

J. K. INGALLS.

VAULT-COVER.

No. 170,567.

Patented Nov. 30, 1875.

Fig. 1.

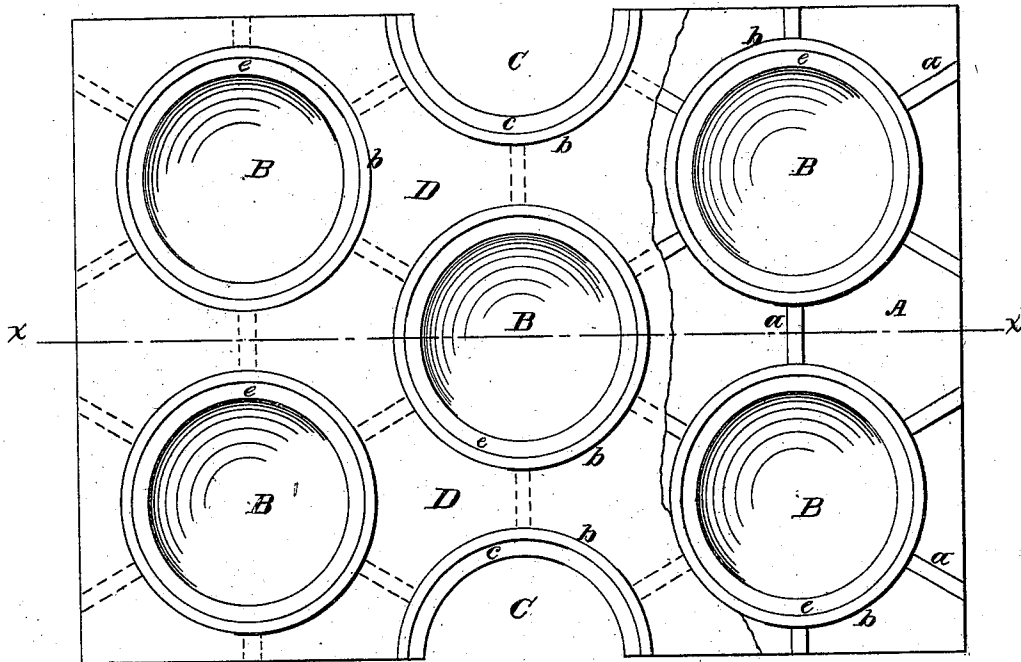
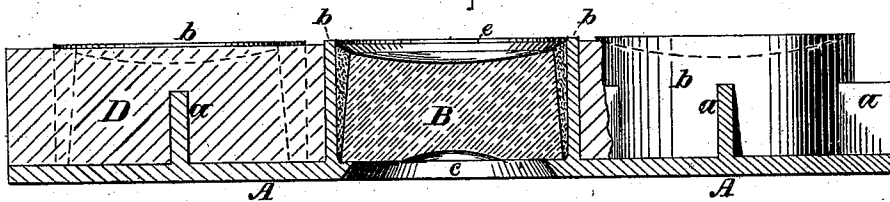


Fig. 2.



ATTEST:

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN VAULT-COVERS.

Specification forming part of Letters Patent No. **170,567**, dated November 30, 1875; application filed November 2, 1875.

To all whom it may concern:

Be it known that I, JOSHUA K. INGALLS, of the city, county, and State of New York, have invented certain Improvements in Illuminating Vault-Covers, of which the following is a specification:

My invention relates to that class of vault-covers having a surface mainly of non-slippery material; and it consists essentially in lenses with a concave upper face set in a recessed or celled plate of metal, and surrounded by a safety-ring, forming a part of the said plate, which rises above the level of the lenses. The cellular interstices between the safety-rings may be filled with cement, concrete, or some similar material.

In the drawings, Figure 1 is a plan of a portion of my improved cover. Fig. 2 is a vertical section of the same, taken in the plane indicated by the line *x x* in Fig. 1.

In carrying out my invention, a plate, A, preferably of cast metal, is perforated for lenses B B, as shown at C C, where the lenses have been purposely omitted. The plate A is recessed to form cells between the glasses or lenses, leaving a thin bottom web and safety-rings *b b* around the lenses. These rings rise above the lenses, and their cement setting *e*, as shown, and protect their concave upper surfaces from abrasion. Webs *a a* connecting the rings *b b*, but not rising to their level, may be left for strength. The cells between the safety-rings are filled with some non-slippery material D, which may be concrete, composed of sand or gravel and cement—Port-

land cement being preferred—or with a bond composed of melted sulphur, sand, and coal-tar or asphaltum or other fusible mixture; or blocks of artificial stone may be fitted to the cells and fixed with cement.

For the better illustration of my construction, I have shown that portion of the plate to the right hand denuded of the concrete filling. The lens B rests on a flange or shoulder, *c*, and it may be secured in place by means of cement *e*, or by any method known to the trade. These rings *b b* may be flush with the general level of the concrete D, or may rise slightly above it. They form not only a protection to the lenses and their cement, but a disconnected traction surface to prevent slipping.

I am fully aware that the combination of lenses, a metal plate, and concrete filling is old, and I make no broad claim to it; but

What I do claim is—

In a vault-cover composed mainly of metal and glass, the combination of the lenses B B, having a concave upper surface, and the safety-rings *b b*, surrounding said lenses, and rising above their level, as shown, to protect them from abrasion, and prevent the loosening of the cement, substantially as specified.

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

JOSHUA K. INGALLS.

Witnesses:

SAM. TRO. SMITH,
HENRY CONNETT.