

(No Model.)

2 Sheets—Sheet 1.

J. PHIPPS.

Knit Fabric and Method of Making the Same.
No. 242,973. Patented June 14, 1881.

FIG. 1.

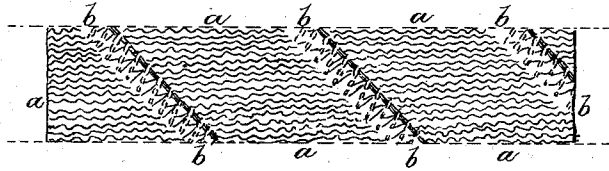


FIG. 2.

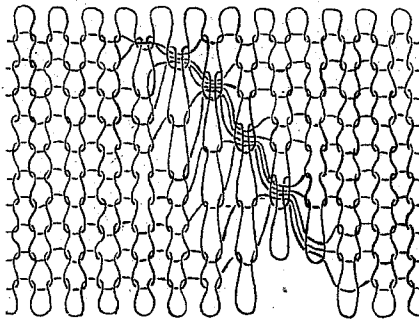
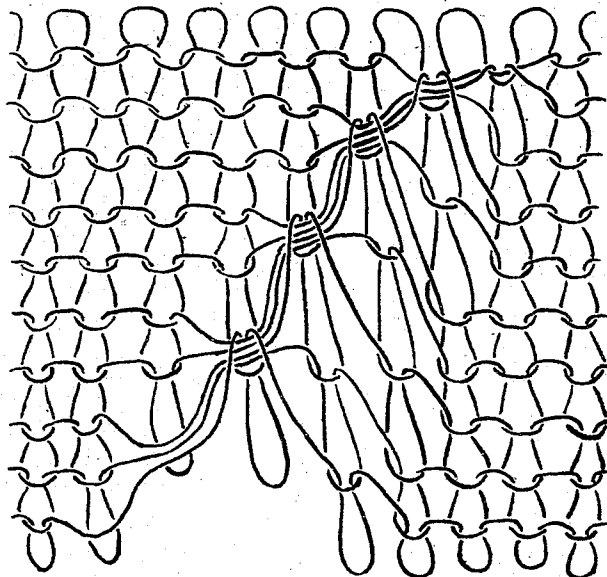


FIG. 3.



WITNESSES:

Harry Smith
Henry Howson jr.

INVENTOR:

John Phipps.
by his Attorneys.

Howson and Son

(No Model.)

2 Sheets—Sheet 2.

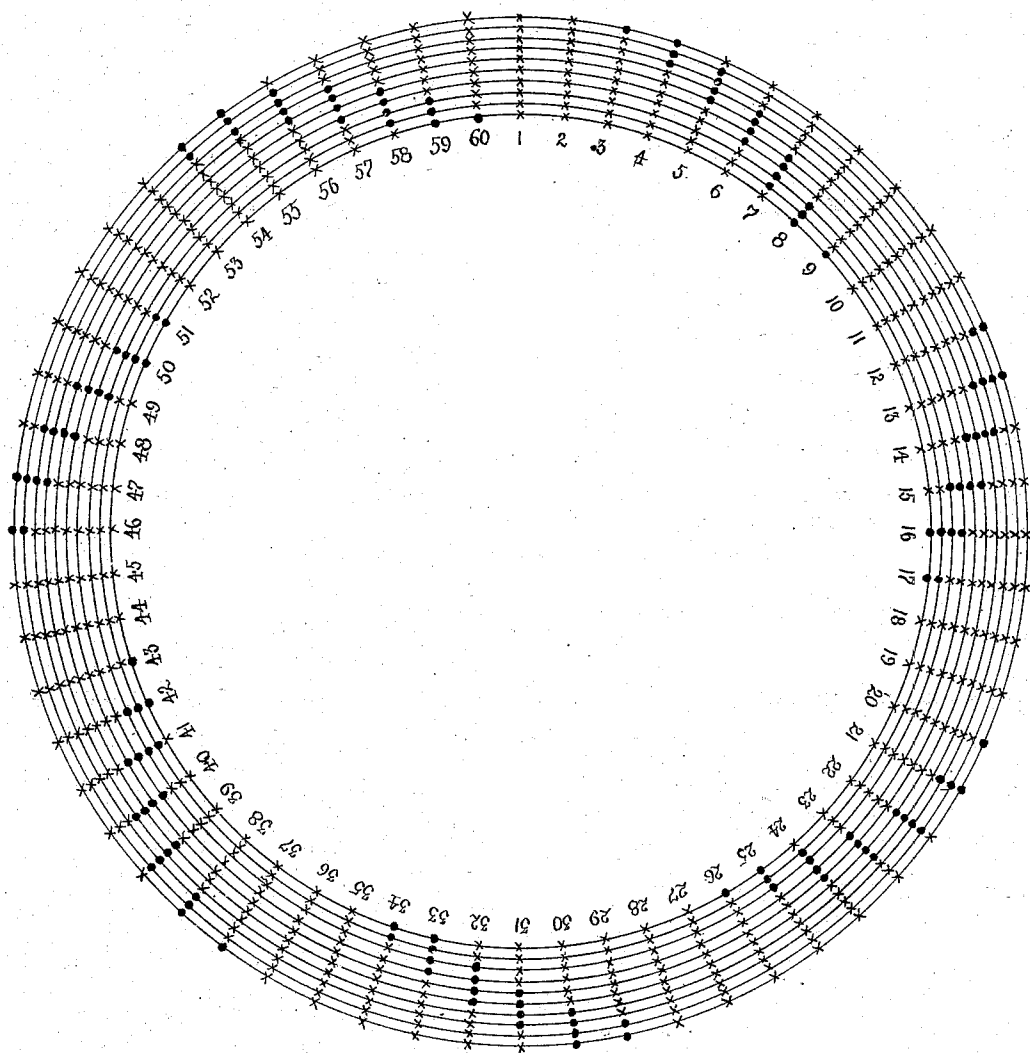
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Patented June 14, 1881.

FIG. 4.



Witnesses
Wm. P. Logan
Harry Smith

Inventor
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UNITED STATES PATENT OFFICE.

JOHN PHIPPS, OF PHILADELPHIA, PENNSYLVANIA.

KNIT FABRIC AND METHOD OF MAKING THE SAME.

SPECIFICATION forming part of Letters Patent No. 242,973, dated June 14, 1881.

Application filed October 11, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN PHIPPS, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Knit Fabrics and in the Methods of Making the Same, of which the following is a specification.

The object of my invention is to produce on an ordinary circular barbed-needle knitting-machine a tube of knit fabric having open-work bands of a peculiar character formed therein, as hereinafter set forth.

In the accompanying drawings, Figure 1, Sheet 1, is a view representing the general appearance or effect of my improved fabric; Fig. 2, an enlarged view of a piece of the same; Fig. 3, a diagram, on a still larger scale, of the back of a piece of the fabric, illustrating the method of producing the open-work band; and Fig. 4, Sheet 2, a diagram representing a knitting-machine head and showing a number of successive courses of stitches, so as to illustrate the accumulation of idle threads on successive needles.

The main portion *a* of the improved fabric is plain single-stitch work; but the continuity of this plain work is interrupted at intervals by diagonal bands *b* of a more open character than that of the plain work *a*.

The method of forming the open-work band is by allowing threads to accumulate to a certain extent on the needles in succession without forming loops—that is to say, taking one needle for example, the barb of said needle is not pressed so as to cause it to deliver its loop until the head has made a certain number of revolutions and a like number of threads have been delivered to the needle, so that when the loop is finally pressed off these threads will be delivered with the same, and will lie on the back of the fabric along one edge of the open-work band, and will be confined by the stitches on said edge. The needles receive and deliver their proper complement of idle threads in succession, the presser-wheels being so cut, however, that while certain needles are pressed so as to deliver their loops and idle threads during the formation of one course of stitches the next adjacent needles will not deliver their loops and idle threads until the formation of the second course of stitches following, as will

be observed on reference to Figs. 3 and 4. An examination of the latter figure will show the method of accumulating idle threads on successive needles, and casting off these idle threads as soon as the proper number on each needle is reached, the crosses signifying cast-off loops, and the circles signifying idle threads. There must be a peculiar cutting of the presser-wheels to accomplish this result—that is to say, the number of presser-blades in the wheel must bear a certain relation to the number of needles in the head—and the pressers must be divided into sets, one set containing one presser less than the other.

In producing the effect shown in the diagram, for instance, the presser-wheel has seventeen blades, the first set consisting of seven acting blades and two cut blades, and the second set of six acting blades and two cut blades, and the head has sixty needles, a number equivalent to three times the number of blades in the presser plus the number of blades in the first set of the latter. By this means the first course is caused to run first seven stitches and two idle threads, then six stitches and two idle threads, then seven, two, six, two, seven, two, six, two, and seven, two, which completes the course, the next course commencing with six stitches and running six, two, seven, two, six, two, seven, two, six, two, seven, two, six, two, the set terminating one needle in advance of the beginning of the third course, which runs seven, two, six, two, seven, two, six, two, seven, two, six, two, seven, two, the set terminating at the same needle as before, and the fourth course running six, two, seven, two, six, two, seven, two, six, two, seven, two, six, two, so as to terminate one needle farther in advance, and so on. The successive needles thus receive the proper number of idle threads, and cast off the same with the succeeding loops, as above set forth.

More than two cut blades in each set in the presser-wheel is inadvisable, as a greater number of cut blades than two would cause more than four idle threads on each needle, and this would have a tendency to break the barbs of the needles. The width of the plain fabric between the diagonal open-work bands may be varied, however, by varying the number of acting blades in each of the sets, care being taken,

however, to observe the rules given above as to the relation of the sets to each other and to the number of needles in the head. As an illustration of an arrangement other than that shown in the drawings, I may instance a head having one hundred and sixty needles and a presser-wheel having twenty-nine blades arranged in two sets of thirteen, two, and twelve, two, respectively.

10 In carrying out my invention I use an ordinary circular-knitting machine with barbed needles, and the usual pressers, cams, thread-guides, &c., such, for instance, as that illustrated by Fig. 2771, page 1237 of Knight's Mechanical Dictionary.

15 Without claiming, broadly, a knit fabric having diagonal open-work bands, I claim as my invention and desire to secure by Letters Patent—

20 1. The improved knit fabric herein described, the same consisting of a tube having diagonal

open-work bands with a series of idle threads laid on the back of the fabric along one edge of the band and confined by the loops on said edge, as set forth.

25 2. The mode herein described of making a knit tube with open-work diagonal bands, said mode consisting in feeding threads to certain of the needles for a number of courses without pressing off, one needle receiving its proper number of idle threads during one course, the succeeding needle receiving its complement of idle threads during the second course following, and so on, as described.

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

JOHN PHIPPS.

Witnesses:

JAMES F. TOBIN,
HARRY SMITH.