

A. P. BERLIOZ.

Improvement in Electric Lighting Apparatus.

No. 115,154.

Patented May 23, 1871.

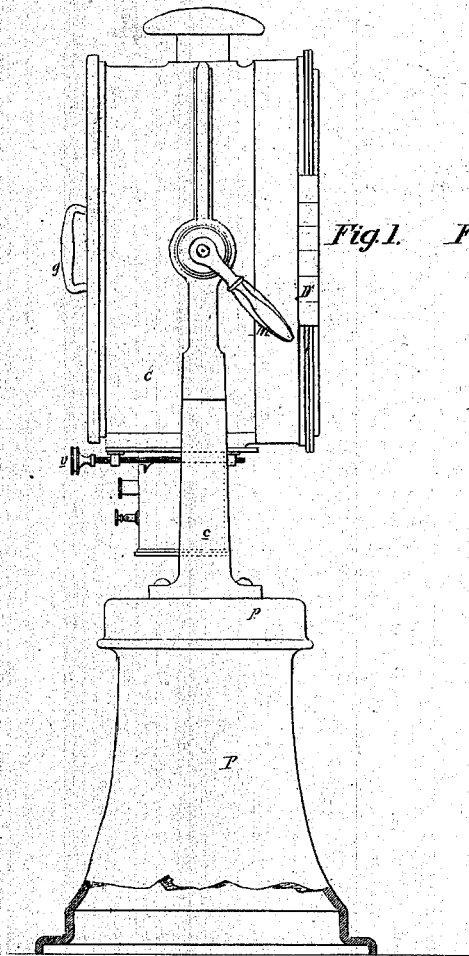


Fig. 1.

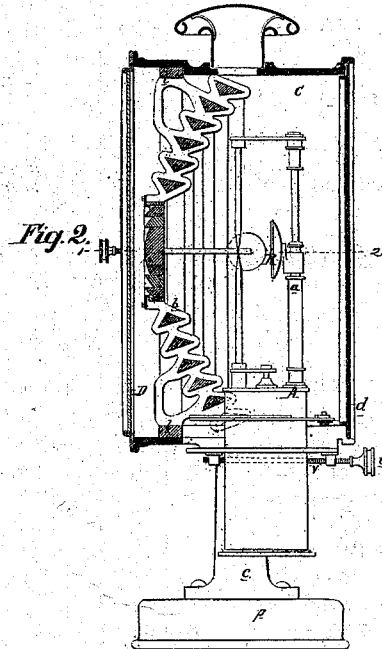


Fig. 2.

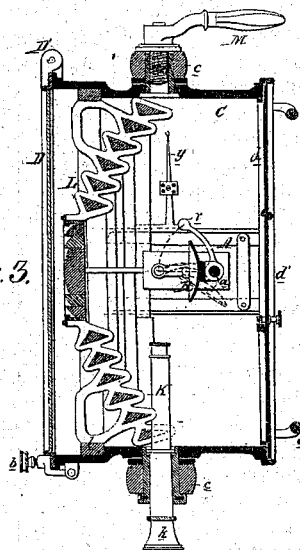


Fig. 3.

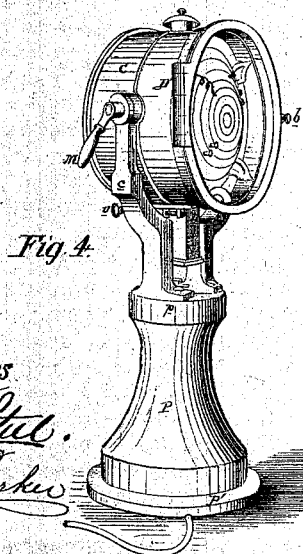


Fig. 4.

Witnesses  
*Wm. A. Steel.*  
*John Parker.*

A. P. Berlioz  
 by his Attor  
 Horsman & Son.

# UNITED STATES PATENT OFFICE.

AUGUSTE PROSPER BERLIOZ, OF PARIS, FRANCE.

## IMPROVEMENT IN ELECTRIC LIGHTING APPARATUS.

Specification forming part of Letters Patent No. 115,154, dated May 23, 1871; antedated May 17, 1871

I, AUGUSTE PROSPER BERLIOZ, manager of Alliance's Society in Paris, Empire of France, have invented a System of Lighting Apparatus, of which the following is a specification:

### *Nature and Object of the Invention.*

My invention consists of an electrical lighting apparatus, fully described hereafter, which may be employed at sea to avoid collisions at night or during fogs, or be used in making all combinations of signals. The apparatus will also be found useful on land in time of war for signaling or for observing the movements of the enemy in the field, &c.; and may be employed, in fact, wherever an intense and extended light is required.

### *Description of the Accompanying Drawing.*

The drawing represents, by way of example, one form of apparatus especially adapted for use on board ship, it being mounted upon a pedestal, as hereafter described, in such a manner as to permit the light to be directed to any angle, either horizontal or vertical.

Figure 1 is an exterior elevation of the apparatus; Fig. 2, a vertical section of the same through the axis; Fig. 3, a sectional plan view on the line 1 2, Fig. 2; and Fig. 4, a perspective view of the apparatus reduced.

### *General Description.*

The exterior casing of the apparatus consists of a cast-metal cylinder, C, this form having been found best adapted for the reception of the devices necessary in service. The pivots at the opposite sides of this cylinder are mounted in standards *c*, which rest upon a metallic cap, *p*, the latter being attached by a vertical pivot to the cast pedestal P, which is placed upon a platform, P', fastened to the deck of the vessel. To retain the cylinder C at any angle to which it may be adjusted in the vertical plane one of its pivots is provided with a handled bolt or screw, M, Fig. 3, which serves to press the said cylinder against the supports *c*, and thus prevent it from turning. The cylinder is closed at the back by a copper plate, *d*, in the center of which is a rectangular door, *d'*, that opens to enable the lamp or electric light A to be withdrawn. The front of the cylinder is closed by a glass, D, fixed in a frame hinged at D', and kept closed by means

of a hook or swinging piece, *b*, furnished with a thumb-screw. The glass D thus protects the lens L, consisting of rings, which is arranged in the manner of the little voltaic arc of the electric light, and the effect of which is to give the greatest intensity to the latter. The rings of this lens are fixed in a cross-radial support, which is connected to a metal ring, *l*, held by screws in a groove of the cylinder C. The regulator or electric lamp A is completed by a small reflector, R, mounted upon a rod, *a*, attached to the said lamp, so that, if the latter is moved in its guides to give more or less divergence to the light, the said reflector remains always at its focus. The reflector is mounted in such a manner as to turn upon the rod *a* so as to carry into the axis of the charcoal points or pencils a sort of disk, *r*, which thus serves for centering the said pencils. (See dotted lines.) As soon as the center is thus obtained the reflector is again put in place—that is to say, in the position indicated by the full lines in Figs. 2 and 3—in the slides arranged longitudinally in the cylinder *c*; and the slide, as well as the entire lamp A, is made to advance or retreat by means of a screw, V, which is operated from outside the cylinder, it having a milled head, *v*. By this means of advancement or retreat more or less divergence may be given to the light. To the interior of the apparatus is added a small telescopic tube, K, placed in one of the pivots of the cylinder, and intended to show outwardly upon an unpolished glass, situated at *k*, the image of the charcoal points. Upon this glass there is an index, serving to facilitate the placing of the light to the focal point. The conducting-threads of the currents furnished by the magneto-electric machine are passed into the interior of one of the supports of the cylinder C, so that they may not be injured by the salt water, which might sometimes break the current. At *y*, Fig. 3, is seen one of the threads, which terminates in a spring rubber.

The apparatus may be turned to any extent in the horizontal plan, and can also be adjusted to any angle vertically on loosening the handled screw M.

To aid in the management of the apparatus two strong handles, *g g'*, Fig. 3, are fastened to the plate *d* of the cylinder.

The apparatus, constructed as above de-

scribed, or slightly modified, can be used upon land, as before mentioned, as well as upon vessels.

*Claims.*

1. An electric illuminating apparatus consisting of a case, C, having near one end a lens, L, and containing an adjustable stand, which supports adjustable carbon-pencils, and an adjustable reflector, R, all substantially as described.

2. The said case and its contents, in combination with a stand, P, on which the said case is adjustable, as described, and through which extend the wires leading to the battery, as set forth.

3. The adjustable arm carrying the disk *r*, arranged adjacent to the carbon-pencils, for the purpose described.

4. The tube K and its glass, in combination with the case C and the carbon points, as and for the purpose specified.

5. The lens, consisting in whole or in part of independent rings of glass secured to radial supports, as set forth.

6. The lamp A, adjustable in the case C by means of the screw V, or its equivalent, substantially as set forth.

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

AUGUSTE PROSPER BERLIOZ. [L. s.]

Witnesses:

EMILE RICHARD,  
ADOLPHE BISSON.