

No. 766,998.

PATENTED AUG. 9, 1904.

H. A. HOUSEMAN.

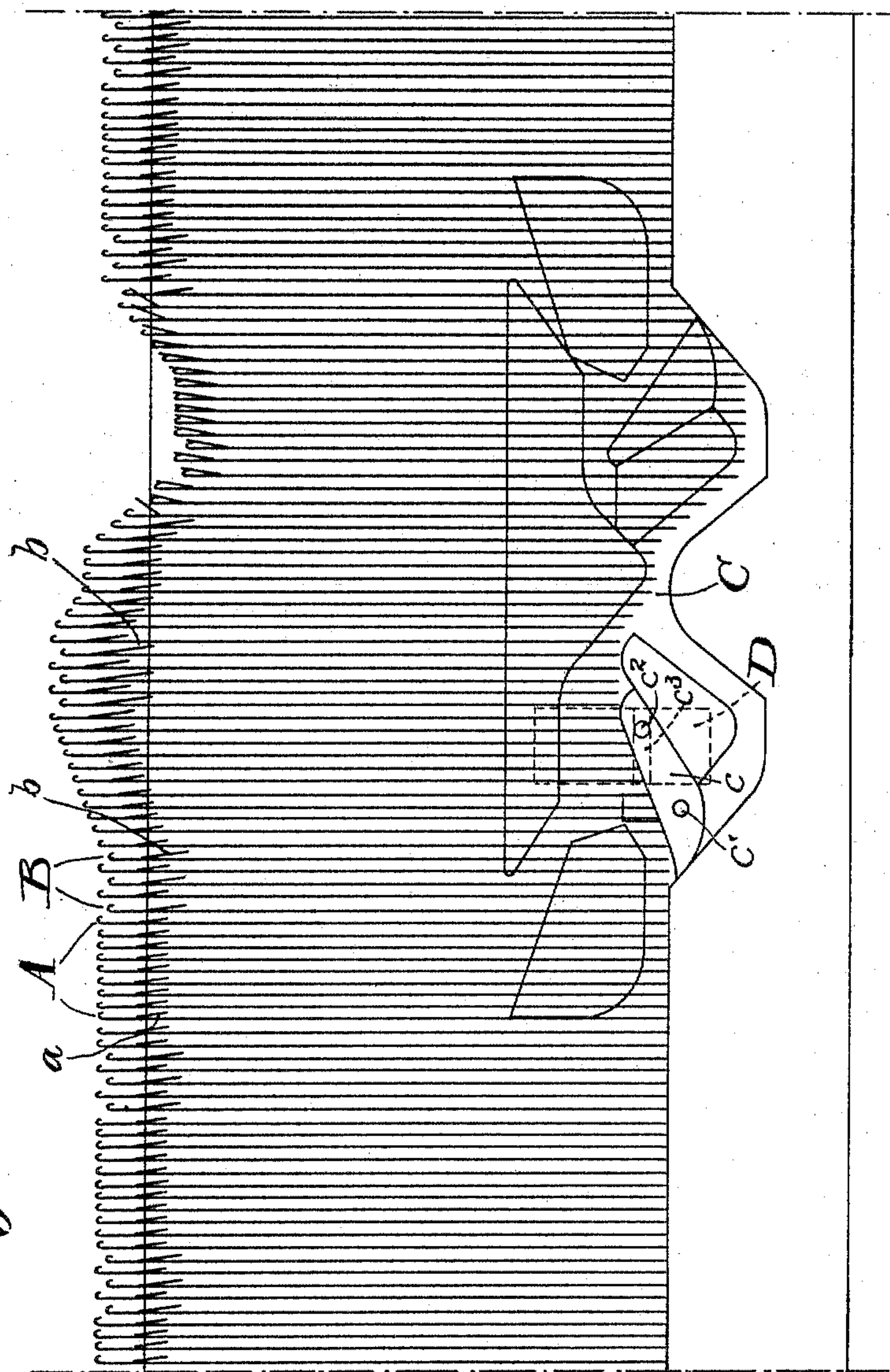
TUCK STITCH FABRIC AND METHOD OF PRODUCING SAME.

APPLICATION FILED MAR. 14, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

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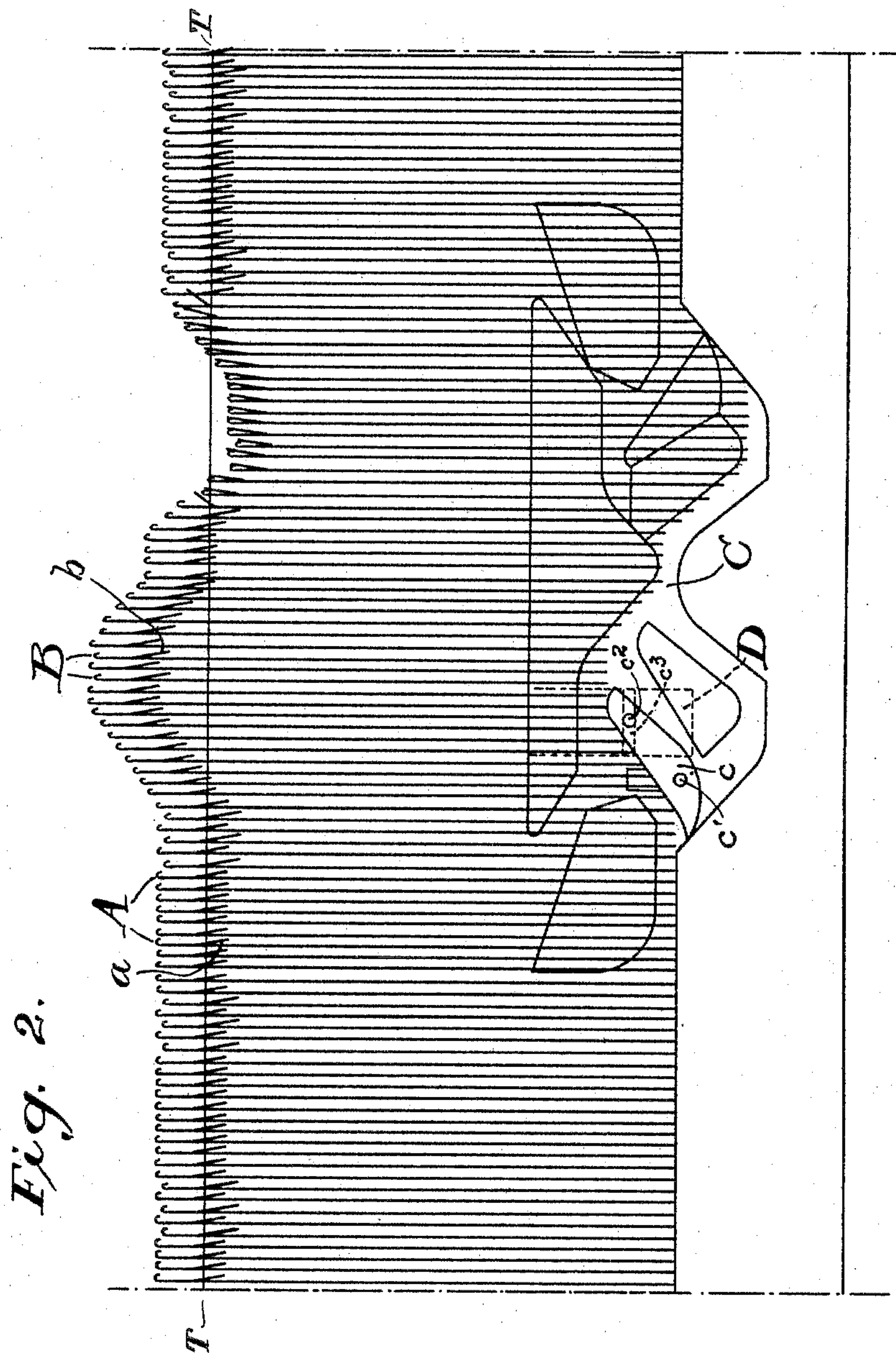
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3 SHEETS—SHEET 2.



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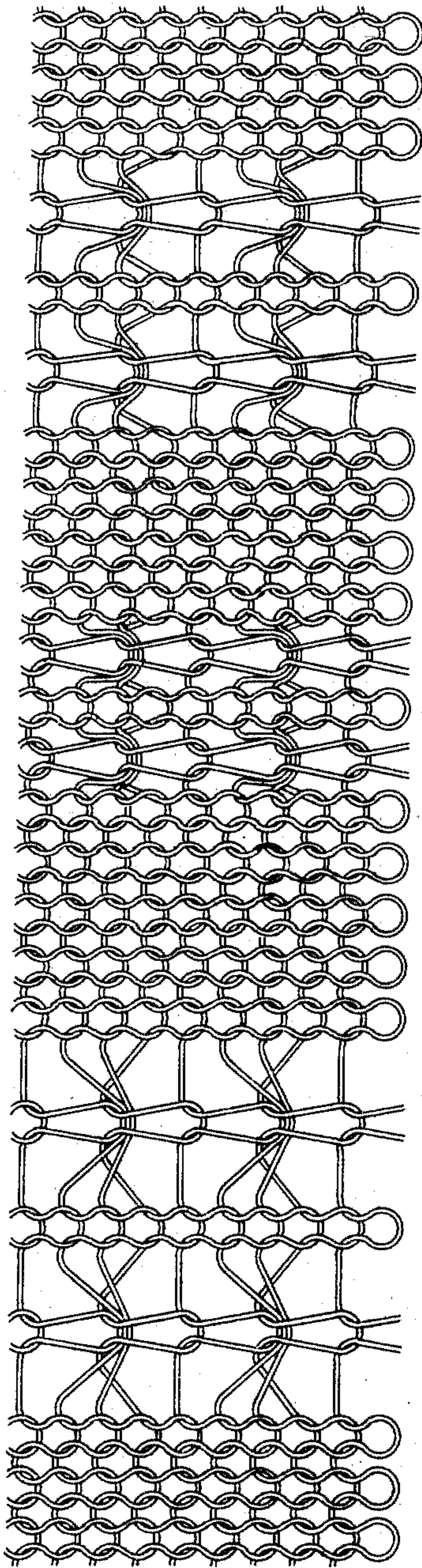
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NO MODEL.

3 SHEETS—SHEET 3.

Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HARRY A. HOUSEMAN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
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A CORPORATION OF PENNSYLVANIA.

TUCK-STITCH FABRIC AND METHOD OF PRODUCING SAME.

SPECIFICATION forming part of Letters Patent No. 766,998, dated August 9, 1904.

Application filed March 14, 1903. Serial No. 147,710. (No specimens.)

To all whom it may concern:

Be it known that I, HARRY A. HOUSEMAN, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Tuck-Stitch Fabrics and Methods of Producing the Same, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

In the class of knitted fabrics, particularly stockings, in which tuck-stitch or lace work is formed it is the common practice to form on the front of the leg, the instep, and top of the foot a lace or open work effect produced by a tuck-stitch effect with an omitted needle effect on each side of the tuck-stitch effect. This produces an open or lace work effect—such, for instance, as is shown in section *a*, Figure 7 of the patent of W. Wilson, No. 702,843, dated June 17, 1902. It is impossible with certain classes of stockings to have this effect upon any other part of the stocking, as, it being harmful to have it upon the bottom of the foot or heel or toe, it is thus practically precluded from use upon the back of the leg. In order to avoid a plain effect upon the back of the stocking, a tuck-stitch effect alone has been placed there, as shown, section C, Fig. 7 of the before-mentioned patent. With the tuck-stitch as ordinarily made the mesh, compared with the lace effect, is quite closed. There is thus produced a contrast between the two effects, which make their differences in appearance quite apparent. I have discovered that if in that portion of the fabric where tuck-stitch effect alone is used I make the tuck-stitch loops contain a greater amount of thread or yarn than the contiguous non-tuck-stitch or plain-knitting loops the tuck-stitch effect is more open, giving a greater similarity to the lacework effects.

I will now describe, in connection with the accompanying drawings, my improved fabric and method of producing the same.

In the drawings, Fig. 1 is a diagrammatic

view of a portion of the needles, showing tuck-stitch needles receiving but not casting the loop. Fig. 2 is a view similar to Fig. 1, showing the tuck-stitch needles receiving and casting the thread. Fig. 3 is a sectional view of the piece of fabric embodying my invention.

A represents the regular knitting-needles; B, the tuck-stitch needles; C, the knitting-cam mechanism; *c*, the switch-cam thereof, pivoted at *c'* and having the pin *c''* in the transverse slot *c'''* in the block D. This block has a vertical movement, as described in my application for Letters Patent, Serial No. 129,521, filed October 31, 1902.

The latches *b* of the tuck-stitch needles B are longer than the latches *a* of the needles A. When the switch-cam *c* is in the position shown in Fig. 1, the needles B are not lifted high enough to cast the stitch, while when the cam *c* is in the position shown in Fig. 2 they are lifted to such a height as to cast the stitches. The tuck-stitch needles B are shorter in length than the needles A. As a consequence in their most elevated positions they are below the level of the other needles and in their low position they are below the low level of the other needles, all of which is clear from reference to Figs. 1 and 2. The tuck-stitch needles B thus descend farther below the thread-line T T than the needles A, and thus take up more thread. By "thread-line" is meant the line over which the stitch is drawn. As a consequence when the loops are cast (the cam *c* elevated) the mesh will be quite loose and open.

In Fig. 3, section *x*, I have shown tuck-stitching formed with loops of the same length as adjacent plain knitting, but with an omitted needle on each side thereof. In section *y* I have shown tuck-stitches formed with loops of same length as contiguous plain-knitting loops and no omitted needle. In section *z* I have shown tuck-stitches formed with loops of a greater length or amount of thread than contiguous plain-knitting loops and with no omitted needles. The difference between the effect of section *x* and section *y* is quite ap-

parent, while the difference between the effect of section x and section z is scarcely perceptible. By not limiting the effect of z to the back of the stocking or any particular
5 part of the fabric, but interspersing it with the effect of x throughout the fabric, the difference becomes even less perceptible.

While I have shown the tucking accomplished by means of needles having a longer
10 latch, this of course is not of the essence of my invention, nor is the mechanism of the vertically-movable switch-cam for tucking any part of the invention of this application.

Having now fully described my invention,
15 what I claim, and desire to protect by Letters Patent, is—

1. The improvement in the method of forming tuck-stitch fabrics upon knitting-machines provided with tuck-stitch needles and non-
20 tuck-stitch needles, which consists in forming loose open-tuck-stitch wales upon the tuck-stitch needles by causing the tuck-stitch needles to descend below the thread-line a

distance greater than the descent of the contiguous non-tuck-stitch needles. 25

2. A knitted fabric having a section or sections of tuck-stitches contiguous to sections of plain knitting, each of said sections being provided with equispaced wales, each of the tuck-stitch loops containing a greater quantity of thread than the aggregate thread in the corresponding plain-knitting loops. 30

3. A section of knitted fabric composed of equispaced wales, one portion of which is provided with plain knitting and another portion 35 with tuck-stitches, each of the tuck-stitch loops containing a greater quantity of thread than the aggregate thread of the corresponding plain-knitting loops.

In testimony of which invention I have here-
40 unto set my hand, at Philadelphia, on this 11th day of March, 1903.

HARRY A. HOUSEMAN.

Witnesses:

M. M. HAMILTON,
M. F. ELLIS.

Correction in Letters Patent No. 766,998

It is hereby certified that in Letters Patent No. 766,998, granted August 9, 1904, upon the application of Harry A. Houseman, of Philadelphia, Pennsylvania, for an improvement in "Tuck-Stitch Fabrics and Methods of Producing Same," an error appears in the printed specification requiring correction, as follows: In line 24, page 2, the word "that" should read *than*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 6th day of September, A. D., 1904.

[SEAL.]

F. I. ALLEN,
Commissioner of Patents.