No. 721,257. PATENTED FEB. 24, 1903.

F. L. O. WADSWORTH.

REFLECTING STRUCTURE.

APPLICATION FILED APR. 15, 1898.

NO MODEL.

Fig. 1.

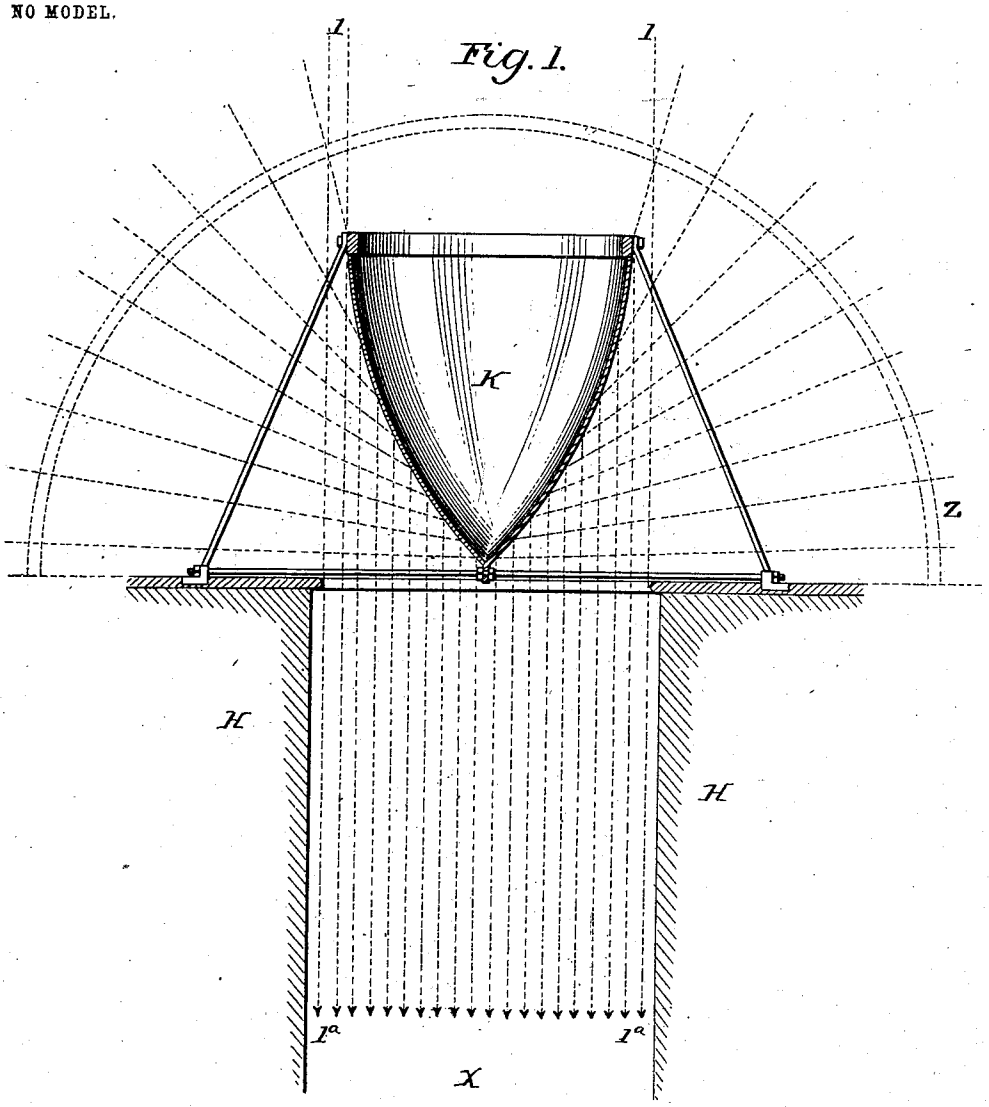
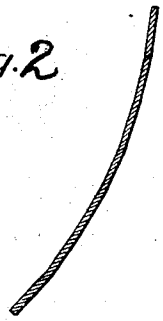


Fig. 2.



Witnesses

J. Gottlieb

Paul W. Hearne

Inventor

by F. L. O. Wadsworth

Foster Freeman

Attorneys

UNITED STATES PATENT OFFICE.

FRANK L. O. WADSWORTH, OF WILLIAMS BAY, WISCONSIN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO PRESSED PRISM PLATE GLASS COMPANY, A CORPORATION OF WEST VIRGINIA.

REFLECTING STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 721,257, dated February 24, 1903.

Application filed April 15, 1898. Serial No. 677,740. (No model.)

To all whom it may concern:

Be it known that I, FRANK L. O. WADSWORTH, a citizen of the United States, residing at Williams Bay, in the county of Walworth and State of Wisconsin, have invented certain new and useful Improvements in Reflecting Structures, of which the following is a specification.

My invention relates to illuminating structures; and it consists of a reflecting-illuminator particularly applicable to receive light from the sky and direct it downward into a vertical opening in a building, such as a light-well. In general light is received through such an opening only from that portion of the sky immediately overhead, and if this is overcast with clouds the illumination at the bottom of the light-well will be very defective, although other portions of the sky may be very brightly illuminated and capable of furnishing sufficient light for efficient illumination. To avoid this difficulty and obtain a construction which will always send the light from the brightest part of the sky down the light-well, I place over the latter a reflector of the character fully set forth hereinafter and as illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation showing the upper part of a light-well with my improved reflecting structure; Fig. 2, a section of a reflector having flat faces.

In the construction shown in Fig. 1, H H represent adjacent buildings or the walls on opposite sides of a light-well X, above which my improved illuminating device is placed. The said device is a rounded tapering structure K, exteriorly convexly curved in longitudinal cross-section, with an external reflecting-face so formed that successive portions of it receive light from different directions and send it vertically downward into the well. To accomplish this, the surface of the structure is so formed that the lower portion makes an angle of about forty-five degrees with the axis of the structure, while the upper part is nearly parallel to it. The intermediate portions are either continuously curved, as shown in Fig. 1, or made up of a series of narrow flat faces arranged so as to make continuously-decreasing angles with the axis of the structure as we go from the lower end toward the upper, as in Fig. 2, which simply represents in sectional outline one side of the structure. As this reflector-face is in general a cylinder of revolution, (or its equivalent,) of which the section only is shown, it is evident that some portion of it will always be in such a position as to receive light from the brightest portion of the sky, in fact from the sun itself, and reflect it downward into the well. Therefore, whatever be the position of the sun there is always a direct sunlight illumination at the bottom of the well, such as would be obtained if the sun were directly overhead. In the construction shown the reflector tapers to a point, so that the only portion of the light from directly overhead which gets into the well is that which passes the edges of the cone, as at 1 1^a, and to permit the passage of any such vertical light we must make the cone slightly smaller in diameter than the opening over which it is placed.

The reflecting structure may be a shell or case of polished metal or of metal or other material, suitably coated to secure a reflecting-surface, and it may be supported in any suitable manner which will enable it to be adjusted to the required position over the mouth of the light-well or opening above which it is placed.

The reflecting structure may be exposed, as shown in full lines, or in some cases with a transparent protecting-covering, arranged as indicated by dotted lines Z, Fig. 1.

Without limiting myself to the precise construction, proportion, or arrangement shown, I claim—

A daylight-reflecting structure arranged above a light-well and consisting of a shell tapering to a point upon curved lines from the base to said point, the curvature of the surface being such that the angle between the

tangent to the curve of any axial section, and the axis of the shell itself varies from zero degrees at the base of the shell to forty-five degrees at the point of the shell, the outer surface being a reflecting-surface, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK L. O. WADSWORTH.

Witnesses:
HARRY E. HAY,
W. CLARENCE DUVALL.