

No. 724,384.

PATENTED MAR. 31, 1903.

J. T. FERRES.
SHIPPING PACKAGE.
APPLICATION FILED DEC. 23, 1901.

3 SHEETS—SHEET 1.

NO MODEL.

Fig. 1

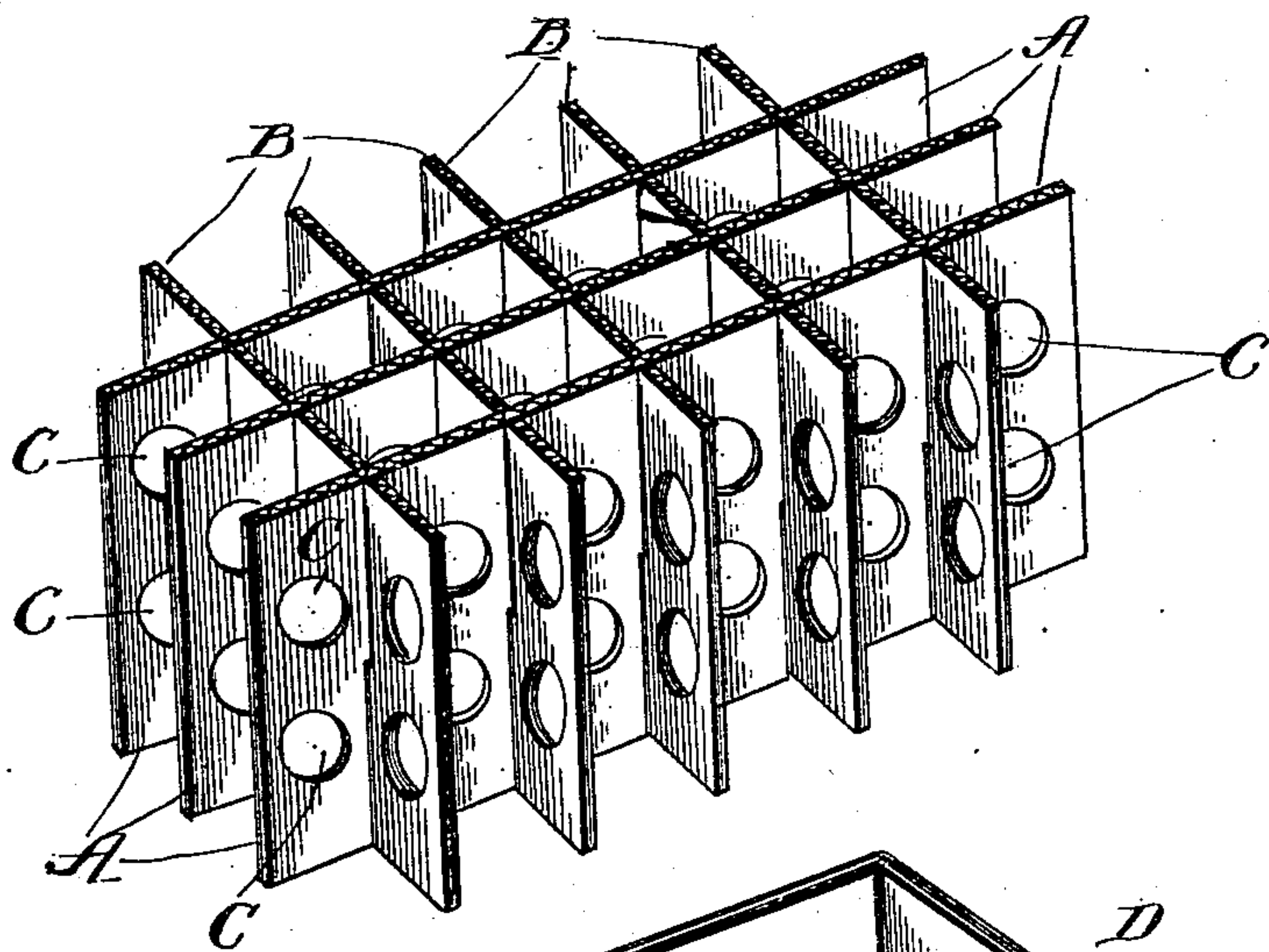


Fig. 2

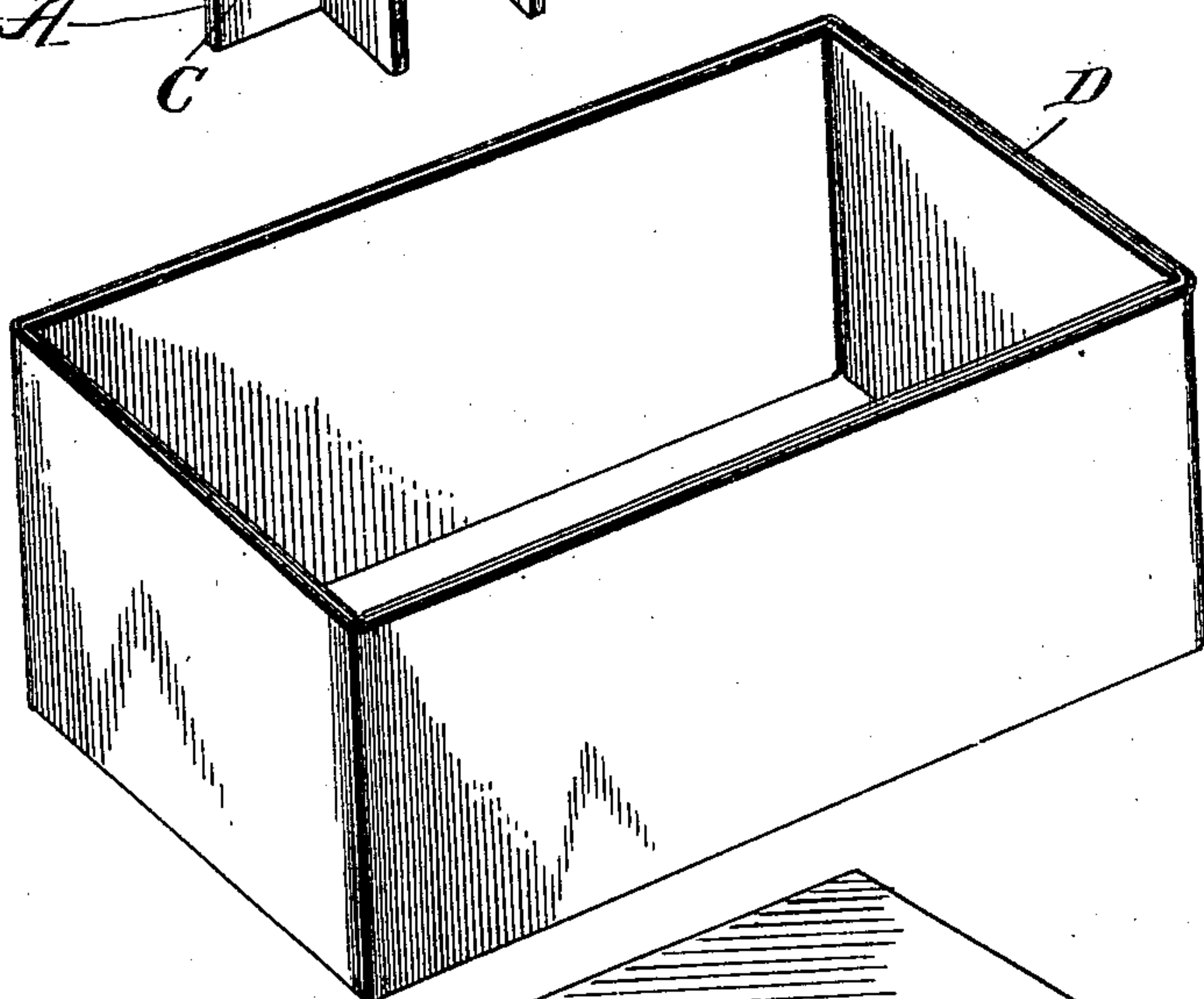
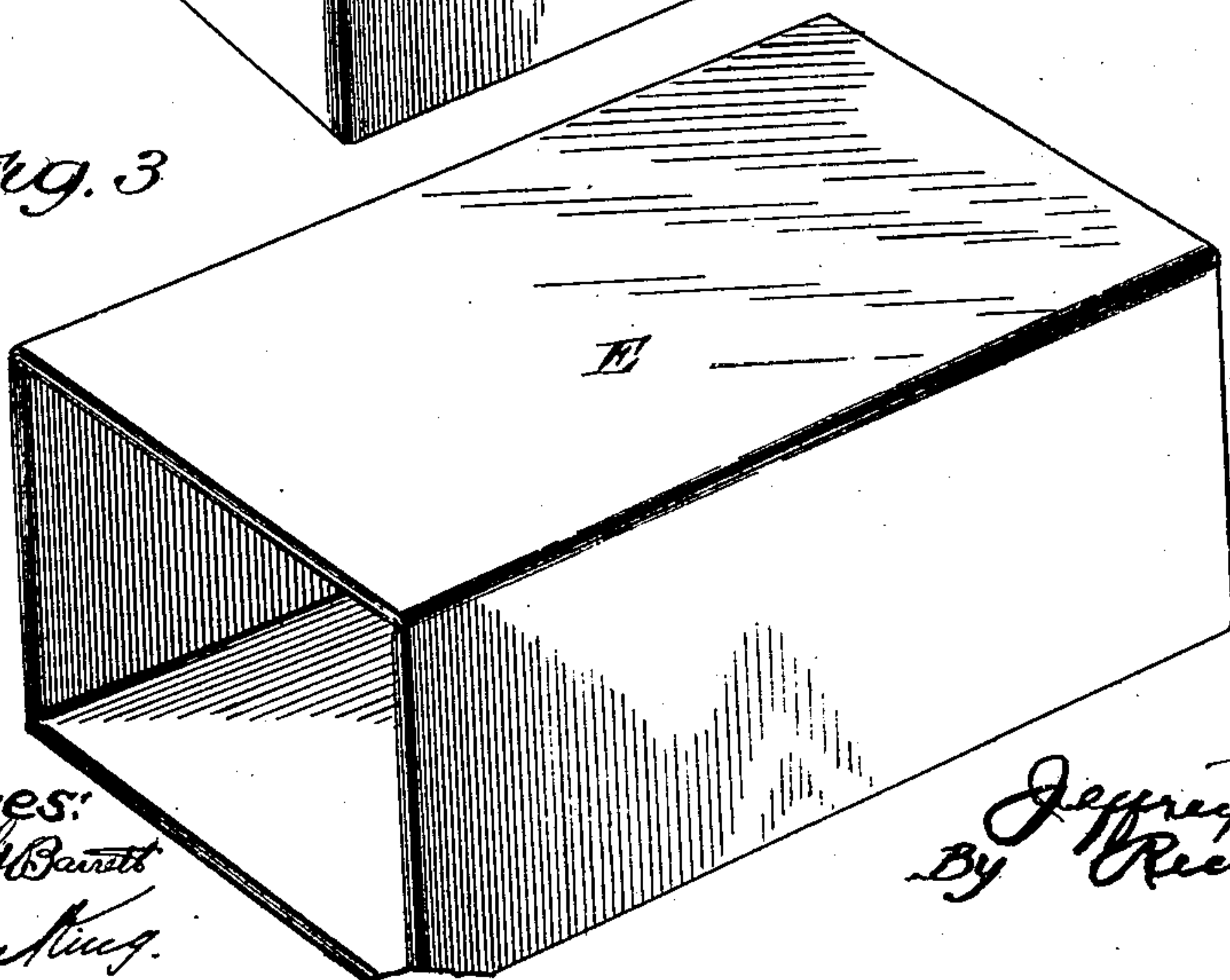


Fig. 3



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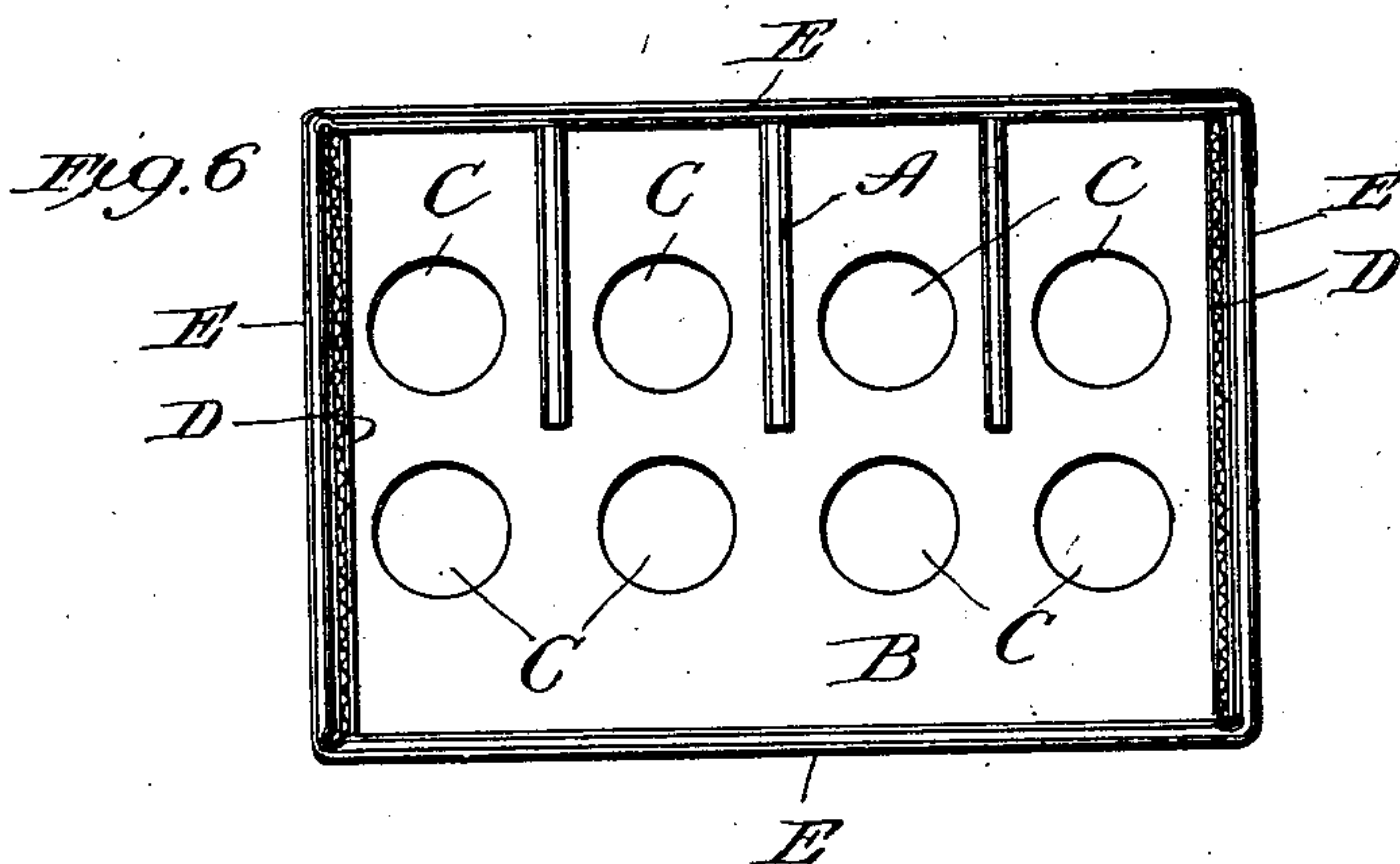
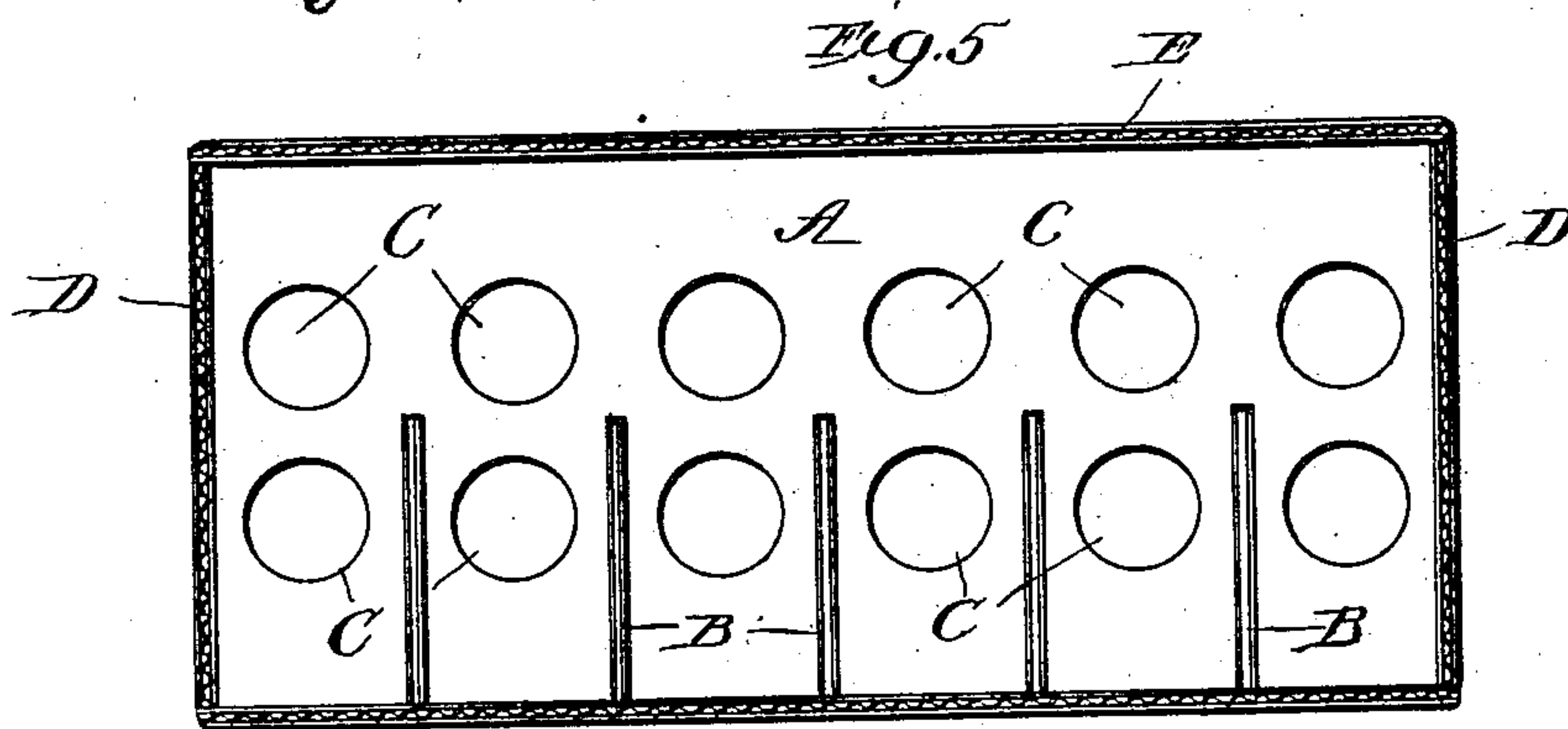
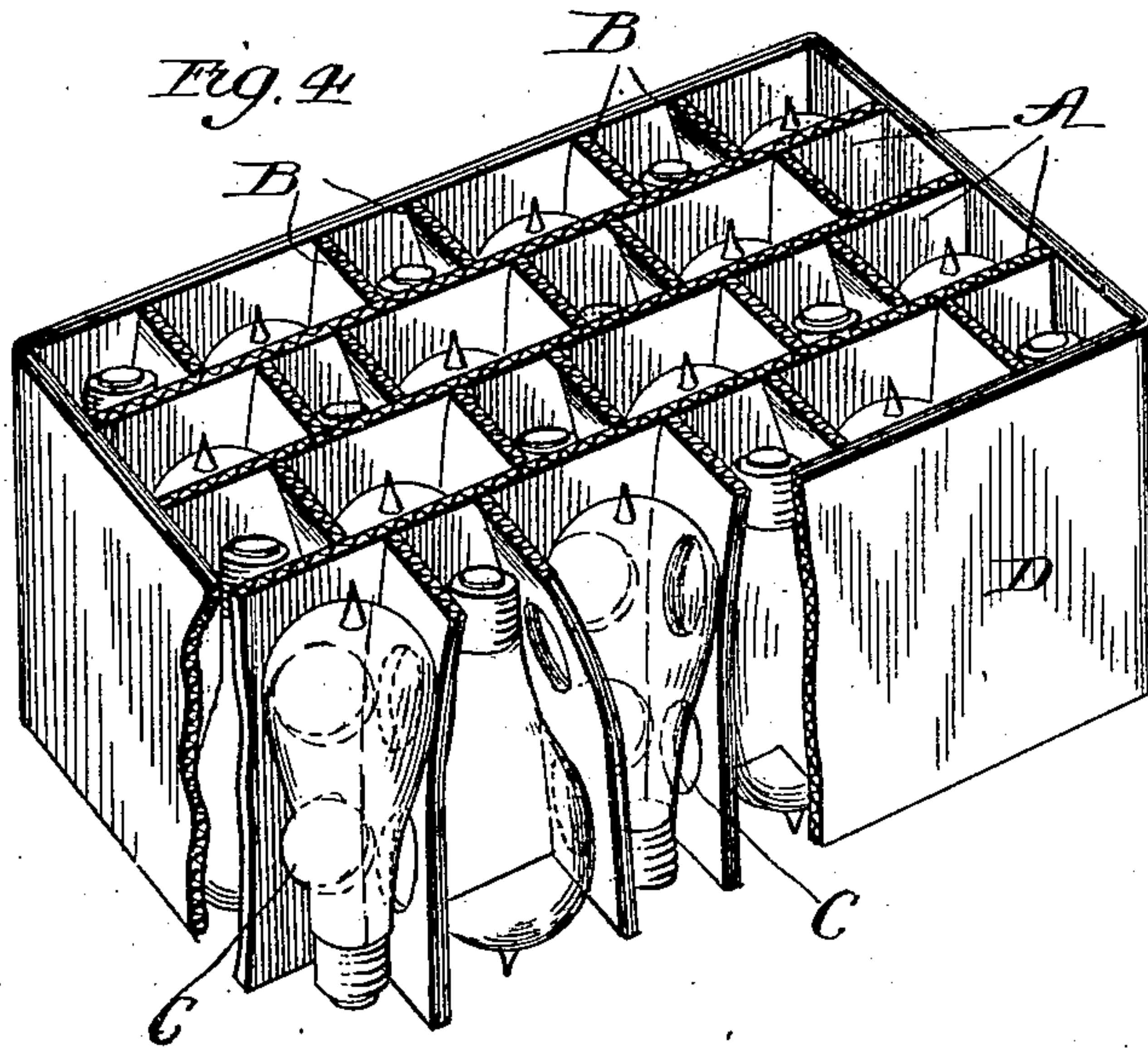
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3 SHEETS—SHEET 2



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3 SHEETS—SHEET 3.

Fig. 7

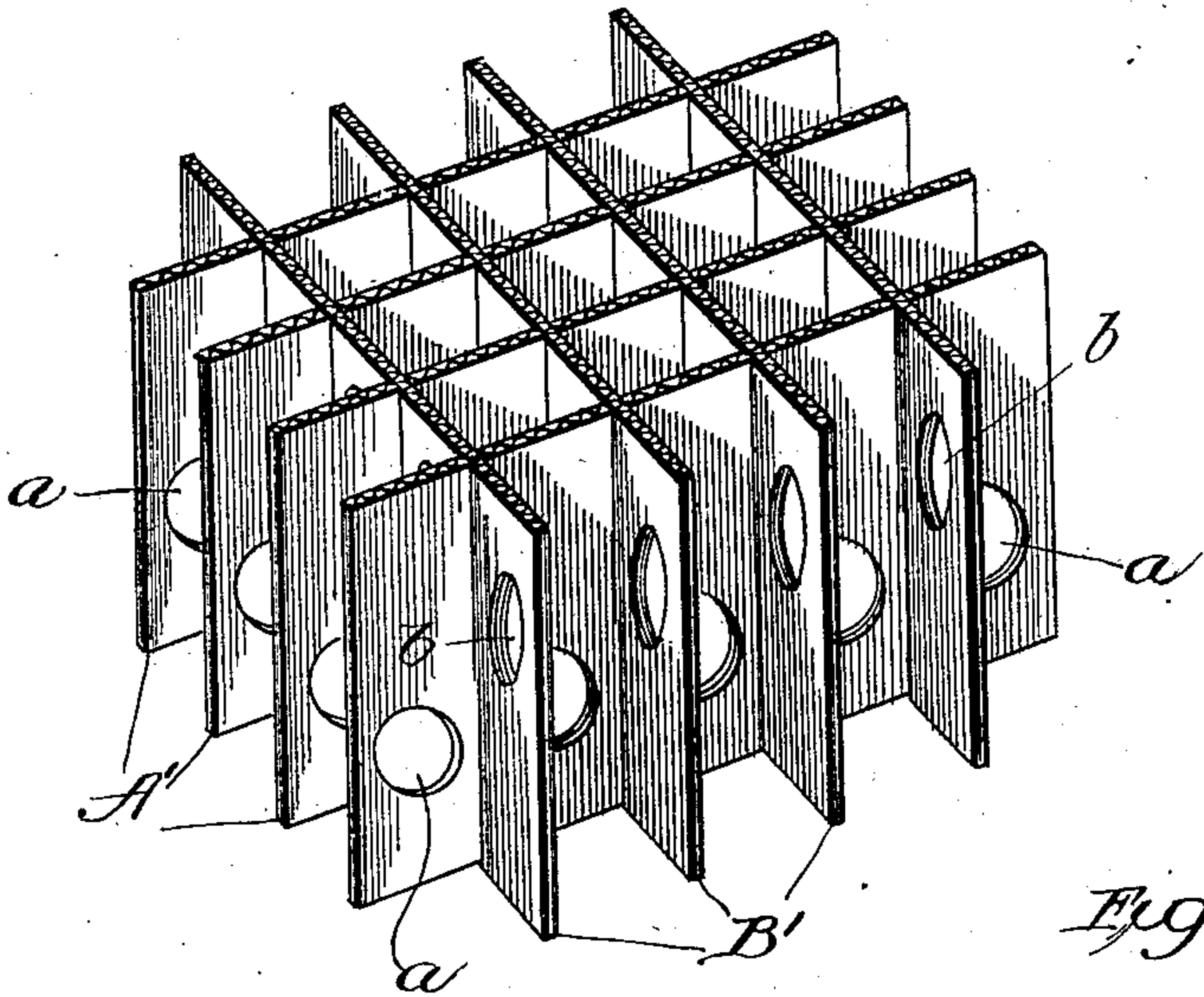


Fig. 8

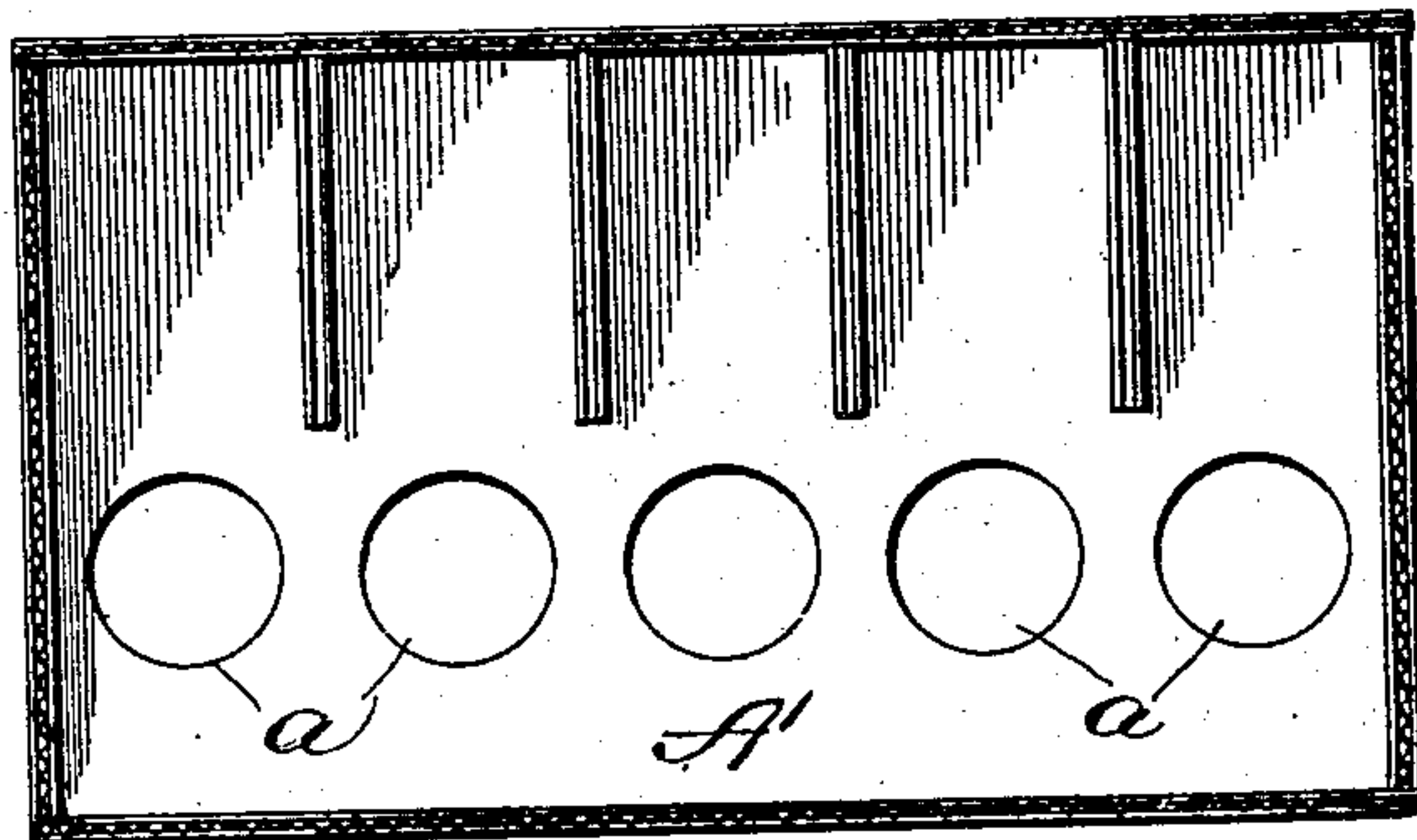
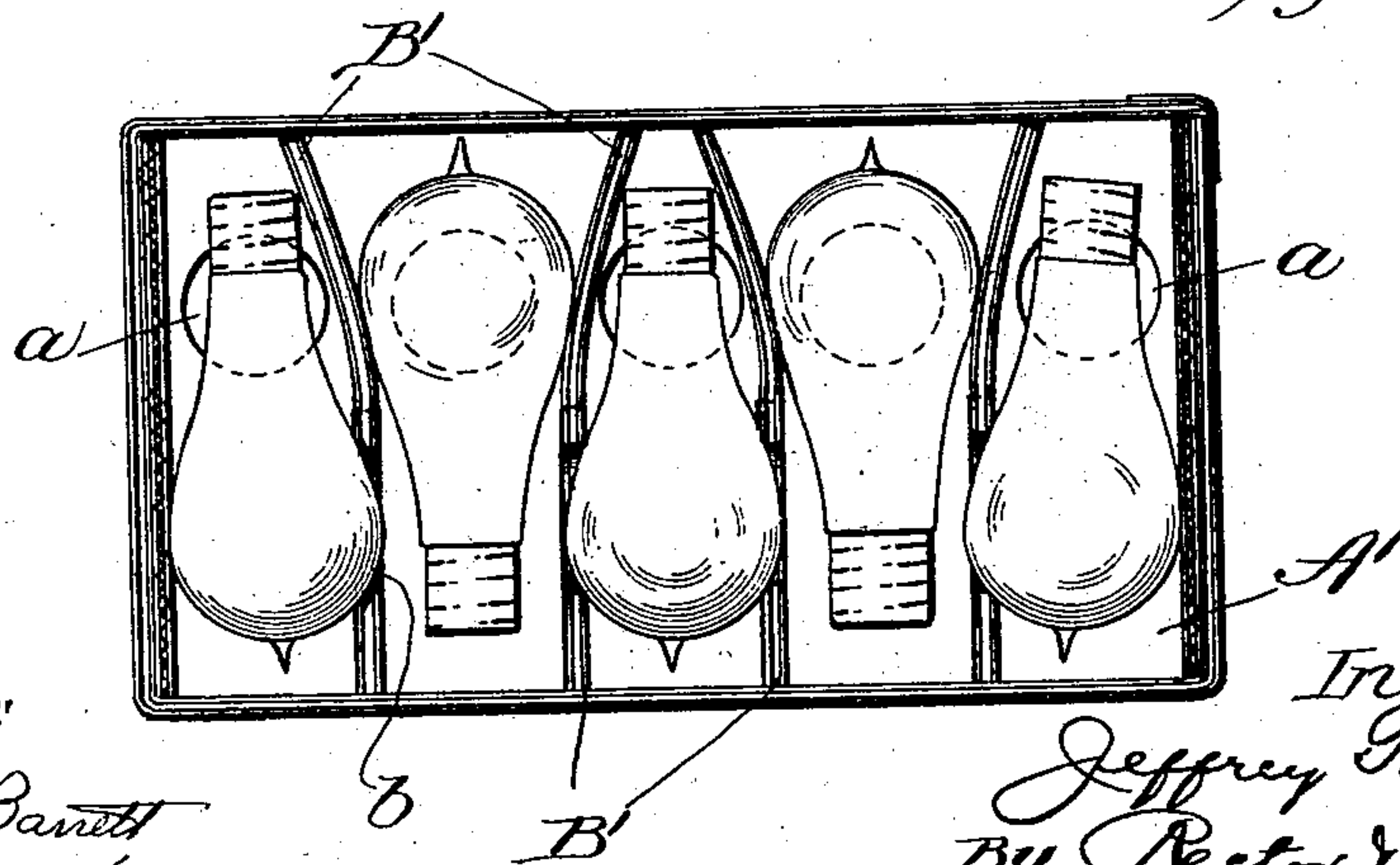


Fig. 9



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UNITED STATES PATENT OFFICE.

JEFFREY T. FERRES, OF ANDERSON, INDIANA.

SHIPPING-PACKAGE.

SPECIFICATION forming part of Letters Patent No. 724,384, dated March 31, 1903.

Application filed December 23, 1901. Serial No. 86,924. (No model.)

To all whom it may concern:

Be it known that I, JEFFREY T. FERRES, a citizen of the United States, residing at Anderson, in the county of Madison and State of Indiana, have invented certain new and useful Improvements in Shipping-Packages, of which the following is a description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates more particularly to packages designed for the handling and shipping of incandescent electric lamps and similar fragile articles, and has for its object the production of a cheap and convenient package for this purpose which will efficiently protect the lamps or other articles from breakage during handling and shipment.

My improved package consists, essentially, of a set of partitions or "cells" of novel character adapted to fit within an open-ended box and receive the lamps or other articles and properly support and protect them and a second open-ended box into which the first-mentioned box and its contents are inserted to complete the package, all as hereinafter more fully explained.

In the accompanying drawings, Figure 1 is a perspective view of the set of partitions or cells for the reception of the lamps; Fig. 2, a perspective view of the open-ended box into which said partitions are adapted to fit; Fig. 3, a perspective view of the second or outer box into which the box of Fig. 2 and its contained set of partitions are adapted to be inserted to complete the package; Fig. 4, a perspective view of the box of Fig. 2 with the partitions of Fig. 1 in place in it and the several cells filled with lamps ready for insertion in the box of Fig. 3, part of the inner box being broken away to expose the cells within it; Fig. 5, a longitudinal vertical section through the complete package; Fig. 6, a vertical cross-section of the same; and Figs. 7, 8, and 9, views corresponding to those of Figs. 1, 4, and 6, but illustrating a modified form of package and with twenty-five cells instead of twenty-four.

The same letters of reference are used to indicate like or corresponding parts in the several views.

The set of partitions or cells shown in Fig. 1 is composed of a series of longitudinally-

extending boards A, preferably of double-faced corrugated paper, (single-faced corrugated paper or plain strawboard can be used,) and a series of transverse boards B of the same material, the boards A being slit upward from their lower edges, Fig. 5, and the boards B downward from their upper edges, Fig. 6, to interlock and form a connected set of partitions or cells, as usual. Each board A and B is provided with two horizontal rows of circular holes C, so arranged that each of the side walls of the cells formed by the partitions is provided with two of such holes, one vertically above the other, Fig. 4.

The set of partitions of Fig. 1 above described is adapted to fit snugly within the rectangular band or open-ended box D of Fig. 2, which may also be formed of heavy double-faced corrugated paper, the walls of said box thereby forming the outer walls of the outer row of cells. The package is then ready to receive the lamps, which are inserted in the respective cells socket end first and in the reverse order shown in Fig. 4. The cells are of such size that when a lamp is inserted in a cell its bulb slightly distends the cell until it comes opposite one of the sets of holes C in the walls of the cell, whereupon the cell-walls spring inward again and their holes C engage the sides of the bulb and yieldingly but securely hold the lamp from further inward or outward movement. By providing the walls of the cells with the two rows of circular openings C, one immediately above the other, and reversing the position of the adjacent lamps in placing them in the cells the socket end of each lamp is brought opposite the bulb ends of all of the immediately adjacent lamps, so as not to interfere with the distention of the cell-walls by the bulbs of such adjacent lamps and so as to permit said bulbs to be securely engaged by the circular holes in the cell-walls and contact of the bulbs with each other be effectually prevented. This reverse arrangement of the lamps in the cells necessitates the adjacent lamps being inserted from opposite sides of the package, to facilitate which the latter may be placed upon its side, bringing the cells into horizontal position, and the lamps be inserted from the right and left hand, respectively, or with the package in horizontal position one-half

of the lamps may be first inserted in the upper ends of their respective cells and the package be then turned over to bring the opposite ends of the cells uppermost and the remaining lamps be then inserted in their respective cells. When the package has been filled with lamps, as in Fig. 4, it will be slipped endwise into the outer box E of Fig. 3, which latter, as shown, is also formed of double-faced corrugated paper. The package is then ready for shipment and a large number of them may be shipped together in a suitable box or crate, or single packages may be safely shipped by express or otherwise without any additional protection than that afforded by the walls of the package and its contained cells. The opposite side walls of the one box of Fig. 2 and the adjacent side walls of the box of Fig. 3 form side walls of double thickness for the package, as shown in Fig. 6, while the end walls are of a single thickness only, Fig. 5. With the inner band or box made of heavy double-faced corrugated paper, as described, this will ordinarily suffice for the proper protection of the lamps, but, if desired, a separate end piece of corrugated paper may be inserted in each end of the inner box. In removing the lamps from the package the inner box will be slipped endwise out of the outer box to expose the open ends of the cells containing the lamps, whereupon the latter can be removed bulb end foremost by pushing upon their socket ends, each lamp being removed from its cell from the end thereof at which it was inserted.

The foregoing package not only constitutes a very safe and efficient one for the shipment of incandescent lamps and similar fragile articles, but a very convenient one for the insertion of the lamps and the handling of them in package form prior to shipment. The engagement of the bulbs of the lamps with the holes in the partition-walls holds them so securely in place in their respective cells that when the open package is filled with lamps, as in Fig. 4, it may be freely handled in inserting it in the outer box or in moving it from place to place without danger of any of the lamps dropping out of their cells. Likewise in opening the closed package preparatory to removing the lamps the inner box and its contained partitions and lamps may be slid out of the outer box and freely handled and the lamps removed one by one without requiring the exercise of any care to prevent them from falling out of their respective cells.

The set of partitions of Fig. 1 may be readily pressed out into flat form, as may likewise be the open-ended boxes of Figs. 2 and 3, so that the packages may be stored or shipped in large quantities in very compact form prior to use.

The form of package illustrated in Figs. 7, 8, and 9 corresponds with that above described, except that each partition or board is provided with a single line or series of holes in-

stead of a double series. As before, the boards A' and B' are slitted, so as to form an interlocking structure having a series of cells for the reception of the lamps. The boards A' are provided with a series of circular holes *a* and the boards B' with a series of similar holes *b*, so that the cells, except the end ones, have four holes arranged in two pairs in opposite walls, one pair being near the top of the cells and the other near the bottom thereof. To avoid as much as possible any weakening of the boards, the holes thereon are cut in the main body or unslitted half thereof, as illustrated in Figs. 7 and 8. When the lamps are inserted in reverse arrangement in the cells, as shown in Fig. 9, the bulb portion thereof will fit into and be supported by two opposite holes of that cell, while the two walls thereof unprovided with holes adjacent to the bulb of the particular lamp will be distended or bent laterally, as illustrated in Fig. 9. This bending of the walls is not detrimental, but, in fact, serviceable in holding the socket end of some of the lamps. Furthermore, the cell structure having a less number of holes will be rendered stronger than that shown in Fig. 1.

Having thus fully described my invention, I claim—

1. In a shipping-package of the character described, the longitudinal and transverse boards forming a series of connected cells for the reception of the articles, one set of said boards being provided with a row of openings above their middle and the other being provided with a row of openings below their middle, and means for holding the boards and also forming the outer walls of the outer rows of cells, the articles being inserted from opposite sides of the cell structure in alternately-reversed positions and being engaged by said openings; substantially as described.

2. In a shipping-package of the character described, the longitudinal and transverse boards slitted and interlocked with each other and forming a series of connected cells for the reception of the articles, each set of boards being provided with a row of openings in its solid or unslitted portion, whereby a series of openings is provided in one set of boards above their middle and in the other set of boards below their middle, and means for holding the boards and also forming the outer walls of the outer rows of cells, the articles being inserted from opposite sides of the cell structure in alternately-reversed positions and being engaged by said openings; substantially as described.

3. In a shipping-package of the character described, the longitudinal and transverse interlocked boards forming a series of connected cells for the reception of the articles, one set of said boards being provided with a row of openings above their middle and the other being provided with a row of openings below their middle, said openings being adapted to engage said articles when the latter are

placed in the cells in alternately-reversed positions, in combination with the surrounding band adapted to hold the said partitions and form the outer walls of the outer row of cells; substantially as described.

4. In a shipping-package of the character described, the longitudinal and transverse boards slitted and interlocked with each other and forming a series of connected cells for the reception of the articles, each set of boards being provided with a row of openings in its solid or unslitted portion, whereby a series of openings is provided in one set of boards above their middle and in the other set of boards below their middle, and adapted to engage and support articles when placed in the cells in alternately-reversed positions, in combination with the surrounding band or box open at top and bottom adapted to hold the said partitions and form the outer walls of the outer row of cells; substantially as described.

5. In a shipping-package of the character described, the longitudinal and transverse interlocked boards forming a series of connected cells for the reception of the articles, one set of said boards being provided with a row of openings above their middle and the other being provided with a row of openings below their middle, said openings being adapted to engage said articles when the latter are placed in the cells in alternately-reversed positions, in combination with the surrounding band or box D open at top and bottom adapted to hold said set of partitions and form the outer walls of the outer row of cells thereof, and the second box E also open at top and bottom into which the box D and its contained partitions is inserted; substantially as described.

6. In a shipping-package of the character described, the longitudinal and transverse boards slitted and interlocked with each other and forming a series of connected cells for the reception of the articles, each set of boards being provided with a row of openings in its solid or unslitted portion, whereby a series of openings is provided in one set of boards above their middle and in the other set of boards below their middle, and adapted to engage and support articles when placed in the cells in alternately-reversed positions, in combination with the surrounding band or box D open at top and bottom adapted to hold said set of partitions and form the outer walls of the outer row of cells thereof, and the second open-ended box E into which the box D and its contained partitions is inserted; substantially as described.

7. In a shipping-package of the character described, the longitudinal and transverse interlocked boards A and B forming a series of connected cells for the reception of the articles, and provided with the double rows of holes C above and below their middle, respectively, said holes being adapted to engage the convex portions of the articles when placed in the cells in alternately-reversed positions and a surrounding band D around the cell structure; substantially as described.

8. In a shipping-package of the character described, the longitudinal and transverse interlocked boards A and B forming a series of connected cells for the reception of the articles, and provided with the double rows of holes C above and below their middle, respectively, said holes being adapted to engage the convex portions of the articles when placed in the cells in alternately-reversed positions, in combination with the surrounding band or box D open at top and bottom adapted to receive and hold said set of partitions and form the outer walls of the outer row of cells thereof; substantially as described.

9. In a shipping-package of the character described, the longitudinal and transverse interlocked boards A and B forming a series of connected cells for the reception of the articles, and provided with the double rows of holes C above and below their middle, respectively, said holes being adapted to engage the convex portions of the articles when placed in the cells in alternately-reversed positions, in combination with the surrounding band or box D open at top and bottom adapted to receive and hold said set of partitions and form the outer walls of the outer row of cells thereof, and the second open-ended box E in which the box D and its contained partitions are inserted; substantially as described.

10. The herein-described shipping-package, comprising the set of partitions composed of longitudinal and transverse interlocked boards forming a series of connected cells for the reception of the articles to be shipped, and provided with the double rows of openings adapted to engage said articles in the manner described, the surrounding band or open-ended inner box, and the open-ended outer box adapted to receive said inner box and its contained set of cells and their contents.

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Witnesses:

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