

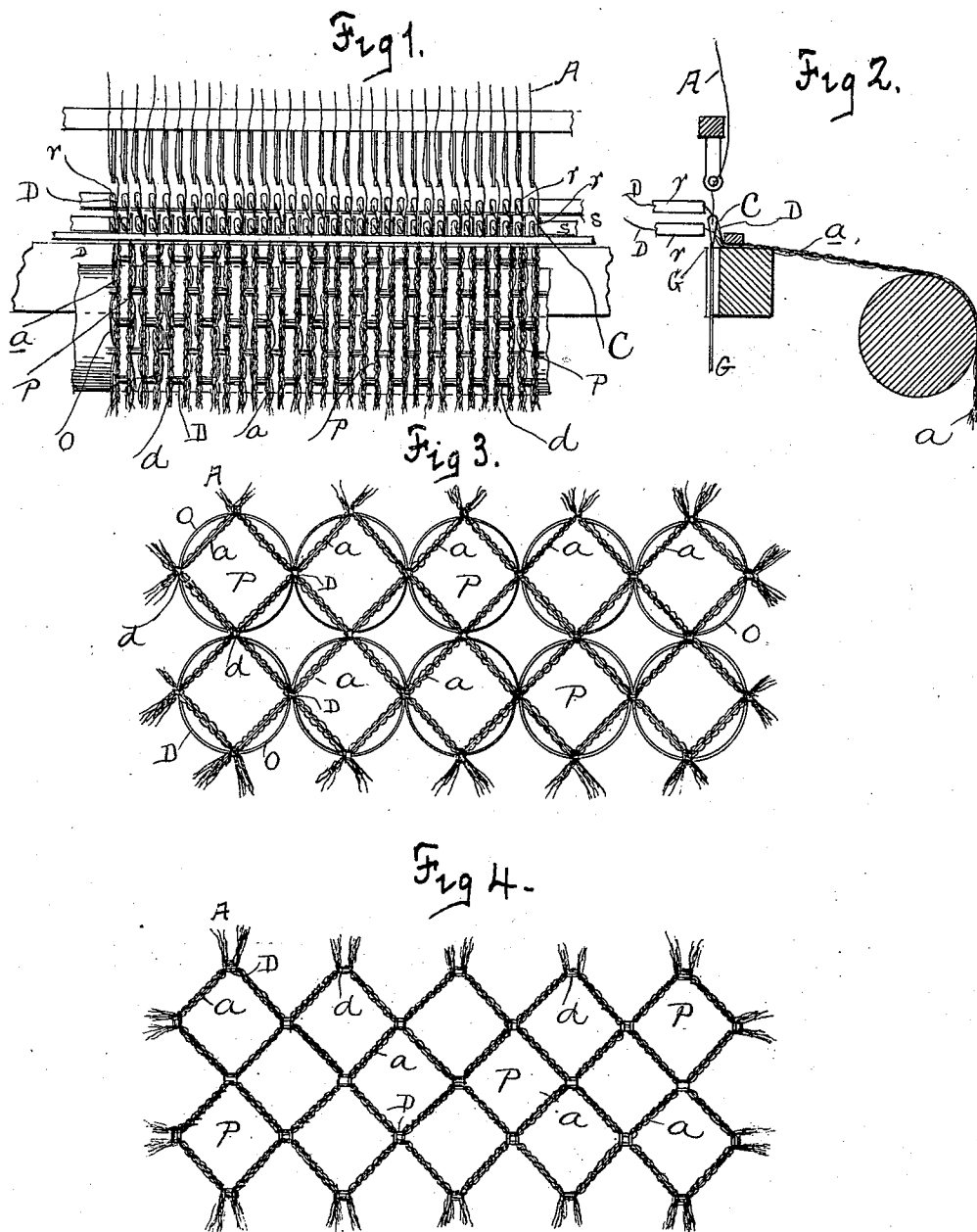
(No Model.)

2 Sheets-Sheet 1.

A. WARD.
NET.

No. 550,304.

Patented Nov. 26, 1895.



Witnesses:
H. O. Huber
G. L. Keller

Inventors:
Anthony Ward

(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

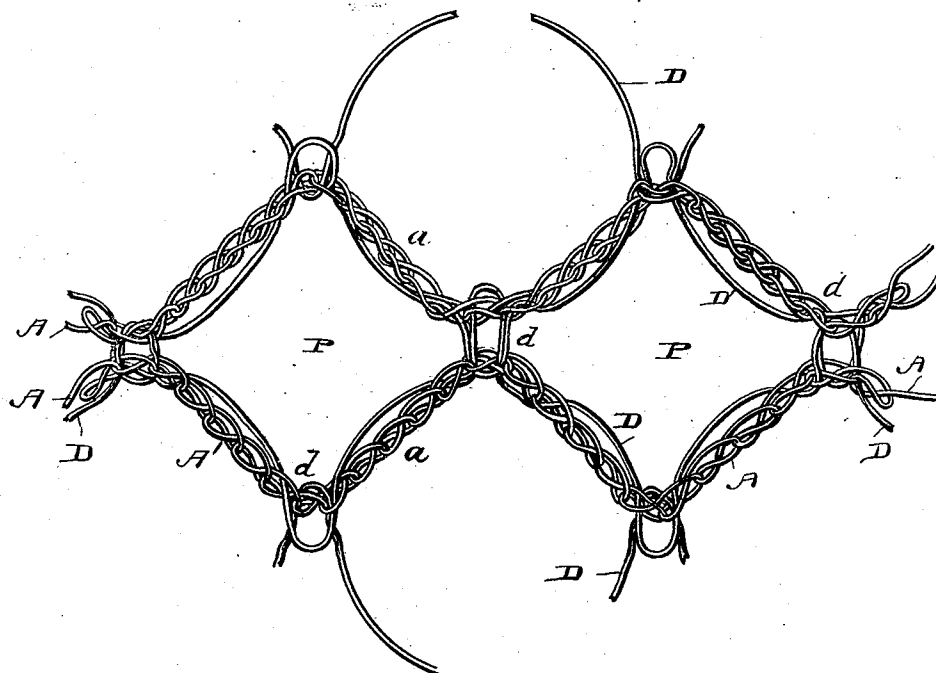
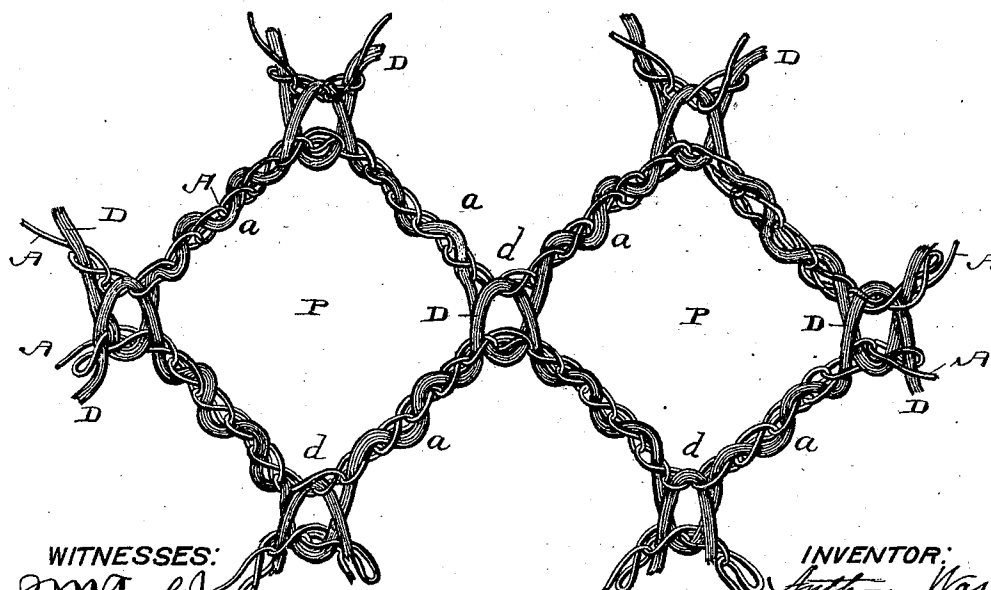


Fig. 6.



WITNESSES:

W. H. Fowler
C. A. Reed

INVENTOR:

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BY

F. C. Jones

Attorney.

UNITED STATES PATENT OFFICE.

ANTHONY WARD, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO FRITZ W. HAUBNER, OF SAME PLACE.

NET.

SPECIFICATION forming part of Letters Patent No. 550,304, dated November 26, 1895.

Application filed December 18, 1894. Serial No. 532,247. (No model.)

To all whom it may concern:

Be it known that I, ANTHONY WARD, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented a certain new and useful Net, of which the following is a specification.

My invention relates to the manufacture of nets; and the object is to adapt the formation or knitting of the net to a loom knitting-machine, permitting thereby a greater variety of changes in the design thereof and also an increase in the quantity manufactured, together with a decrease in the cost of making the net.

Referring to the drawings, Figure 1 is a front view of a part of a knitting-machine, illustrating the manner in which my improved net is made thereon. Fig. 2 is a sectional end view of Fig. 1. Fig. 3 is a plan view of my improved net with ring loops encircling the squares. Fig. 4 is a plan view of my improved net with the ring loops omitted. Fig. 5 is an enlarged plan view of a portion of the net shown in Fig. 3. Fig. 6 is also an enlarged plan view of a portion of the net shown in Fig. 4.

The net shown in Figs. 3 and 5 is formed as follows: The warp cords or threads A, which may be of any color, are knitted each into a separate chain of loops *a* by the needles C in the usual manner appertaining to knitting-machines. The number of the chains or cords *a* is governed partly by the size or width of the machine and partly by the size of the squares P. These chains or cords are joined at *d* according to the size and shape of the squares by secondary threads or cords D coming from reels through the tubes *r* and running substantially parallel with the cords or chains *a*. There can be any number of these cords of any variety of colors. These cords D effect the joining of the warp chains or cords *a* by being knitted therewith when the loops are formed by the needles. This is done by moving the bars *s*, holding the tubes *r*, to and fro, which is done by suitable cams. (Not shown.) This movement causes the cords D to be caught by the warp-loop and become attached to the warp-cord *a*.

By permitting the tube-bars to remain at rest between the points of joining of cords *a*

loose string of unconnected cords D will be extended between the said points of joining, effecting in design the result of a circle O around the squares P, as shown in Fig. 3.

The net shown in Figs. 4 and 6 is made as shown in Figs. 3 and 5 as to the chains of loops or cords *a* and the joining thereof by cords D; but instead of locking or joining the cords D only at the connecting points, as shown in Figs. 3 and 5, they are joined to the cords *a* at intervals, thereby forming small loops, instead of a long one, between the joining points. These cords D are locked with the warp chains or cords *a*, and it is effected by giving the tube-bars a slight to-and-fro movement at the time the cords are being formed by the needles.

As the cords D can be varied in color, it is apparent that the net when made up either according to the pattern shown in Figs. 3 and 5 or 4 and 6 can be made to present a beautiful and elegant design.

Although my invention is principally adapted to the manufacture of nets, it is also applicable to the production of open ornamental work.

What I claim is—

1. A fabric comprising a series of chains, and a series of secondary threads running substantially parallel with said chains, said chains being each composed of a succession of loops, and said secondary threads being formed at intervals into loops which are interknit with and connect said chains.

2. A fabric comprising a series of chains, and a series of secondary threads running substantially parallel with said chains, said chains being each composed of a succession of loops, and said secondary threads being formed at intervals into loops which are interknit with and connect said chains, said secondary threads floating freely between the connecting loops.

Signed at New York, in the county of New York and State of New York, this 15th day of December, A. D. 1894.

ANTHONY WARD.

Witnesses:

F. O. HAUBNER,
G. F. ROLLER.