

J. M. WILLBUR.
Vault-Lights.

No. 150,118.

Patented April 21, 1874.

Fig. 1.

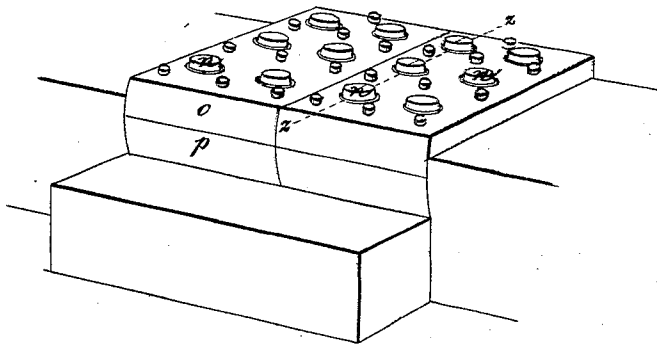


Fig. 2.



Fig. 3.

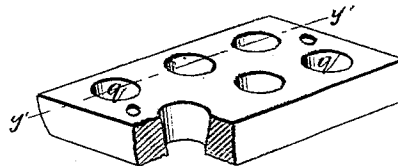


Fig. 4.



Witnesses.

C. F. Rogers.
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Inventor
J. M. Willbur
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UNITED STATES PATENT OFFICE.

JAMES M. WILLBUR, OF NEW YORK, N. Y.

IMPROVEMENT IN VAULT-LIGHTS.

Specification forming part of Letters Patent No. **150,118**, dated April 21, 1874; application filed January 28, 1874.

CASE C.

To all whom it may concern:

Be it known that I, JAMES M. WILLBUR, of the city, county, and State of New York, have invented certain new and useful Improvements in Vault-Lights; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is a perspective view of my improved vault-light. Fig. 2 is a sectional view in the line $z z$, Fig. 1. Fig. 3 is a perspective view of the lower plate of Fig. 2; and Fig. 4 is a sectional view through the line $y' y'$, Fig. 3.

Similar letters of reference in the accompanying drawings denote the same parts.

My invention consists in the employment in vault-lights of two plates, similarly formed, connected together by bolts or other fastenings, each plate being provided with tapering perforations fitting over each other for the reception of barrel-shaped lights, the whole being reversible, so that when the upper surface of the vault-cover or sidewalk has been worn away it may be turned over and afford a new wearing-surface.

In the accompanying drawings, $o p$ are two plates, joined together by bolts and nuts, or other similar fastenings, and provided with tapering perforations $q q$, so that when the two plates are fastened together, the larger diameters of the perforations $q q$ in the plates will lie directly over each other, and the perforations between the plates will present a barrel-shaped form; or, more strictly speaking,

the perforations in the two plates, when one is placed over the other, are of the form of two frustums of a cone with their larger bases in contact. Vault-lights $n n$, of the form of two frustums of a cone united at their bases, are inserted in each of the perforations $q q$ in the plates $o p$ before they are fastened together.

In lieu of barrel-shaped lenses in some cases I design to employ truncated pyramidal-shaped lenses, the bases of the truncated pyramids being in contact and united together; or, in lieu of the latter, lenses having any number of sides, with their bases in contact, and made in one piece, may be employed, the object of this part of my invention being to make the lens of greater circumference at its middle than elsewhere in order to retain it in place between the plates.

It will be seen from this construction that the plates $o p$ can readily be reversed, or turned upside down, so that when the upper surface of the vault-cover or sidewalk has been worn away it may be turned over, and thus afford a new wearing-surface.

I claim as my invention—

The plates $o p$, secured together and provided with barrel-shaped lights, as set forth, by means of which said lights are securely held in the plates, and the whole made capable of being reversed to give two wearing-surfaces, substantially as described.

JAMES M. WILLBUR.

Witnesses:

MELVILLE CHURCH,
WM. READ.