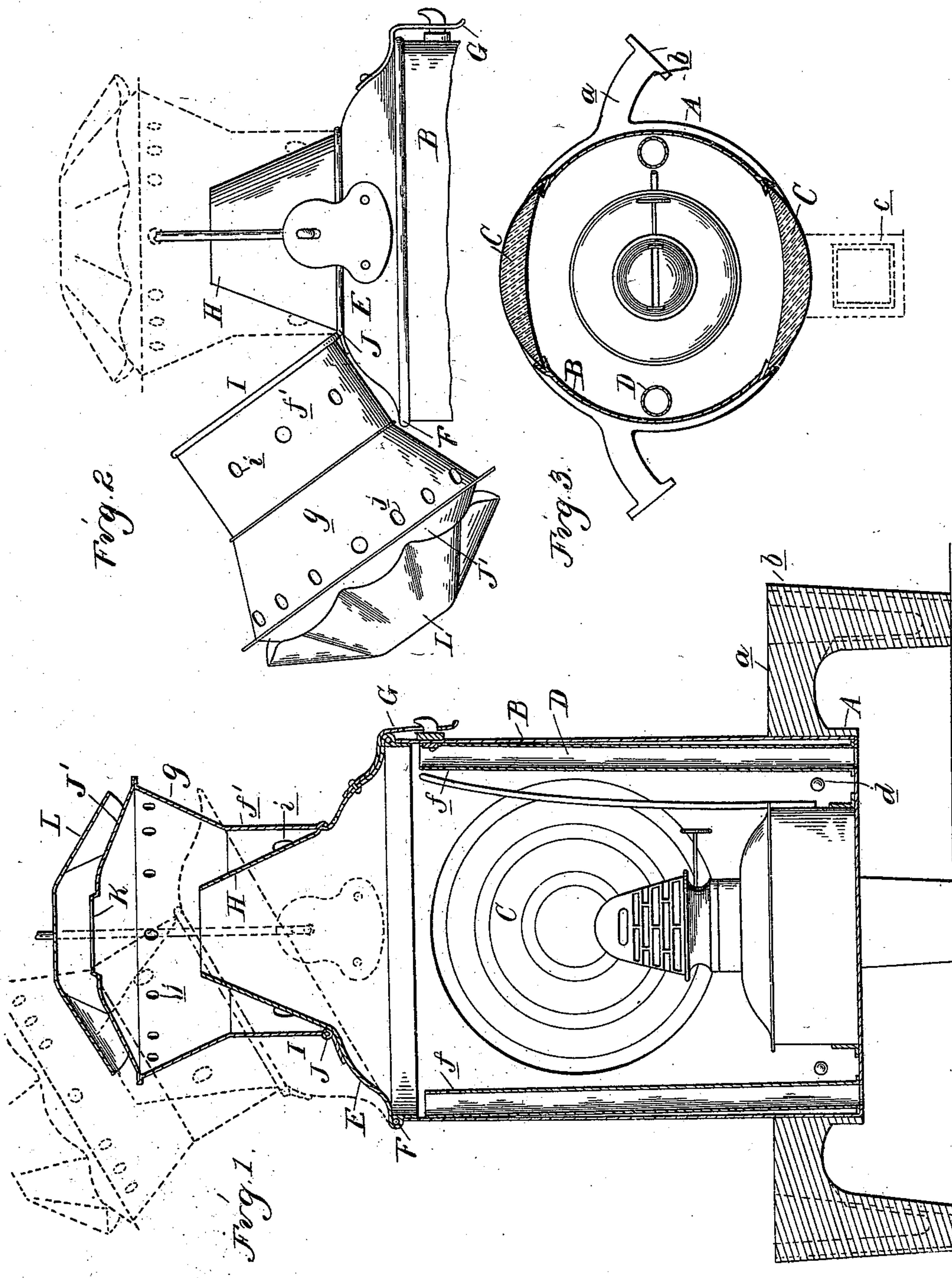


(No Model.)

G. E. WARREN.
SIGNAL LAMP.

No. 556,170.

Patented Mar. 10, 1896.



Witnesses
A. L. Hobbie
C. F. Bantel

Inventor
George E. Warren
By Wm. S. Spangue & Co.
Attys

UNITED STATES PATENT OFFICE.

GEORGE E. WARREN, OF DETROIT, MICHIGAN.

SIGNAL-LAMP.

SPECIFICATION forming part of Letters Patent No. 556,170, dated March 10, 1896.

Application filed May 6, 1895. Serial No. 548,265. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. WARREN, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Signal-Lamps, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to signal-lamps for use in railways; and it consists in the improvement of the air-feeding and ventilating devices. Lamps of this character are often exposed to high air-pressures—as, for instance, when used as signal-lamps carried on the outside of the rear coach of railway-trains, where the air-pressure often becomes abnormally high when the train is running fast. The safety of railway-trains not only demands absolute protection against the possibility of the lamp being blown out, but also that the light should be maintained in a normal condition, as otherwise the oil might be so rapidly consumed by the increased consumption created by abnormal drafts or air-pressure that the lamp goes out from want of oil.

My invention is designed to meet this condition, and to this end it consists of the construction and arrangement of air-feeding and ventilating devices, as more fully hereinafter described and shown in the drawings, applied to a signal-lamp especially designed for railway-trains.

Figure 1 is a vertical central section of my improved signal-lamp. Fig. 2 is an elevation of the top of said lamp, showing the hood tipped back. Fig. 3 is a horizontal section of the lamp.

The lamp is provided with a suitable supporting-bracket for detachably securing it to the side of the coach, as in the usual manner. The drawings show a cast-iron ring A provided on opposite sides with suitable arms *a* terminating in vertical studs *b* adapted to fit the sockets (not shown) provided for them on the coach. Any other means in present use suitable for the purpose may be substituted, such as the sockets *c*, (shown in dotted lines,) adapted to engage with a stud on the coach.

The body B of the lamp is made cylindrical, of sheet metal, and provided with a suitable lens C on opposite sides, as in the present

construction, and the lamp is secured within the bracket by means of rivets *d*, or otherwise. Within the body, secured to the side walls, intermediate between the lenses, are two vertical tubes D extending from the bottom to near the top of the body and open at both ends, so that air may pass in from the outside, or, vice versa, from the inside to the outside. Each tube is preferably provided near its upper end with a relief-aperture *f*. The top E is hinged to the body at F in the usual manner, and a spring-catch or other fastening means G is provided for tightly securing the top to the body. This cover is provided in its center with a short conical chimney H and is inclosed by a hood I, which is hinged at J to the base of the chimney and tightly fits thereon to be held against accidental displacement.

The hood I consists of the cylindrical lower portion *f'* and the conical enlarged upper portion *g*, each being provided with an annular series of apertures *i* *j*, respectively. The lower series of apertures, *i*, are near the base of the hood, so as to be screened on the inside by the chimney, and the upper series of apertures, *j*, are near the top of the conical portion *g*. The top of the hood is closed by a cap J' of more or less umbonate form and provided with a central aperture K and an upper cap L above it. This outer cap L is substantially of conical shape and radially corrugated. It is entirely imperforate, but does not extend quite to the outer edge of the cap J', but is entirely supported above the cap J', except the base portions of the depressions formed by the corrugations. In this manner an air-space is formed above the cap J' which communicates with the outer air through a series of openings formed by the corrugations of the cap. The parts being thus arranged and described, it will be seen that the tubes D feed the air in volume into the lamp and carried up so far to the top as to prevent any disturbing air-currents reaching the flame. The current in striking the under side of the top E is partly checked, so as to give the ample and necessary air feed through the apertures *f*, while the volume of air from the top of the tubes is deflected into the chimney and affords sufficient draft to prevent any disturbing air-currents from

passing down the chimney. At the same time the hood is so constructed that while it gives ample facility for the products of combustion it prevents air from entering in volume sufficient to disturb the flame. The corrugated cap L permits only a limited amount of air to pass over the opening K, while the plate J' below acts as a deflector to assist the air in carrying off the products of combustion.

10 My construction maintains the flame in a constantly normal condition, no matter what disturbing influences there be, and it furthermore has the advantage of making the lamp entirely moisture-proof.

15 What I claim as my invention is—

1. In a signal-lamp, the combination with the body and a conical hood or top, of the air-tubes D extending substantially to the base of said top on opposite sides of the body of
20 the lamp communicating with the outer air at their bases, open at their upper ends and

having imperforate lower portions and apertures in their sides above the flame, substantially as described.

2. In a signal-lamp, the combination with 25 the body of the lamp and the burner, of open-ended air-tubes D extending above the burner and provided with lateral openings *f*, the conical contracted chimney H and the ventilating-hood I provided with annular series of 30 apertures *i* and *j*, one series above the mouth of the chimney and the other below said chimney-mouth and the caps J' and L constructed and arranged to operate substantially as described. 35

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

GEORGE E. WARREN.

Witnesses:

M. B. O'DOGHERTY,

O. F. BARTHEL.