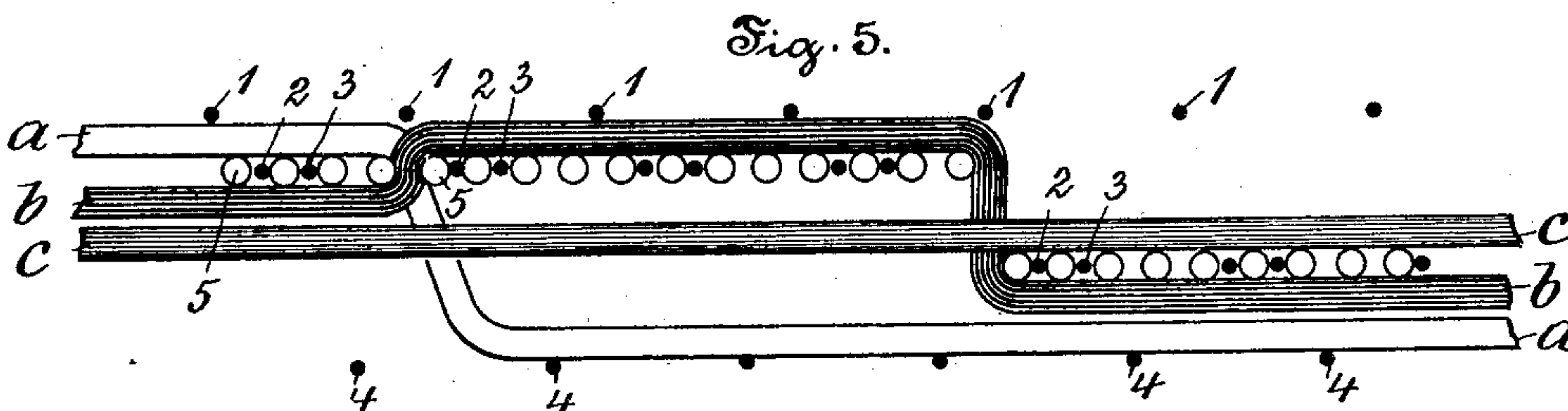
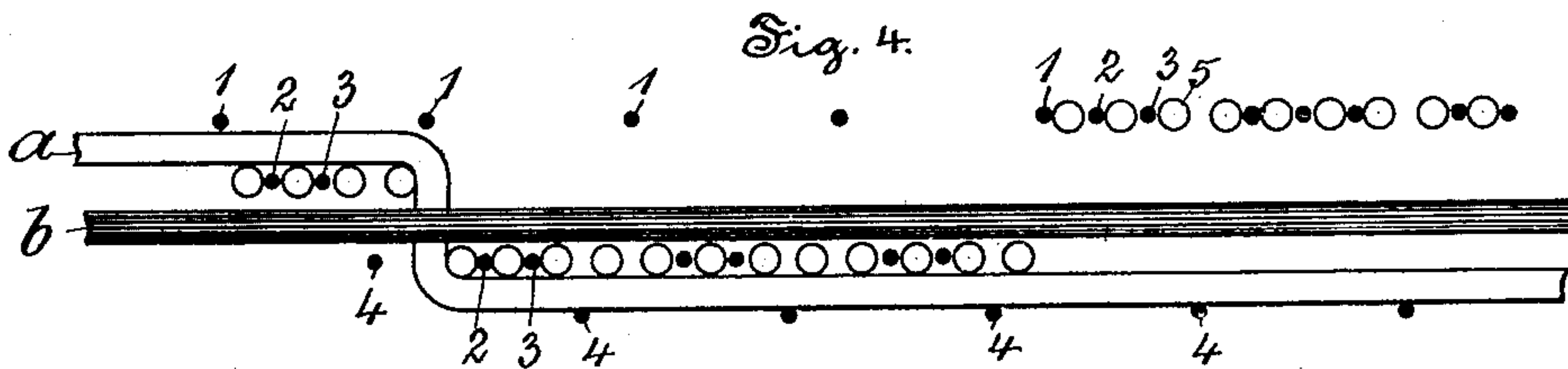
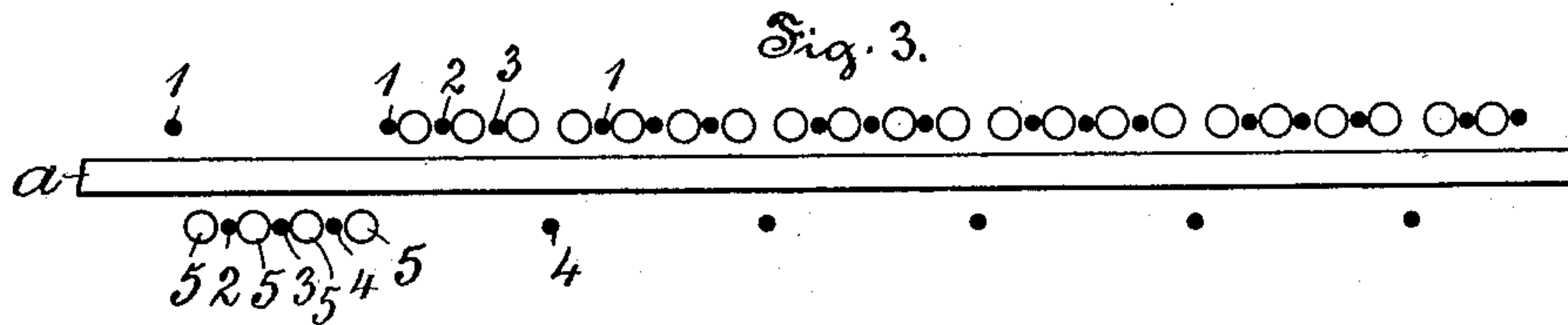
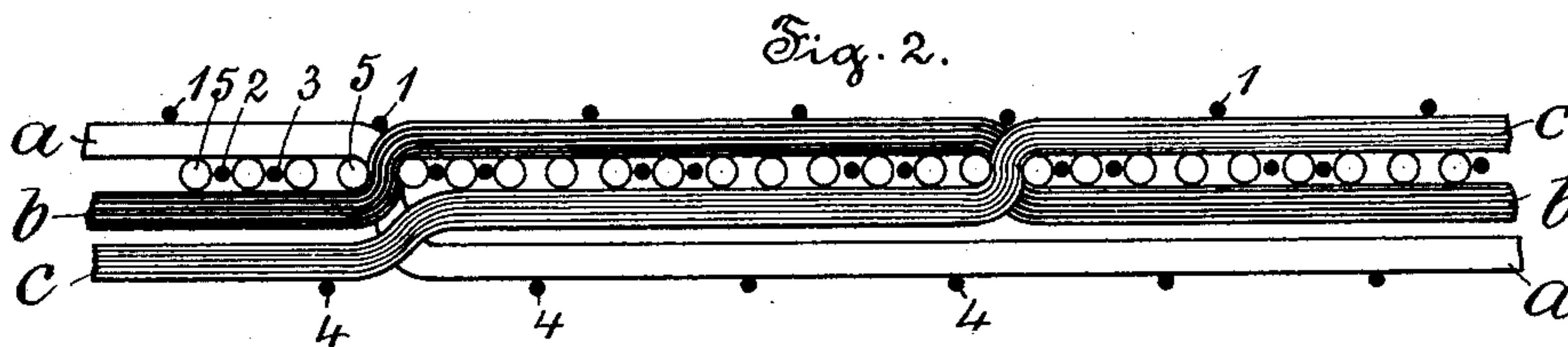
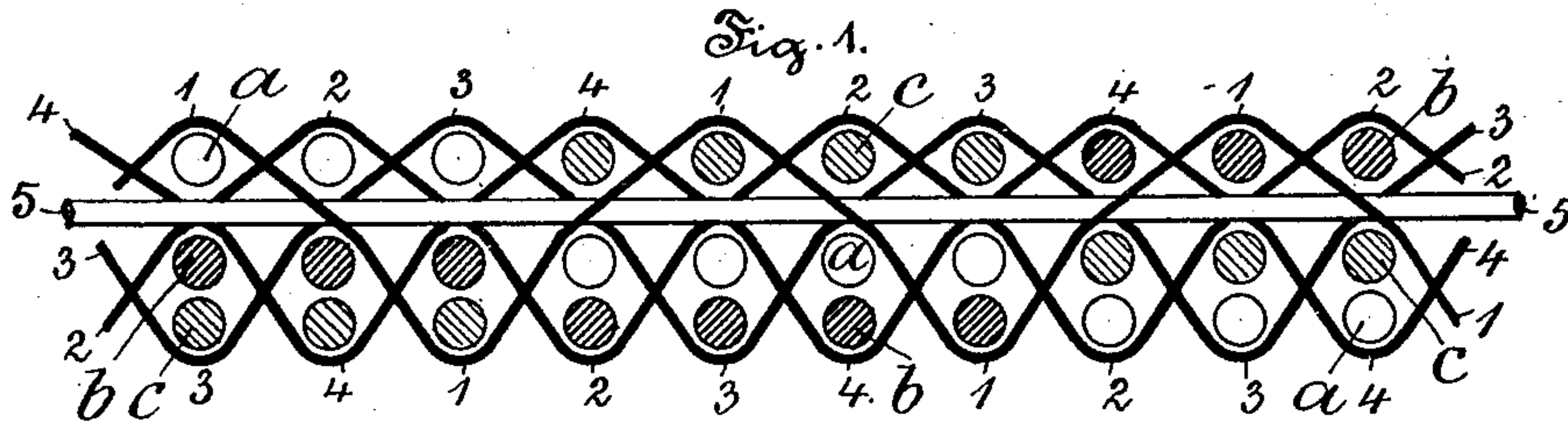


(Specimens.)

I. McCALLUM.
WOVEN FABRIC.

No. 480,855.

Patented Aug. 16, 1892.



Witnesses:
Hermann Bormann
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UNITED STATES PATENT OFFICE.

IRVING McCALLUM, OF PHILADELPHIA, PENNSYLVANIA.

WOVEN FABRIC.

SPECIFICATION forming part of Letters Patent No. 480,855, dated August 16, 1892.

Application filed February 26, 1892. Serial No. 422,850. (Specimens.)

To all whom it may concern:

Be it known that I, IRVING McCALLUM, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Woven Fabrics, of which the following is a specification.

My present invention relates to improvements in the fabrics described in and by my Letters Patent of the United States numbered 453,288 and 453,289 and issued June 2, 1891. In said fabrics the wefts comprising the weft plane or planes that underlie the face-weft plane are in some instances visible from the face of fabric, so that they peep through between the respective face wefts, and consequently mar or disfigure the color effect.

The principal object of my present invention is to improve said fabrics by tying in or knitting down the underlying wefts in such manner that they cannot peep through between the face wefts, whereby the color and figure effect presented by the finished fabrics is greatly improved; and I attain this object by dividing the whole warp into five divisions and manipulating four of these divisions in precisely the manner set forth in said patents and the other of these divisions in such manner that it lies between the face-weft plane and the underlying-weft planes without being incorporated with any of them.

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

Figure 1 is a diagrammatical representation of a section of a fabric embodying features of my invention and taken in the direction of the warp-threads—that is, a section through the weft-threads. Fig. 2 is a like view of the same, taken in the direction of the weft-threads—that is, a section through the warp-threads. Figs. 3, 4, and 5 are diagrammatical representations of sections, taken in the direction of the wefts and illustrating the positions of the respective warp-threads of the fabric at the introduction of each shot of weft.

In my present invention the whole warp is divided into five divisions instead of four, as in my said patents. In the present instance

the whole warp of eight threads is divided in half and one of these divisions or half parts is subdivided into quarters, so that the four divisions contain one-eighth part of the warp each and the fifth division contains one-half part of the whole warp. The threads appertaining to the four divisions are designated 1, 2, 3, and 4, respectively, and each of these divisions is controlled, preferably, by a journal-lift and by Jacquard mechanism. The threads comprising the fifth division are designated 5 and are controlled, preferably, by the Jacquard machine. In the finished fabric the threads 3 and 4 lie crosswise between a single figuring-weft and the ground-wefts of every alternate row of picks and at the respective faces of every intervening row of picks, and the threads 1 and 2 lie in a similar manner, but at the respective faces of said alternate rows of picks and crosswise between the single figuring-weft and the ground-wefts of said intervening rows of picks, as is fully explained in my said patents. The threads 5, comprising one-half of the whole warp, lie between the figuring-wefts—i. e., the wefts appertaining to the face-weft plane—and the ground-wefts—i. e., the wefts appertaining to the underlying-weft plane or planes—and are not incorporated with any of them. These warps 5 are comparative very numerous and completely separate the wefts of the face and back weft planes and serve to prevent the wefts of the latter from peeping through between the wefts of the former, thus materially improving the color effects of the fabrics described in my said patents.

Referring now to Figs. 3, 4, and 5, *a, b*, and *c* are the respective shots of weft. During the introduction of these shots of weft to form the first row of picks the divisions of the warp 1 and 2 are shedded by the ordinary operation of the journals and held in such position. The divisions of warp 3, 4, and 5 are each operated by the Jacquard machine once before the introduction of each shot of weft in the following manner: The divisions of warp 3 and 4 are lifted at those points where the weft is required to go to the back or center of the fabric and are dropped at those points where the weft is required to go to the face of the fabric. The division of warp 5 is operated by the Jacquard machine in such manner that it

always lies between the face-weft plane and the underlying-weft plane. The next row of picks is formed by the repetition of the above-described operations, it being understood that
5 the divisions of warp 3 and 4 are shedded by the journals and the divisions of warp 1, 2, and 5 are manipulated by the Jacquard machine in the manner above set forth with reference to the divisions 3 and 4, and these op-
10 erations are repeated in regular succession throughout the formation of the whole fabric.

Having thus described the nature and objects of my present invention, what I claim as new, and desire to secure by Letters Pat-
15 ent, is—

A homogeneous unmottled figured fabric having rows of picks comprising ground or concealed figuring wefts and a single figuring-
20 weft, with substantially one-half of the warps in four divisions, whereof two lie crosswise

between the single figuring-weft and the ground-wefts of every alternate row of picks and at the respective faces of every interven-
ing row of picks, and whereof the other two lie in a similar manner, but at the respective
25 faces of said alternate rows of picks and crosswise between the single figuring-wefts and ground-wefts of said intervening rows of picks, and with substantially the other half
30 of the warps always between the concealed figuring and figuring-wefts, for the purposes set forth.

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

IRVING McCALLUM.

Witnesses:

A. B. STOUGHTON,
HERMANN BORMANN.