(No Model.)

T. ISHERWOOD.

FABRIC.

No. 330,787. Patented Nov. 17, 1885.

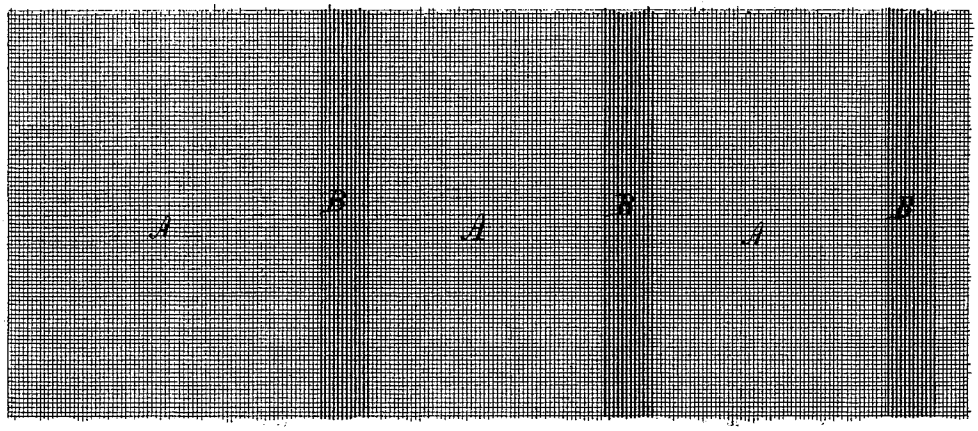


Fig. 1.



Fig. 2.

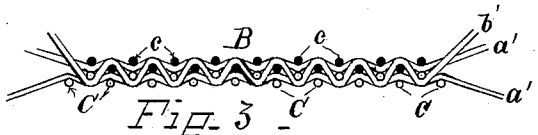


Fig. 3.

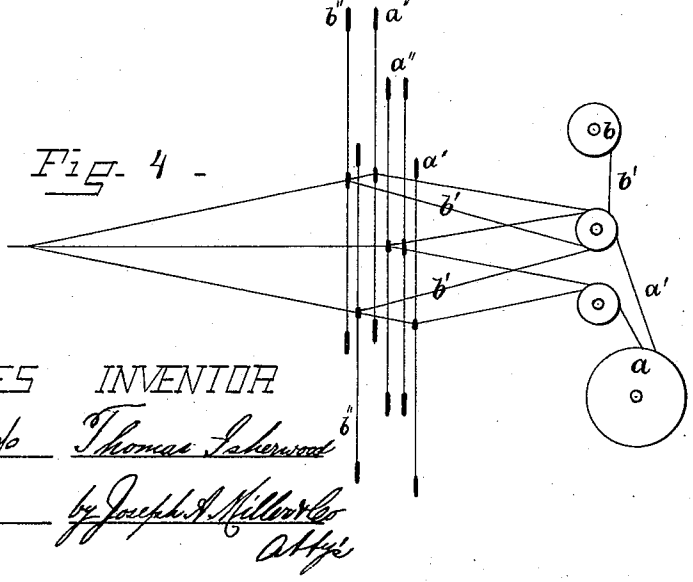


Fig. 4.

WITNESSES

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UNITED STATES PATENT OFFICE.

THOMAS ISHERWOOD, OF WESTERLY, RHODE ISLAND.

FABRIC.

SPECIFICATION forming part of Letters Patent No. 330,787, dated November 17, 1885.

Application filed February 8, 1884. Serial No. 120,114. (No model.) Patented in Canada June 19, 1882, No. 14,979.

To all whom it may concern:

Be it known that I, THOMAS ISHERWOOD, of Westerly, in the county of Washington and State of Rhode Island, have invented a new and useful Improvement in Fabrics; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to duck, sail, tent, awning, and other similar cloth; and it consists in weaving the same with strips for strengthening the cloth simultaneously with the cloth proper and interweaving such strips by springing the extra warp-threads for these strips from one surface of the cloth to the other, so as to tie the weft and warp of the strip to the cloth, whereby the strength and durability are much increased, as will be more fully set forth hereinafter.

Figure 1 is a view of a piece of cloth in which strengthening-strips are interwoven. Fig. 2 is a sectional view of the cloth, showing the ends of the warp-threads and the lay of the weft or filling. Fig. 3 is a sectional view of the cloth, showing the ends of the weft-threads and the extra binding warp-thread by which the strip is united with the cloth. Fig. 4 is a skeleton view of the warp-threads, the warp-beams, and the harnesses.

In the drawings, A represents the cloth, which may be duck, sail, awning, or other similar cloth woven in one, two, or more ply.

B B are the raised strips for strengthening the cloth. These strips are woven by a series of shuttles operated by a rack or in any other of the methods used on ribbon-looms, and so that while the shuttle laying the weft in the cloth proper traverses the whole width each one of the series of shuttles laying the weft in the strips will move across the warp forming the strips B, and also lay the weft-thread.

In Fig. 4, *a* is the warp-beam on which the warp for the body of the cloth, as also the main warp for the strengthening-strips, is wound, and from which the same is supplied.

b is the warp-beam on which the warp forming the binder-threads is wound, and from which they are supplied.

b' b' are the binder-threads.

b'' b'' are the heddles or harnesses by which the binder-threads are sprung so as to form sheds for the shuttles in laying the filling or weft of the main cloth, and the sheds for the shuttles laying the filling or weft for the strengthening-strips.

a' a' are the warp-threads for the cloth A proper, and *a'' a''* are the heddles or harnesses for springing the sheds of the warp.

c c are the weft or filling threads laid by the shuttles weaving the strengthening-strips, and C the weft for the cloth proper.

Cloth for sails, for tarpaulins, tents, duck cloth, and, in fact, cloth for a large variety of purposes and uses, is strengthened by sewing strips of cloth on the surface, and cloth with extra thicknesses forming strips has been heretofore woven; but such strips were woven separate from the cloth and only secured along their edges. Such cloth is not as strong or durable as the cloth in which the strip is intimately interwoven with the cloth, as is done in my improved cloth, and it cannot be woven with as great facility as my improved cloth.

By this means of weaving this cloth I weave the top and bottom plies both at once, as all the shuttles go through at one time. So in weaving cloth with forty picks I only run the loom twenty picks, and thus make a saving of fifty per cent. in weaving the cloth.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A re-enforced cloth made with the main and auxiliary warps and the main and auxiliary wefts, said auxiliary warps forming binders interweaving the re-enforcement and the body of the cloth and common to both surfaces, the said re-enforcements having double the number of warps and double number of fillings as the body of the cloth, substantially as described.

THOMAS ISHERWOOD.

Witnesses:
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