(No Model.)

L. E. DAVENPORT.

ILLUMINATING TILE.

No. 472,699. Patented Apr. 12, 1892.

Fig: 1.

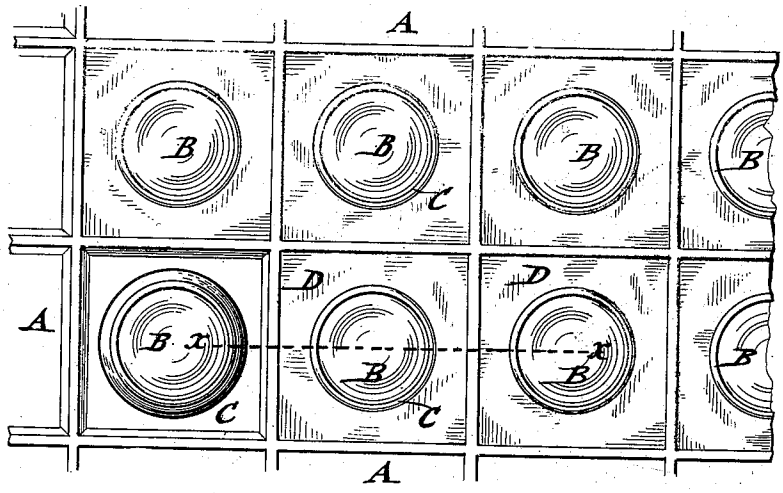


Fig: 2.

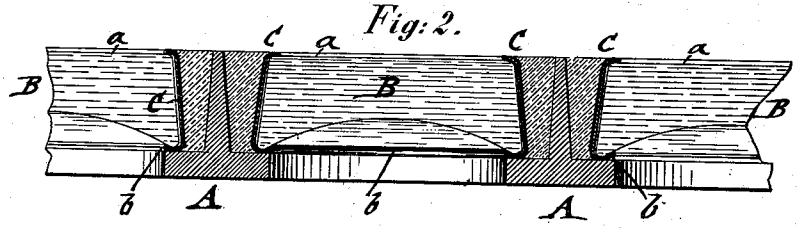


Fig: 3.

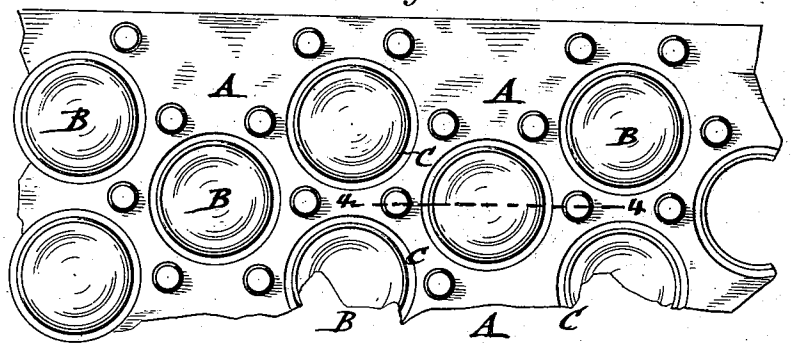
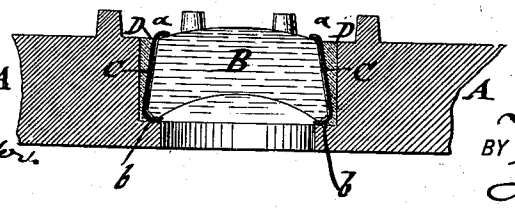


Fig: 4.



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LOUIE E. DAVENPORT, OF NEW YORK, N. Y.

ILLUMINATING-TILE.

SPECIFICATION forming part of Letters Patent No. 472,699, dated April 12, 1892.

Application filed February 6, 1892. Serial No. 420,522. (No model.)

To all whom it may concern:

Be it known that I, LOUIE E. DAVENPORT, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Illuminating-Tiles, of which the following is a specification.

This invention relates to an improved illuminating-lens for tiles, vault-covers, area-lights, skylights, and other applications, said lens being tightly incased, so that the glass body is protected against chipping by wear and prevented from being dropped even when broken into pieces by concussions, blows, &c.; and the invention consists of an illuminating-lens for tiles, &c., the glass body of which is inclosed by a sheet-metal thimble, the upper and lower ends of which are spun over the lens, so as to form protecting and retaining flanges for the same, as will be fully described hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a top view of a portion of an illuminating-tile with my improved lenses. Fig. 2 is a vertical transverse section of the same on the line $x\,x$ of Fig. 1, drawn on a larger scale. Fig. 3 is a top view of another construction of tile; and Fig. 4 is a vertical transverse section on line 4 4 of Fig. 3, also on a larger scale.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a honeycombed frame having bottom openings, such as is used in illuminating-tiles for vaults, areas, skylights for basements, &c.

In the cells or compartments of the frame A are arranged lenses B, which are made of glass in the usual manner and incased by a sheet-metal thimble C, which is spun at its upper and lower ends over the body of the lens, so as to form an inwardly-projecting protecting-flange *a* and an inwardly-projecting retaining-flange for the lens. The thimble C can be made of sheet-brass, sheet-aluminium, sheet-steel, or other suitable metal, the flanges *a* and *b* overlapping tightly the upper and lower edges of the lens, so as to form a water-tight connection of the thimble with the same. In some cases it may be advisable to introduce some kind of water-proof packing—such as a thin layer of rubber, felt, &c.—between the lens and its thimble; but in most cases, especially when the lens is molded into slightly-tapering shape, the sheet-metal casing can be applied sufficiently tight to prevent leakage. The spaces between the incased lens B and the honeycombed frame A are filled with the cement D, which is made level with the edges of the projecting flanges of the thimbles, the cement locking the bars firmly in position in the tile, owing to the outward taper of the same. When the lens is used for solid cast-metal tiles provided with openings, the lenses are secured into the same by any well-known cement, such as is obtained by mixing tar with sulphur, as shown in Fig. 4.

The advantages of my improved illuminating-lens for tiles are, first, that the inwardly-protecting flange *a* at the upper part of the casing protects the top of the lens against abrasion and chipping off at the circumference, which imparts to the lens an unsightly appearance. In case the lens is split or cracked by sudden blows or concussions the pieces are prevented from being dropped by the retaining bottom flange *b* of the thimble, as the thimble fits sufficiently tight to the lens to permit the detaching of the pieces. The lens is thereby retained in position and in condition for use without requiring the replacing of a new lens or without forming objectionable openings in the tile through which water can enter. The firm holding of even the broken pieces of the lens by the casing also prevents leakage, notwithstanding the cracks, so that the objects of the lens—namely, illumination and protection against leakage—are more completely obtained than by the tile construction heretofore in use.

Another advantage of my improved lens is that the cement by which the lens is held in position will adhere more intimately to the sheet-metal thimble than to the glass surface, which is especially the case when a sulphur and tar cement is used, as in this case the affinity between the cement and the metallic thimble produces a better support and retention of the lens.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. An illuminating-lens for tiles, composed of a glass body and a sheet-metal thimble that is tightly applied to the body of the lens and provided with an inwardly-bent protecting top flange and an inwardly-bent retaining bottom flange for the lens, substantially as set forth.

2. The combination, with a supporting tile-frame having bottom openings, of illuminating-lenses provided with tightly-fitting sheet-metal thimbles having overlapping top and bottom flanges, and cement fillings between the frame and incased lenses, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

LOUIE E. DAVENPORT

Witnesses:
PAUL GOEPEL,
CHARLES SCHROEDER.