

No. 627,945.

Patented June 27, 1899.

J. WATERFIELD.
KNIT FABRIC.

(Application filed Nov. 28, 1898.)

(No Model.)

Fig. 3.

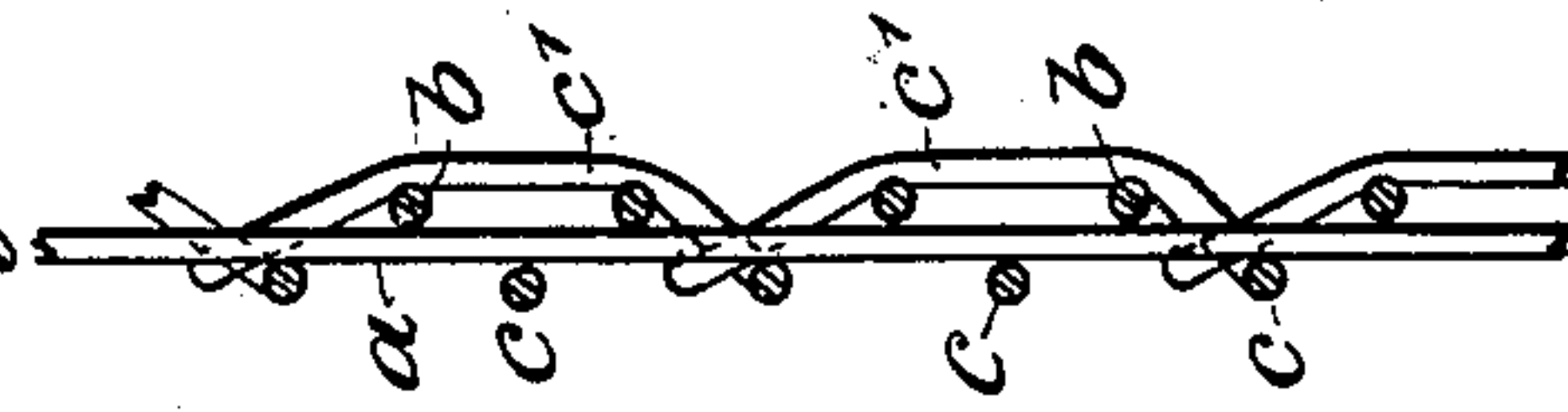


Fig. 2.

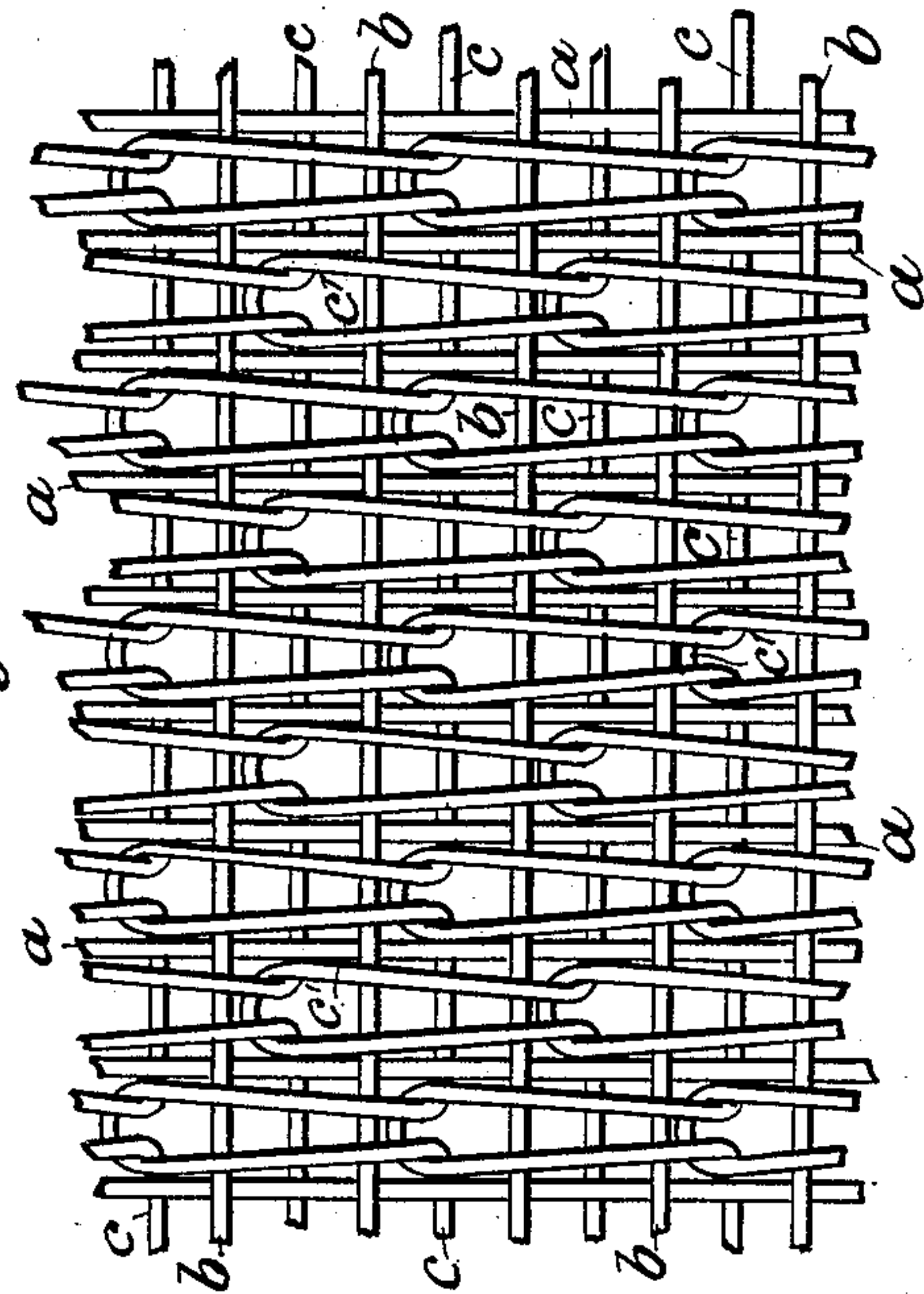


Fig. 1.

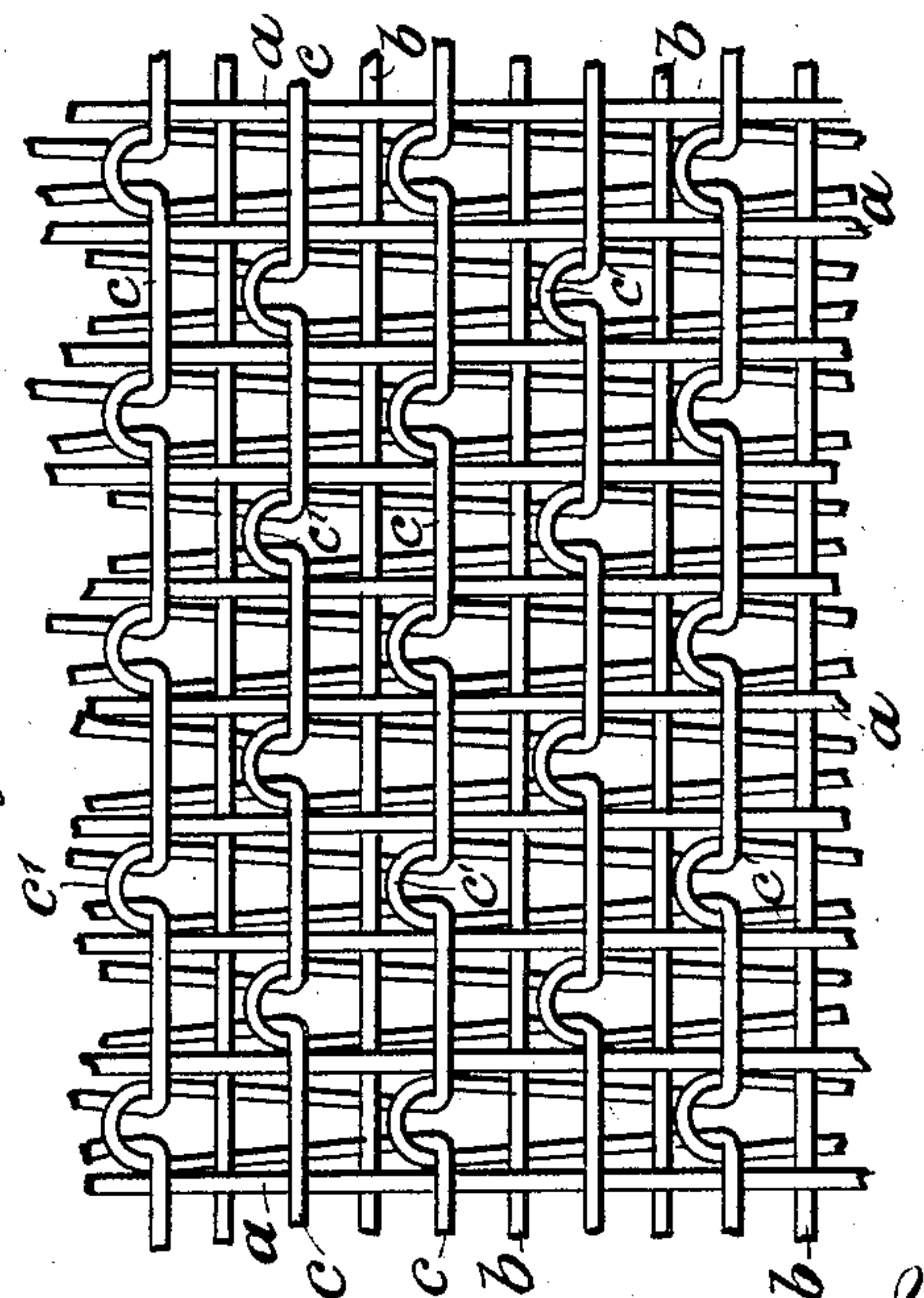


Fig. A.



Witnesses
Chas. N. Smith
J. Staib

Inventor
John Waterfield
per L. W. Serrell & Son
Attys.

UNITED STATES PATENT OFFICE.

JOHN WATERFIELD, OF PROVIDENCE, RHODE ISLAND.

KNIT FABRIC.

SPECIFICATION forming part of Letters Patent No. 627,945, dated June 27, 1899.

Original application filed June 28, 1898, Serial No. 684,686. Divided and this application filed November 28, 1898. Serial No. 697,605. (No model.)

To all whom it may concern:

Be it known that I, JOHN WATERFIELD, a citizen of the United States of America, and a resident of Providence, in the State of Rhode Island, but at present residing at London, England, have invented an Improved Knit Fabric, of which the following is a specification.

This application is a division of my application filed June 28, 1898, Serial No. 684,686.

10 This invention relates to an improved textile fabric intended to resemble ordinary woven cloths.

The class of fabrics to which the invention more particularly has reference is that having longitudinal or warp threads and transverse or weft threads, the latter being divided into two sets, termed, respectively, "plain weft or filling threads" and "knitted or looped weft-threads."

20 According to the said invention the loops of the knitted weft-thread instead of being arranged as heretofore, so that they alternate regularly with the warp-threads, are disposed so that they miss or skip some of these threads.

25 Thus in a fabric intended to resemble an ordinary diagonal the loops in one row might be arranged to lie between alternate pairs of warp-threads, while those of the next row would lie between the intervening pairs. 30 Consequently the loops of one row would break joint, as it were, with those of the adjacent rows and the desired diagonal pattern would be obtained.

35 An example of a fabric such as referred to in the preceding paragraph is shown in the annexed drawings, in which—

Figure 1 illustrates, diagrammatically and considerably enlarged, the front, and Fig. 2 the back, of the improved textile fabric, Fig. 40 3 being a longitudinal section and Fig. 4 a transverse section.

45 *a* are the warp-threads—that is to say, the threads which run longitudinally of the fabric—and *b* are the plain weft or filling threads. These latter extend transversely across the fabric and are quite straight—that is to say, they are not bent in and out between the warp-threads, but lie straight across them on one side thereof only. In this way these 50 threads serve to prevent the fabric stretching

in a transverse direction, just as the warp-threads prevent longitudinal stretching.

c are the knitted or looped weft-threads, which are laid on the opposite side of the warp-threads to that on which the filling-threads lie. They alternate with the filling-threads and pass through the fabric from one face to the other, thus serving to tie or knit the other threads together. On the face or front of the fabric, Fig. 1, the said threads 60 form loops *c'* between alternate pairs of the warp-threads, the legs of the loops lying parallel, or approximately so, with the warp-threads, but on the outer side of the filling-threads, which latter are thus firmly held between 65 the warp-threads and the said legs of the loops. In the fabric shown in the drawings each loop is of such a length that its legs extend over two filling-threads and engage the corresponding loop in the next knitting-thread but one. It will be seen that the loops 70 in one row break joint with those in the next row, and thus give the diagonal appearance to the fabric. In other words, the loops *c'* of the threads *c* follow each other across the fabric 75 in diagonal lines, and thus give a pattern similar to that of an ordinary woven diagonal. Woven diagonals of this kind may have the loops arranged to run either to the right or to the left or may be made up of left-handed work 80 and right-handed work alternating with each other, or checkerwise, as in some woven fabrics. To this end the loops of the knitted weft-threads may be arranged between every third pair of warp-threads or otherwise instead of between alternate pairs of warp-threads, as in the example given above. 85

Fabrics made as above described can advantageously be produced on the circular-knitting loom forming the subject of a pending application for patent by me. 90

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The method of producing a knitted diagonal cloth which consists in laying straight filling-threads across one side of a set of longitudinal threads, laying knitting-threads across the other side of said longitudinal threads forming loops in each knitting-thread 100

before the succeeding one is laid in place, such loops lying between alternate pairs of warp-threads and then forming loops in the said succeeding thread, these latter loops lying between the intervening warp-threads which were missed by the former loops, substantially as described.

2. In a knit cloth, the combination of longitudinal or warp threads, plain transverse threads on one side of said longitudinal threads, and knit transverse threads succeeding each other in regular order on the opposite side of said longitudinal threads, such knit threads being arranged in sets of which the corresponding threads of each set have their loops arranged in the same way, such loops however lying between the loops of the other thread or threads in the same set, substantially as described.

3. A knitted cloth consisting of longitudinal or warp threads, straight transverse threads extending across one side of said longitudinal threads, and knit transverse threads extend-

ing across the other side of said threads, each alternate knit thread having its loops arranged in the same way and alternating with the loops of the intervening knit threads, substantially as described.

4. In a knitted diagonal cloth, the combination of warp or longitudinal threads, straight transverse filling-threads all on one side of the warp-threads, knitting-threads arranged on the opposite side of the warp-threads midway between the filling-threads, and loops in said knitting-threads extending through the fabric over two of the filling-threads and engaging the next corresponding loop, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN WATERFIELD.

Witnesses:

GEORGE ERNEST MINTERN,
WILMER MATTHEWS HARRIS.

It is hereby certified that Letters Patent No. 627,945, granted June 27, 1899, upon the application of John Waterfield, of Providence, Rhode Island, for an improvement in "Knit Fabrics," were erroneously issued to said Waterfield as sole owner of said invention; whereas said Letters Patent should have been issued to *said John Waterfield and William Badcock and Henry Baldwin Edwards, of London, England*, said Badcock and Edwards being assignees of two-thirds interest, as shown by the record of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 11th day of July, A. D., 1899.

[SEAL.]

WEBSTER DAVIS,
Assistant Secretary of the Interior.

Countersigned:

C. H. DUELL,
Commissioner of Patents.