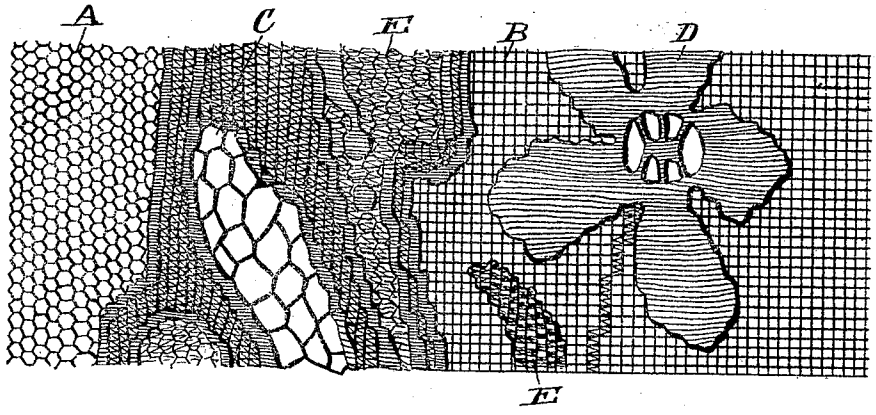
No. 838,174. PATENTED DEC. 11, 1906.

J. E. DUDSON.

LACE FABRIC.

APPLICATION FILED JULY 29, 1905.




Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN E. DUDSON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD TO LEWIS BOOTHMAN BROWN AND ONE-THIRD TO PETER WOLL, JR., OF PHILADELPHIA, PENNSYLVANIA.

## LACE FABRIC.

No. 838,174. Specification of Letters Patent. Patented Dec. 11, 1906.

Application filed July 29, 1905. Serial No. 271,796.

*To all whom it may concern:*

Be it known that I, JOHN E. DUDSON, a subject of the King of Great Britain, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Lace Fabrics, of which the following is a specification.

Prior to 1897 in making lace fabrics it was necessary to work the pattern on the cross-net ground. In 1897 by a patent granted to myself in Great Britain, No. 18,895, dated August 16 in that year, I was enabled to make lace in which the clothing or pattern was woven simultaneously and independently of the cross-net ground. Afterward by the use of a machine and method devised by myself and patented in Great Britain on March 4, 1901, No. 4,613, I was further enabled to form the pattern by looping, clothing, &c., by weaving it as a part distinct from, but simultaneously with, the cross-net ground which surrounds the pattern and supports it in the fabric. It has also been customary to form a ground of what is technically called "square net," the difference between the two nets being principally that the horizontal dividing-lines between the meshes of the square net are in a straight line, while in the cross-net the horizontal dividing-lines between the vertical rows of meshes are staggered.

By the use of the machine mentioned above as patented in England in 1901 it was, as stated, found possible to make the pattern as a part distinct from the cross-net ground, thus having the richness of the appliqued lace, but possessing the advantage thereover of being made in one piece, thereby reducing to a minimum the cost of manufacture, and also the advantage that there is no danger of ripping at the places where sewed. Even after my machine was put into use the choice of groundwork, whether of cross-net or square net, had to be made, and it was not until this article was made that a lace fabric was woven, combining in one continuous fabric two distinct net grounds—viz, a cross-net, or a net in which the horizontal division-lines are staggered—and a square net—*i.e.*, a net in which the horizontal division-lines are in a straight line. The fabric may also be further enriched by varying the size of the meshes as desired.

In the drawing is shown a piece of lace embodying my invention and in which A represents what is technically known as "cross-net," while B represents the square net; C, open loops; D, clothing or pattern threads; and E, Swiss finings or shading.

The lace shown in the drawing is but a sample of the work that can be done by the machine described in English Patent No. 4,613 of 1901, mentioned above, and I do not, therefore, limit myself to the article shown therein, as the pattern may be varied indefinitely without affecting the spirit of my invention, which consists, essentially, in the arrangement of the pattern of lace woven by the machine mentioned above, so that in one operation a lace fabric is made in which continuous threads only are used and in which two different ground-nets are woven into the fabric in combination with the usual pattern, consisting of clothing, open loops, Swiss finings, &c., these different ground-nets being usually, as stated above and shown in the drawing, of the forms known as "square net" and "cross-net."

Having thus described my invention, what I claim is—

1. A lace fabric wholly produced at a single operation and having a ground partly of cross-net and partly of square net.

2. A lace fabric having continuous threads only and a ground consisting partly of cross-net and partly of square net.

3. A lace fabric, wholly produced at a single operation and having continuous threads only, comprising two varieties of net groundwork in combination with open loops, clothing or pattern threads, and shading-threads.

4. A lace fabric, wholly produced at a single operation and having continuous threads only, comprising a groundwork consisting partly of cross-net and partly of square net, in combination with open loops, clothing or pattern threads, and shading-threads.

In testimony whereof I hereto affix my signature in the presence of two witnesses.

JOHN E. DUDSON.

Witnesses:

ALFRED H. DAWSON,

JOHN P. ADAMS.