

(No Model.)

C. T. RICHARDS.
ILLUMINATING TILE.

No. 467,832.

Patented Jan. 26, 1892.

Fig. 1.

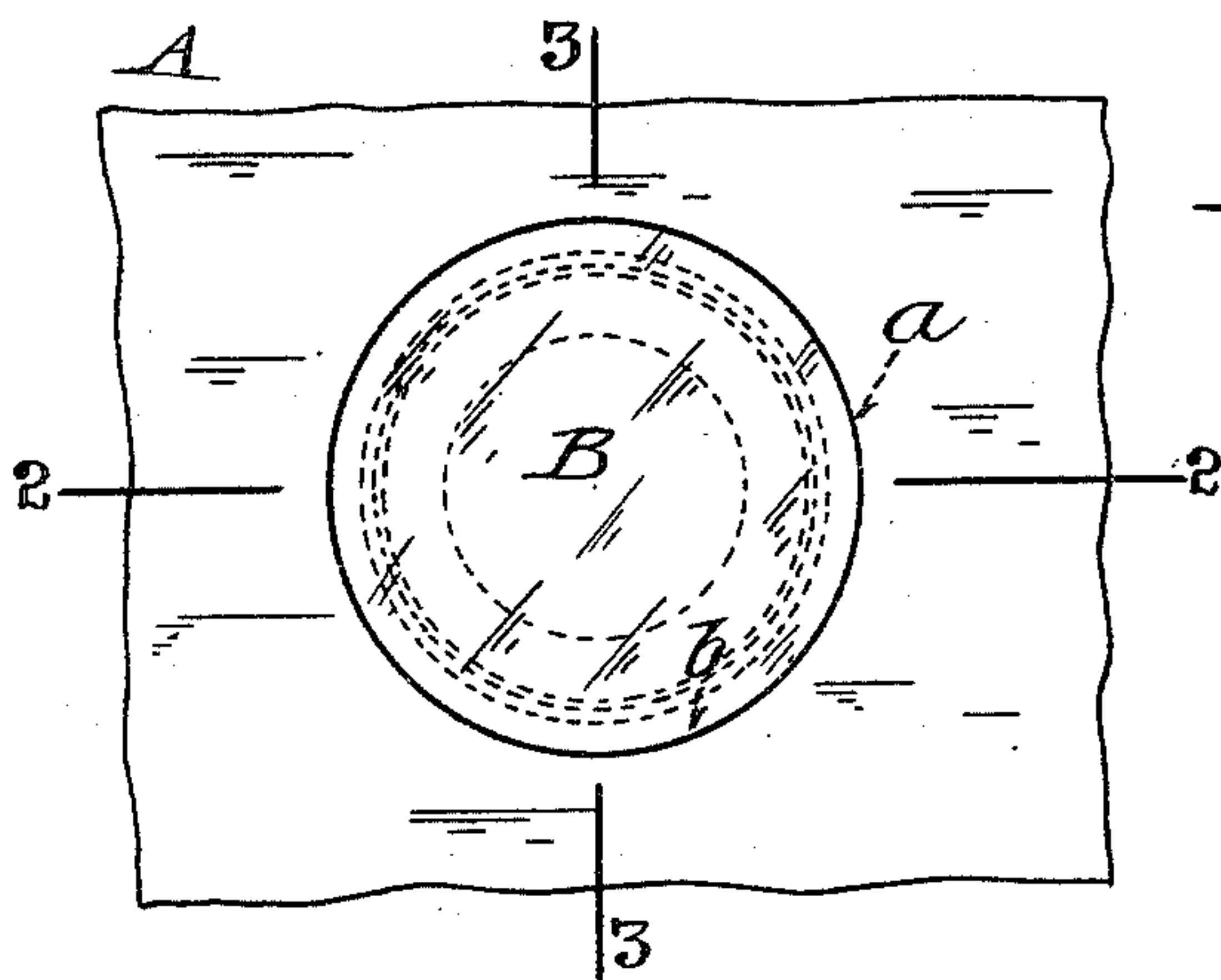


Fig. 2.

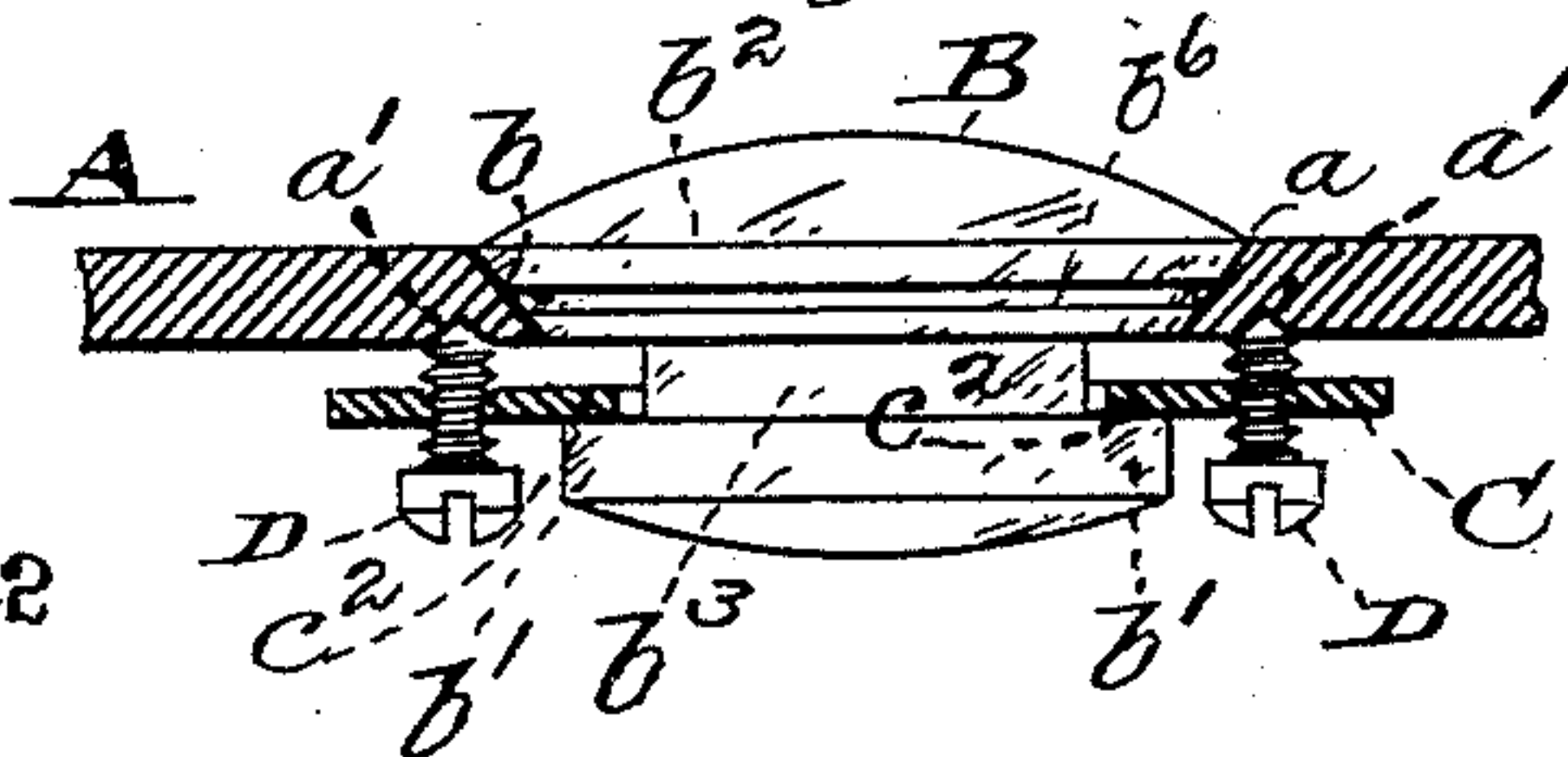


Fig. 3.

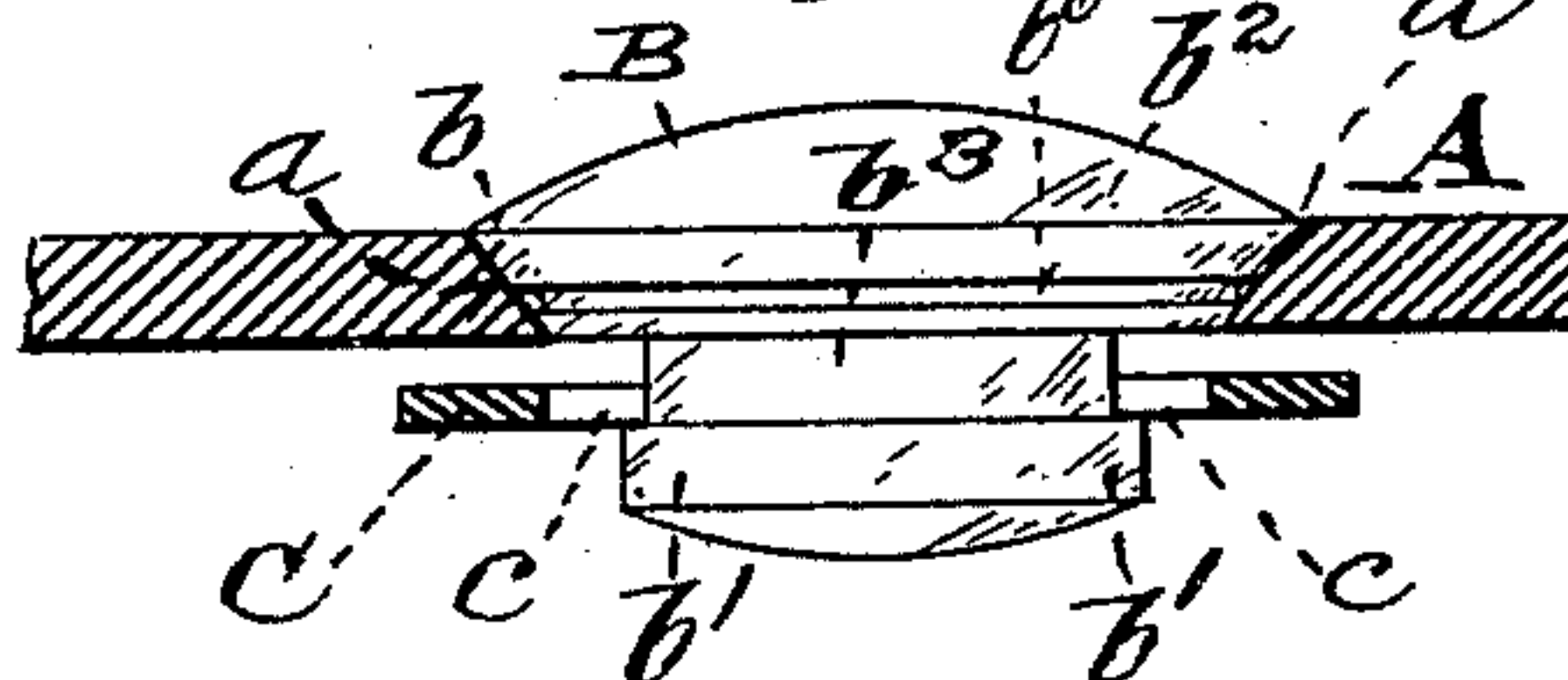


Fig. 4.

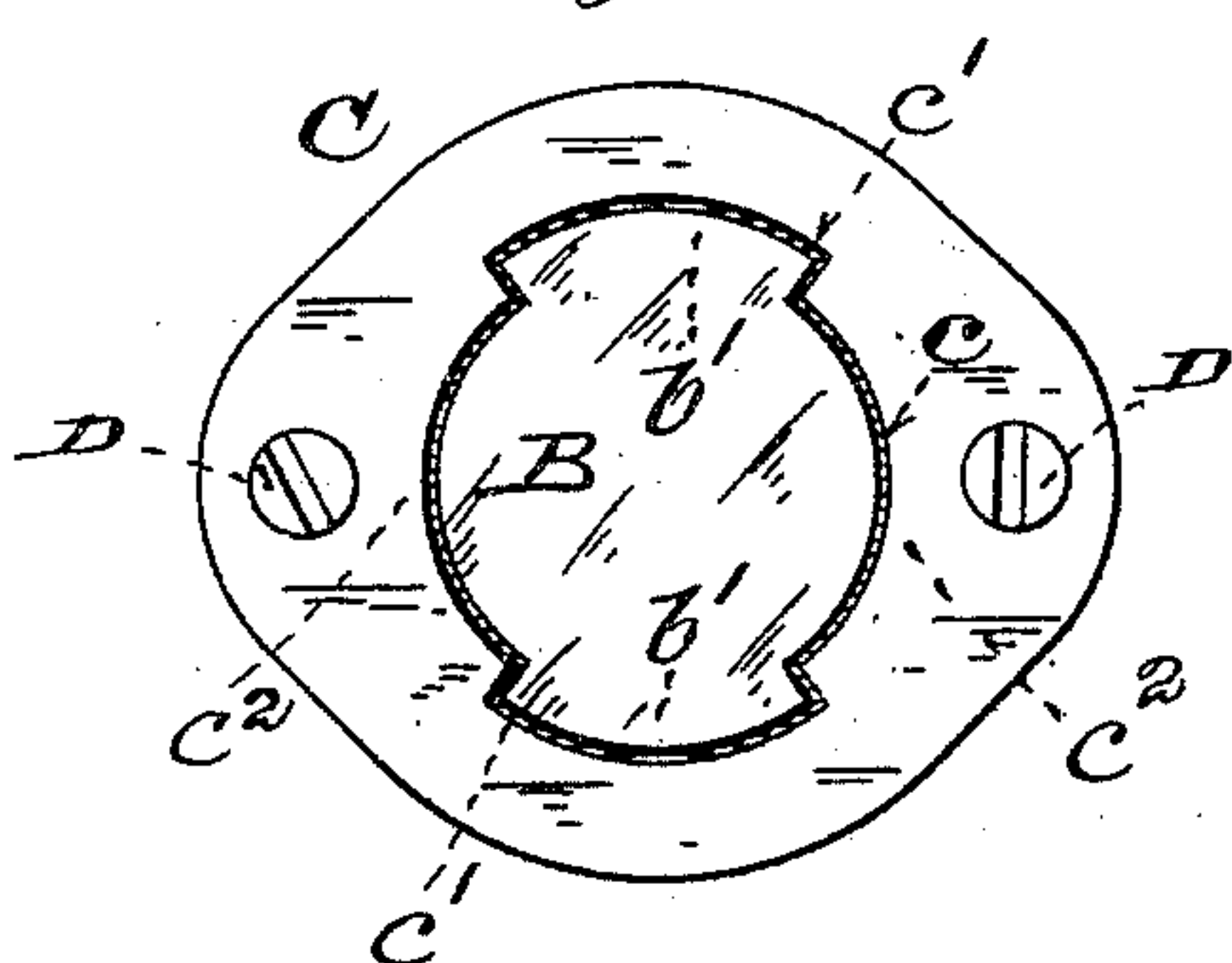


Fig. 5.

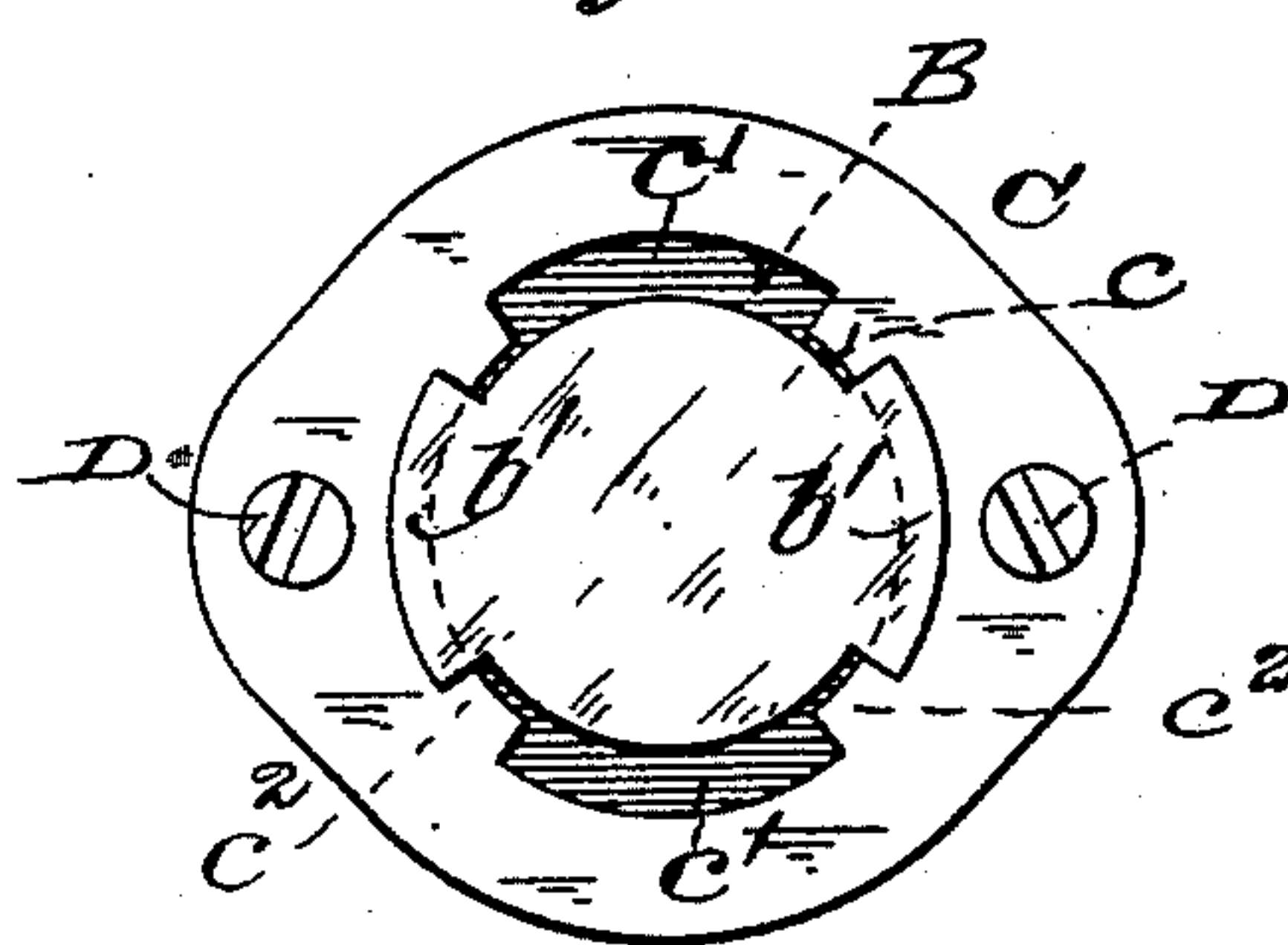


Fig. 6.

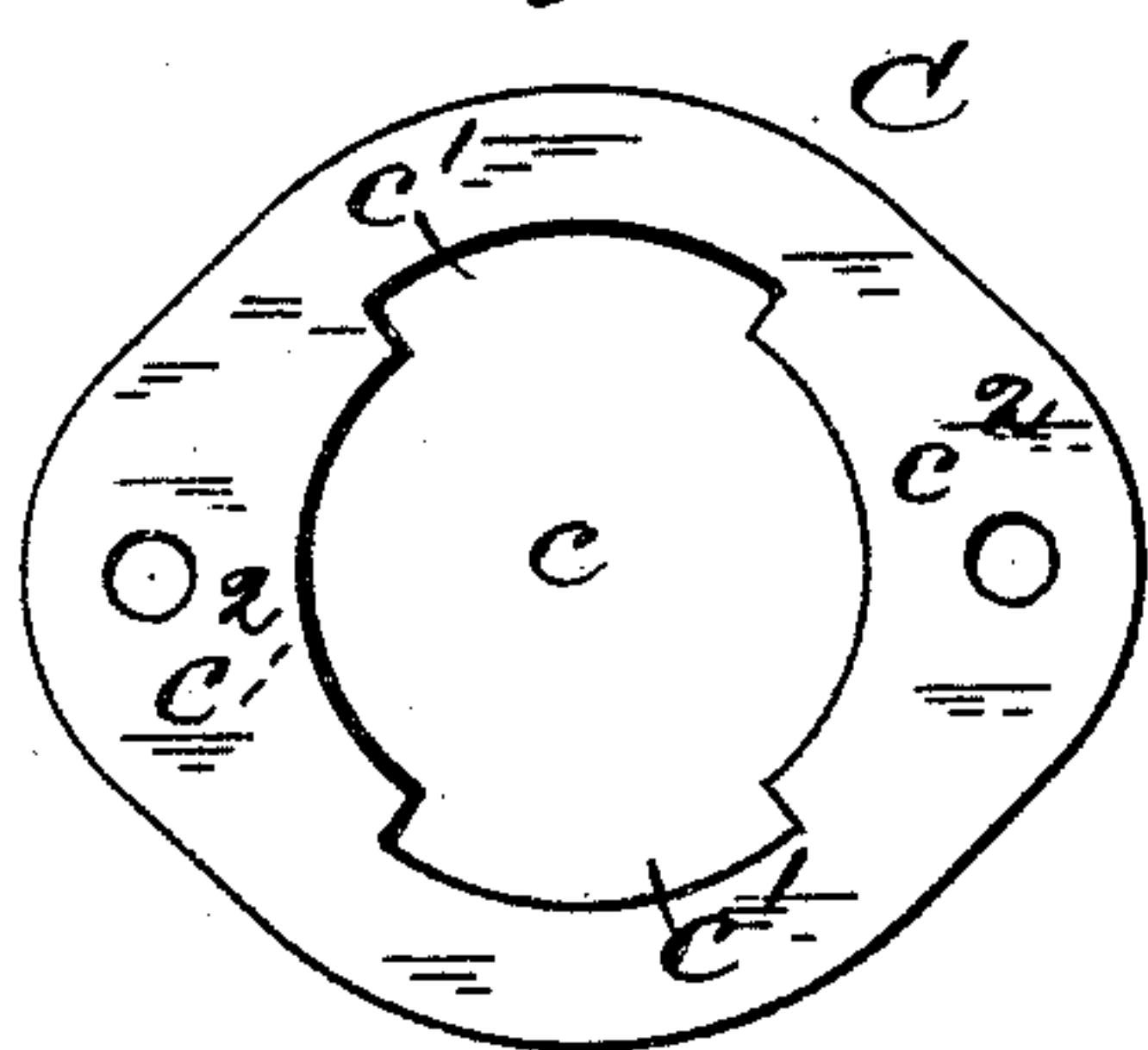
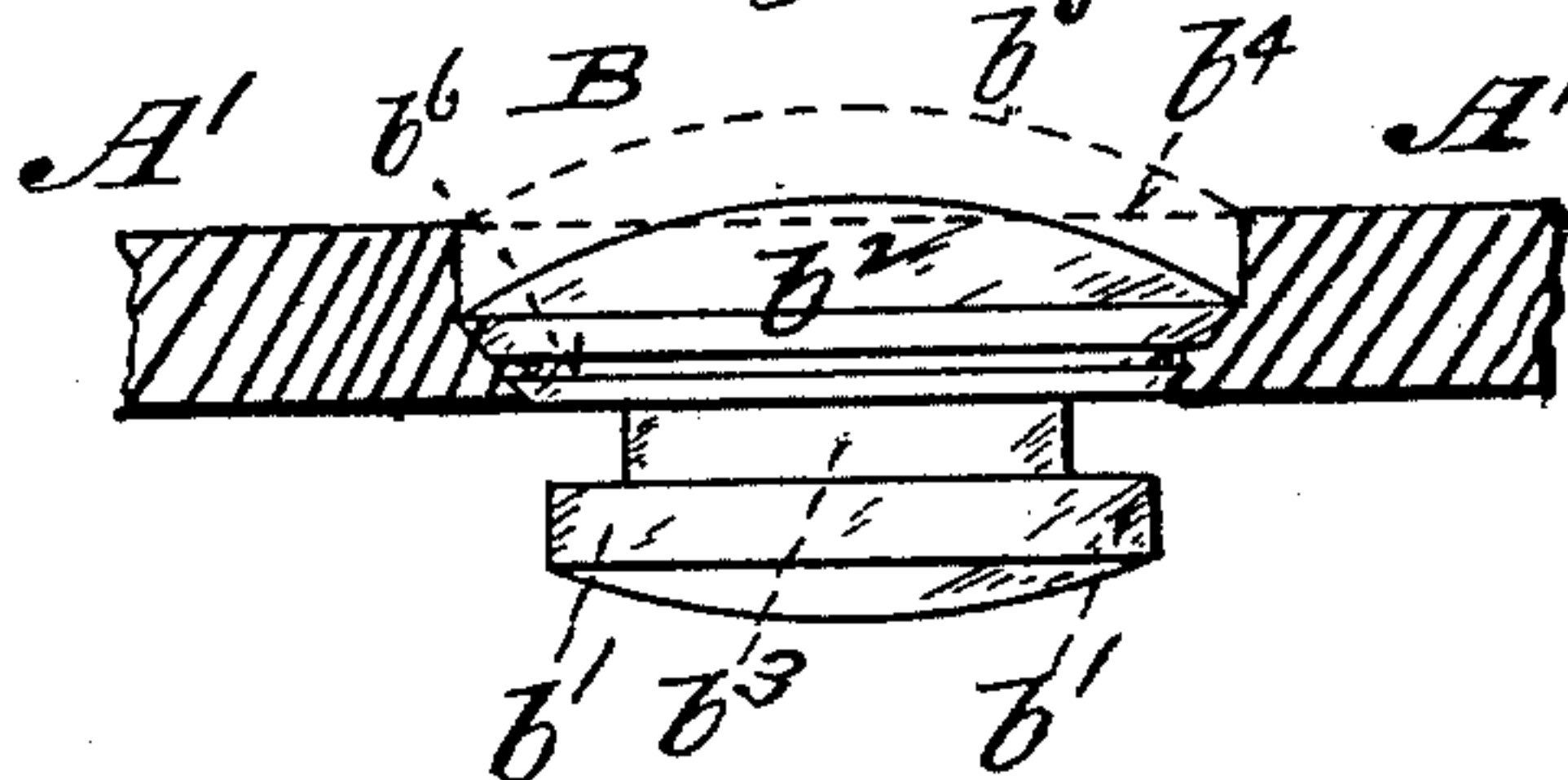


Fig. 7.



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CHARLES T. RICHARDS, OF ST. LOUIS, MISSOURI.

ILLUMINATING-TILE.

SPECIFICATION forming part of Letters Patent No. 467,832, dated January 26, 1892.

Application filed March 28, 1891. Serial No. 386,858. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. RICHARDS, of St. Louis, Missouri, have made a new and useful Improvement in Illuminating-Tiles, of which the following is a full, clear, and exact description.

The improvement relates to the construction of the bull's-eye and the means for securing it in the frame-work, substantially as is hereinafter set forth and claimed, aided by the annexed drawings, making part of this specification, in which—

Figure 1 is a plan exhibiting a portion of a tile having the improvement embodied therein; Fig. 2, a vertical section on the line 2 2 of Fig. 1, the bull's-eye being shown in side elevation; Fig. 3, a vertical section on the line 3 3 of Fig. 1, the bull's-eye being shown in side elevation; Fig. 4, a bottom view of a bull's-eye and its washer, the parts being relatively arranged as when the washer is encircling the neck of the bull's-eye, but the bull's-eye as yet has not been turned around to become interlocked with the washer; Fig. 5, a bottom view showing a bull's-eye interlocked with its washer; Fig. 6, a view of a washer; and Fig. 7 a view employed to illustrate various forms of the bull's-eye, one form being shown in side elevation, and other forms are indicated by the broken lines.

The same letters of reference denote the same parts.

The present improvement is adaptable to various constructions, to pavements, vaults, coal-chutes, tanks, roof-plates, wrought and cast metal doors, floors of buildings, holds of ships and decks, prison-cell windows, and other analogous structures.

A represents any plate, tile, or frame adapted for having, containing, or supporting the improved bull's-eyes. Said plate, tile, or frame, so long as it is adapted for receiving the bull's-eyes, as hereinafter described, may vary in form, according to the nature of the particular construction or place in which it is being used.

B represents one of the improved bull's-eyes. It is constructed and attached so that when in position it is drawn downward into its opening *a* in the plate to cause its periphery *b* to be pressed against the wall of said opening *a* or against any interposed layer of

cement with more force than is due to its weight simply, and thereby fixed more securely in position than is the ordinary bull's-eye in its support. This is accomplished, preferably, as follows: The bull's-eye on its inner or under side is extended to form a shoulder *b'*, which is connected with the main portion *b²* of the bull's-eye by means of a neck *b³*. At least two of these shoulders *b' b'* are preferably used, and when there are two such shoulders they are usually arranged to be opposite each other, substantially as shown.

C represents a perforated plate in the nature, say, of a washer, substantially as shown. Its perforation *c* is adapted to receive said shouldered end of the bull's-eye—that is, the central portion of the perforation is of proper size and shape to receive the neck *b³* of the bull's-eye, and at *c' c'* the perforation is extended to enable the shoulders *b' b'* of the bull's-eye to be passed through the perforation. The parts are assembled and fastened in position by dropping the bull's-eye into the opening in the plate and passing its shouldered end through the opening in the washer, and thence turning the bull's-eye around to cause its shoulders *b' b'* to come beneath the portions *c² c²*, respectively, of the washer, and then and by means of, say, the screws D D, which engage in and are adapted to be worked through the washer and whose points press upward against the under side of the plate A and preferably in indentations *a' a'* in said plate, causing said washer to press downward upon said shoulders *b' b'* of the bull's-eye. The first-named position of the bull's-eye with relation to the washer is shown in Fig. 4, and in Fig. 5 the bull's-eye is shown turned around in position for the washer to press downward upon it, as described. Any other suitable means may be employed to press said washer downward, and said washer and said bull's-eye may be variously relatively constructed to enable said washer when it is thus pressed downward to bear upon the bull's-eye and draw it downward into its opening in the plate A. The bull's-eyes may be of any suitable diameter and be otherwise proportioned and formed, as may be desired, so long as they embody the principle of the present improvement. They may be flat on top or crowned, and they may in depth be

suited to a wrought-iron plate or support A, such as is shown in Figs. 2 and 3, or they may be made deeper, as indicated by the outlines $b^4 b^5$, Fig. 7, and which respectively indicate
5 a flat or a crowned top adapted to a cast-metal support, such as shown at A', Fig. 7. The groove b^6 in the main part of the bull's-eye is a preferable means for more securely uniting the bull's-eye with any layer of cement which
10 may be used in setting the bull's-eyes in their support.

I claim—

1. In an illuminating-tile, the combination of the lens having enlarged ends, one of
15 which fits within or against the supporting-plate A, the other enlargement against the

washer C, and set-screws D for separating the plate and washer, whereby the lens is compressed upon its bearing against the supporting-plate, substantially as described. 20

2. The combination of the support A, the bull's-eye having the neck and shouldered portion, the perforated washer, and the screws D, passing through said washer, substantially as described. 25

Witness my hand this 25th day of March, 1891.

CHARLES T. RICHARDS.

Witnesses:

C. D. MOODY,
B. F. REX.