(No Model.)

# J. JACOBS.

## ILLUMINATING TILE.

No. 488,122. Patented Dec. 13, 1892.

Fig. 1.

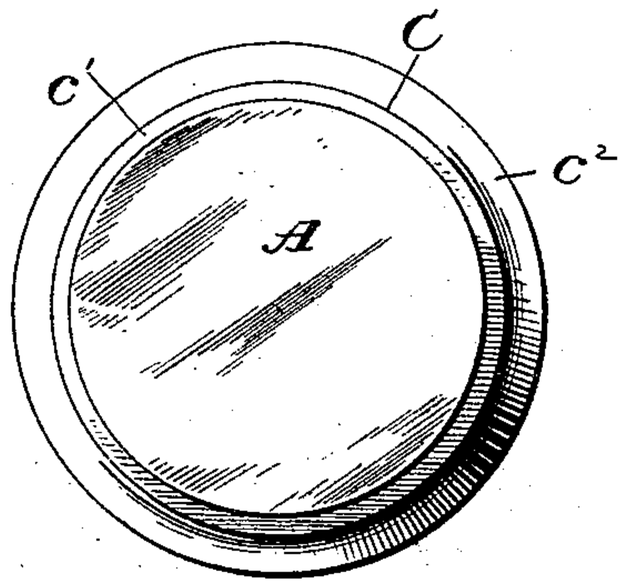



Fig. 2.

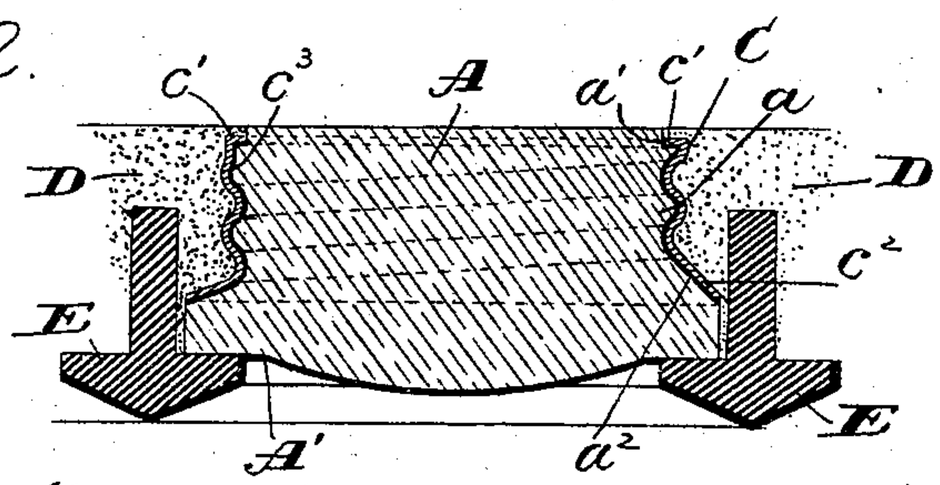



Fig. 3.

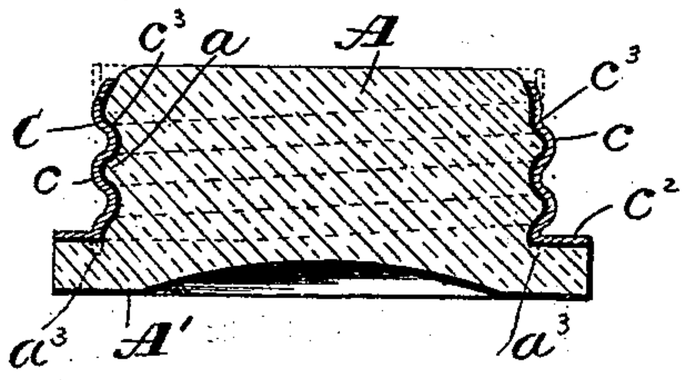
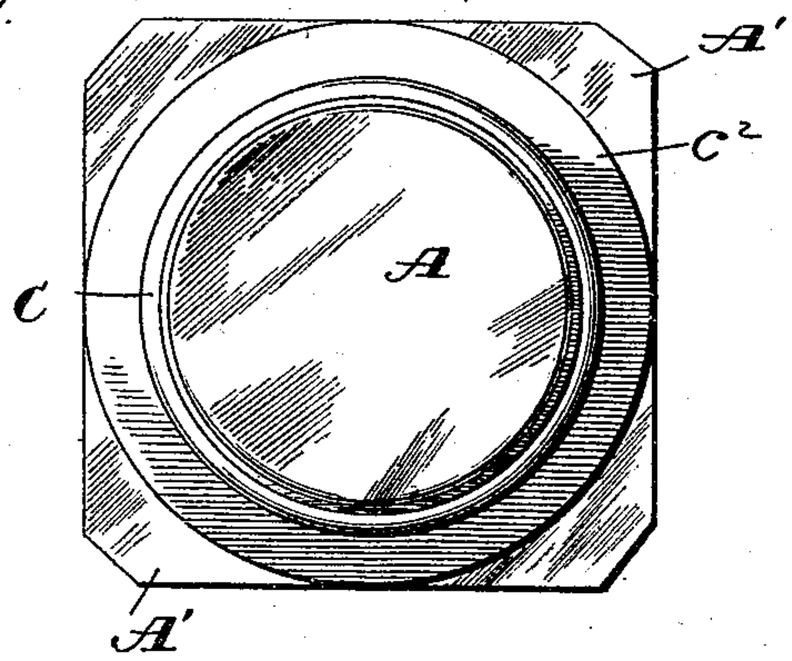



Fig. 4.




Witnesses
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# UNITED STATES PATENT OFFICE.

JACOB JACOBS, OF BROOKLYN, NEW YORK.

## ILLUMINATING-TILE.

SPECIFICATION forming part of Letters Patent No. 488,122, dated December 13, 1892.

Application filed June 21, 1892. Serial No. 437,479. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB JACOBS, a citizen of the United States, residing at Brooklyn, in the county of Kings, and in the State of New York, have invented certain new and useful Improvements in Lenses for Illuminating-Tiles, Vault-Covers, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 shows a top plan view of one of my lenses; Fig. 2, a vertical central section of the same, showing the lens as in place in a tile-frame; Fig. 3, a vertical central section of a lens with a different formation of the glass-inclosing jacket, and Fig. 4 a top plan view of a lens with the jacket formed as shown in full lines in Fig. 3 and a base made square with corners cut off.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention has been to provide an improved lens for use in illuminating-tiles, vault-covers, &c.; and to this end it consists in the lens and the parts thereof constructed, arranged, and combined as hereinafter set forth.

In the drawings, A designates the body of the glass part of the lens, and A′ the base thereof, which, as in lenses heretofore made, is constructed of greater diameter than said body and can be round, as shown in Fig. 1, square with corners cut off, as shown in Fig. 4, or of any other desired shape.

The body A is provided with one or more spiral or inclined screw-threads *a a* to engage correspondingly-shaped thread or threads on the inner face of the jacket C, so that the latter can be screwed down upon said body. Such jacket is preferably made of sheet metal, which can be brass, iron, tin, copper, aluminum, lead, galvanized iron, zinc, or other metal; but it can, if desired, be formed instead of gutta-percha, celluloid, earthenware, or any other desired material. When it is made of sheet metal or other thin substance, the desired thread or threads *c c* on it can consist, as indicated in the drawings, of suitable corrugations to correspond with the ribs and depressions on the body A. The upper edge of the jacket is preferably made to extend inward over a portion of the upper part of the lens-body in the manner indicated in full lines in Figs. 1, 2, 3, and 4, or it can be caused to stand upright and simply embrace the cylindrical top of said body, as shown in dotted lines in Fig. 3.

In Figs. 1 and 2 the jacket has around its upper edge an abrupt inwardly-turned lip *c′*, which engages the bottom of an annular rabbet *a′* in body A, which is preferably deeper than the lip is thick, so that the top of the latter forms no part of the "walking-surface." The lower end of the jacket has an outwardly and downwardly extending flange or lip $c^2$, extending over a correspondingly outwardly-inclined face $a^2$, connecting the outer face of body A with the projecting base A′.

In the lens shown in full lines in Fig. 3 there is no rabbet *a′* in the body; but the upper edge of the latter is rounded or beveled off and the upper end of the jacket is inclined inward to embrace a portion of the rounded or beveled part, but preferably stops short of the upper face of the glass. The top of the base A′ and the flange $c^2$ on the jacket extend out substantially at a right angle to body A. As the engaging threads on said body and jacket will securely hold the two from up or down movement with reference to each other and the lower end of the jacket engaging the base A′ effectually limits the downward screwing of the jacket, the inturned lip at the upper end of the latter can be dispensed with, if desired, and the jacket can be above its thread, carried up vertically so as to inclose a cylindrical part of the lens, in the manner indicated in dotted lines in Fig. 3.

Instead of having the outturned flange at the lower end of the jacket, I contemplate, where it is desired, providing the base with an annular depression $a^3$ in its top, into which the jacket will project when screwed down into place around the body A. (See Fig. 3.)

In order to make a close water-tight joint between the inner and outer faces of the jacket and body, respectively, I have a thin layer $c^3$ of white or red lead, cement, or other waterproof material between such faces. This layer can be easily secured by coating

the body A or jacket, or both of them, with the desired material before such parts are screwed together.

Instead of threading all or nearly all of the lens body and jacket, the screw thread or threads can be made to extend over only a portion thereof, the rest being made plain.

By making my lens with its parts constructed and arranged as shown and described I am enabled to use a jacket which can be made complete before being applied to the glass body, and it needs no spinning or forcing in of any of its parts to fasten it securely to said body or make it hold the latter most tightly and securely.

Where, as I prefer, the jacket is made of sheet metal corrugated to produce the ribs and depressions necessary to engage the threads of the body A, its outer side will afford the best and surest hold for the cement D, which is to be used in the ordinary way to secure the lens in the tile-frame, part of which is shown at E in Fig. 2. Inwardly-projecting portions of the surrounding cement interlock with the outwardly-projecting parts of the jacket, so that the strongest hold and the most perfectly water-tight joint between the cement and jacket is secured. The interlocking threads on the inner face of the jacket and periphery of body A could also be made to fit or engage each other so tightly that a good water-tight joint could be secured; but I prefer to use the thin layer of white or red lead or cement, in order to make certain that no moisture can get down around the glass, even if the fit of the jacket should not be absolutely perfect at all points.

Having thus described my invention, what I claim is—

1. A lens for illuminating-tiles, vault-covers, &c., having the screw-threaded glass body and a jacket separate from the plate or frame for supporting the lens and screwed upon the portion of the lens-body to be surrounded by the holding-cement on the frame, substantially as and for the purpose specified.

2. A lens for illuminating-tiles, vault-covers, &c., having the screw-threaded glass body, a jacket screwed thereon, and a layer of waterproof material between the jacket and body filling the opposing threads on the jacket and body, substantially as and for the purpose shown.

3. A lens for illuminating-tiles, vault-covers, &c., having the screw-threaded body, a projecting base, and a jacket screwed upon the body, substantially as and for the purpose set forth.

4. A lens for illuminating-tiles, vault-covers, &c., having the screw-threaded body, a projecting base, and a jacket screwed upon the body, provided with a projecting lip or flange on its lower end, substantially as and for the purpose described.

5. A lens for illuminating-tiles, vault-covers, &c., having the screw-threaded body and the jacket screwed thereon having at its upper end a portion extending in over a portion of the body, substantially as and for the purpose specified.

6. A lens for illuminating-tiles, vault-covers, &c., having the screw-threaded body provided with a rabbet around its upper end and the jacket screwed upon such body, having the inturned lip to enter the rabbet, substantially as and for the purpose shown.

7. A lens for illuminating-tiles, vault-covers, &c., having the screw-threaded glass body and the jacket around the latter corrugated to engage the threads on the body and leave projecting ribs and grooves on its outer side, substantially as and for the purpose set forth.

8. A lens for illuminating-tiles, vault-covers, &c., having the screw-threaded body, the jacket of thin material corrugated to engage the thread or threads on the body, and a coating or layer of waterproof material between the opposing surfaces of jacket and body, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of June, A. D. 1892.

JACOB JACOBS.

Witnesses:
WARREN C. STONE,
HENRY C. HAZARD.