

J. F. FOLEY & J. MURRAY.
Vault Lights.

No. 152,836.

Patented July 7, 1874.

Fig 1

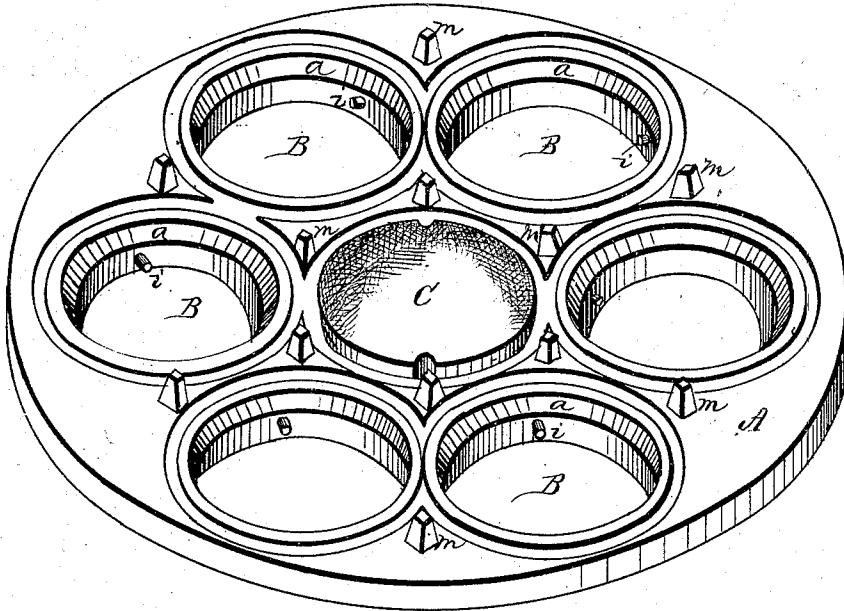


Fig 2

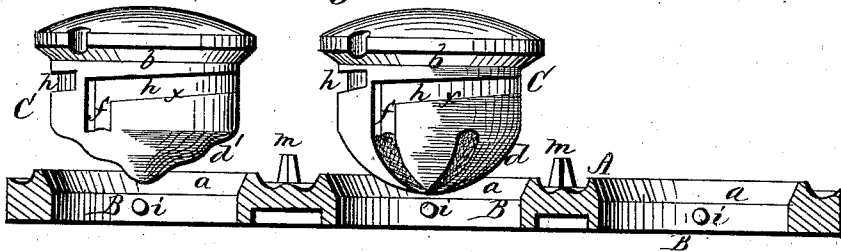
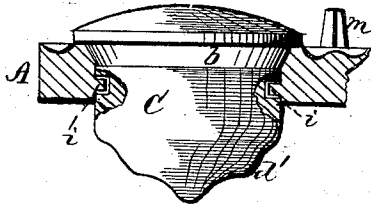


Fig 3



WITNESSES
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN VAULT-LIGHTS.

Specification forming part of Letters Patent No. 152,836, dated July 7, 1874; application filed June 12, 1874.

To all whom it may concern:

Be it known that we, JOHN T. FOLEY and JOHN MURRAY, of New York, in the county of New York and in the State of New York, have invented certain new and useful Improvements in Vault-Lights, &c.; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, making a part of this specification.

Our invention relates to vault-lights, platform-lights, or other similar devices, in which glass plugs are used for collecting and diffusing the light; and the nature of our invention consists in the method of fastening the glass plugs in the frame. Our invention also consists in the construction of the plugs, all of which will be hereinafter more fully set forth.

In order to enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a perspective view of the frame of a vault-light, showing one of the glass plugs in position. Figs. 2 and 3 are sections of parts thereof.

A represents a frame, such as are used for vault-lights, platform-lights, or other similar articles, which frame may be made of metal, wood, concrete, or other suitable material, and formed with a series of circular holes, B B, having their upper edges beveled or flaring, as shown particularly at *a a* in Fig. 2. C C represent the glass plugs, constructed in the following manner: The top surface is a convex lens, with a chamfered shoulder, *b*, underneath the head, corresponding with the beveled or flaring part *a* of the holes B. The lower end of the plug C is conical in form, and either grooved to form segments, as shown at *d* in Fig. 2, or corrugated concentrically, as shown at *d'* in Figs. 2 and 3. In either case the light collected by the convex lens of the top of the plug is diffused below with great power and efficiency.

In the body of the glass plug C, on opposite sides, are formed two vertical grooves, *f*, from the upper end of each of which a groove, *h*, extends in a slightly inclined position around nearly one-half of the circumference of the plug. Each groove, *h*, gradually decreases in depth from the groove *f* to the point where it terminates, at which point it reaches the surface of the plug. In each hole B are two studs or pins, *i i*, directly opposite each other. The glass plug is dropped into the hole, and the studs or pins *i* pass through the vertical grooves *f*, after which the plug is turned by means of a suitable key or wrench fitting two half-holes or notches formed in the edges of the upper surface of the plug. When thus turned, the studs *i i* enter the inclined grooves *h h*, and bind on the lower shoulders *f* of said grooves, and also on the bottoms of said grooves, by reason of their decreasing depth. In addition thereto the shoulder *b* is drawn down on the beveled part *a* by reason of the grooves *h* being slightly inclined.

By these means the glass plug is effectually tightened and securely fastened in place.

The glass plugs are inserted from the top, and are rendered water-tight by means of white lead, or other suitable packing, laid between the beveled countersink *a* and the chamfered shoulder *b*.

For ventilation and other purposes they can be conveniently taken out and again replaced at pleasure. They will seldom need repair, as the glass plugs cannot accidentally become loose from their places, thereby saving the very great annoyance and expense heretofore often experienced.

On the top surface of the frame A are diamond-shaped projections *m*, which extend somewhat higher than the glass plugs, so as to protect and prevent direct travel upon the plugs, and also afford a safe foot-hold for pedestrians.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The glass plugs C C, provided with the

grooves *f h* and the chamfered shoulder *b*, in combination with the studs *i i* and counter-sinks *a* of the holes B in the frame A, substantially as and for the purposes herein set forth.

2. The glass plugs C C, constructed as described, their upper surfaces forming convex lenses, and the lower ends corrugated concentrically, substantially as shown and described, and for the purposes herein set forth.

In testimony that we claim the foregoing we have hereunto set our hands and seals this 11th day of June, 1874.

JOHN T. FOLEY. [L. S.]
JOHN MURRAY. [L. S.]

Witnesses:

STEPHEN WHITEHOUSE,
JOSEPH CARPENTER.