

(No Model.)

E. GOODWIN.
DARNING APPARATUS.

No. 568,110.

Patented Sept. 22, 1896.

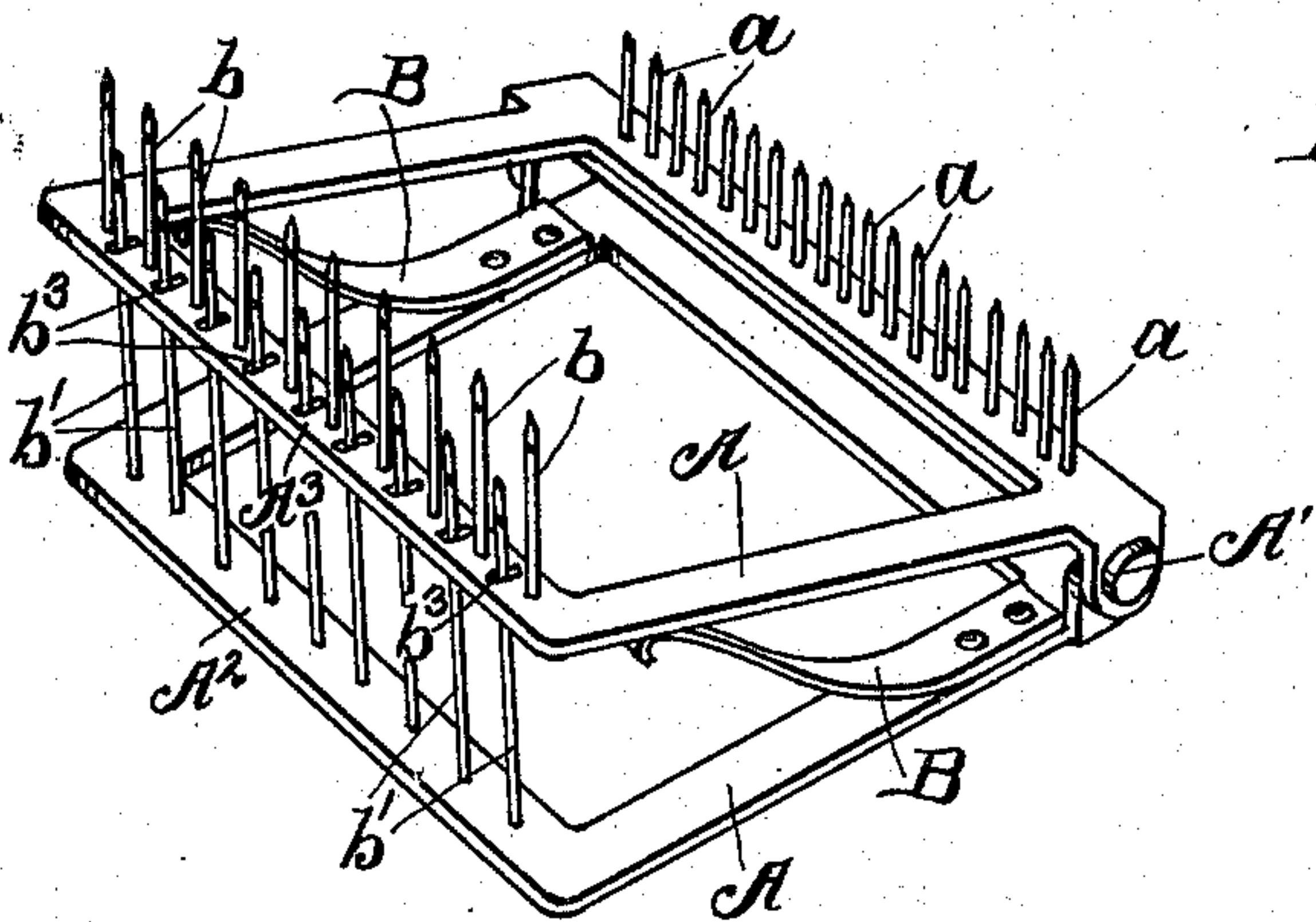


Fig. 1.

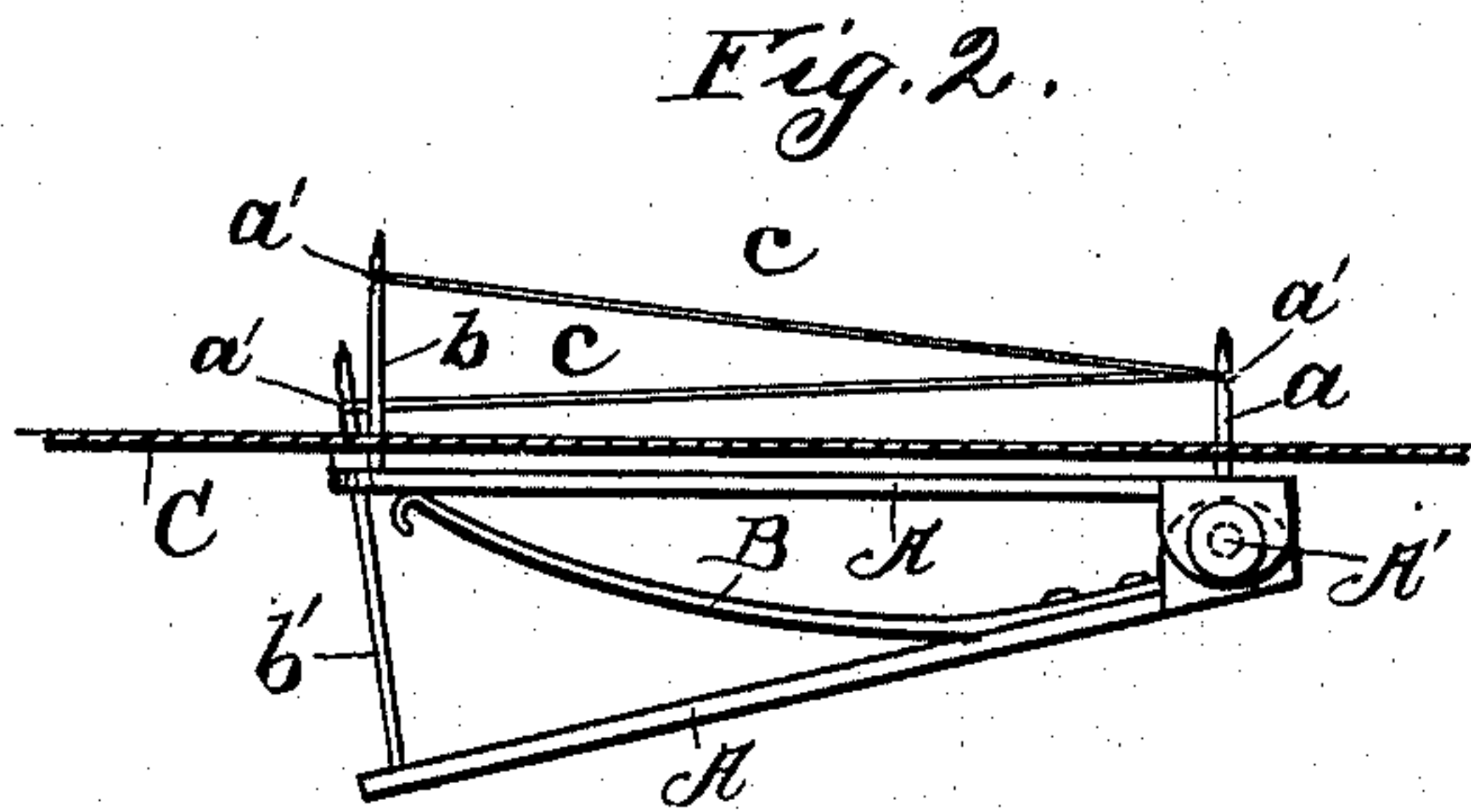


Fig. 2.

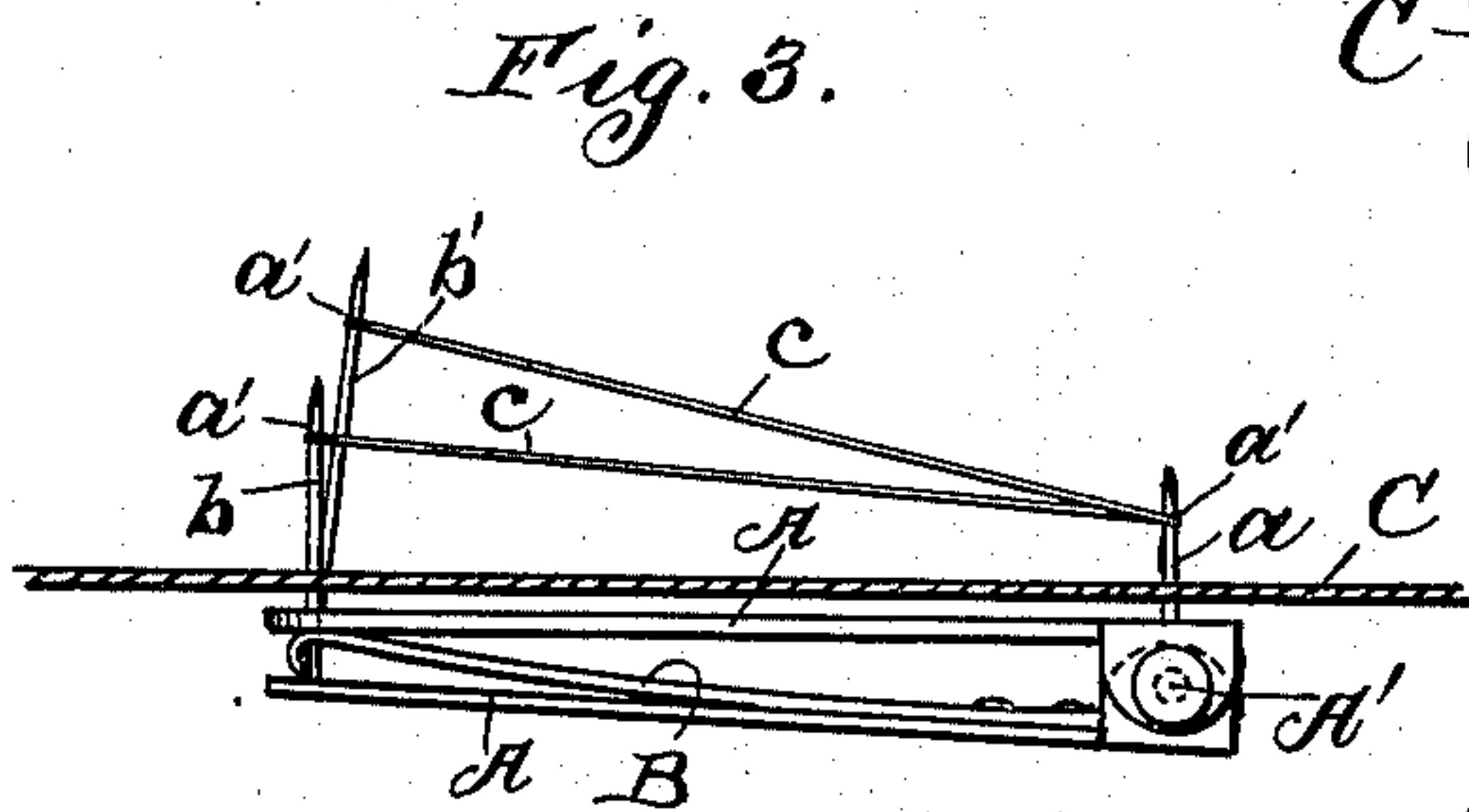


Fig. 3.

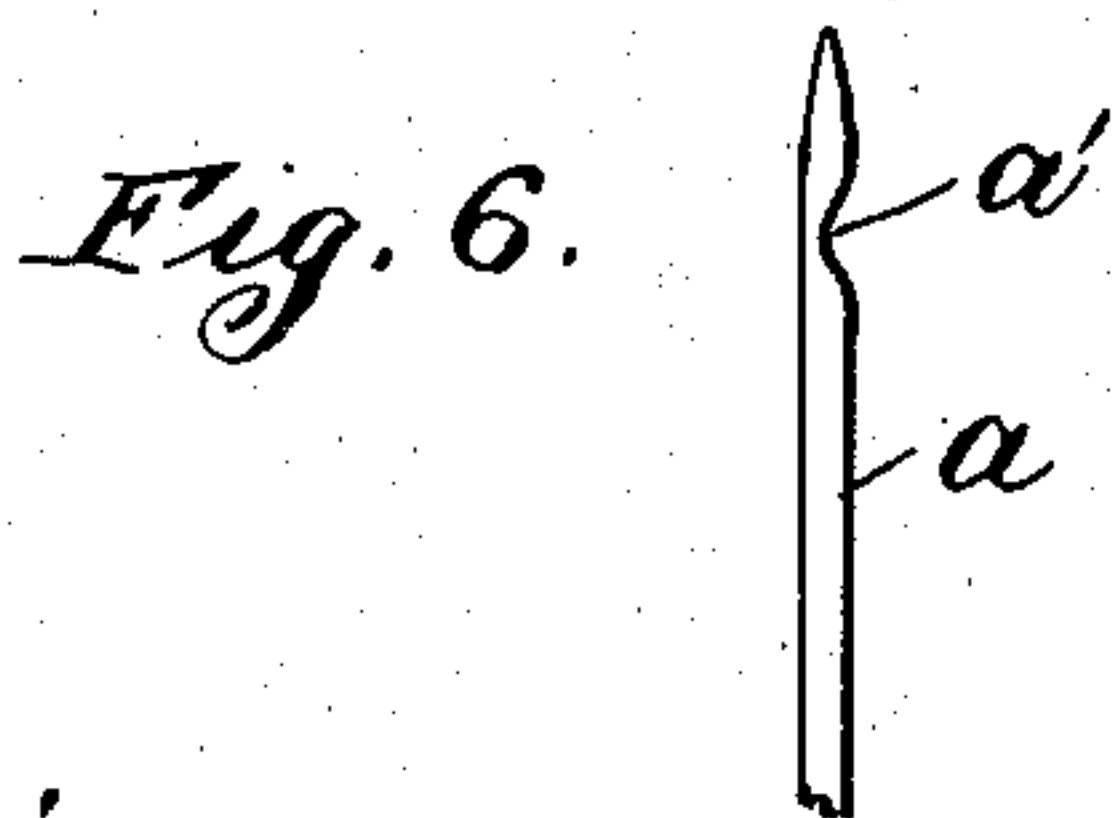


Fig. 6.

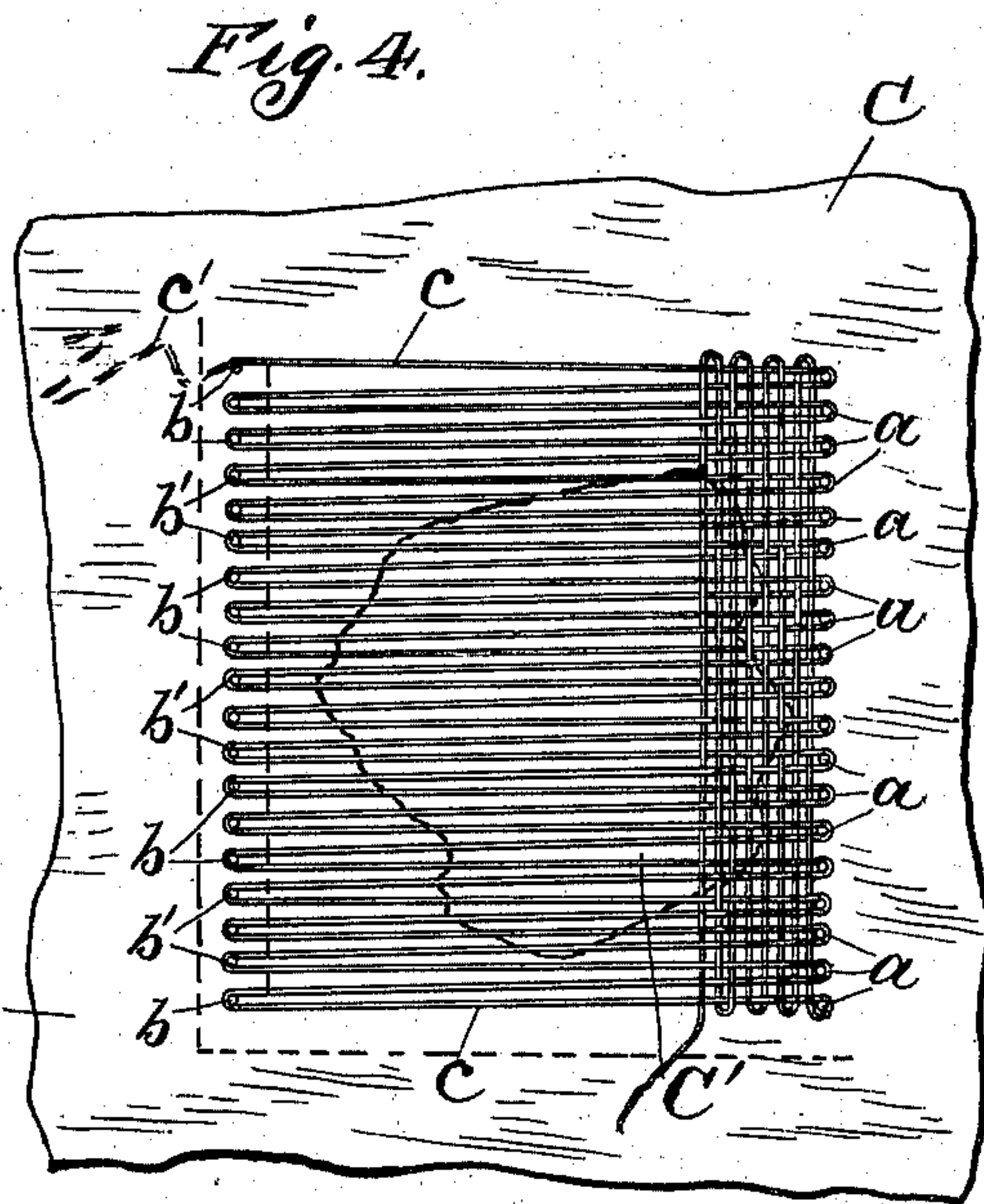


Fig. 4.

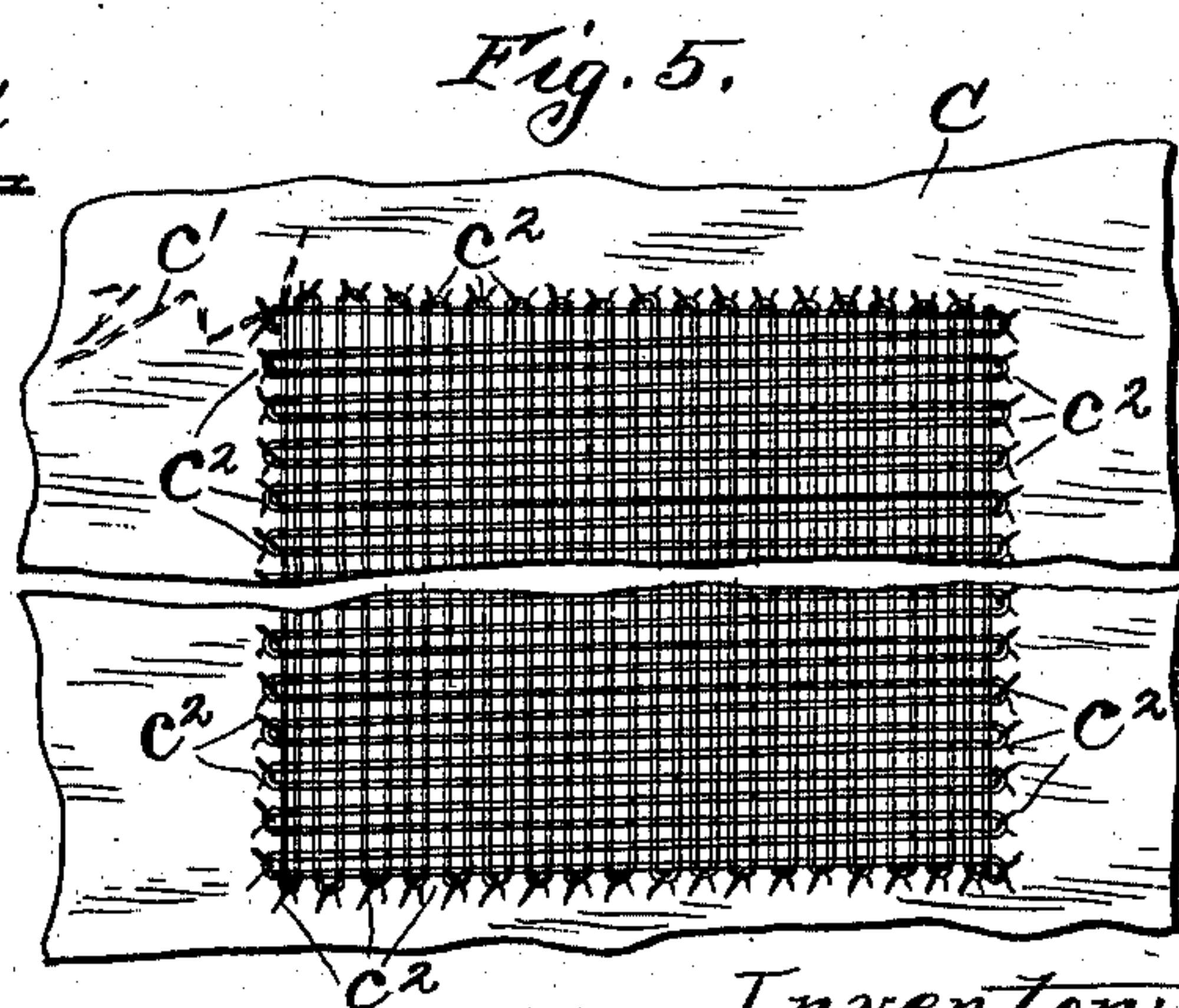


Fig. 5.

Witnesses:

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UNITED STATES PATENT OFFICE.

ELLA GOODWIN, OF CHICAGO, ILLINOIS.

DARNING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 568,110, dated September 22, 1896.

Application filed January 23, 1896. Serial No. 576,506. (No model.)

To all whom it may concern:

Be it known that I, ELLA GOODWIN, of Chicago, in the State of Illinois, have invented certain new and useful Improvements in Darning or Mending Machines, of which the following is a specification.

My invention relates to means for mending or darning holes in stockings or other articles of clothing by forming a piece over the rent by means of a series of interwoven loops, forming a selvage about all the edges of the piece, and then securing the ends of the loops to the body of the garment, whereby the work is greatly facilitated and a superior finish is afforded. The apparatus comprises a frame adapted to be applied inside the garment and provided with pins projecting through to the outside for holding the series of loops or folds of yarn as warp-threads over the rent and means for throwing the alternate loops so that a darning-needle can be passed between them as a shuttle in shooting in a weft-thread.

The operation and apparatus are illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the apparatus. Fig. 2 is an edge view of the apparatus as applied to the garment shown in section and showing the warp-threads in normal position. Fig. 3 is a similar view to that shown in Fig. 2, but showing the warp-threads in the other position. Fig. 4 is a top view showing the manner of supporting the warp-threads over the rent in the garment shown in fragment. Fig. 5 is a top view showing the finished work. Fig. 6 is an enlarged detail showing one of the pins.

In the drawings, A designates the frame of the apparatus, which is composed of two members hinged together at A' so that they can open and close at the opposite side. There are springs B secured to one member of the frame and arranged to bear against the other so as to keep them normally apart, as seen in Figs. 1 and 2, and permit them to be forced together, as seen in Fig. 3.

One of the side bars of the frame at the hinged side is provided with a row of pins a , which are provided with smooth rounded points and have slight notches or depressions a' near the points; and the side bars A^2 A^3 of both members of the frame opposite the hinged side have a row of pins $b b'$, the former

being about the length of the pins a and secured to the bar A^3 , and the latter being longer and secured to the bar A^2 and passing through the openings or slots b^3 in the bar A^3 . The pins $b b'$ alternate, and their number corresponds with the number of the pins a . The depressions a' in the pins a of the row along that side of the frame at which the members are hinged together fall in the opposite direction from the depressions in the pins $b b'$ of the row along the opposite side of the frame.

C designates a fragment of the garment, and C' the rent therein. The points of the pins will readily pass through the fabric of the garment from the inside on the fabric first being drawn taut, so that the pins will stand on opposite sides of the rent and project enough to carry the depressions beyond the fabric. One end of the darning-thread c is then secured to the fabric, as at c' , whence it is carried to the adjacent pin and looped over it, thence to the pin on the opposite side and passed about it in the depression, and thence back, repeating the operation until a series of loops as warp-threads is formed sufficient to cover the rent, the thread being looped around the last pin and secured to the fabric, as in the beginning, the last connection being preferably on the side at the pins a . Then with an ordinary darning-needle a weft-thread, or, preferably, a double-weft thread, being first fastened with its end in the fabric at the end of the row of pins a , is passed between the warp-loops horizontally at or approximating the pins $b b'$, where the warp is sufficiently separated, as shown in Fig. 2, and then drawn down, so as to lie across the thread c at right angles and close against the pins a . Then by pressing the members of the frame together, as shown in Fig. 3, the ends of warp-threads c on the pins $b b'$ will be thrown apart the other way, so that the needle can be run back and all the weft-threads thus run in. This operation is repeated until the weft covers the space between the pins on opposite sides of the rent. The loops at the several pins and at the turn or back fold of the weft-threads are secured to the garment fabric by stitches c^2 , as shown in Fig. 5. After the loops are secured to the fabric of the garment the pins can be drawn in without cutting any of the threads, and the machine will then

drop out. On putting the needle through between the warp-threads the weft-threads may be caught in the garment each time, if desired.

When placed within the garment under the
5 rent, the apparatus is adapted to be held in the hand with the thumb upon one member of the frame toward the unhinged side on the outside of the garment for compressing the parts to throw the threads one way, the spring
10 operating automatically when released to throw them the other way.

What I claim is—

1. A darning apparatus comprising a frame of two members hinged together at one side
15 and arranged at an inclination to one another, a spring adapted to throw the members apart at the free side, a row of pins secured to the frame along the hinged side thereof, and a row of alternate long and short pins along the
20 opposite side from the hinged side, the short

pins being secured to one member of the frame and the long pins to the other member of the frame as specified.

2. A darning apparatus comprising a frame of two members hinged together at one side 25 and held normally inclined to one another by spring-pressure adapted to act outwardly, a row of pins secured along the hinged side of the frame and a row of alternate short and long pins along the opposite side from the
30 hinged side, the short pins being secured to one member of the frame and the long pins to the other member of the frame, all of the pins being provided with rounded points and depressions near the points as specified.

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Witnesses:

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