

(No Model.)

2 Sheets—Sheet 1.

B. L. STOWE.
METHOD OF FORMING KNIT BELTS.

No. 537,428.

Patented Apr. 9, 1895.

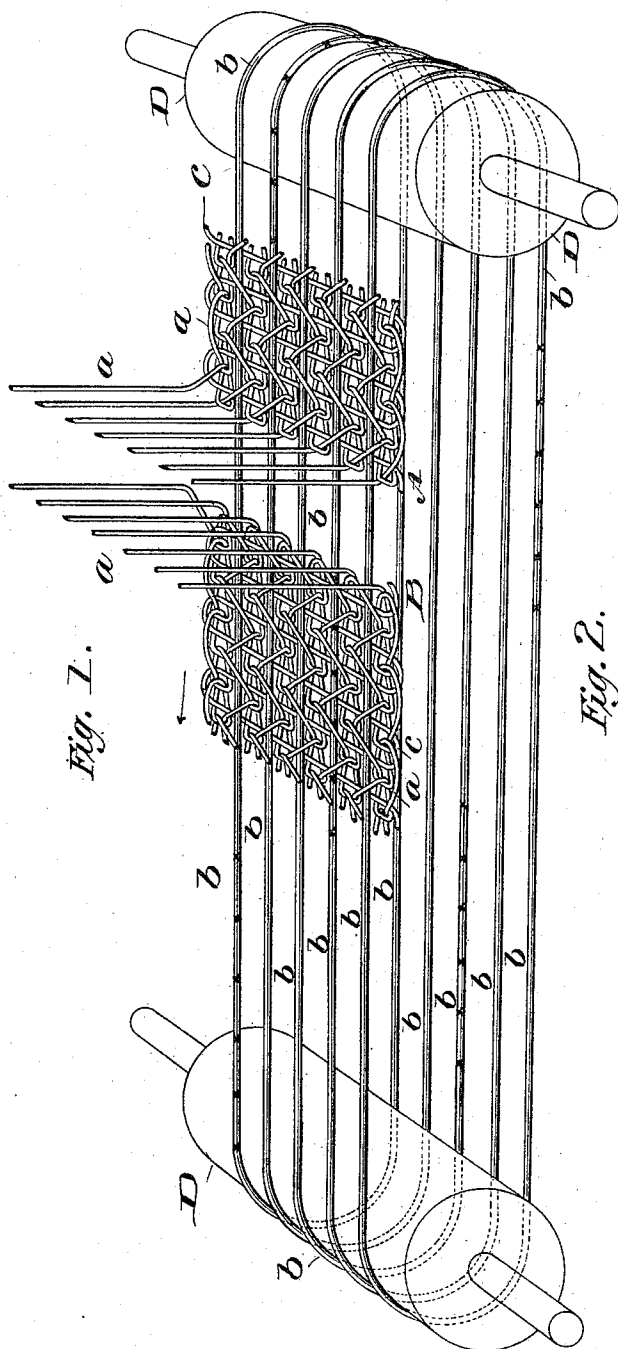


Fig. 2.

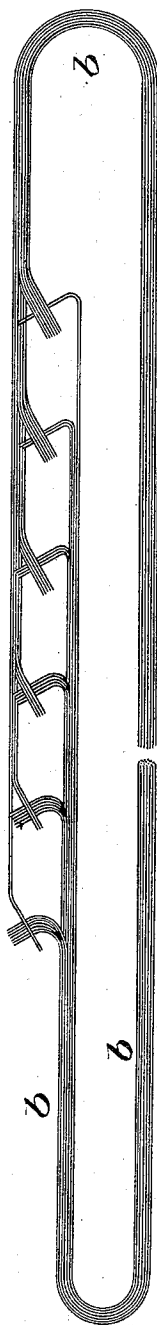


Fig. 3.



Witnesses:
L. C. Hills.
J. B. Keifer

Inventor:
Benjamin L. Stowe
by Marshall Bailey
his Atty.

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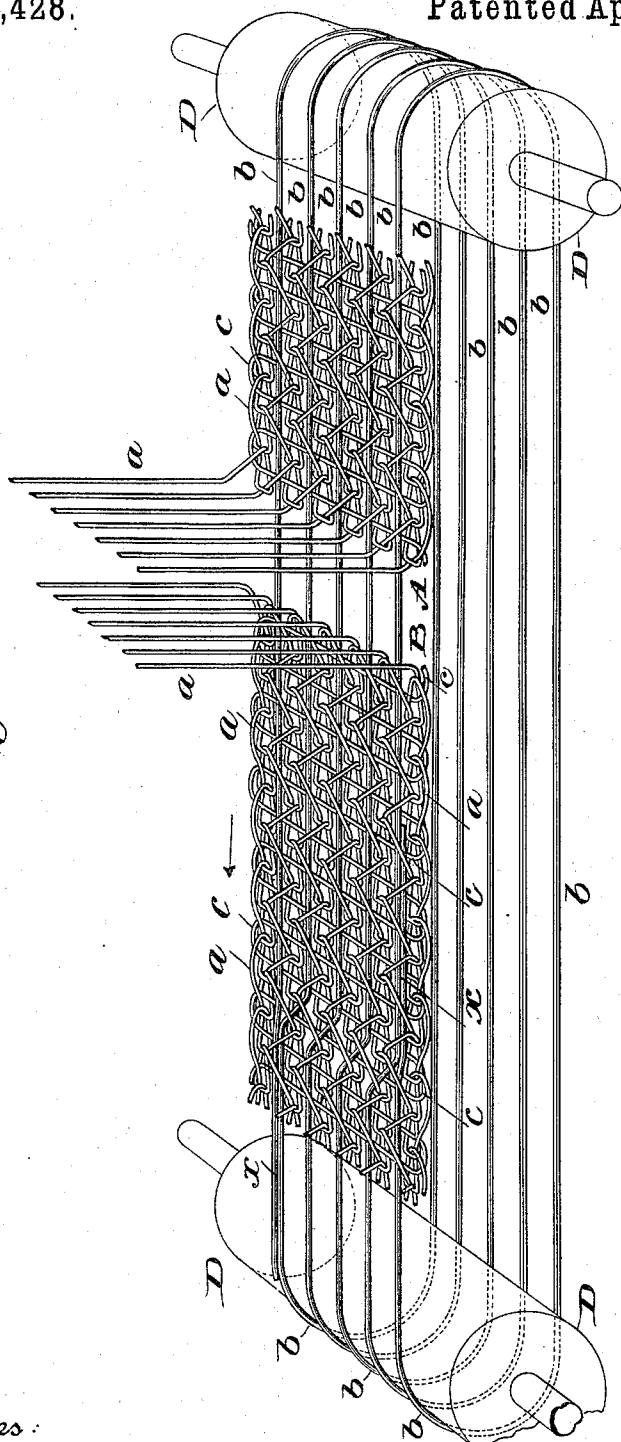
2 Sheets—Sheet 2.

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Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

BENJAMIN L. STOWE, OF JERSEY CITY, NEW JERSEY.

METHOD OF FORMING KNIT BELTS.

SPECIFICATION forming part of Letters Patent No. 537,428, dated April 9, 1895.

Application filed August 21, 1894. Serial No. 520,902. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN L. STOWE, of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in the Method of Forming Knit Belts, of which the following is a specification.

The knit fabric of which the belting hereinafter referred to is composed, is one having incorporated in its structure, straight longitudinal threads or strands which prevent the belt from stretching. The method of joining such knit belts which is described and claimed in my Letters Patent numbered 446,084, dated February 10, 1891, contemplated the cutting, from a roll of knit belting fabric, of a section long enough to make a belt of the required length with sufficient length in addition to unravel in order to get threads for splicing, the two ends of the belt being joined and the knitting being restored by hand. While this method produced a belt that was satisfactory in appearance and would usually give satisfactory results, yet the belts were not invariably satisfactory owing to the inevitable inequalities in tension of thread resulting from the method—these inequalities being so great at times as to cause the belt to speedily give out when put in use. The inequalities of tension referred to are particularly to be avoided in those threads or strands—the longitudinal strands—which give the belt its strength.

It is my object to correct and prevent the inequalities in tension last mentioned, and this result I attain by making the longitudinal strands endless before the body of the belt is knit about them. In this way all the loops of longitudinal strands can be made absolutely of the same length and may be subjected to the same tension if desired during the process of making and joining the belt. It is this feature that mainly characterizes my invention.

The nature of my improvements and the manner in which the same are or may be carried into effect will be readily understood by reference to the accompanying drawings, in which—

Figure 1 is a view, to a large extent diagrammatic, illustrating my improved method, involving the employment of distinct and

separate longitudinal strands, made endless by splicing together the meeting ends of each length of strand. Figs. 2 and 3 illustrate the method of splicing the meeting ends of each loop. Fig. 4 is a view similar to Fig. 1, of a modification which will hereinafter be more particularly referred to.

The fabric shown in Figs. 1 and 4, is ordinary knit fabric of the width desired for the belt, having incorporated in it longitudinal strands and a weft. The knit warp threads are designated *a*, the longitudinal strands *b* and the weft *c*. The longitudinal strands usually consist of cord made up of a number of individual threads or strands, as indicated more plainly in Figs. 2 and 3. In the particular fabric represented in Figs. 1 and 4, they are laid in the spaces between the longitudinal rows of warp loops and are held in the fabric between the weft and those portions of the warp threads which extend diagonally between the rows of loops. In the actual fabric, the parts—longitudinal strands, warp threads and weft—are of course packed tightly together. They are represented however in the drawings enlarged and widely separated in order that the structure of the fabric may be more easily discerned.

In Figs. 1 to 3 the longitudinal strands are made endless by taking separate lengths and tying or splicing together their meeting ends. To avoid a large knot, the meeting ends of each strand (which, as above stated, is composed of a number of individual threads or strands) are divided and portions of the several component threads tied together at different points as indicated in Figs. 2 and 3. In putting these spliced loops into the knitting loom care should be taken not to have the splices in any two loops opposite one another, but to have them distributed as indicated in Fig. 1. To knit endless belting by this method, the loops are mounted and kept taut over drums *D*, freely revolving so as to permit the proper feed of the strands, and those limbs of the endless strands next to the knitting appliances are presented to the same, in the same manner and in the same position as though they were ordinary longitudinal strands, and the belt is knitted about them as usual. The knitting operation, commencing say at the point *A*, continues, until say the

point B is reached. I have however omitted representation of much of the fabric—between the points A and B, as being unnecessary. The arrows indicate the direction of travel or feed movement of the strands.

When the belt is knitted around its full length to the point of beginning (or, as shown, as near to that point as it is possible to do machine knitting) the finished fabric in the meantime passing through the usual take-up mechanism of the loom, and about the drums D, then all the threads of which the belt is composed, other than the longitudinal strands b, are joined together by hand, in the manner indicated in my Letters Patent numbered 446,084, or in any other suitable or preferred way, and the endless belt is completed.

The hand joining of the threads just referred to, preferably takes place while the belt is still in the loom and under tension; but this is not indispensable.

In lieu of making the loops endless in the manner indicated in Figs. 1 to 3, I can attain practically the same result by forming them, as shown in Fig. 4, of a single continuous

strand bent into a series of loops—each end of the strand, as indicated at x, being joined into the side of the loop nearest it, at the point where the end comes in contact with the loop.

Having described my improvement, what I claim, and desire to secure by Letters Patent, is—

The method of forming knit belts, composed of a fabric having incorporated in it longitudinal strands, which consists in first forming said strands into endless loops, then knitting the body of the belt about said loops while held taut, until the belt is knitted round its full length as near as possible to the point of beginning, and then joining together those threads, other than the longitudinal strands, which enter into the composition of the fabric, substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

BENJAMIN L. STOWE.

Witnesses:

FRANK R. GRADY,
F. McMULLEN.