

No. 865,974.

PATENTED SEPT. 10, 1907.

J. L. POALK.

WOVEN FABRIC AND ART OF WEAVING THE SAME.

APPLICATION FILED JULY 3, 1906. RENEWED JULY 30, 1907.

Fig. 1.

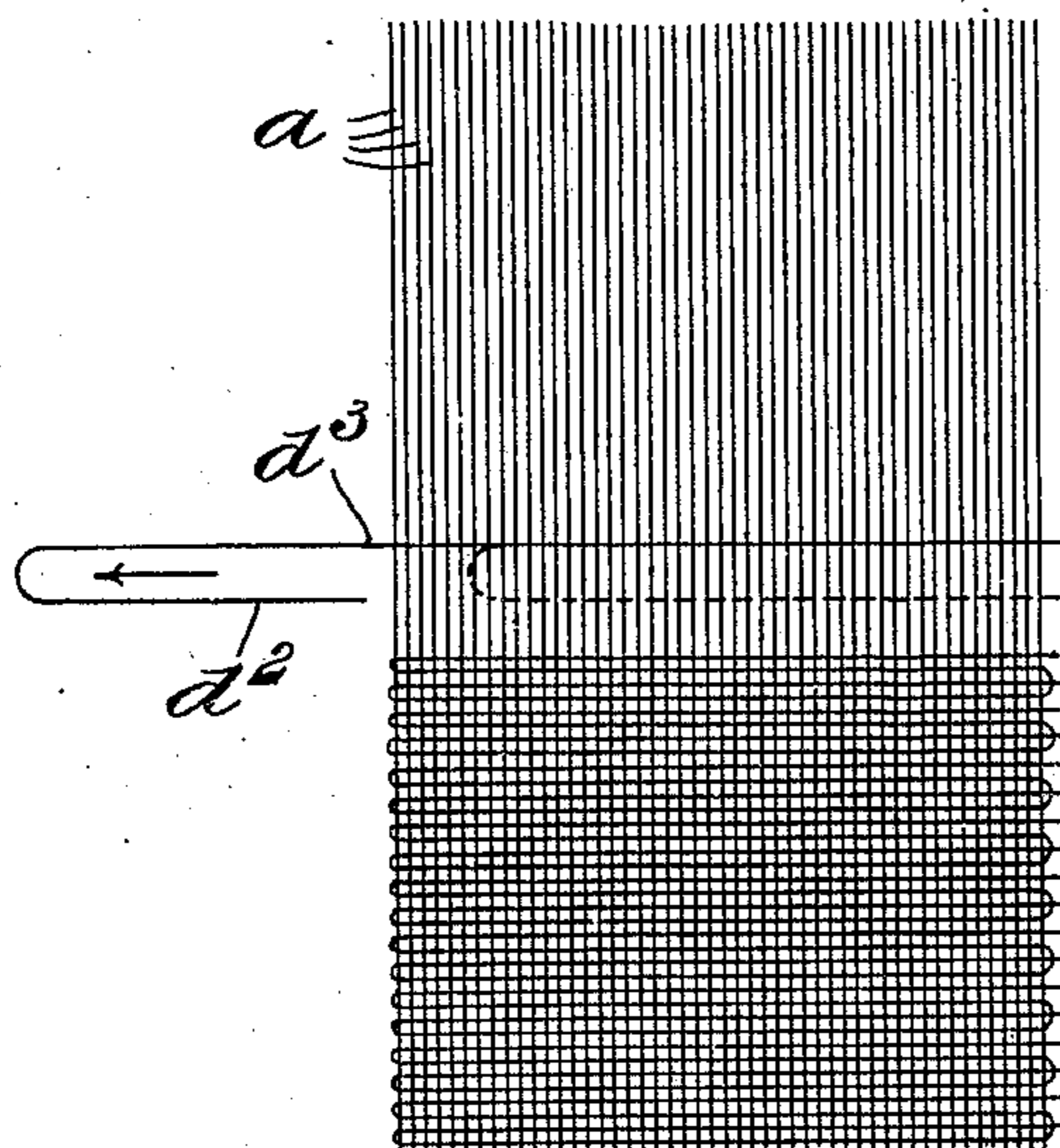


Fig. 2.

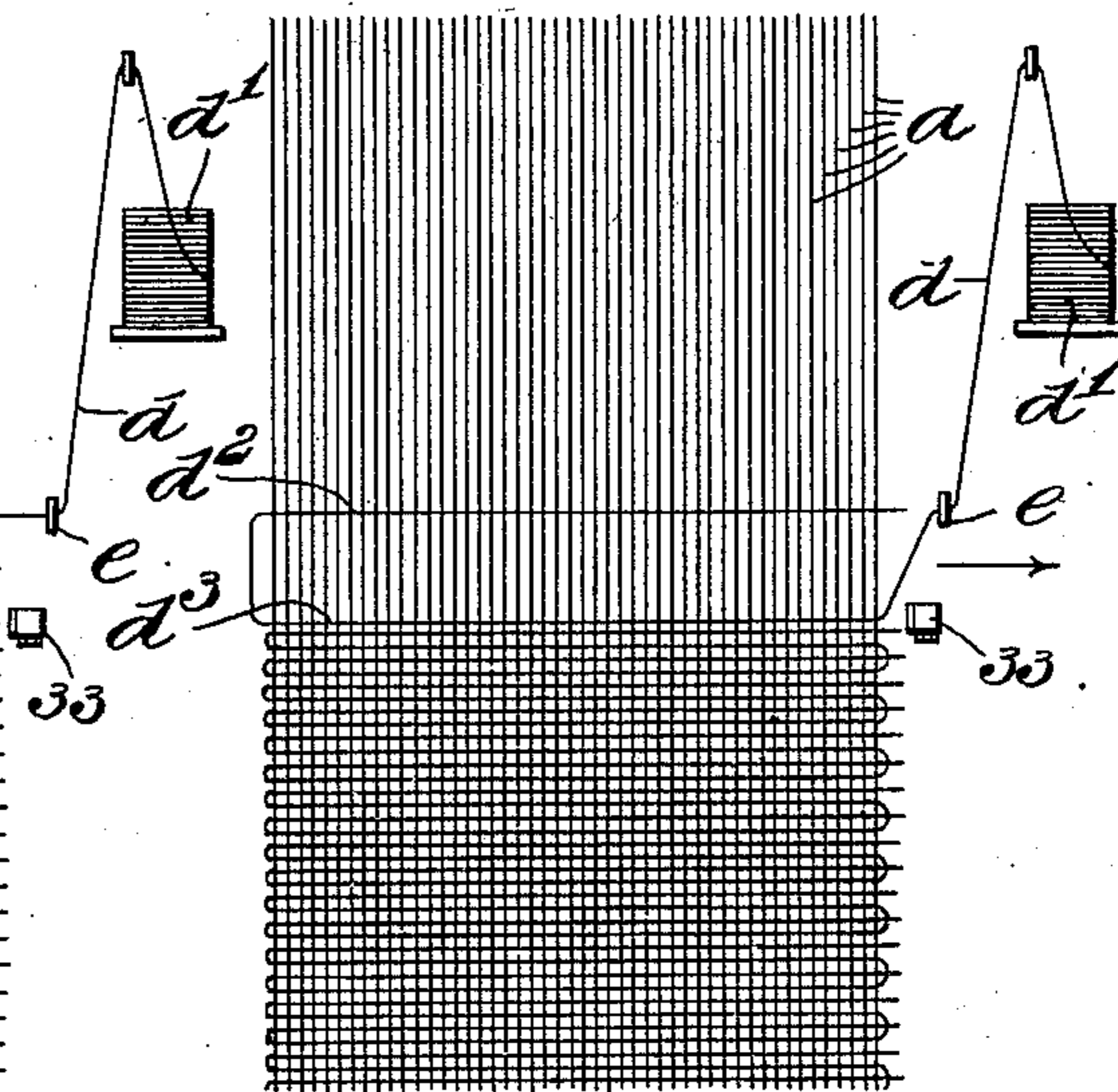


Fig. 3.

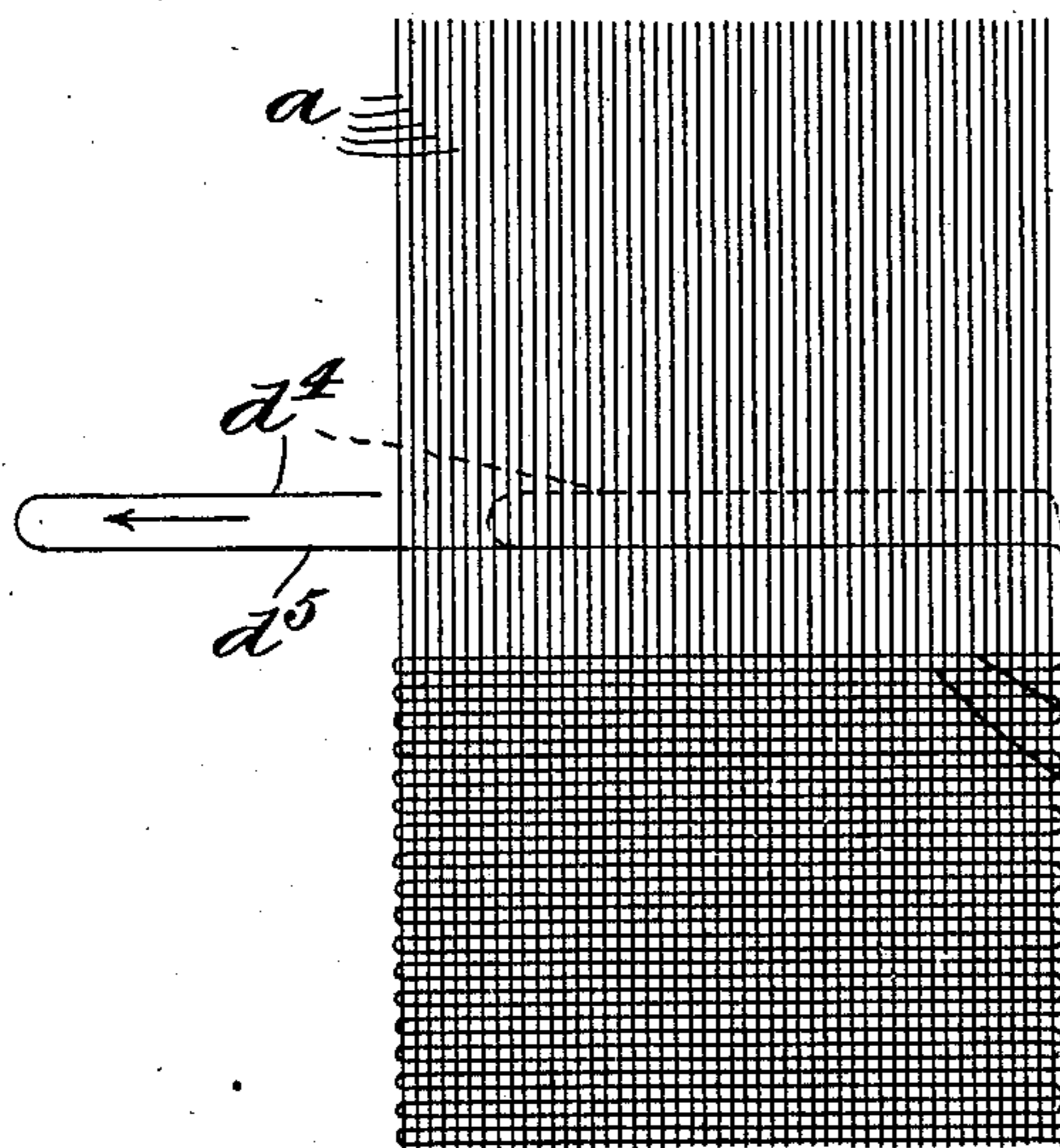
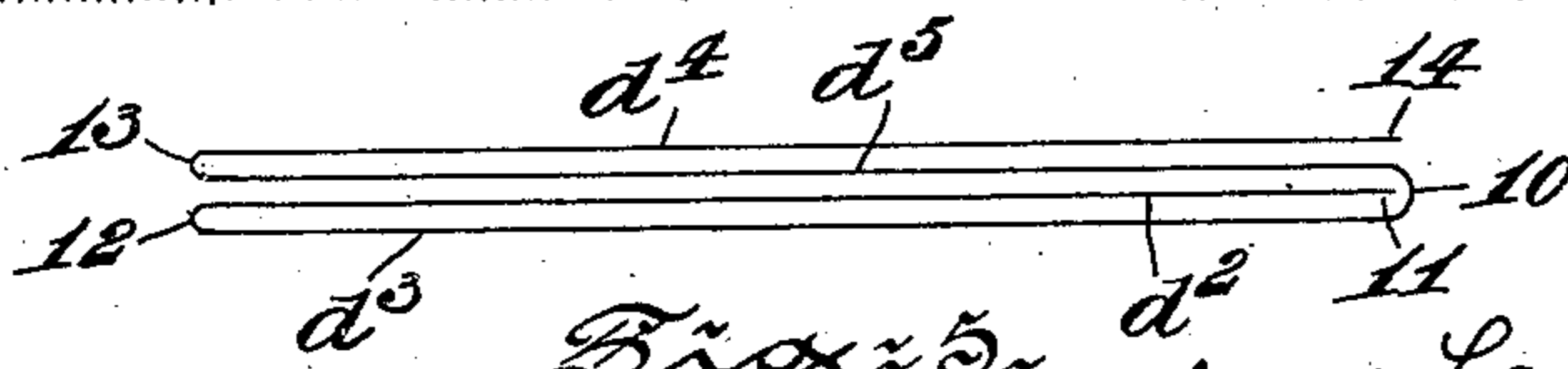
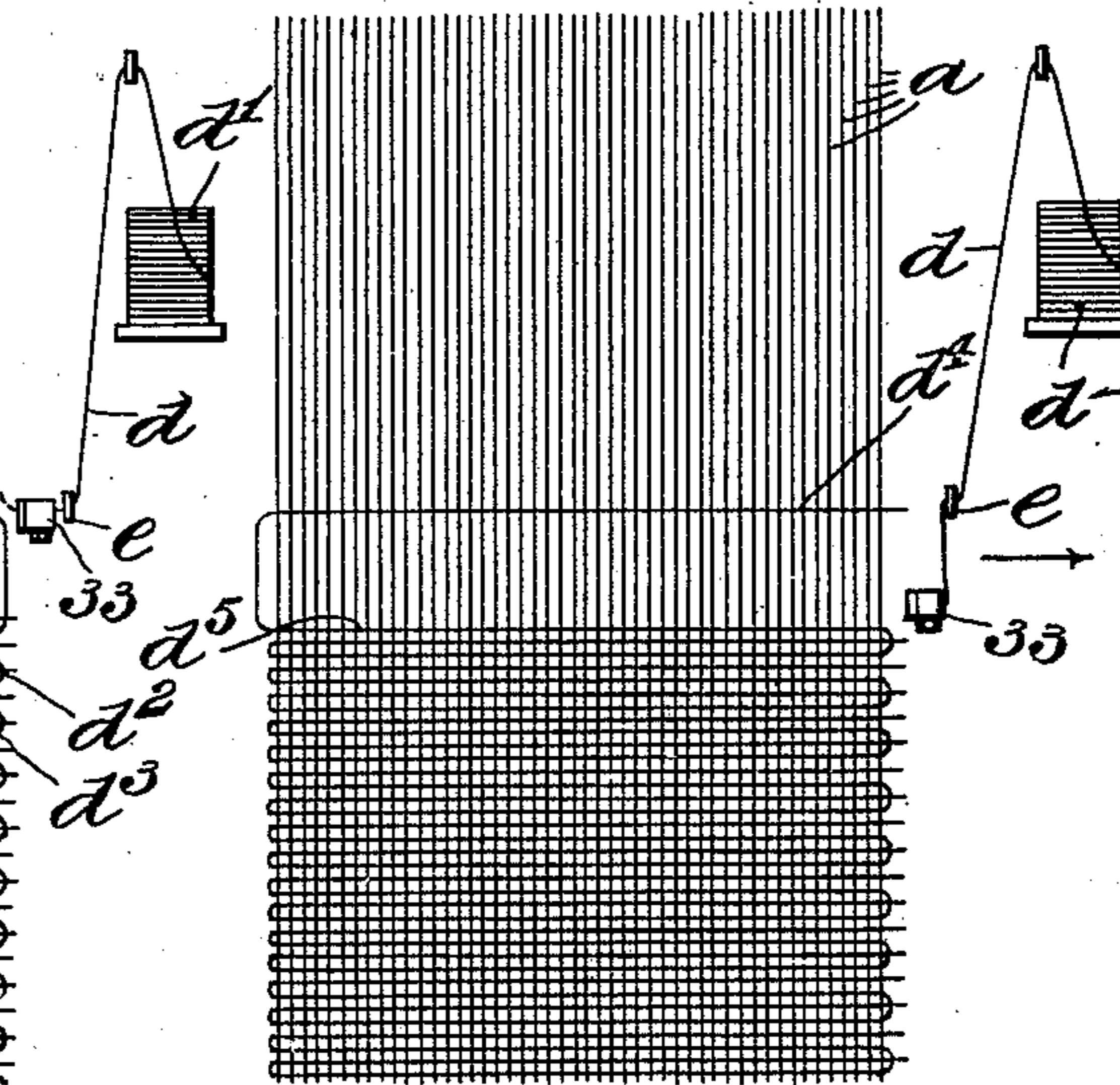


Fig. 4.



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Fig. 5.

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WOVEN FABRIC AND ART OF WEAVING THE SAME.

No. 865,974.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed July 3, 1906, Serial No. 324,656 Renewed July 30, 1907. Serial No. 386,245.

To all whom it may concern:

Be it known that I, JAMES LANE POALK, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have
5 invented certain new and useful Improvements in Woven Fabrics and Art of Weaving the Same, of which the following is a specification.

The present invention has relation to a fabric and to a method of weaving the same wherein a continuous
10 weft thread or filler is drawn from outside the weaving apparatus or loom and thrown into the sheds in a doubled portion and is beaten up in single portions in successive sheds.

The nature and scope of my invention will be more
15 fully understood from the following description taken in connection with the accompanying drawings forming part hereof, in which:—

Figures 1 to 4 are views illustrating the improved fabric also illustrating diagrammatically the successive
20 steps in the formation of said fabric, and Fig. 5 is a detail view of a weft thread showing it as arranged in the fabric.

In the formation of the fabric the warp threads *a* are operated in any well known manner to form the sheds
25 and into each shed a weft thread *d* is drawn doubled from a spool or reel *d'* by a shuttle indicated by the arrow. In Fig. 1, is illustrated the position of the doubled weft thread *d* at the end of the first pick the thread being carried from right to left. In this in-
30 stance the shuttle draws the thread doubled across the entire warps, the thread leading through a guide *e* from the reel *d'*. At the end of the movement of the shuttle, a portion (the lowermost portion) of the doubled thread is drawn out of the shed of the fabric as indicated by the
35 portion *d*² of Fig. 1. The upper portion *d*³ of the thread *d* is now beaten up into the fabric (see Fig. 2) and the shuttle is next returned from left to right carrying into the next shed the portion *d*² as clearly illustrated in Fig. 2, which is then beaten up. Upon the next pick,
40 the shuttle travels from right to left (Fig. 3) with the continuation *d*⁵ of the thread *d*³ in the lower position and an upper portion *d*⁴ follows with the shuttle. As the shuttle reaches its position at the left, a shearing device 33 located at the right of the fabric cuts the
45 thread leaving the upper portion *d*⁴ free to be drawn out of the shed to permit the portion *d*⁵ to be beaten up. After being so beaten up the shuttle returns from left to right drawing into a shed the portion *d*⁴ of the thread *d*, (see Fig. 4) which may be beaten up (see Fig. 1) and
50 the cycle of operations again begin. It follows, therefore, that at the end of the cycle of operations there is thrown into the four sheds of the warps a continuous weft thread *d* of the form and arrangement illustrated in detail in Fig. 5. That is to say, at the right edge of

the fabric the first and third picks of the weft inclose by 55
bend 10 the loose end 11 of the second pick, and at the left edge of the fabric the first and second picks and the third and fourth picks of the weft are continued in the bends 12 and 13 respectively, the loose end 14 of the
60 fourth pick of weft extending to the right edge of the fabric. By this arrangement and manipulation of the weft thread, each pick of weft may be beaten up separately in the fabric and a perfect selvage may be
65 formed to prevent the pulling out or loosening of the weft. The weft thread may by the aforesaid manipulation, be drawn continuously from a source of supply, being severed from the source only at the end of each fourth pick. The preferred type of loom upon which
70 the fabric may be woven together with the mechanisms for manipulating the weft thread are illustrated and described in my application for patent filed May 2nd, 1906 under Serial No. 314,755.

Having thus described the nature and object of my invention, what I claim as new and desire to secure by Letters Patent, is,— 75

1. The improvement in the art of weaving fabrics from a continuous weft thread which consists in first forming with the warp threads successive sheds, then throwing into each shed a doubled weft thread, then beating up into each shed but one portion of said doubled weft thread. 80

2. The improvement in the art of weaving fabrics from a continuous weft thread which consists in forming successive sheds with the warp threads, then throwing into the first shed in series a doubled weft thread, then withdrawing from said shed one portion of said weft and beating up in the shed the remaining portion of said weft, then throwing the withdrawn portion of said weft into the second shed and beating up the same, then throwing a doubled weft thread through the third shed and withdrawing one portion thereof from the shed, then beating up 90 the remaining portion of the weft in said shed and finally throwing the withdrawn portion of the weft into the fourth shed.

3. A woven fabric having warp threads formed into successive sheds and a weft thread filling a plurality of said sheds consecutively, said weft thread having a plurality of bends connecting the picks of said weft, the second pick of the weft being joined by one of said bends to the first pick and having a free end, said free end being inclosed by a second bend of said weft. 100

4. A woven fabric having warp threads formed into successive sheds, and a weft thread filling four of said sheds, said weft thread having one of its free ends thrown into the fabric as the second pick of the weft and inclosed by a bend connecting the first and third picks of said weft and the other of said free ends of the weft being thrown into the fabric as the fourth pick and connected with the third pick of the weft by a bend at that edge of the fabric opposite to the bend between the first and third picks. 105

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Witnesses:

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