

H. H. DOTY.
SIGNAL-LANTERN.

No. 178,607.

Patented June 13, 1876.

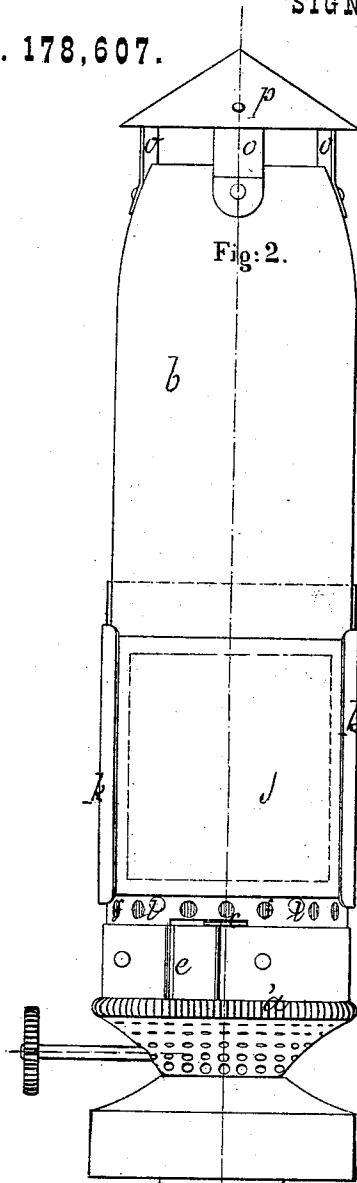


Fig:1.

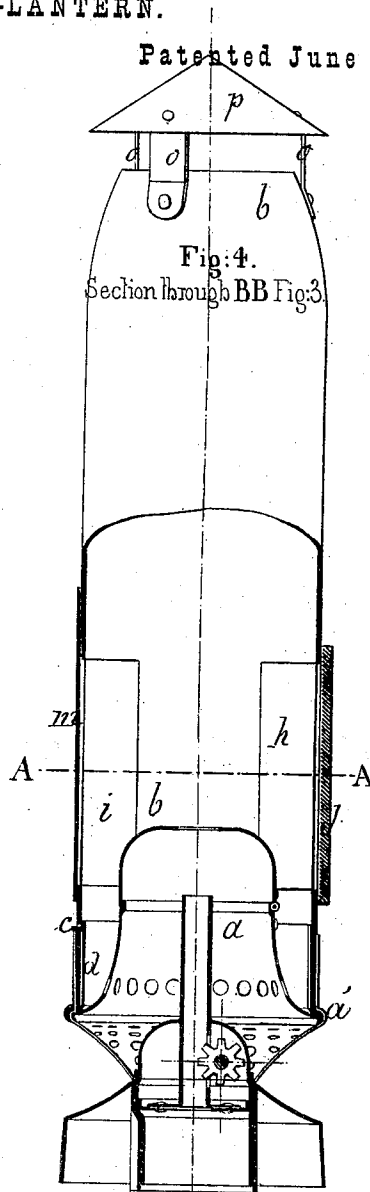
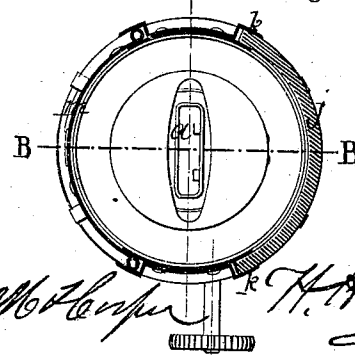
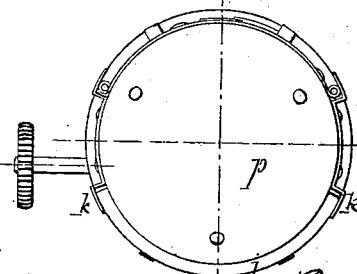


Fig:4.
Section through BB Fig:3.

Fig:3.
Section through AA Fig:4.



Witnesses,

J. Francis Evans

Robert M. Phelps

Inventor

H. H. Doty

UNITED STATES PATENT OFFICE.

HENRY H. DOTY, OF LONDON, ENGLAND.

IMPROVEMENT IN SIGNAL-LANTERNS.

Specification forming part of Letters Patent No. **178,607**, dated June 13, 1876; application filed June 7, 1875.

To all whom it may concern:

Be it known that I, HENRY HARRISON DOTY, naval officer, of 15 Bury street, St. James, London, England, have invented certain new and useful Improvements in Signal-Lanterns, for railway, marine, and other purposes; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

The nature of my invention relates to lamps for signaling at night on railways, ships in ports, and for other usages, wherewith light is projected either in one single direction or in two different directions simultaneously, either without affecting the color of the said light or modifying the same by means of a series of colored glasses, in accordance with the regulation of the different services making use of the same; and it consists in adapting, over a burner, burning, preferably, hydrocarbon oils, a metallic chimney, provided with two openings, made on about a level with the center of the flame, one opposite to the other, over one of which I arrange white or changeable colored glasses, according to the requirements of the service, and over the other either a reflector for the purpose of augmenting the amount of light projected for signaling purposes in one single direction, or a colored glass as a check-signal or back signal, and if requisite this latter opening may also be utilized for the transmission of signals by means of changeable colored glasses, as stated, with reference to the first opening.

This metallic chimney is provided at its base with a series of holes, which produce an internal draft of air, beneficial as regards the brilliancy and the steadiness of the flame. It is attached quickly and securely to the burner by means of a special joint, (bayonet-joint,) and surmounted with a hood of a special construction, serving to regulate the ascending current of air, and at the same time to intercept any downward current.

Thus constructed, my new lamp can at all times be employed under covered stations without requiring any other protection; and, for entirely open-air service, such as signal-

ing at sea, it is simply inclosed in the usual ship-lantern, provided with a plain glass or a lens.

In order that my improvements be clearly understood, I will describe them in detail conjointly with the four figures of the hereto-annexed drawing, of which—

Figure 1 represents a plan of my improved signaling-lamp; Fig. 2, a lateral elevation of the same; Fig. 3, a plan in section through A A; and Fig. 4, a front elevation, partly in section, through B B, Fig. 3.

In these figures, *a* represents the burner, arranged for consuming hydrocarbon oil, and *b* the metallic chimney, resting on the rim *a'* of the burner, and retained in its place by the projections *c c*, attached to the upper part of the outer flange *d* of the burner. Its upper extremity is tapered, and thereto are riveted three legs, *o o o*, on which is riveted the conical cap *p*. To place the chimney on the lamp, the parts *e e* are swelled out on the bottom flange of the chimney, and the projections *c c* being made to coincide with the same, the chimney is simply pressed down on the burner, and then partially turned round, so that the projections *e e* rest on the upper part of the chimney-flange, in which position the openings or windows present themselves parallel with the flame, when a flat wick-burner is used. *f*, Fig. 2, represents the position and proportionate size of holes which I prefer making in the lower part of the chimney. *h i* are the windows or openings made in the chimney opposite to the flame. Their position and dimensions may, however, vary according to circumstances. They are both identical, and can, therefore, either of them be made available for signaling purposes, and supposing that it is *h* which serves to transmit the signals, *j* is a glass, (either plain or colored,) maintained in contact with the chimney by the lateral slides *k k*, and resting on the pins *l*, while *m*, at the window *i*, would either be a glass serving for back or check signaling, as in the case of a railway-station or a reflector, intercepting the passage of the rays in that direction, and projecting them toward the other direction, thus intensifying the amount of light.

For the purpose of back signaling, I also

make a hole about half an inch in diameter in the center of the reflector, while its remaining surface serves to augment the intensity of the light projected in the other direction. By this means I simplify the manipulation of my lamp without materially affecting the amount of light reflected in the opposite direction.

It is advantageous to coat the interior of the chimney with silver or nickel.

This lamp-chimney is not liable to be broken, and the character of the signals can be easily changed by removing one glass and substituting another, and the lamp is adapted to exposed positions, and is more compact and

cheap than lanterns usually employed for signals.

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

The lamp-chimney made of metal, with a circular base, and provided with slides *d* and movable curved glasses, and concave reflectors, in combination with the circular rim *a'* of the burner and the attaching projections *c*, substantially as specified.

HENRY HARRISON DOTY.

Witnesses:

ROBT. M. HOOPER,
I. FRANCIS EVANS.