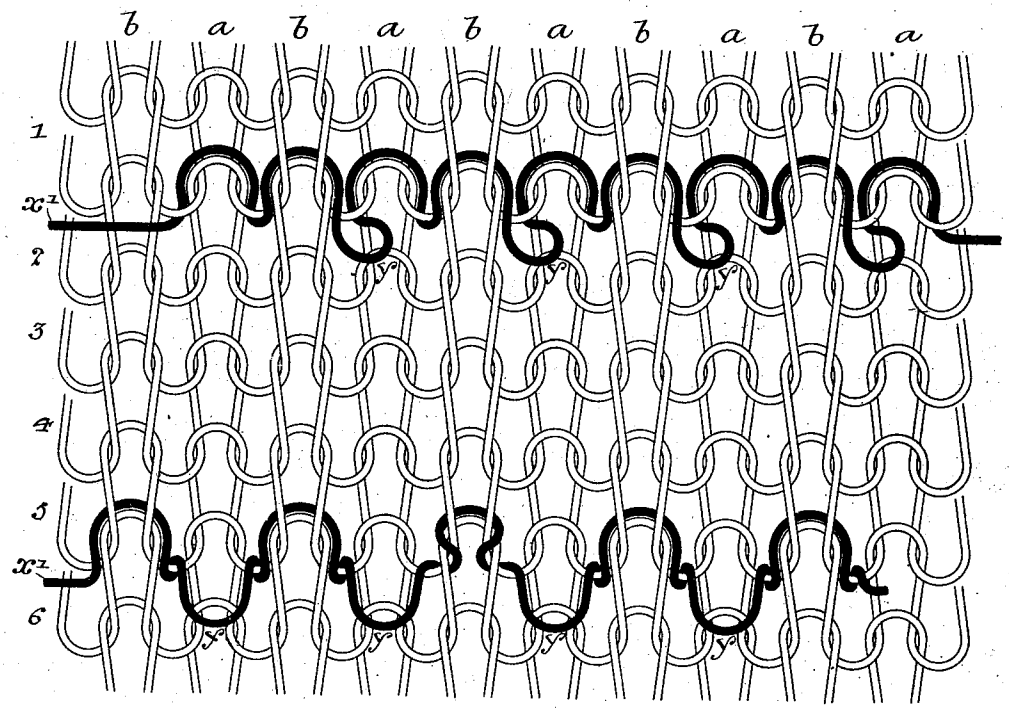
L. N. D. WILLIAMS.

KNITTED FABRIC.

(Application filed Feb. 19, 1902.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 4.



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

UNITED STATES PATENT OFFICE.

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

KNITTED FABRIC.

SPECIFICATION forming part of Letters Patent No. 709,839, dated September 23, 1902.

Application filed February 19, 1902. Serial No. 94,851. (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 Ashbourne, Montgomery county, Pennsylvania, have invented certain Improvements in Knitted Fabrics, of which the following is a specification.

My invention relates to that class of knitted fabrics with which is combined a fleecing-yarn having projecting loops on either or both faces of the fabric, which loops can be brushed so as to form a fleece without injury to the yarn composing the stitches of the knitted fabric, the object of my invention being to effect a more secure confinement than usual of such fleecing-yarn so as to prevent the pulling out or lengthening of some of the loops at the expense of others, and thereby provide for the production of a uniform fleece throughout that face of the fabric on which said fleece is formed.

In the accompanying drawings, Figure 1 is an exaggerated view of a piece of ribbed knitted fabric having a fleecing-yarn combined therewith in accordance with my invention. Fig. 2 is a similar view illustrating another method of carrying out the invention in connection with a ribbed knitted fabric. Fig. 3 is a view, on a smaller scale, illustrating the application of my invention to a plain fabric; and Fig. 4 is a view of a piece of ribbed fabric illustrating still other embodiments of my invention.

In Fig. 1 of the drawings, 1, 2, 3, and 4 represent successive courses of stitches interlooped so as to form a ribbed fabric, some of the stitches in each course being drawn in one direction so as to form wales a on one face of the fabric, and alternating stitches being drawn in the opposite direction so as to form wales b on the opposite face of the fabric. Each course of fleecing-yarn x is engaged with stitches of the wales b of the fabric and forms between these wales loops y, projecting beyond that face of the fabric formed by said wales. In the usual method of producing this class of fabric the fleecing-yarn x is simply laid in between the wales a and b of the opposite faces of the fabric and projected between the wales b so as to form the loops y. The simple passing of the fleecing-yarn behind the wales b, however, does not effect the desired confinement of the same, it being a comparatively easy matter to draw out or lengthen a loop y at the expense of the adjoining loops, the latter being correspondingly shortened. Hence irregularity in the projection of the loops y frequently results with corresponding irregularity in the fleece subsequently produced by the brushing of said loops. I overcome this objection, as shown in Fig. 1 in the drawings, by wrapping or twisting the fleecing-yarn around the stitches of the wales with which said yarn engages. Hence any attempt to lengthen either of the looops y by pulling upon the same will cause the fleecing-yarn to bind upon the adjoining wales of the fabric and tighten said fleecing-yarn upon the same, thereby effectually overcoming the objection which I have above noted as being incident to the usual method of construction.

In Fig. 2 I have illustrated the application of my invention to that class of fabric in which the fleecing-yarn instead of being laid behind a wale has a looped engagement with a stitch of said wale. In this class of fabric as ordinarily produced there is, although not in the same degree as in fabric of the class shown in Fig. 1, an insecure fastening of the loops of fleecing-yarn; but this objection is likewise overcome by wrapping or twisting the fleecing-yarn around the stitches of the wales with which said yarn engages. In the upper portion of Fig. 2 I have shown the fleecing-yarn as engaged with wales of one face of the fabric and in the lower portion of the figure I have shown said yarn as engaged with wales of the other face of the fabric, the course of the fleecing-yarn being different in the two cases, but the yarn in each case being wrapped or twisted around the stitch with which it engages. In Fig. 1 I have shown the fleecing-yarn as engaging with a stitch in every wale b in alternate courses of stitches and in Fig. 2 I have shown the fleecing-yarn as engaging with a stitch in every other wale b of alternate courses of stitches; but the distribution of the points of attachment of the fleecing-yarn may be varied in any desired manner without departing from the present invention.

My invention in its broadest embodiment

is not limited to ribbed fabric, but is applicable as well to single or plain fabrics having a fleecing yarn or yarns combined therewith, and in Fig. 3 I have shown the application of the invention to such a fabric. In Fig. 4 I have illustrated other ways of carrying out my invention in connection with ribbed fabric. The fleecing-yarn x' in these examples instead of being wrapped or twisted around the wales b is wrapped or twisted around the yarn where it passes from a wale a to a wale b, and loops y are formed by projecting the fleecing-yarn between the wales b, either at one side of the wales a, as at the upper portion of Fig. 4, or so as to overlie said wales a, as at the lower portion of said figure.

All of the fabrics can be produced upon machines having jacks or sinkers for acting upon the fleecing-yarn. The twisting of the fleecing-yarn when it is applied to the needle can be effected by the employment of a needle of the character shown in the application filed by Robert W. Scott on the 10th day of February, 1902, Serial No. 93,320. Wrapping of the fleecing-yarn around the knitting-yarn in the manner shown in Fig. 4 can be effected by causing the proper needles of the machine to draw loops or stitches of the fleecing-yarn, as will be readily understood by those skilled in the art.

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

1. A knitted fabric having a fleecing-yarn combined therewith, and forming projecting loops, said fleecing-yarn being independent of the knitting-yarn and being wrapped or twisted around the stitches of the wales with which it engages, substantially as specified.

2. A ribbed knitted fabric having a fleecing-yarn combined therewith and forming projecting loops, said fleecing-yarn being independent of the knitting-yarn and being wrapped or twisted around the knitting-yarn or wale whereby its hold will be tightened by a pull upon the loop tending to lengthen the same, substantially as specified.

3. A ribbed knitted fabric having a fleecing-yarn combined therewith and forming projecting loops, said fleecing-yarn being independent of the knitting-yarn and being wrapped or twisted around the stitches of the wales with which it engages, substantially as specified.

4. A ribbed knitted fabric having a fleecing-yarn combined therewith and forming projecting loops, said fleecing-yarn being independent of the knitting-yarn and being wrapped around the knitting-yarn where the same crosses from a wale of one face of the fabric to a wale of the other face of the same, 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:
F. E. BECHTOLD,
JOS. H. KLEIN.