(No Model.) 2 Sheets—Sheet 1.

N. McD. CRAWFORD.

SIGNAL LANTERN.

No. 346,897. Patented Aug. 10, 1886.

Fig. 4.

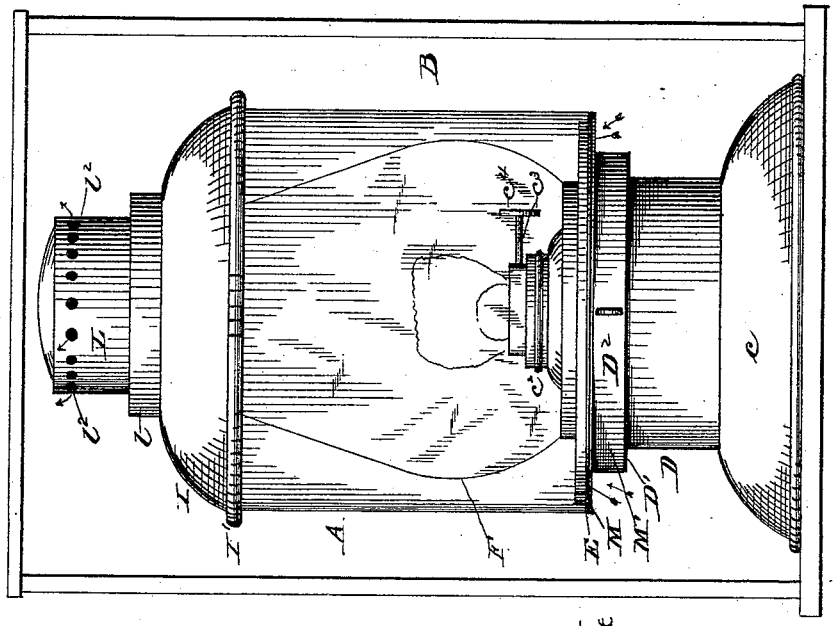
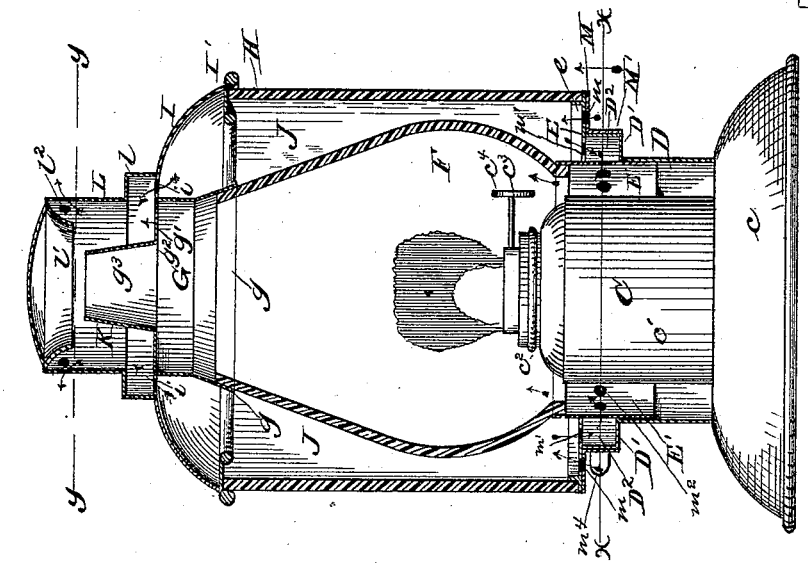


Fig. 5.



Attest:
Wm. H. H. Knight,
S. C. Edmonds

Inventor:
Norman McD. Crawford
By his attorneys,
Edson Bros.

(No Model.)

2 Sheets—Sheet 2.

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SIGNAL LANTERN.

No. 346,897. Patented Aug. 10, 1886.

Fig. 2.

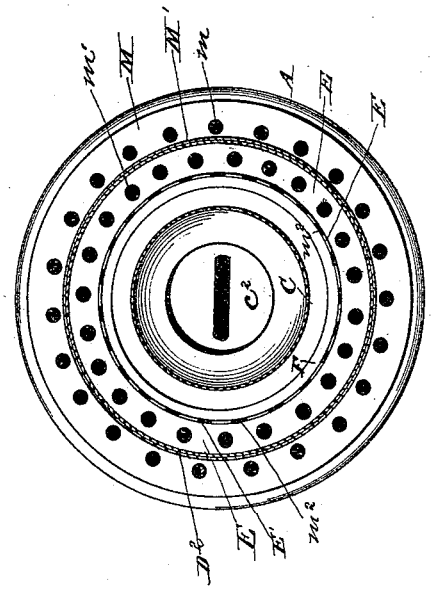
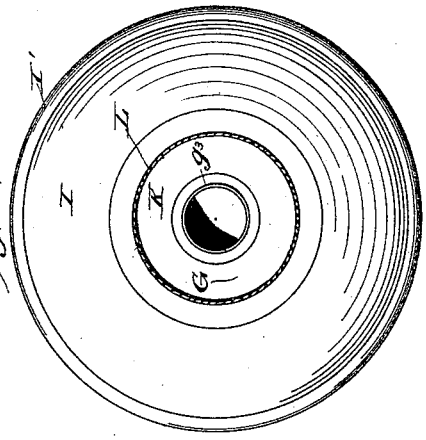


Fig. 3.



Attest:
Wm. A. N. Knight.
S. C. Edmonds.

Inventor:
Norman McD. Crawford
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UNITED STATES PATENT OFFICE.

NORMAN McD. CRAWFORD, OF HARRISBURG, PENNSYLVANIA.

SIGNAL-LANTERN.

SPECIFICATION forming part of Letters Patent No. 346,897, dated August 10, 1886.

Application filed February 24, 1886. Serial No. 193,058. (No model.)

To all whom it may concern:

Be it known that I, NORMAN McD. CRAWFORD, a citizen of the United States, residing at Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Signal-Lights, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in lamps or lanterns, which, although applicable to such articles in general, are especially designed and adapted for use upon swiftly-moving bodies—as, for instance, signal-lamps upon locomotives, and tail lamps or markers upon the rear of railroad-trains, steamships, &c.—and also for service at points exposed to high winds—as high or low railroad-switch signal-lamps, &c.

It is well known to those skilled in the art to which my invention appertains that the ordinary lamp or lantern, when used in either of the above-named capacities, is unreliable, and fails to give satisfactory results, which in great measure is due to the improper feeding of air to the lamp or lantern.

To this end the invention consists in certain novel and peculiar features of construction and arrangement, as hereinafter described and claimed.

In the drawings, Figure 1 is a central longitudinal section through a lamp or lantern embodying my improvement. Fig. 2 is a transverse section thereof on the line *x x* of Fig. 1, looking in the direction indicated by the arrow. Fig. 3 is a similar section on the line *y y*, looking downward. Fig. 4 is a side elevation of the lamp.

Referring to the drawings, in which similar letters of reference denote similar parts, A designates a lamp or lantern designed for use upon a locomotive, or upon the "caboose" or rear platform of railroad-trains; B, the outer casing or box, within which the lamp proper is placed; C, the oil-receptacle, of the usual well-known construction—viz., having bottom *c*, secured to the bottom edges of the body *c'*, and removable top c^2, having wick-adjusting roller c^3, provided with thumb-piece or head c^4.

D designates a wall or ring surrounding and eccentric with the lamp-body *c'*, at a short distance therefrom, and is secured to the upper surface of the bottom *c*.

D' designates a flange surrounding the upper edge of the ring D, and projecting therefrom in a horizontal plane. To the outer edge of the flange D' is secured a second ring, D^2, concentric with the body *c'*.

E designates a ring that rests at or near its middle upon the upper edge of the ring D^2, and extends at each side thereof in a horizontal plane. The inner edge of the ring E bears against the outer surface of a wall or ring, E', that extends upwardly from the ring or wall D, and supports at its upper end the inner glass globe, F, of the lamp, which has the usual well-known shape.

G designates a metal cap having a flaring lower end, *g*, that incloses the upper end of the globe F, and a top, *g'*, the latter having at its middle an aperture, g^2, that registers with the lower end of a short open-ended tube, g^3, having inwardly-converging walls, as shown.

H designates the exterior wall or casing of glass that surrounds the globe F at a short distance therefrom. This wall or casing is of the same diameter throughout its length, and rests upon the upper surface of the ring E, at the outer edge thereof, and is held from lateral movement by a flange, *e*, that is secured to and projects upwardly from the ring E.

I designates a cap hinged at one side to a wired ring, I', that surrounds and rests upon the top of the casing H. The cap I is apertured at its middle, and rests upon the outer edges of the cap G of the globe F.

i designates a series of apertures formed through the cap I near its upper edge, that connects the chamber J between the globe F and casing H with a chamber, K, formed above said cap I within the inclosing-walls of a cap, L, that surrounds the tube g^3 thereon. *l* designates an offset formed at the lower end of the cap L, to provide for the passage of air through the openings *i*. The upper end of the cap L is provided with an upwardly-curved flange, *l'*, that extends downward nearly to the plane of the top of the tube g^3, to prevent direct drafts between said tube g^3 and the openings l^2, formed in the walls of the cap L, near the top thereof.

m m' designate openings formed through

the ring E, concentric with the outer edge thereof, the outer one, m, admitting air to the chamber J, while the inner one, m', opens from said chamber through openings m^2, formed in the ring E', to the space between the lamp-body c' and the ring D, and thence upward to the interior of the globe F. When desired, the apertures m may be closed by an apertured ring, M, that surrounds and moves upon the outer surface of the ring D^2 in the plane of and in juxtaposition with the ring E.

M' is a ring secured to and projecting downward from the inner edge of the ring M in juxtaposition with the ring D^2, and m^4 is a thumb-piece projecting from the ring M', to provide means for operating it.

The lamp C is removable from the ring E', which holds the globe in position, in the usual well-known manner.

It will be observed that the air first passes through the openings m into the chamber J, between the globe F and outer casing, H, where it becomes quiet or "dead," even while the lantern is moving through the air at great speed, the flame of the lamp being supplied through the openings m' and m^2 with air from said chamber J, while at the same time a proper circulation is maintained at the top of the lamp through the openings i and l^2, thereby securing a steady flame at all times. I deem this feature of great importance, and one that will be fully appreciated by those skilled in the art to which my invention appertains.

I claim—

1. The combination, with an oil-chamber, a ring, D, surrounding the chamber, and having an offset, D^2, a perforated ring, E', interposed between the chamber and ring D, and having perforations m^2, of the perforated ring E, supporting casing H, the globe J, supported upon ring E', and the caps I and L, substantially as described.

2. The combination, with the ring D, having offset D', and the concentric perforated inner ring, E', of the perforate ring E and movable perforated ring M, globe J, supported upon ring E', casing H, supported upon ring E, hinged cap I, having apertured and perforated upper end, perforated cap L, having offset l, and downwardly-contracted deflector l', the upwardly-tapering piece g^3, supported by said cap I, and the collar G, surrounding the upper end of the globe J, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

NORMAN McD. CRAWFORD.

Witnesses:
EDWARD L. CAUNE,
JAMES C. KULP.