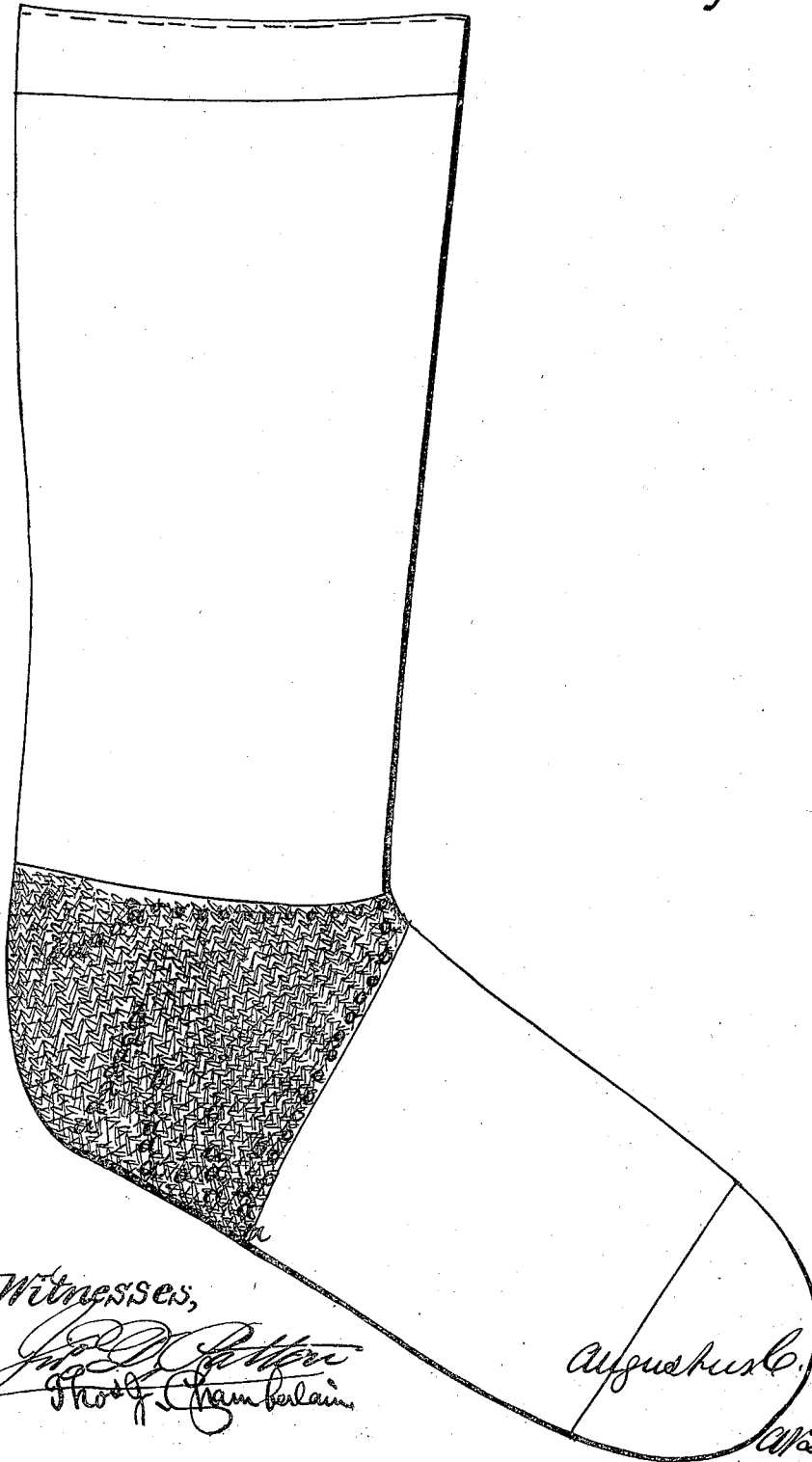


*A. C. Carey.*  
*Knit Fabric.*

*N<sup>o</sup> 54,109.*

*Patented Apr. 24, 1866.*



*Witnesses,*

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# UNITED STATES PATENT OFFICE.

AUGUSTUS C. CAREY, OF MALDEN, MASSACHUSETTS.

## IMPROVEMENT IN MACHINE-MADE KNITTED STOCKINGS.

Specification forming part of Letters Patent No. 54,109, dated April 24, 1866.

*To all whom it may concern:*

Be it known that I, AUGUSTUS C. CAREY, of Malden, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Knitting, Turning, or Forming the Heels of Stockings by means of a jacquard connected with a knitting-machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, making part of this specification, and which represents so much of the knit-work of a stocking as will aid in illustrating my invention.

My invention consists in knitting the heel of a stocking by alternating a series of rows knit only partially around with rows or a row knit all the way around the stocking or cylinder, as will be explained.

The stocking I propose to knit upon a machine whose general construction is similar to that described in my patent of 18th of April, 1865, made with two straight parallel rows of independent needles placed in a horizontal position and opposite to each other, with the ends of the needles pointing toward the center of the machine, and the ends of the needles in the two independent rows pointing toward each other. The first needle on one row, when thrown forward, passes between the first and second needle of the opposite row of needles.

In knitting straight tubular work the yarn is knit first upon one row of needles and then upon the other row, the thread being delivered to both rows by the same carrier, which traverses between the rows. These needles are thrown forward by a jacquard, and any number of them, or any particular needle or needles, can be thrown forward at any given time by making the jacquard accordingly.

The stocking is knit commencing at the toe. When a stocking has been knit complete to the top of the leg, then, for the purpose of commencing another stocking at the top of the toe, both rows of needles are thrown forward at one motion. As the yarn passes over them one row of needles is drawn back in one direction and the opposite row in the opposite direction. Both rows of needles thus knit the same thread at the same time once across,

thus connecting all the needles together lengthwise and crosswise, and thus closing up the tubular work.

Now by throwing forward a part of the needles in the center of each row in rotation and increasing the number by one or more at every revolution of the machine, a toe of any desired form can be obtained. Then may follow the cylinder work until the point is reached where the heel is to be commenced, and this operation is what constitutes the gist of my invention, the above description being general in its character and bearing.

When the heel is to be knit the jacquard throws forward three or more needles on one row, and the yarn passes over them and is knit in. Then the same needles, with one more or one less, are thrown forward on the same row and the yarn passes back and is knit in. Next the same operation takes place on the opposite row, and so on until four, six, or eight rows are knit, as at *a* in the drawing; then all the needles are thrown forward, first on one side and then on the other, and a row knit all the way around, as at *b*, or two or more. This operation of alternate short rows knit back and forth and rows all the way around, or a series of gussets and rings alternated with each other, is continued, varying the number of needle as may be required to produce the desired form, until the heel is finished; then the rows of needles are thrown forward in alternation until the leg is of the proper length, when another toe is taken up or formed and the same operation repeated.

Having thus fully described my invention, what I claim as a new article of manufacture is—

A machine-made stocking the heel of which is knit, turned, or formed by a jacquard connected with the knitting-machine, and composed of a series of short rows or gussets, alternating with one or more continuous rounds or rings of knit-work, substantially as herein described and represented.

AUGUSTUS C. CAREY.

Witnesses:

A. B. STOUGHTON,  
EDM. F. BROWN.