

No. 610,463.

Patented Sept. 6, 1898.

B. L. STOWE.
TUBULAR WOVEN FABRIC.

(Application filed July 25, 1898.)

(No Model.)

Fig. 1.

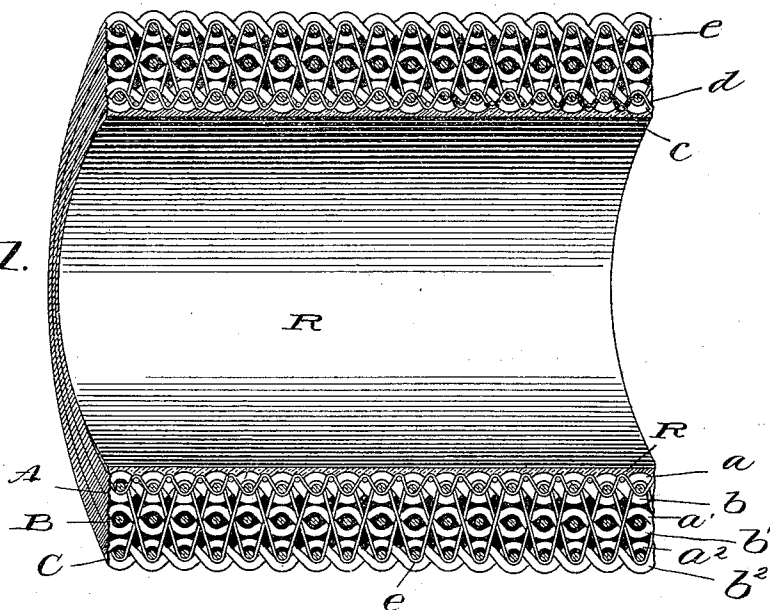
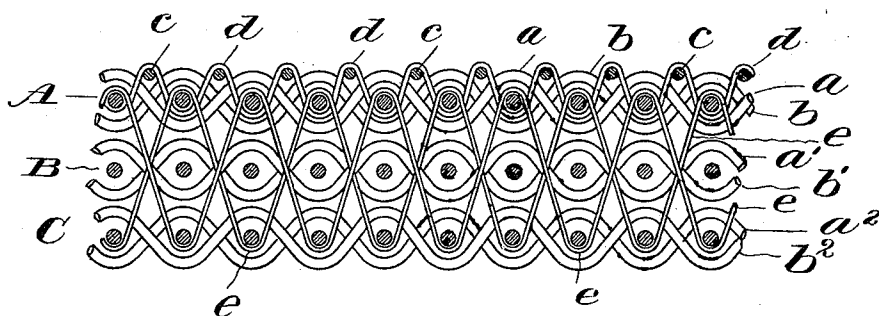


Fig. 2.



Witnesses:

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

TUBULAR WOVEN FABRIC.

SPECIFICATION forming part of Letters Patent No. 610,463, dated September 6, 1898.

Application filed July 25, 1898. Serial No. 686,815. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN L. STOWE, of Jersey City, in the State of New Jersey, have invented a new and useful Improvement in Tubular Woven Fabrics, of which the following is a specification.

My present invention relates to woven fabric for hydraulic or fire hose provided with an interior surface free from the furrows or corrugations which appear on the interior surface of ordinary tubular woven fabric, thus furnishing a smooth surface upon which the rubber lining can be laid.

In another application for Letters Patent, filed March 31, 1898, Serial No. 675,885, on which Letters Patent will issue of even date herewith, I have described and claimed a tubular woven hose fabric in which the waterway is rendered smooth and free from corrugations by incorporating into the fabric leveling weft-strands, laid on the interior surface of the tubular fabric in the furrows or corrugations between the several filling-strands of said fabric, and warp-strands by which said additional leveling-strands are held.

My present invention involves the same broad invention as that which is the subject of my said former application and is an improvement on the same.

In the illustrations of the broad invention which are set forth in my said former application the warps by which the leveling-strands are held in place in the fabric extend through to the exterior of the fabric. In my present improvement the warps which hold in place the said leveling-strands do not extend through to the exterior of the fabric, but stop short of the outer ply thereof, the advantage of this improved arrangement being that the wearing away of the outer ply or plies will not destroy or impair the warps which hold the leveling filling or weft strands.

In the accompanying drawings, to which I shall now refer for a better understanding of my said improvement, Figure 1 represents in longitudinal section a piece of tubular-woven-fabric rubber-lined hydraulic hose embodying my improvement. Fig. 2 is a longitudinal section of the fabric on a scale more enlarged than in Fig. 1.

In the drawings, and particularly in Fig. 2, the strands are represented on an enlarged

scale and widely separated from one another in order that the structure of the fabric may be more readily understood. In the actual fabric the strands are of course packed closely together.

In Fig. 1 R is the rubber lining.

The fabric shown in the drawings is one which without the addition of the strands requisite to effectuate my improvement would be an ordinary multiply (in this instance three-ply) seamless hose, the three plies of which are lettered A, B, and C. The regular warp and weft of the inner ply are lettered *a* and *b*, respectively. The regular warp and weft of the intermediate ply are lettered *a'* and *b'*, respectively. The regular warp and weft of the outer ply are lettered *a*² and *b*², respectively, and the binding-strands which bind the plies together are lettered *e*.

In the furrows or corrugations between the filling-strands *b* of the inner ply and upon the interior surface of said ply I lay, during the process of weaving the fabric, an additional filling *c*, which is held and incorporated into the fabric by warp *d*. The warp *d* and the filling *c* thus added to the fabric will preferably be of fine yarn, just sufficient in size, when incorporated into the fabric, to fill the furrows between the ordinary filling yarn or yarns *b* on the interior surface of the hose fabric, thus making this surface practically smooth and without corrugation. The strands *d* stop short of the exterior of the fabric and do not appear in the outer ply. Indeed they are in the illustration of my invention given in the drawings confined to the innermost ply A exclusively and do not appear in either the intermediate ply B or the outer ply C. The result of this improved arrangement of the warp-strands *d* is that they will not be destroyed or impaired by the wearing away of the outer ply or plies of the fabric.

Having described my improvement, I desire to state that I do not confine myself to the exact structural details shown in the accompanying drawings in illustration hereof; but

What I here claim, and desire to secure by Letters Patent, is—

1. Tubular woven fabric for fire or hydraulic hose having incorporated in its structure

leveling weft-strands laid on the interior surface of the tubular fabric in the furrows between the usual filling-strands of said fabric, and warp-strands for holding said leveling-
5 strands which stop short of, and do not extend through to, the exterior of said fabric, substantially as and for the purposes hereinbefore set forth.

2. Tubular multiply woven fabric for hydraulic or fire hose having incorporated in its
10 structure leveling weft-strands laid on the interior surface of the inner ply in the fur-

rows between the usual filling-strands, and warp-strands for holding said additional leveling-strands, which stop short of, and do not
15 extend into, the outer ply of said fabric, substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 21st day of July, 1898.

BENJAMIN L. STOWE.

Witnesses:

EVELYN NORRIS,
NATHAN STOWE.