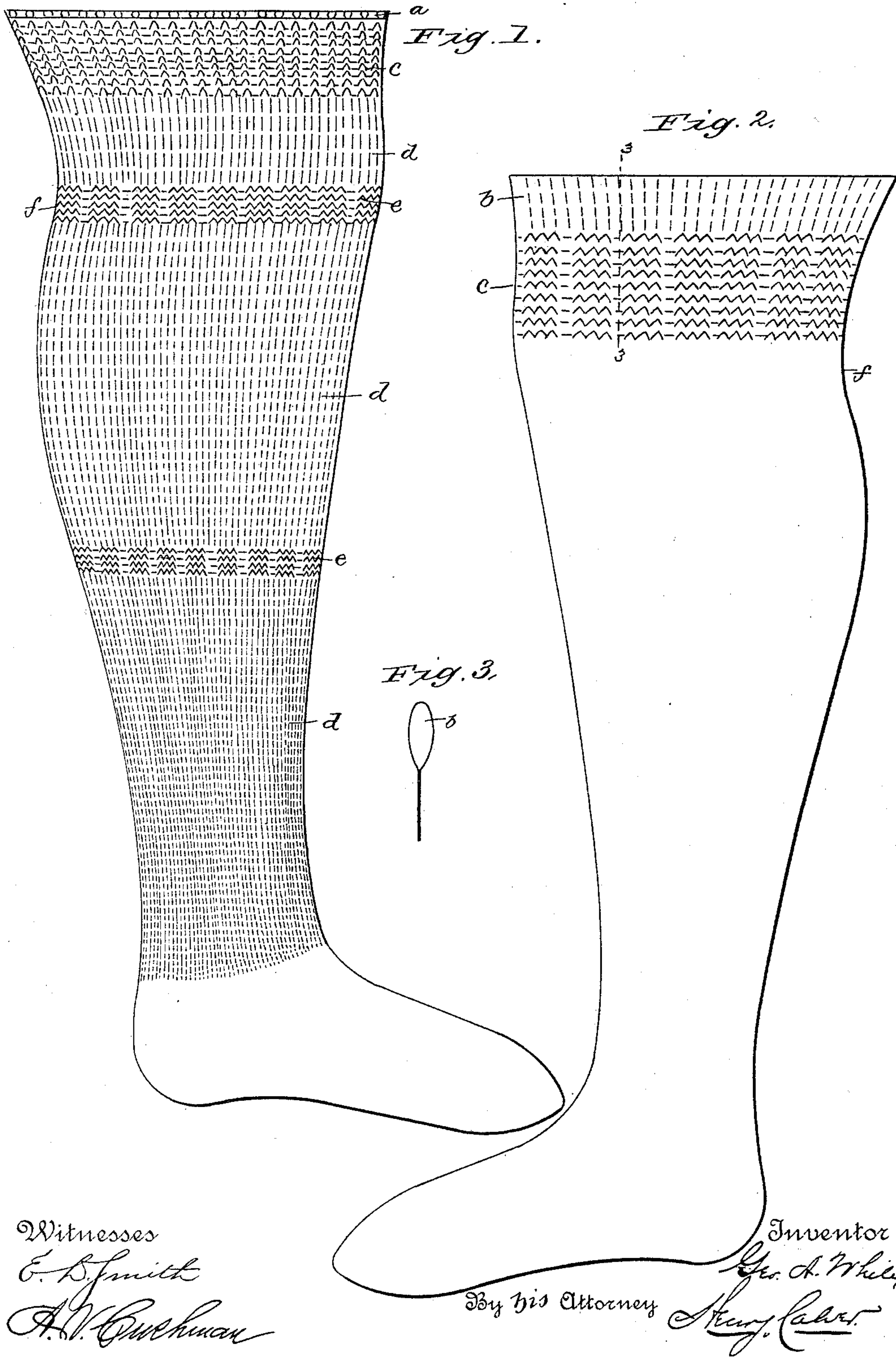


(No Specimens.)

G. A. WHITE.
STOCKING.

No. 450,654.

Patented Apr. 21, 1891.



UNITED STATES PATENT OFFICE.

GEORGE ALLAN WHITE, OF BOSTON, MASSACHUSETTS.

STOCKING.

SPECIFICATION forming part of Letters Patent No. 450,654, dated April 21, 1891.

Original application filed March 10, 1886, Serial No. 194,727. Divided and this application filed April 13, 1889. Serial No. 307,106.
(No specimens.)

To all whom it may concern:

Be it known that I, GEORGE ALLAN WHITE, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Stockings, of which the following is a specification, reference being had therein to the accompanying drawings.

10 My invention has for its object to provide a completely-fashioned stocking having an integrally-finished top and being wholly or partially ribbed, said stocking being knit from a continuous thread and the fashioning or
15 shaping being effected by changing the sizes of the stitches without changing the numbers thereof in the courses or circles.

To these ends my invention consists of a stocking formed or constructed as hereinafter
20 described and claimed.

In the accompanying drawings, Figure 1 is a side view of one form of my improved stocking having a selvage upper edge, a ribbed top, and ribbed parts in the leg portion. Fig.
25 2 is a side view of another form of my improved stocking having a French hem at the top and ribbed leg portion. Fig. 3 is a partial section on line 3 3, Fig. 2.

In carrying my invention into effect I employ a machine like that, for example, shown
30 and described in Letters Patent No. 336,611, granted to me February 28, 1886—that is to say, a circular-knitting machine employing two sets of needles working in opposition to
35 each other to turn portions of the knit loops in opposite directions, as is necessary in knitting ribbed work.

In the production of my improved stocking I preferably begin at the top of the same and
40 form first either a welted selvage *a*, Fig. 1, or a French hem *b*, Figs. 2 and 3, in the usual well-known ways. The welted selvage is made on a machine having two sets of needles arranged to make a “one-and-one”
45 ribbed fabric, or a fabric in which alternate vertical rows of loops face in opposite directions.

In making a welted selvage, the knitting being first set up on the two sets of needles,
50 one set is thrown out of action and three or four courses are then knit with the other set,

said courses forming the welted selvage. The set of needles previously thrown out, and which still hold their loops, is then thrown in and knitting proceeds on the two sets, making a one-and-one ribbed fabric and uniting the welted selvage to the body of the fabric.

The French hem is also made on a machine having two sets of needles arranged to make a one-and-one ribbed fabric, and the method
60 of connecting said hem is just like that above described for making the welted selvage whole; but in making the selvage the three or four courses comprising the same may be made with the machine as ordinarily weighted. In
65 making the French hem, the fabric, being made on the working set of needles, must be carried down by a special weight provided for this purpose, and the knitting is continued on a single set of needles until a
70 hem of the desired width is produced, said hem falling or being pulled down from the needles in the form of a bag, being held at one end by the idle set of needles and falling down from the other set as knit. When a
75 hem of the proper width is formed, the idle set of needles is thrown in and the knitting proceeds on the two sets of needles, the fabric now produced being of a thickness equal to the folded or double fabric constituting
80 the hem, as indicated by Fig. 3.

Either the welted selvage or the French hem above described forms what I term an “integrally finished top for the stocking”—that is to say, a finished top formed and connected to the leg of the stocking wholly by
85 knitting, in contradistinction to the more common practice of finishing the tops of stockings which do not have a selvage or French hem, which consists in turning in the
90 top of the stocking and forming a hem by securing the inturned portion by a line of stitches.

Following the welted selvage or the French hem, I knit a ribbed portion *c*, which may be
95 continued throughout the stocking-leg to the ankle portion, or which may be followed by plain knitting *d*, Fig. 1, as indicated by the conventional dotted lines, and such plain knitting may be interrupted by rings *e*, of
100 ribbed knitting, to form elastic parts which will be serviceable in holding up the stocking

on the leg of the wearer, or the stocking below the upper ribbed section *c* may be wholly plain.

In knitting my stocking, either in the 5 ribbed or plain parts thereof, I fashion it throughout the leg portion, and also throughout the foot portion, by varying the sizes of the stitches without changing the numbers of stitches in the courses or circles. Thus in 10 knitting the stockings shown in the drawings I gradually diminish the sizes of the stitches from the selvage edge *a* or the French hem *b* down to the points *f*, so as to shape the garment to fit the leg of the wearer above the 15 calf, the knitting being either in plain or ribbed work, as may be desired. I then slowly enlarge the stitches to give a proper swell to the calf portion of the stocking, and then again diminish the loops in size, still without 20 changing the number of stitches in a course or circle down to the smallest part of the ankle portion of the stocking, after which I preferably knit in a seamless heel, as described in my application No. 194,727, filed 25 March 10, 1886, of which this application is a division. After the heel is completed the foot part of the stocking is knit, this part being also fashioned in knitting by changing the sizes of the stitches, and it may be finished off in the usual approved manner. 30

In changing the sizes of the stitches, as above described, the variation may be effected either by changing the weight which is hung on the stocking being knit (an increase of 35 weight increasing the length of the stitches, and vice versa;) by changing the tension on the yarn (an increase of tension diminishing the size of the stitches, and vice versa;) by changing the throw of the needles by the 40 actuating cam or cams (an increased throw of the needles increasing the size of the stitches, and vice versa;) by varying the speed at which the machine is run, (an increase of speed decreasing the size of the stitches, and 45 vice versa,) or by varying the size of the yarn, a finer yarn of course making smaller stitches, and vice versa.

The yarn which I employ in my improved stocking consists of a number of small threads 50 or strands, which are doubled as they are run into the knitting-machine, and are twisted by the machine in the operation of the latter. Thus to diminish or increase the size of the yarn it is only necessary to leave out or add 55 one of these small threads or strands, so that while the yarn is varied in size it still remains continuous. The yarn at the top of the stocking may be composed of six or seven of these small threads or strands, which can 60 be dropped out one at a time as the knitting progresses until the yarn at the angle portion

is composed of not more than two or three strands. By varying the sizes of the stitches in the manner described, I am enabled to fashion the stocking throughout without detracting from the elasticity of any portion 65 thereof. From this it will be apparent that very considerable variations in the sizes of the stitches may be effected and that very nice graduations of such variations may be 70 secured by employing at one time any two or more of the above-mentioned means of changing the sizes of the stitches, at the same time preserving the uniformity of the fabric.

From the foregoing it will be apparent that 75 I may produce a wholly or partially ribbed stocking from a continuous thread, and which stocking is fashioned throughout by changing the sizes of the stitches without changing the numbers of stitches in the courses or circles. 80

I do not claim in this application the herein-described method of knitting a stocking from a continuous yarn or thread and fashioning the same throughout by varying the 85 sizes of the stitches without varying the numbers of stitches in the courses or circles; nor do I claim, broadly, a stocking knit throughout from a continuous yarn or thread and having a French hem knit integral therewith 90 at its top, or the method of forming the same, as these features of my invention are embraced by my applications, Serial Nos. 366,978 and 367,723, filed October 3 and 10, 1890, respectively. 95

I claim as my invention and desire to secure by Letters Patent—

1. A knit stocking wholly or partially ribbed and consisting throughout its leg and foot portions of a continuous thread or yarn, the 100 said stocking having an integrally finished top, and being fashioned throughout its leg and foot portions by gradually changing the sizes of the stitches without varying the number of stitches in the courses or circles, substantially as set forth. 105

2. A knit stocking wholly or partially ribbed and consisting throughout its leg and foot portions of a continuous thread or yarn, the 110 said stocking having a French hem at its top and being fashioned throughout its leg and foot portions by gradual changes in the sizes of the stitches without varying the number of stitches in the courses or circles, substantially as set forth. 115

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE ALLAN WHITE.

Witnesses:

HENRY CALVER,
EWELL A. DICK.