M. M. ROUNDS.

Locomotive Head Light.

No. 54,020. Patented April 17, 1866.

Fig. 1.

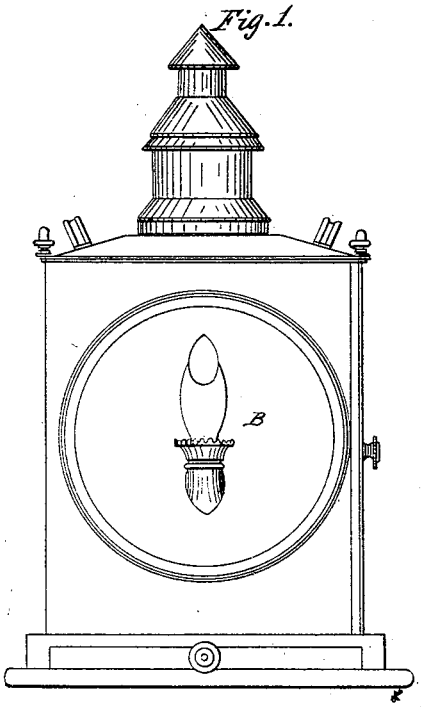


Fig. 2.

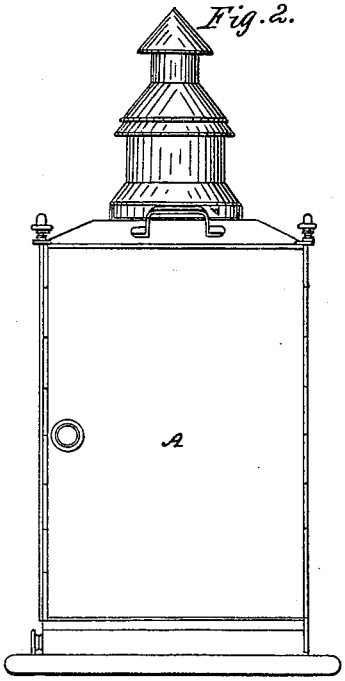


Fig. 3.

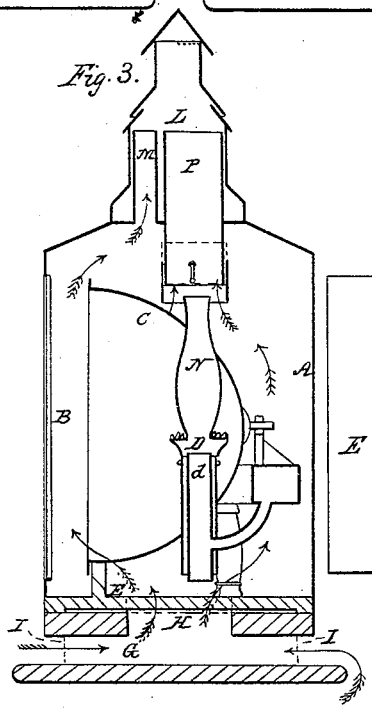
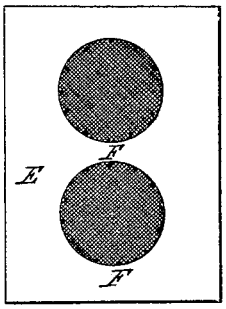


Fig. 4.



Witnesses:
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John H. Shumway

Inventor:
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By his atty
John C. Earl

UNITED STATES PATENT OFFICE.

M. M. ROUNDS, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN HEAD-LIGHTS.

Specification forming part of Letters Patent No. **54,020**, dated April 17, 1866.

To all whom it may concern:

Be it known that I, M. M. ROUNDS, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Head-Lights; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a front view; Fig. 2, a side view; Fig. 3, a vertical central section cutting from front to rear, and in Fig. 4 a plan of the bottom of the inner case.

In head-lights as heretofore constructed a great difficulty has arisen from the great heat generated therein, causing the frequent breakage of the glass, and by the intense heat destroying the entire head-light, and from lack of perfect combustion light has been much curtailed, which if not so curtailed would have only added to the difficulty first mentioned.

To overcome these difficulties is the object of my invention, which consists in the peculiar arrangement of my invention, whereby the case is perfectly ventilated and greater combustion obtained.

To enable others skilled in the art to construct and use my improvement, I will proceed to describe the same as illustrated in the accompanying drawings.

A is the outer case, provided with a glass front, B, of nearly the usual form and construction; C, the reflector; D, the lamp, of any known form or construction.

E is the bottom of the case, the bottom of which is seen in Fig. 4, openings F F being made therethrough, covered upon the upper side by a wire-gauze.

Below the bottom E, I form a chamber, G, having an opening, H, communicating with the opening F F above, also covered by wire-gauze. The front and rear sides of the chamber G are also closed by a wire-gauze, I.

Upon the top of the case I place a ventilator, L, of any well-known construction. Opening into the said ventilator from the case I form a passage, M, so that air may pass freely from the interior of the case to the ventilator.

Directly over the chimney N, I place a tube, P, opening into the ventilator. The said tube P, at its lower end, is provided with a sleeve, to be moved down over the chimney, as denoted in black, or, when necessary, to be raised, as denoted in red, for the purpose of removing the chimney or otherwise.

To the lamp a passage, *a*, around the wick-tube *d*, admits a large quantity of air directly to the burner, which greatly facilitates the combustion.

The front and rear openings to the chamber G are either one closed, as the case may be. (Seen in Fig. 1.) When moving at a rapid velocity the front opening should be closed and the rear opening opened to admit air, as denoted by a black arrow, the draft through this opening being sufficient for all practical purposes. The air thus admitted passes through the protected opening H and F to the front of the case, as denoted by the blue arrows, out through the passage M and up through the passage *a*, as denoted by arrows, to supply and facilitate combustion, and also around the rear, as denoted by the arrows in red. In addition to the natural draft thus created, the great heat from the burner passes through its chimney, thence through its tube P, creating a still stronger draft through the tube P, which, being fully supplied by the cold air freely admitted, tends to more perfectly ventilate and cool the case; and by the supply of atmospheric air to the burner a much larger blaze may be maintained, and a consequent proportionately increased light, the perfect supply of cold air to the case permitting the light to be so increased.

If running at a slow rate of speed, the rear opening of the chamber G should be closed and the front opening opened to permit air to pass in, as denoted by the blue arrow, to operate as before described. It is advisable that these two openings should be so arranged that the engineer may open or close either the one or the other, according to the rate of speed at or direction in which he is moving.

I do not claim the chamber H, nor the foraminous air-openings F F, as they are found in the hand-lantern of John D. Brown, and substantially in several of Fulton's lamps; but

What I do claim is—

1. The foraminous openings I I, as represented, one in front and the other in rear, so that when the train is in rapid motion the front orifice may be closed and the rear one open, and when the train is moving slowly the rear opening may be closed and the front one opened, so as to equalize the flow of air to the lamp, substantially as shown and described.

2. The said foraminous openings, in combination with the cold-air chimney M, substantially as shown and described.

M. M. ROUNDS.

Witnesses:
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