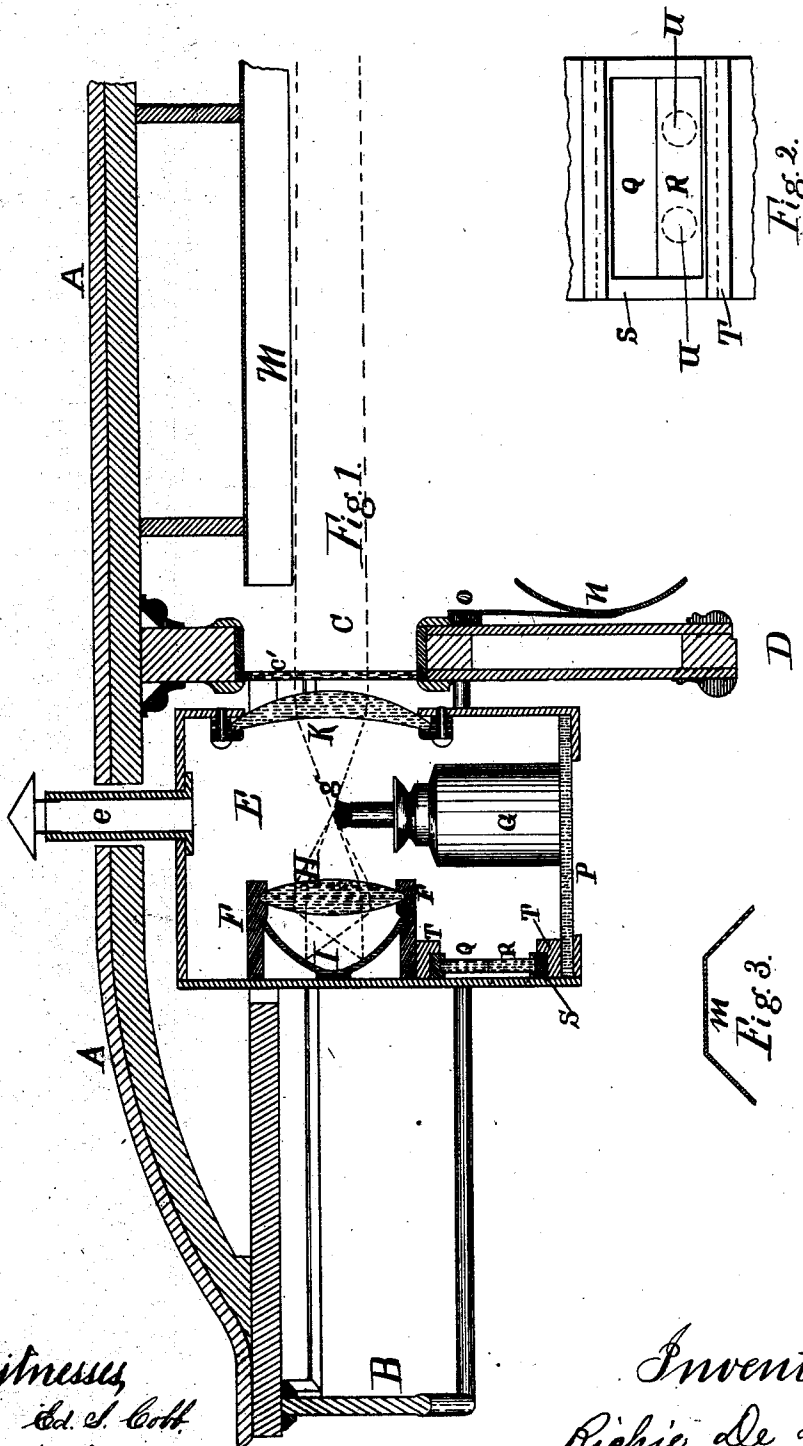


(No Model.)

R. De LAN.
Lighting Railway Cars.

No. 237,095.

Patented Feb. 1, 1881.



Witnesses,
Ed. S. Cott.
J. H. Adams.

Inventor,
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UNITED STATES PATENT OFFICE.

RICHIE DE LAN, OF BOSTON, MASSACHUSETTS.

LIGHTING RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 237,095, dated February 1, 1881.

Application filed May 8, 1880. (No model.)

To all whom it may concern:

Be it known that I, RICHIE DE LAN, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in the Method and Means of Lighting Railway-Cars, of which the following is a specification.

The object of my invention is to provide a means for lighting railway-cars by a single light placed at either end of the car on the outside, so as to diffuse a bright, uniform light throughout the interior of the car, as well as on the platform of the same, and, when necessary, exposing a danger-signal at the rear of the car, and also to diminish the risk of setting the car on fire in case of accident to the same.

The invention consists of a lamp or other burner, to be arranged in a case or lantern just outside of the end of the car in the space over the door, in connection with a magnifying-lens placed in front of a parabolic reflector, with a space left between the two, so that the light will be magnified in the reflector, and the light thus magnified passing through a lens on the opposite side of the light and next to the front partition of the car, on the outside.

The invention also consists of a reflector placed near the center of the roof, and extending the whole length of the same, so as to reflect the light downward after passing through the inner lens.

Referring to the drawings, Figure 1 represents a longitudinal section of an end portion of a railway-car, showing the position and arrangement of the lantern or lamp. Fig. 2 represents a frame containing a reversible slide, holding plain and colored glass, arranged at the rear of the lamp or lantern, for danger or other signals. Fig. 3 is a transverse section of the reflector extending along the upper part of the car.

A represents the roof of a railway-car, and B the portion extending over the platform of the car.

D represents the position of the doorway of the car; and C is an opening at the end of the car, over the doorway, through which the light passes from the lamp.

E is a case or lantern arranged on the outside of the main portion of the car, and so

that it can be shifted and placed at either end of the car.

G is a lamp suitably arranged in relation to the lenses and opening C, and supported upon a glass plate, P, constituting the bottom of the lantern, and through which light is emitted to light the platform of the car.

At the rear of the case or lantern E is arranged, in a frame, F, a parabolic reflector, I, and in front of said reflector is fixed a magnifying-lens, H, a space being left between the two, as shown, by means of which arrangement a very greatly magnified light is reflected from the flame of the lamp at *g*, which is properly arranged in relation to the focus of lens H, as shown in Fig. 1, the course of the rays emitted from the lamp being shown in dotted lines. Opposite the lens H, on the other side of the light or burner *g*, is another lens, K, through which the magnified light from the reflector passes, and is again magnified, into the car, passing through the opening C, which is provided with a plain glass partition, *c'*.

n represents a reflector attached to a plate swinging upon a center, *o*, and is designed to cover the opening C at the opposite end of the car from the light and its lenses when it is desired to close said opening C.

At the rear of the lower part of the case or lantern E is arranged, in guides T T, a sliding frame, S, in which are secured plates or panes of plain and colored glass, so that by drawing out the slides and reversing its position a plain or colored light may be displayed, as desired, the object being to show a danger or other signal at the rear end of the rear car. The said plate of glass may be arranged in a circular rotating frame, if desirable. *u u* are holes in the lantern-frame for the passage of the signal-lights. Extending longitudinally through the car, and attached to the roof of the same, on the inside, is a reflector, *m*, the form of which is shown, in cross-section, in Fig. 3, by means of which the light is reflected downward, which passes through the lens K.

In case it is desirable to light a compartment-car according to my improvement, I place a tube in the upper part of the car, extending through openings in the partitions of the same, and whose transverse section may be either circular, polygonal, or elliptical, and having a reflecting inner surface. In each compart-

ment of the car there is an opening in the tube on the lower side provided with a swinging or sliding door or cover, so that light may be admitted to any compartment, as desired.

5 The lantern with the reflectors, as above described, may be used for lighting halls and for other similar purposes.

What I claim as my invention, and desire to secure by Letters Patent, is—

10 1. The combination, in a lantern connected with a railway-car, of the lens H, reflector I, and lens K, and burner *g*, substantially as set forth.

15 2. The combination, in a lantern, E, of a magnifying-lens, H, arranged in front of a re-

flector, I, so as to effect a magnified light from the burner *g*, substantially as specified.

3. The reflector M, attached to upper part of a railway-car, and extending the entire length of the same, or nearly so, in combination with the reflector K and burner *g*, as and for the purpose set forth. 20

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

RICHIE DE LAN.

Witnesses:

J. H. ADAMS,

EDW. S. COBB.