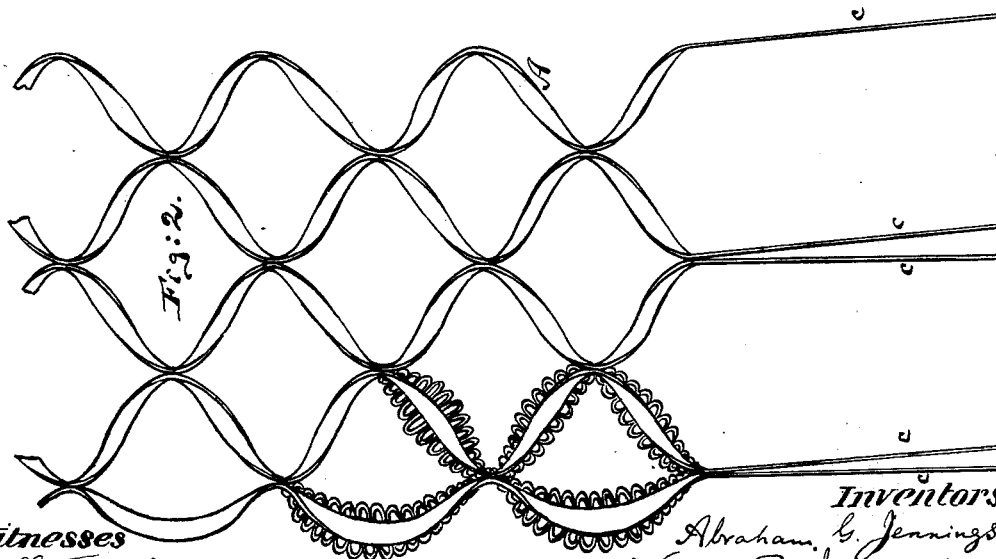
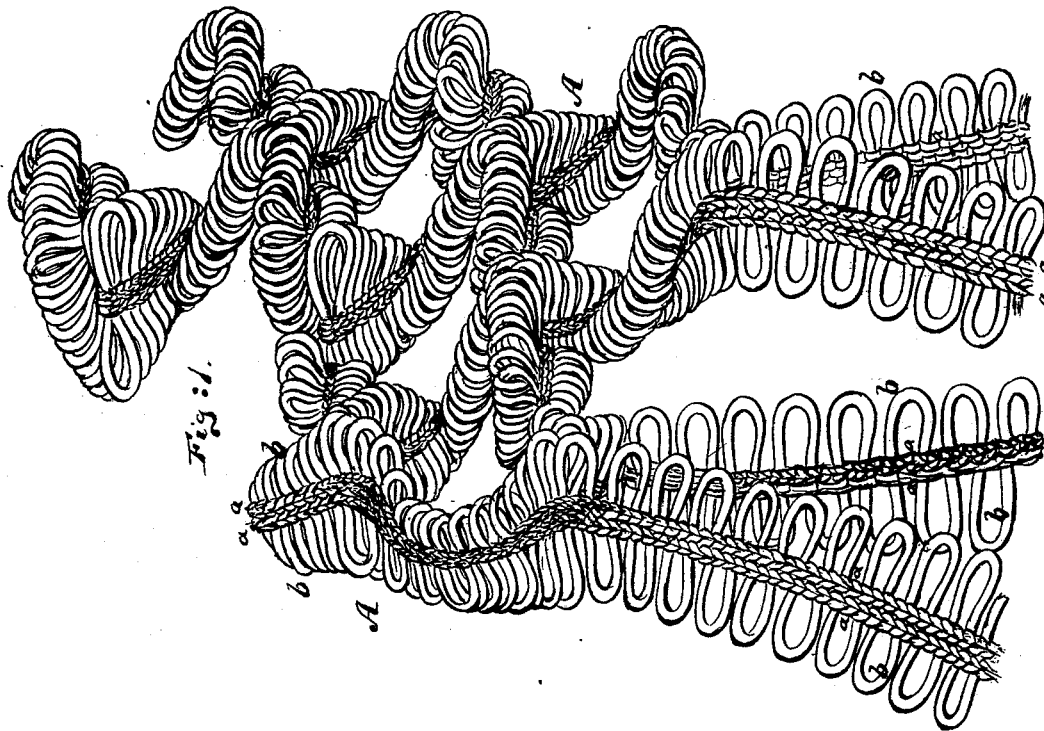


A. G. & W. P. JENNINGS.  
Lace Purling.

No. 218,032.

Patented July 29, 1879.



Witnesses

J. C. Tumbridge  
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Inventors

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# UNITED STATES PATENT OFFICE.

ABRAHAM G. JENNINGS AND WARREN P. JENNINGS, OF BROOKLYN, N. Y.

## IMPROVEMENT IN LACE PURLING.

Specification forming part of Letters Patent No. **218,032**, dated July 29, 1879; application filed December 31, 1878.

*To all whom it may concern:*

Be it known that we, ABRAHAM G. JENNINGS and WARREN P. JENNINGS, of the city of Brooklyn, county of Kings, and State of New York, have invented a new and Improved Lace Purling, of which the following is a specification.

This invention relates to an improved reticulated purling; and has for its object to so construct the same that the laterally-projecting loops will be held in proper flat positions while and after the pillars are joined in the reticulated form.

The invention consists in binding the laterally-projecting loops of each pillar by two rows of meshes, all as is hereinafter more fully described.

The invention also consists in providing our improved purling with fringes, as hereinafter specified.

In the accompanying drawings, Figure 1 represents a face view of our improved reticulated lace fabric or purling. Fig. 2 is a diagram showing the mode of joining the pillars and of forming the fringes.

Similar letters of reference indicate corresponding parts in all the figures.

The letters A A, &c., represent the pillars of the improved lace fabric. Each pillar is composed of laterally-projecting loops *b b*, that are joined and held in place by double rows of meshes *a a*. The pillars are joined at proper intervals to form a reticulated fabric, as clearly shown in Fig. 2. The loops *b* are knit into the meshes *a*, and project at both sides therefrom at equal or suitable distances. The double row of meshes *a a* in the pillars will firmly hold the loops *b* in a flat position—to wit, in a plane parallel substantially to the face of the meshes.

Were it not for the multiple row of meshes in each pillar, the loops *b* would turn up, and thereby destroy, to a great extent, the beauty of the fabric which it is desired to produce by this invention.

The two rows of meshes of each pillar A may be made to adjoin each other, as shown in the drawings; or they may be placed at a distance apart, in which case the threads forming the loops *b* will traverse the space between the two rows.

The above-described fabric may be made

with fringes *c*, of the same construction as the remainder of the fabric. These fringes are formed by extending the pillars beyond their points of contact, as clearly shown in Fig. 2.

Instead of using two rows of meshes, *a*, on each pillar, three or more rows may be used.

The fabric can be made on every kind of warp-lace machine—such, for example, as that described in Letters Patent No. 92,995, dated July 27, 1869. The pillars are produced on the knitting-needles of the machine in the ordinary manner, and are made to cross and form the reticulated fabric, the same as is done in the well-known manufacture of hair-nets on such machines.

The pillars, when of proper length, are taken off the needles that formed them by the laterally-sliding guide-bars, and deposited on the next set of needles, on which the adjoining pillar was previously formed, which in turn is taken off its needles by another guide-bar, all in the ordinary manner of making reticulated fabrics on warp-lace machines. The character of machines on which such fabric may be made is well known, and a description of the machine used is to be found on page 1243 Knight's Mechanical Dictionary, sub-article "Warp-Net Machines," except that in making the pillar and purl fabric several beams and guide-bars are used, as above described.

The lace-purl fabric above described is made on a warp-lace machine. The threads for the meshes *a* constitute the warp-threads. These and the purl threads for the loops *b* are on two separate warp-beams. The warp-threads *a* pass from the beam to two guide-bars, that lay them onto the barbed needles, and they are worked straight down, forming the net. The purl-threads *b* are threaded through one or more guide-bars, that cross and inlay the warp-thread at regular intervals, making the purl.

On the warp-machine the warp-threads work on every second or third needle, making the pillars, which pillars are made to cross and join and form the net or mesh, and this is done according to the size of mesh wanted. There are one or more empty needles between each warp-pillar. The purl-warp threads traverse

on the empty needles on each side of their pillar-threads across the warp-threads, and, working on empty needles, are pushed off by the sinkers, thus making the purl, which is held in its place by the pillar-threads that it has crossed and inlaid; but the fabric may as well be made on a bobbinet or twist-lace machine, in which the purl-threads will be tied to the warp-threads by the bobbin-thread, an additional bobbin-thread being required to hold the purls extended, which additional thread is afterward drawn out.

We claim as our invention—

1. The reticulated lace purling composed of

pillars A A, each pillar consisting of laterally-projecting loops *b b*, and of two or more continuous rows of meshes, whereby the loops are held flat, substantially as specified.

2. The reticulated lace purling composed of pillars A A and of fringes *c c*, the fringes being continuation of the pillars, substantially as specified.

ABRAHAM G. JENNINGS.  
WARREN P. JENNINGS.

Witnesses:

F. v. BRIESEN,  
A. v. BRIESEN.