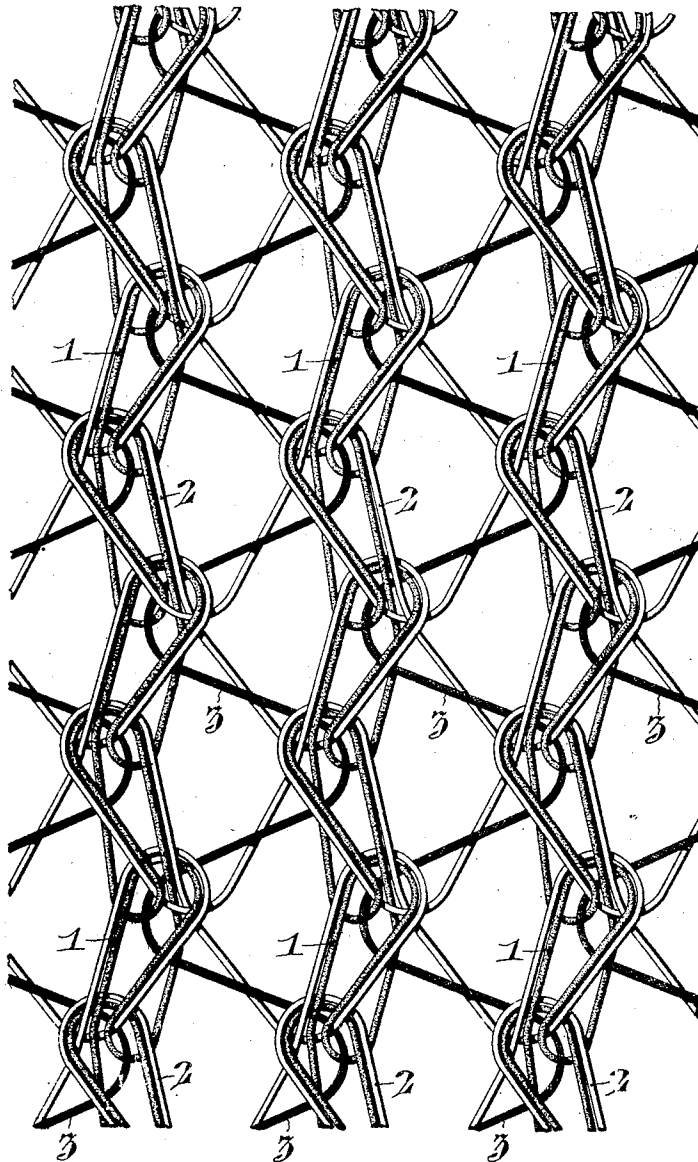


T. BRANSON.
KNIT FABRIC.
APPLICATION FILED JULY 10, 1915.

1,186,507.

Patented June 6, 1916.



Witness:
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UNITED STATES PATENT OFFICE.

THOMAS BRANSON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO SIBSON & STERN, INC., OF GERMANTOWN, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

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1,186,507.

Specification of Letters Patent.

Patented June 6, 1916.

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To all whom it may concern:

Be it known that I, THOMAS BRANSON, of Philadelphia, in the County of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Knit Fabrics, whereof the following is a specification, reference being had to the accompanying drawings.

My invention has for its end to produce a knit fabric for employment as a reinforcement for rubber, with special reference to the reinforcement of rubber vehicle tires or similar articles. For this purpose the fabric must have great strength and compactness, combined with the required degree of resiliency, for the fabric must have capacity to conform to the stretching of the mass of rubber within which it is embedded and at the same time sufficient compactness and elasticity to serve its function of materially strengthening or reinforcing the rubber. Along with all of this it is essential that the interstices of the knit web shall be of sufficient magnitude to permit the mass of rubber to fully penetrate the fabric, so that through each of said interstices the rubber on each side of the fabric is united by intervening strands of rubber. Accordingly I produce my fabric by the intermeshing of three classes of threads, to wit: a series of warp threads, each of which is knit by its needle as a straight chain; a series of binder threads superimposed upon the warp threads, but transferring their loops alternately from one needle to the next, whereby the wales are firmly bound together; and a series of filler or inlay threads which are not knit, but pursue a zigzag course between two adjacent wales of knitting with each of which they are intermeshed.

In the accompanying drawings, I have shown on an enlarged scale, and with exaggerated separation of the threads, a web of fabric constructed according to my invention, the view showing the fabric as it appears from the back.

Referring to the drawing, the speckled threads 1, 1, 1, constitute the warp threads, and of these there is one for each wale of knitting. The white threads 2, 2, 2, constitute the binder threads and of these there is also one for each wale of knitting. The cross-hatched threads 3, 3, 3, constitute the

filler or inlay, and of these there is one passing back and forth between adjacent wales.

If the course of one of the speckled warp threads 1, be traced upon the drawing, it will be found that it is continuously interknit with its own loops upon a single needle to form a straight chain, as commonly practised upon warp knitting machines. If one of the white binder threads be similarly traced it will be found that its loops are alternately interknit first with a loop in the wale to the right and then with a loop from the wale to the left. It, therefore, performs the function of a binder in tying together the wales of knitting. The binder threads and the warp threads are knit simultaneously upon the same needles, the one thread being superimposed upon the other.

If one of the filler or inlay threads 3, be traced it will be observed that it pursues a zigzag course between two wales of knitting, being intermeshed first with one and then with the other. At each turn it will be found to be laid around a loop, both of the warp thread and of the binder thread, but the individual filler threads are never looped, nor are they intermeshed with each other, but each pursues its zigzag course in regular alternations, corresponding to the alternations of the filler threads on either side of it. This limited travel and independence of the filler threads is characteristic of my invention, which however in other respects is not limited to the particular embodiment shown in the drawings.

Having thus described my invention, I claim:

A knit web formed by the combination of warp threads, each interlooped with itself to form a straight chain; binder threads each interlooped alternately with the loops of a binder thread on either side, and filler threads, each of which passes back and forth between and is intermeshed with the loops which form two adjacent wales of the knit web.

In testimony whereof, I have hereunto signed my name, at Philadelphia, Pennsylvania, this eighth day of July, 1915.

THOMAS BRANSON.

Witnesses:

JAMES H. BELL,
E. L. FULLERTON.