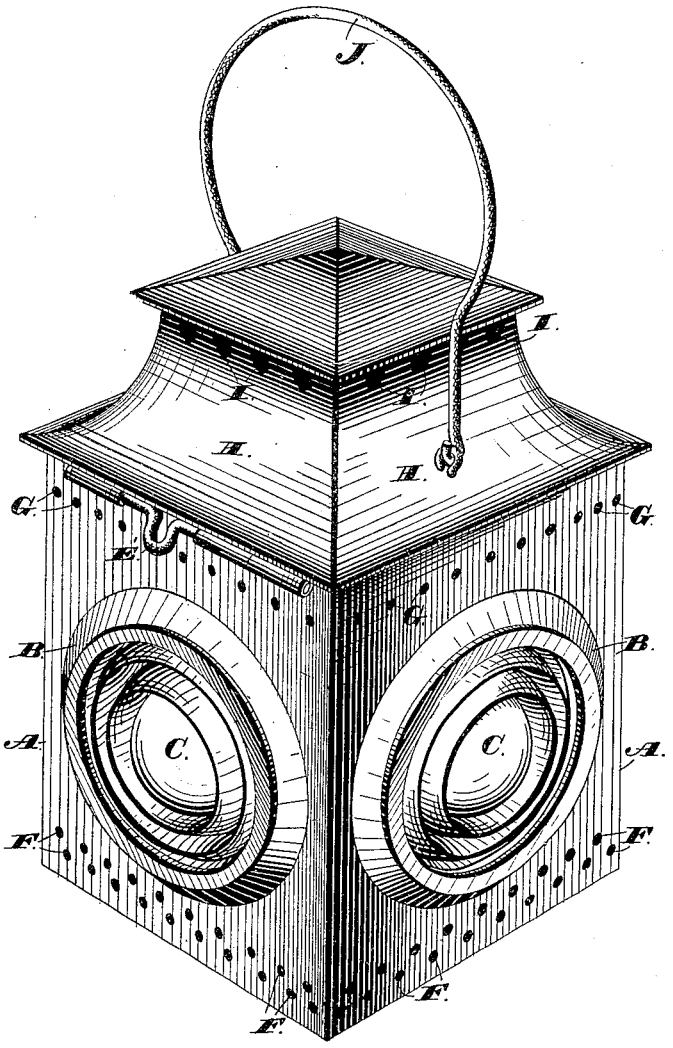
(No Model.) 2 Sheets—Sheet 1.

J. H. EWING.

SIGNAL LANTERN.

No. 263,396. Patented Aug. 29, 1882.

Fig. 1.



Witnesses.
Jas. E. Hutchinson.
Geo. D. Seymour

Inventor.
John H. Ewing.
By Hall & Seymour.
Attys.

(No Model.) 2 Sheets—Sheet 2.

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No. 263,396. Patented Aug. 29, 1882.

Fig. 2.

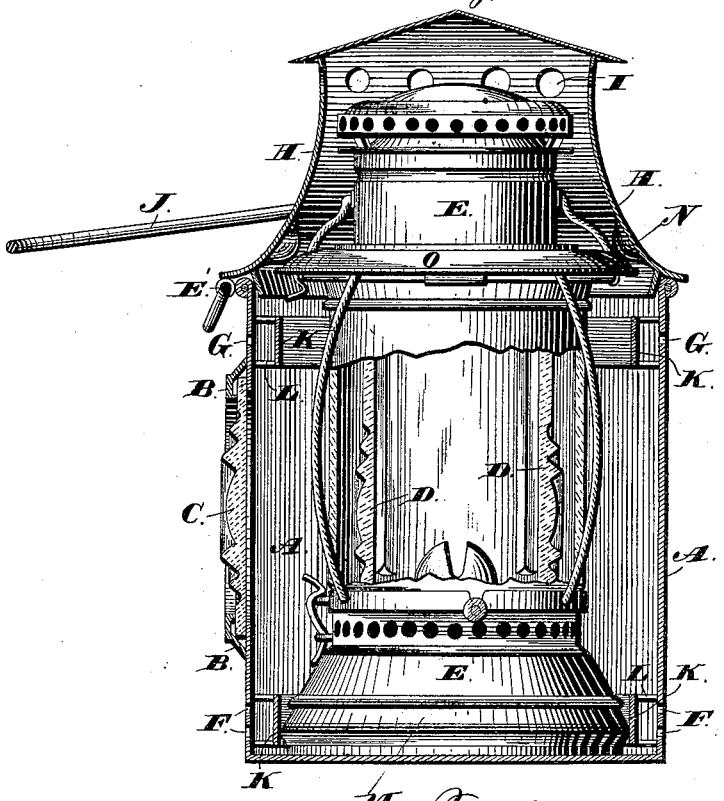
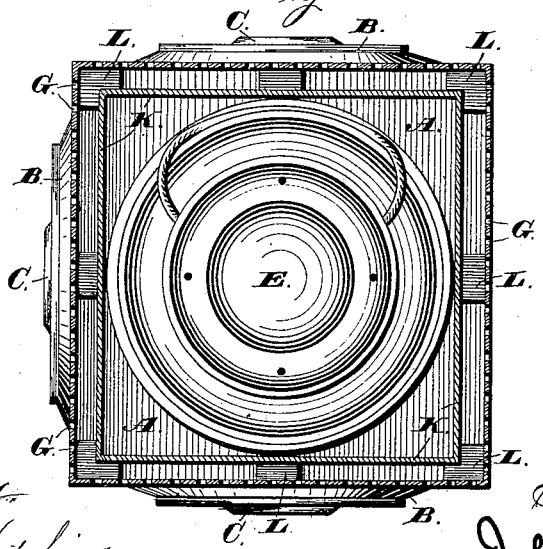


Fig. 3



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Jas. E. Hutchinson.
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John H. Ewing.
By H. A. Seymour,
Atty.

UNITED STATES PATENT OFFICE.

JOHN H. EWING, OF WHEELING, WEST VIRGINIA, ASSIGNOR TO THE EWING & BILL LANTERN COMPANY, OF SAME PLACE.

SIGNAL-LANTERN.

SPECIFICATION forming part of Letters Patent No. 263,396, dated August 29, 1882.

Application filed April 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. EWING, of Wheeling, in the county of Ohio and State of West Virginia, have invented certain new and useful Improvements in Signal-Lanterns; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to an improvement in signal-lanterns, the object being to provide a device of this character which shall be simple in construction and require comparatively little attention to maintain it in running order, and which will be adapted to withstand the action of wind and weather without danger of being extinguished, and, in virtue of a novel arrangement of lenses, to concentrate and transmit the pencils of light in a manner most desirable for signaling purposes.

With this object in view my invention consists in the combination, with a hand-lantern, of a box or case adapted to inclose it, and provided with lenses to transmit the light of the lantern, and with apertures to admit air thereto.

My invention further consists in the combination, with a hand-lantern, of a box or case adapted to inclose it, and provided with lenses to transmit the light of the lantern, with apertures to admit atmospheric air thereto, and with wind-guards arranged to break the air-currents entering the case through the apertures aforesaid.

My invention further consists in the combination, with a hand-lantern provided with lenses, of a box or case adapted to inclose the lantern, and provided with lenses to concentrate and transmit the pencils of light passed through the lenses of the lantern.

My invention further consists in the combination, with a hand-lantern, of a box or case provided with a hinged top adapted to permit the introduction of the lantern into the case and to hold it in position therein.

In the accompanying drawings, Figure 1 is a view in perspective of a signal-lantern constructed in accordance with my invention. Fig. 2 is a view thereof in vertical cross-section, and Fig. 3 is a view in horizontal cross-section.

The lantern box or case A is preferably constructed of sheet metal, conforming in general contour and size with the style of lantern to be employed in combination with it, reference also being made to the peculiar use to which it is to be made subservient, for, although the lantern was primarily designed to be employed for railroad purposes, as for switch-targets and tail-lights, for which it is eminently well adapted, it may be used for a ship, carriage, or as a street light. One or more sides of the said case are provided with annular rings B, adapted to have lenses C mounted in them, said lenses being appropriately arranged to receive the pencils of light converged by the lenses D of the lantern E, which is inclosed in the case. The lenses C may be formed of colored glass, or they may be made of white glass flashed with colored glass, or they may be of plane white glass, the color of the transmitted light being determined by the color of the lenses D. Ordinarily, however, the lenses D will be white and the lenses C colored; but as a matter of economy the lenses C and D may be made of white glass, the light being colored by panes of colored glass located back of the lenses C, and when a very strong light is not required the lenses C may be substituted by panes of white or colored glass. The lower ends of the sides of the case A are provided each with a double row of apertures, F, to admit air into the case, while the upper ends of the said sides are provided with a row of apertures, G, which also admit air into the case.

H is a hinged top, conforming in internal contour with the shape of the upper portion of the lantern, which it incloses when closed and locked by the locking devices E′. The upper portion of this hinged top piece is encircled by a row of apertures, I, which permit the egress of air from the case A. The top piece is also provided with a pivotal handle, J, by which the case A is moved from place to place as desired.

The wind-guards K, located within and directly in front of the apertures F and G, consist of flat strips of metal supported by flanges L, a sufficient space being left between the sides of the case and the strips to permit the air to enter the apertures freely. The guards located in front of the apertures F perform a twofold function, for they not only break the force of the air-currents entering through said

apertures, but also by engaging with the skirt M of the lantern they aid in holding it rigidly in place, the upper portion of the lantern being secured against displacement by lugs N, projecting from the inner face of the hinged top H and engaging with the reflecting-ring O of the lantern.

The quantity of air supplied to an inclosed space through fixed openings varies greatly with the motion of the air. For instance, the quantity of air entering the openings on a still night will be much less than on a windy night. The openings must therefore be sufficiently numerous, or of such size that the quantity of air admitted to the flame on a still night will be ample to sustain it burning brightly; but on a windy night the air entering through the same openings will be greatly in excess of the desired amount, and the currents produced will often extinguish the flame. Furthermore, the lamp-chimney will frequently be broken by the contractions in the glass due to suddenly cooling it.

The wind-guides which I have described, while in no wise interfering with the entrance of air into the case on still nights, break the force of the air-currents that seek to gain admittance to the case on windy nights. The flame is thus supplied at all times with sufficient air to support it in brilliant combustion, but it is never exposed to currents sufficiently violent to extinguish it. The flame is also protected by the lantern itself, which is provided with devices to guard against the entrance of air-currents to the flame.

The lantern, moreover, may be readily removed for renewing the supply of oil and for trimming the wick. It may also be removed for use as a hand-lantern, if desired. Signal or lard oil, which is extensively used in signal-lamps, is objectionable, in that it congeals in cold weather, and the light is thus extinguished. Kerosene-oil, which I employ, will not congeal, and this difficulty is obviated.

Aside from those changes which must sometimes be made to meet the requirements resulting from the oscillation of the ordinary practical conditions, it may be advisable to make other slight changes. I would therefore have it understood that I do not limit myself to the exact construction shown and described, but that I hold myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

I am aware that it is not new to place a lamp within a casing having glass sides and to interpose lenses between the lamp and the sides of the case. I am also aware that lamps inclosed by glass have been placed in cases having lenses mounted in their side walls. I am further aware that lamps have been placed in cases having double walls provided with apertures for the ingress of air, and with lenses acting independently to concentrate the light.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a hand-lantern, of a case adapted to receive it, the side walls of the case being provided with panes or lenses, and having rows of air-inlets located above and below said panes, a device located within and near the bottom of the case to engage with the lower portion of the lantern, and a top secured to the case and arranged to engage with the upper portion of the lantern and secure and support it in the case, substantially as described.

2. The combination, with a hand-lantern, of a case adapted to receive it, the side walls of the case being provided with panes or lenses, and having air-inlets located above and below said panes, wind-guards located within the case and arranged to break the force of the air-currents entering the inlets, the lower guard serving also to engage with the lower portion of the lantern to hold it in place, and a top hinged to the case, adapted to be locked thereto, provided with air-outlets, and adapted to engage with the top of the lantern to secure and support it in the case, substantially as described.

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

JOHN H. EWING.

Witnesses:
SAM A. MILLER, Jr.,
JAS. C. BAKER.