

(No Model.)

2 Sheets—Sheet 1.

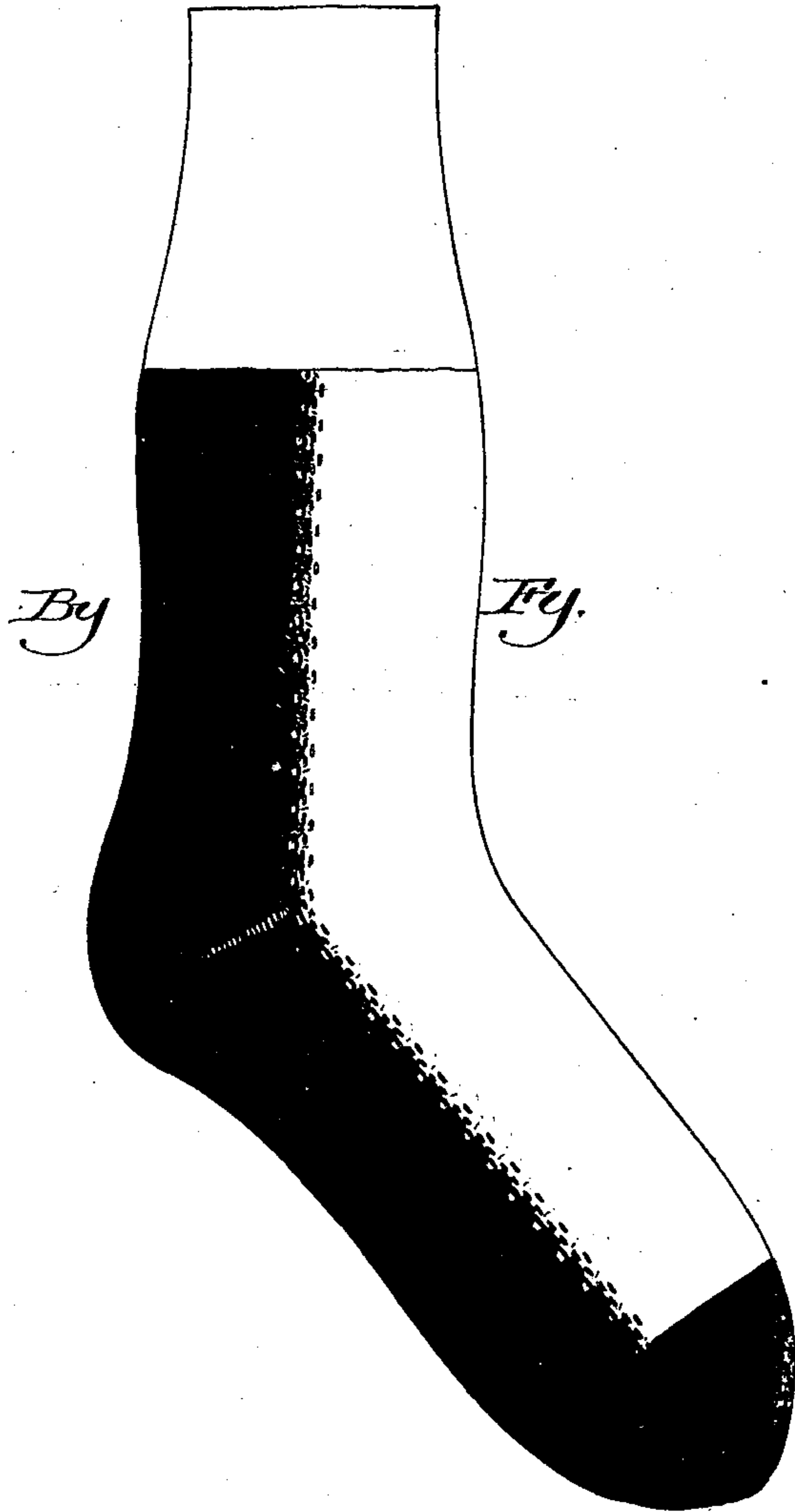
B. F. SHAW, Dec'd.
J. BUTLER, Executor.

STOCKING AND METHOD OF KNITTING THE SAME.

No. 459,992.

Patented Sept. 22, 1891.

Fig. 1.



Witnesses.
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Fred S. Greenleaf.

Inventor:
Benjamin F. Shaw
Josiah Butler, executor.
by Crosby & Gregory
attys.

(No Model.)

2 Sheets—Sheet 2.

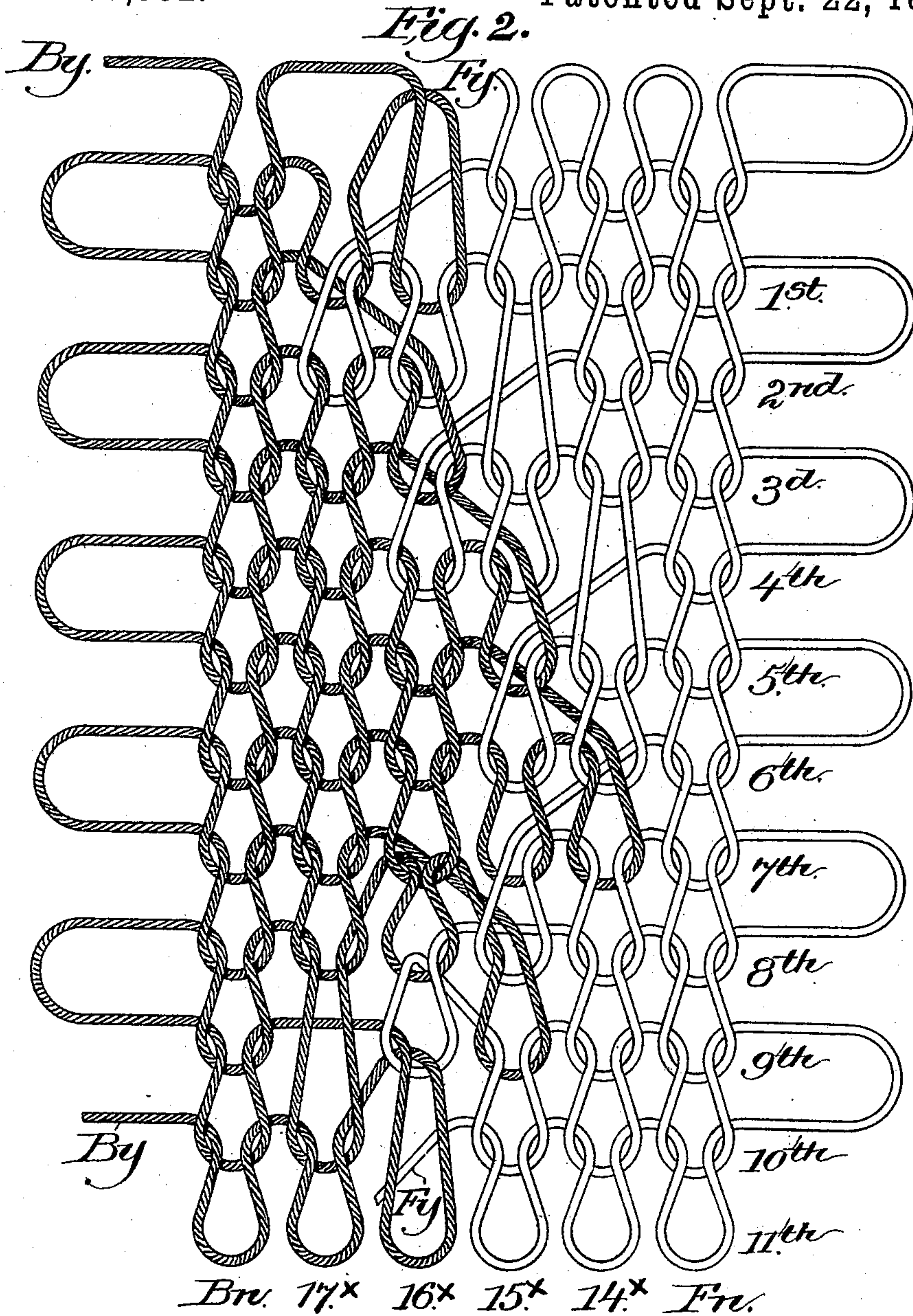
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UNITED STATES PATENT OFFICE.

JOSIAH BUTLER, OF LOWELL, MASSACHUSETTS, EXECUTOR OF BENJAMIN F. SHAW, DECEASED, ASSIGNOR TO THE SHAW STOCKING COMPANY, OF SAME PLACE.

STOCKING AND METHOD OF KNITTING THE SAME.

SPECIFICATION forming part of Letters Patent No. 459,992, dated September 22, 1891.

Application filed June 11, 1891. Serial No. 395,946. (No specimens.)

To all whom it may concern:

Be it known that BENJAMIN F. SHAW, late a citizen of the United States, and a resident of Moultonborough, county of Carroll, State of New Hampshire, deceased, did invent an Improvement in Stockings and Method of Knitting the Same, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This invention is intended as an improvement on that described in United States application, Serial No. 332,426, filed December 3, 1889. The application referred to represents a so-called "seamless stocking," or one without side seam in the main part of the leg or foot, the said stocking having its front and rear parts composed of independent yarns, semi-courses of which are united end to end in one and the same longitudinal side wale of loops. In order to strengthen this class of stockings and make it more salable and desirable in appearance, its construction has been improved so that the endmost loops of the semi-courses are interlooped in different longitudinal wales, as will be described.

Figure 1, in side elevation, represents one half or side of a seamless stocking embodying my invention; and Fig. 2, an enlarged view of the endmost loops of about twelve semi-courses, ten semi-courses being required to show the interloopment herein to be described, the other courses being repetitions.

The stocking herein to be described may be quickly knitted on a knitting-machine of the class shown in United States application, Serial No. 390,273, wherein is shown and described a so-called "circular-knitting machine;" but in practice the cam-cylinder of said machine will have only a motion of reciprocation.

A machine to automatically knit the stocking to be described, as described in said application, will contain front and back needles with intermediate suture-needles, the endmost needles of the two series being separated, one series from the other, by a series of two or more suture-needles under the control of a

pattern-surface, so that the endmost loop of any desired semi-course may be made to terminate on any one of said suture-needles, or in one of several different longitudinal wales of the stocking, according to the requirements of a pattern-surface. In this instance of the invention suppose the endmost loops of the semi-courses as united or terminated in four different wales.

Referring to Fig. 2, four of the longitudinal wales are designated by the numbers 14^x 15^x 16^x 17^x, said numbers in the said application, Serial No. 390,273, designating the suture-needles, said numbers being used herein to designate the longitudinal wales which the correspondingly-numbered needles will make in joining the fabric represented in the drawings in this case. The wale Fⁿ to the right of the wale 14^x is supposed to be knitted on one of the front needles of the said machine, and the wale Bⁿ to the left of needle 17^x to be made on the endmost needle of the series of back needles.

In Fig. 1 the yarn which enters into the formation of the front of the stocking is shown by F^y, and the yarn which enters into the formation of the back of the stocking as B^y. The courses included by the numbers 1 to 10, inclusive, are the regular courses, the eleventh course being a repetition of the first. In the first course of the particular junction herein shown the first semi-course of front yarn finishes its end or terminates in wale 15^x, while the endmost loop of back yarn terminates in the wale 16^x. In the second semi-courses the front yarn F^y is terminated in wale 17^x, and the back yarn in the wale Bⁿ, made by one of the back needles. In the third semi-courses the front yarn-loop terminates in wale 15^x and the back yarn in the wale 16^x. In the succeeding seven semi-courses of the ten semi-courses the front yarn terminates, respectively, in the wales 16^x 14^x 15^x Fⁿ 15^x 16^x 15^x, and the back yarn, respectively, in the wales 17^x 15^x 16^x 14^x 16^x 15^x 17^x, as best shown in Fig. 1. The junction in the eleventh course is the same as in the course marked "1st."

By incorporating the endmost loops of the

series of semi-courses of front yarn into the field of loops made from the back yarn, and vice versa, the junction of the two fabrics knitted upon the front and back needles is not only made in such way as to make the stocking stronger, but at the same time the stocking is given a highly ornamental appearance, thus adding materially to its salability. It will also be obvious that, inasmuch as the suture-needles referred to in the said application, Serial No. 390,273, are under the control of a pattern-surface, the particular wale in which the endmost loops of the semi-course of front or back yarn shall terminate may be modified greatly, and that this invention will be practiced if the said endmost loops terminate in two or more parallel wales rather than in one wale, as represented in application, Serial No. 332,426, which is a genus of which this is a species.

The heels and toes of the stocking herein described are represented as produced from the back yarn knitted on the back and suture needles, as described in the application, Serial No. 390,273. The tubular parts of the leg and of the foot are shown as united in like manner; but the invention would be contained in a stocking should the front and back yarns of only the foot or of only the leg be united as represented. In the production of the wales 14^x 15^x 16^x 17^x , as shown, from the independent front and back yarns, some of the loops are shown longer than others. This is done by leaving down a needle at one course, so that it holds its loop, and letting it come up and deliver its loop into a second course. This plan provides for greater elasticity and ornamentation. As

herein shown, nearly every course contains a long loop.

Having described the invention, what is claimed is—

1. The herein-described so-called "seamless stocking," composed of independent distinct yarns for the front and back of the same, the endmost loops of the semi-courses of loops of which the stocking is composed in a tubular part thereof, as the leg or foot, being terminated in different wales, whereby the endmost loops of semi-courses of loops made from one yarn are projected into the field of loops made from the other yarn, as and for the purpose set forth.

2. The herein-described method of knitting the tubular part of a so-called "seamless stocking," which consists in simultaneously forming semi-courses of loops from one yarn for the front of the stocking and semi-courses of loops from another different independent yarn for the back of the stocking, terminating and uniting the endmost loops of said semi-courses forming the front and back of the stocking in different longitudinal wales at the sides of the stocking to thus effect a strong ornamental juncture, substantially as described.

In testimony whereof I, JOSIAH BUTLER, executor of the last will and testament of BENJAMIN F. SHAW, have signed my name to this specification in the presence of two subscribing witnesses.

JOSIAH BUTLER, *Exr.*

Witnesses:

RALPH H. SHAW,
GEO. L. HOOPER.