



# UNITED STATES PATENT OFFICE.

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MESNE ASSIGNMENTS, TO PRESSED PRISM PLATE GLASS COMPANY, A  
CORPORATION OF WEST VIRGINIA.

## ILLUMINATING STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 717,783, dated January 6, 1903.

Application filed April 9, 1898. Serial No. 677,074. (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 Illuminating Structures, of which the following is a specification.

My invention relates to illuminating structures; and it consists in providing two illuminators and in so constructing and arranging the same that one will deflect or turn certain light-rays in a desired direction while permitting the passage of other light-rays to the other structure, by which these rays are turned in the same directions as the first, as fully set forth hereinafter and as illustrated in the accompanying drawings, in which—

Figure 1 is a sectional view illustrating my invention as applied to the window of a room. Fig. 2 is a like view showing a different arrangement of the illuminators.

In carrying out my improvement I make use of two illuminating structures D D', one of which may be a reflecting-illuminator and the other a prismatic illuminator, although both may be of one kind. In Fig. 1 the structure D is arranged as a canopy in an inclined position outside of a window and consists of a frame A, supporting a series of reflecting-plates F, covered by a glass plate B. The window in this case has a fixed upper sash N, with a plane glass B' at the upper portion and with the prismatic illuminator D' in the lower portion. The reflecting-illuminator D and the prismatic illuminator D' may be each of any suitable construction or character; but the relative construction and arrangement are such that the light-rays, such as 2, which pass directly through the structure D and fall on the structure D', will be turned in an approximately horizontal direction into the room, as at 2<sup>a</sup>, while those, such as 1, which are deflected by the structure D will pass to and without change through the plane part B' of the window, as at 1<sup>a</sup>. Thus in Fig. 1 the canopy structure D receives the main incident rays from the direction 1 and deflects them into the room through the plain upper portion of the window in the direction 1<sup>a</sup>. The rays falling from the direction 2 or those ap-

proximately parallel to the plane of the reflecting-strips F of the canopy pass through the structure between and without being deflected by the strips and would ordinarily pass through the window without producing any increased illuminating effect in the back of the room. I utilize these rays by the action of the structure D', which turns them into the room by refraction or refraction and reflection combined in the direction 2<sup>a</sup>, generally parallel to the direction 1<sup>a</sup>. Fig. 2 illustrates the combination for producing the same effect, differing from Fig. 1 only in that the canopy structure is prismatic in character and the structure in the window is reflecting. In this case the approximately horizontal rays, such as 3, which fall on the reflecting-panel D', are transmitted unchanged in direction, as at 3<sup>a</sup>, by a double reflection from the adjacent faces of two successive strips, as fully set forth in my application Serial No. 675,796. In either case the combination secures the direction into the room of a much larger quantity of light than would be secured by the use of a single deflection D and D' alone.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

An illuminating structure consisting of two separate illuminators each having parallel deflecting-faces, one constructed and arranged to deflect substantially the whole body of rays falling upon it at certain angles, directly into the space to be illuminated, and to transmit unchanged in direction rays falling upon it at other angles, and the other illuminator, constructed and arranged to receive these latter rays and to deflect them also into the space to be illuminated in a direction substantially parallel to that imparted to the body of rays deflected by the first illuminator, substantially as set forth.

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 DUVAL.