

(No Model.)

J. M. EWEN.
PRISMATIC LIGHT.

No. 583,594.

Patented June 1, 1897.

Fig. 1.

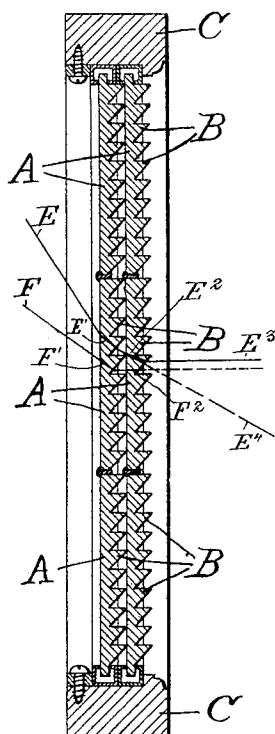


Fig. 2.

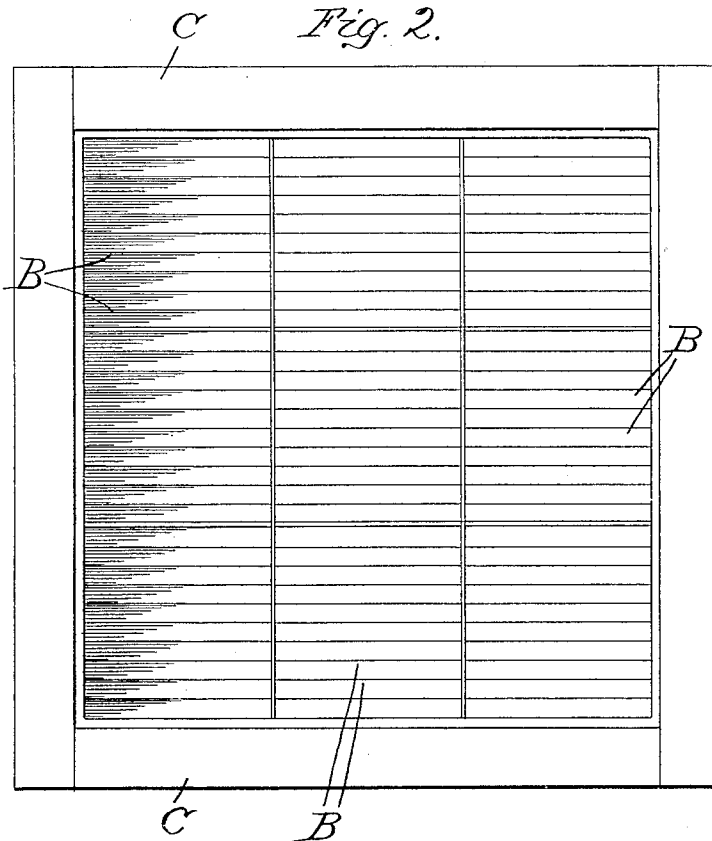
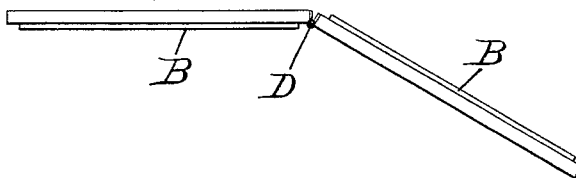


Fig. 3.



Witnesses.

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PRISMATIC LIGHT.

SPECIFICATION forming part of Letters Patent No. 583,594, dated June 1, 1897.

Application filed November 23, 1896. Serial No. 613,130. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. EWEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Prismatic Lights, of which the following is a specification.

My invention relates to prismatic lights, particularly such as are designed to be used in lieu of window-lights for the purpose of receiving, admitting, and distributing in a proper manner the light on the outside of a building which it is desired to use within. I have found in some extended investigations of prismatic light that for certain purposes one angle of the prism will be most desirable, while for other purposes some other angle may be better; but I also find that for the most part the most desirable form of prism is that in which one edge is substantially at right angles to the surface of the glass, while the other is considerably inclined thereto. In the use of prisms, and even in the use of the prism I have last described, a considerable portion of the light which passes through the same is diffused generally, so to speak, instead of being directed forward, as is desired. Such prismatic lights are commonly used for the purpose of directing the light in lines parallel with the ceiling into and through the apartment to be lighted. Now a single prism, such as that shown, will do this to a considerable degree, but a considerable amount of light will also pass through, and, as previously suggested, be generally diffused or distributed and not be carried on the direct or forward line along with the greater portion of the light, so to speak. This appears to be true with substantially all forms of prisms, though perhaps some angles might be used in which this difficulty would not occur. Some forms of prisms, however, are difficult to make and difficult to preserve. I find, now, that by placing in association with such prismatic light a second prismatic light the greater part of these rays of light, diffused as suggested, are gathered up and directed into such parallel lines. In other words, two of these prismatic lights under the ordinary conditions of use, when arranged as suggested, will greatly increase the illumination of the interior of the

room. These results will follow to a greater or less degree from the use of many kinds of prisms, and the prisms need not always perhaps be the same, but I find that very excellent results flow from the use of double prisms where both have the perpendicular edge, and that very excellent results flow from the use of double prismatic lights where the inclined angle is about that shown in the drawings, and that very excellent results flow from the use of double prismatic lights where both are the same. The best form of my invention therefore appears to be that in which I use two prismatic lights placed in substantial parallelism with each other, each having a series of prisms thereon shaped substantially as shown above and being practically the same in shape. These two sets of prismatic lights may be placed in fixed and permanent relation to each other, or they may be hinged together, so that they may be used either double or single, as the case may be or as occasion may seem to require.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a cross-section through two sheets made up each of a series of sections of prismatic lights. Fig. 2 is a plan view of the same, and Fig. 3 is an end view of two sheets of prismatic lights hinged together.

Like letters indicate like parts in the several views.

The sections are indicated by the letters A A, the prisms by the letters B B, and the surrounding sash or frame by the letter C. D is the hinge. These several sections of prismatic glass may be secured together in any desired manner and framed up in any desired frame, so as to constitute, when finished, a filled window-sash, so to speak. Two of these then are placed as indicated and permanently associated in a surrounding fixed sash or frame, or they may be hinged together, as shown, one being fixed in the window in any desired manner and the other being hinged thereon.

The object of hinging the sections or lights together is in part to enable the user to employ one window-light and throw the light admitted therethrough into a certain part of the room or diffuse it in a certain manner,

and thus, as varying conditions may require, to superimpose the other window-light, and thus change the character of distribution. These results of course will depend upon the character of the prisms used. Moreover, on some occasions and with windows situated in a certain manner it would be desirable to use but one set of prisms on a very bright day, while on a dark or cloudy day the increased illuminating effect due to the use of both sets of prisms might be desired.

I have shown in the prisms one and the same angles, but of course I might use one angle in one glass and another angle in another glass—that is to say, the first sheet of glass section might be a certain angle, while the next sheet would be a different angle, and any desired angle can be used on either, and each light can be made up of several sections or not, as the case may be.

The line E represents light coming from about fifty-one degrees from the horizontal, and E' represents the direction which it takes in the body of the outside plate.

E² represents the direction which it takes in the second body or plate of glass, and E³ the direction which it is desired to give such light in order that it may have the useful effect of illuminating the room. If the plate or inner body of glass were absent, the light in question would take the direction E⁴ and be practically useless. On the other hand, light coming from the direction F is refracted so as to take the direction F' in the outer plate, whence it passes in the direction F² into the room and needs no inner plates or prisms. This illustrates the fact that with certain prism-lights which are useful separately under conditions where the light is received along the direction F such prisms are wholly useless under other conditions—as, for

example, in a case where high buildings or obstructions are located on the opposite side of the street. In such case by a duplication of the plates they coact in such way as to produce the desired result.

I claim as new and desire to secure by Letters Patent—

1. The combination of two layers of prismatic lights placed so as to receive the light successively and transmit it from one place to another.

2. The combination of two window-lights each consisting of a series of sections of prismatic glass, the two lights associated together in proximity and parallelism so that the light passes through them successively.

3. The combination of two window-lights each consisting of prismatic glass, the prisms on the two of the same size and shape, and the two lights related in close proximity and parallelism, so that the light passes through them successively.

4. The combination of two window-lights, each consisting of prismatic glass, the prisms on the two of the same size and shape and having each one face substantially perpendicular to the plane of the light and the other face inclined thereto, and the two lights related in close proximity and parallelism so that the light passes through them successively.

5. The combination of two window-lights, each consisting of prismatic glass and associated together in hinged relation so that one or both can be used to control the aperture through which the light is to be received.

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Witnesses:

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