W. S. HAMM.

SIGNAL LAMP.

APPLICATION FILED APR. 15, 1911.

1,039,123.

Patented Sept. 24, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

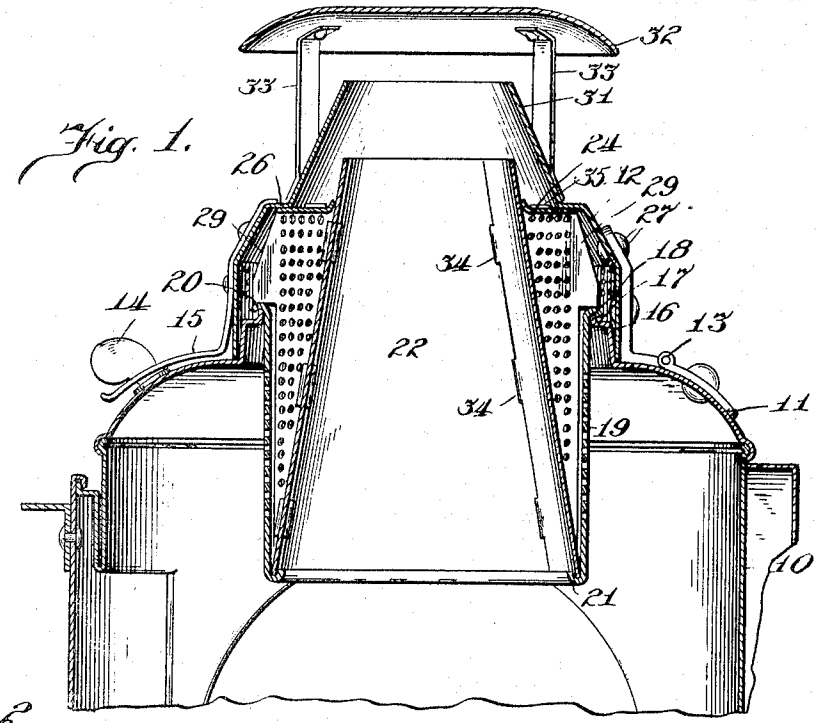


Fig. 2.

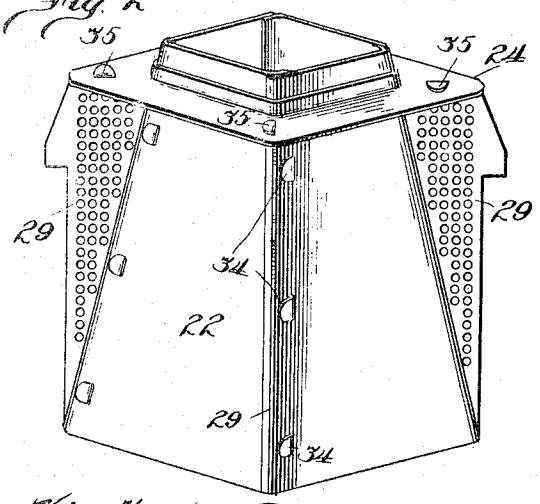


Fig. 4.

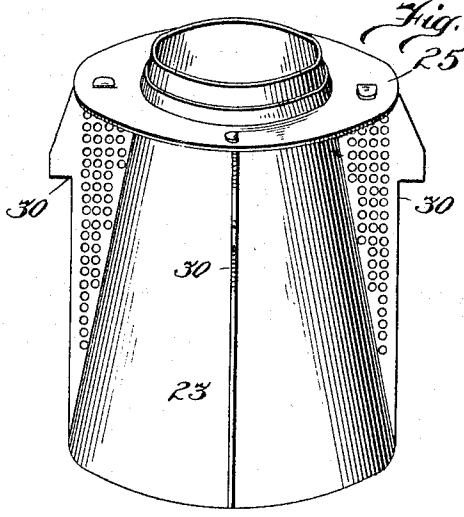


Fig. 3.

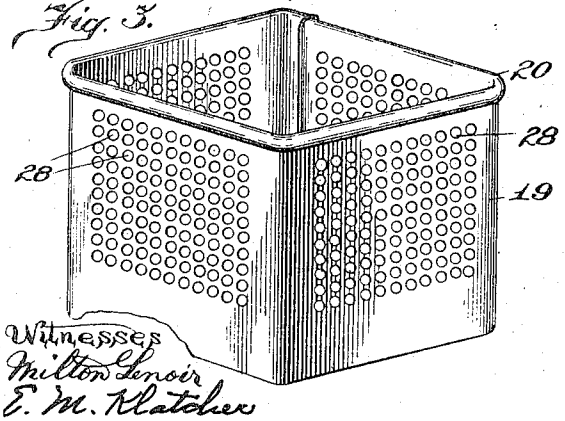
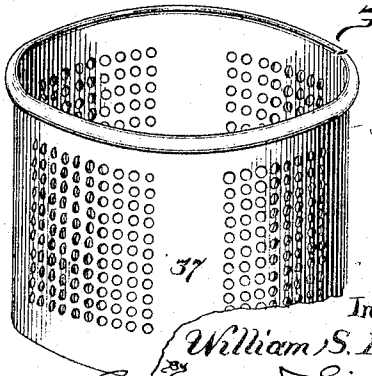


Fig. 5.



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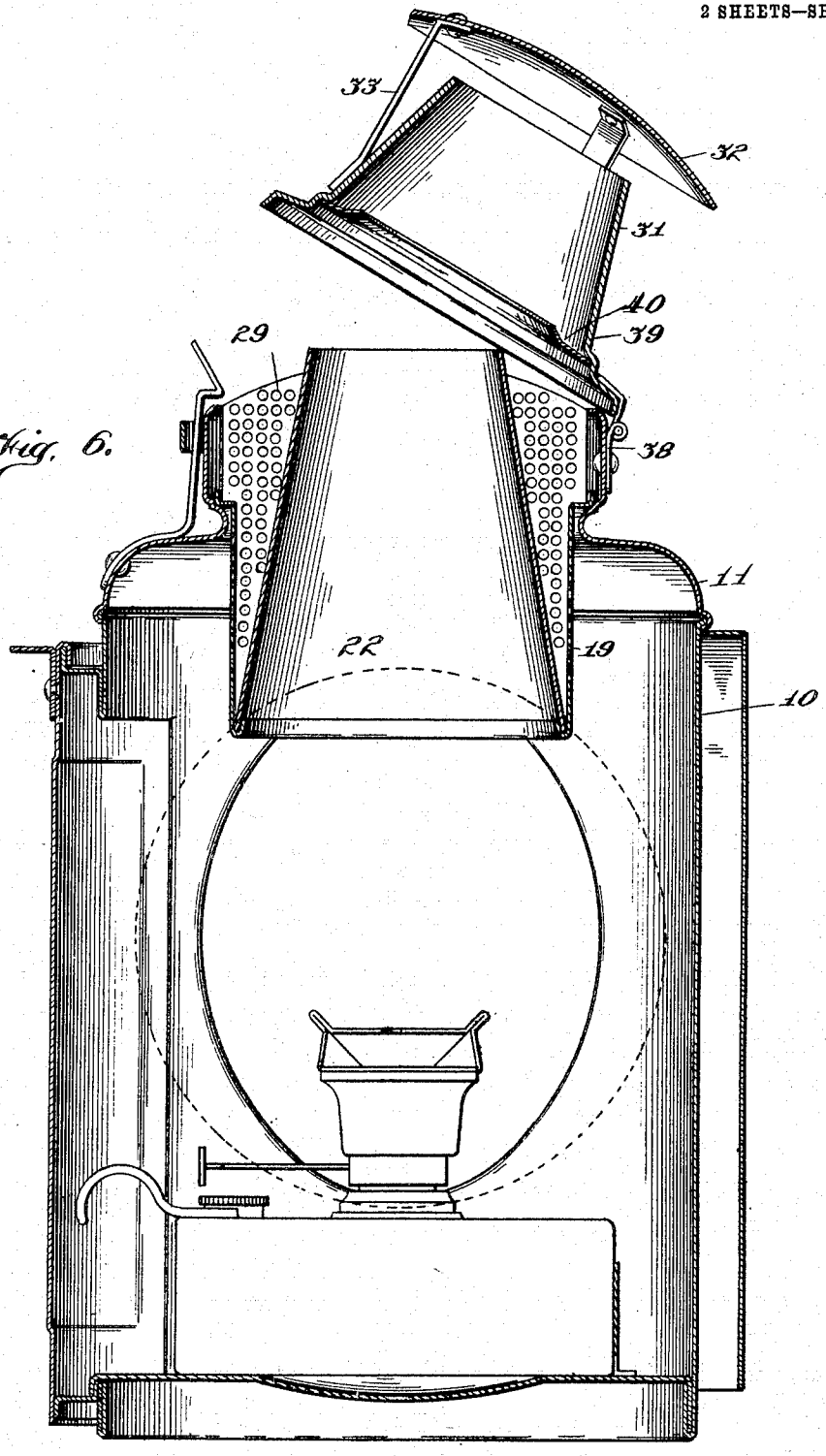
2 SHEETS—SHEET 2.

Fig. 6.



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UNITED STATES PATENT OFFICE.

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SIGNAL-LAMP.

1,039,123. Specification of Letters Patent. Patented Sept. 24, 1912.

Application filed April 15, 1911. Serial No. 621,340.

To all whom it may concern:

Be it known that I, WILLIAM S. HAMM, a citizen of the United States, and resident of Hubbard Woods, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Signal-Lamps, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to signal lamps for use in railway service, such as are used as markers for trains, and also such as are used in connection with railway switches. It applies to that type of lamp known as the "upper draft," in which the supply of air for supporting combustion enters at the top.

The invention relates to the ventilation; its objects being to provide an improved form of construction which facilitates the assembling and separation of the parts and which provides for a better distribution of the air entering the lamp than has heretofore been secured, whereby the flame is rendered more steady under all atmospheric conditions.

The invention consists in a structure such as is hereinafter described and illustrated in the accompanying drawings, in which—

Figure 1 is a detail vertical section of a lamp embodying the invention; Fig. 2 is a detail of the chimney; Fig. 3 is a detail of the air-distributing walls; Figs. 4 and 5 are details similar to Figs. 2 and 3 but showing a modified form of construction; and Fig. 6 is a vertical section through the lamp, showing further modifications.

The body of the lamp is represented at 10, and as being provided with a ventilating dome comprising the usual breast 11 rising from the body and a top 12 which is hinged to the breast, as shown in Fig. 1 at 13, a latch 14 coöperating with a hasp 15 being provided for securing the top in closed position.

Referring further to Fig. 1, a flange 16 rises from the inner edge of the breast 11, and has at its upper end an instanding shoulder 17, preferably provided with an upstanding flange 18. A screen 19, which may be described as having the general form of a bottomless basket, fits within the aperture inclosed by the flange 16. The upper edge of this screen has an outstanding shoulder 20, to rest upon the flange 18. The lower edge of the screen 19 is flanged inwardly, the flange being turned upward, as shown at 21, thus affording a seat for the chimney which, in the preferred form of construction as illustrated more plainly in Fig. 2, is in the form of the frustum of a pyramid, 22, and in the form of construction illustrated in Fig. 4 is in the form of the frustum of a cone, 23. An apertured plate 24 or 25 is fitted upon the upper end of the chimney 22 or 23, taking the polygonal form in the one case and the circular form in the other, its aperture being of such size as to bring it into engagement with the walls of the chimney in a short distance below the top thereof. This plate extends outwardly and is engaged by an instanding shoulder 26 of the lamp top 12. By this construction, while the screen and chimney are not attached to each other, and neither is fixed to the body or top of the lamp, there is formed a substantially air-tight joint between the shoulder of the flange 16 and the top of the screen 19; between the bottom 21 of the screen and the bottom of the chimney; and between the flange 24 or 25 and the shoulder 26 of the lantern top.

The upper portion of the dome of the lamp and which has been referred to as the top, fits over the flange 16 and is provided with an instanding shoulder 26 adapted to bear upon the plate 24 when the top is closed. The walls of the part 12 are perforated as shown at 27, to provide for the admission of air to the chamber bounded by these walls, the plate 24, the walls of the chimney 22 and the screen 19. The walls of the screen 19 are provided with numerous fine perforations which however, do not extend to the bottom of these walls and preferably do not extend entirely to their side edges. Preferably baffle plates, as 29, 30, radiate from the walls of the chimney, one being located at each of the angles of the latter when the polygonal form is used. The upper ends of these baffle plates are made sufficiently wide to extend approximately to the wall of the top 12. The top 12 is contracted above the shoulder 26, and preferably given an upwardly tapering form, as shown at 31, and is open at its upper end. A cap 32 is located above this opening, being supported by posts 33. This cap is spaced apart from the open end of the lamp top in order to permit the free pas-

sage of air beneath it. When the chimney takes the polygonal form it may be conveniently made of a plurality of plates, each constituting one of its flat walls, the several plates being secured together by means of lips, as 34, formed on the edge of one of the plates and projecting through suitable apertures in the adjacent plate, and being then folded down. These plates may each be provided at one of its edges with an outwardly turned wing which constitute the baffle plates 29 and are preferably freely perforated, the perforations, however, not extending to their outer edges. The plate 24 may be securely attached to the chimney, resting upon the upper ends of the baffle plates 29, the latter being provided with upstanding lips 35 which project through suitable apertures in the plate 24 and are then folded down upon the latter.

Air currents entering the induction ports 27 first strike the walls of the chimney and are then deflected upwardly and downwardly, being caught in the closed pocket at the bottom of the air chamber, and are retarded in their movement by the form of the chamber before they enter the body of the lamp through the perforations 28, thereby preventing them from blowing in violently upon the flame. The fine perforations of the screen 19 distribute the air over the entire wall of the lamp body and thoroughly protect it from the ascending moist vapors given off by the flame, which find their exit through the chimney, the opening in the top 31, and under the cap 32. The flattened sides of the chimney 22 tend to still further break up and retard the incoming currents of air, and in the case of a strong wind some of the air currents will pass through the perforations in the baffle plates, the flattened wall of the chimney, however, tending to prevent an excessive movement in this direction, the imperforate portions of the baffle plates tending to the same result.

Some of the features of the invention are adapted equally to the conical as distinguished from the pyramidal form of chimney, but the latter is preferred for the reason just stated.

While the preferred form of chimney is shown as being square, I do not desire to be limited to this polygonal form, as any chimney which presents flattened faces to the incoming air currents will have, to some degree, the advantages of the square form.

The screen 19 and the chimney being disconnected, and both being fitted loosely within the lamp, they may be readily removed for the purpose of cleaning. The pressure of the shoulder 26 upon the plate 24 or 25, however, securely binds all the parts in place and prevents rattling, as well as insuring tight joints.

When the conical form of chimney is employed, as shown in Fig. 4, the screen is substantially cylindrical, as shown at 36.

Various details of construction may be varied from the forms shown without departing from the scope of the invention. If desired the circular form of screen 36 may be provided with solid portions in its wall adjacent the baffle plates, as shown at 37.

While I have shown in Fig. 1 the lower portion of the top 12 as constituting the outer walls of the upper portion of the air chamber, and locate the hinge at the juncture of these walls with the breast 11, these details are not essential as will be seen by reference to Fig. 6. There, the breast is provided with an upstanding flange 38 which constitutes the outer wall of the upper portion of the air chamber and within which the induction ports are formed. A shoulder is provided at the base of this upstanding flange for supporting the screen. In this figure the top 39 is shown as hinged to the upstanding flange 38 and as carrying an annular plate 40 which constitutes the upper wall of the air chamber and, when the top is closed, rests upon the upper ends of the baffle plates and fits snugly about the upper end of the chimney.

In all of the forms of construction, the chimney is shown as projecting above the top wall of the air chamber; the upper portion of the lamp top projects above and is of greater diameter than the chimney. By this construction there is provided a pocket into which any air currents which may be deflected downwardly into the open end of the top of the lamp, are caught and quieted and deflected outwardly, passing off with the vapors which ascend through the chimney. The particular form of this pocket is immaterial, it being important only that it be given such form as will serve to entrap the entering air currents and prevent them from entering the body of the lamp and thus interfering with the flame.

I claim as my invention—

1. In an upper draft lamp, in combination, a dome having induction ports, a polygonal screen depending into the body of the lamp, a polygonal upwardly-tapering flue extending upwardly from the base of the screen, and a plate extending inwardly from the wall of the dome above its induction ports.

2. In an upper draft lamp, in combination, a dome having induction ports, a square screen depending from the dome into the body of the lamp, a square upwardly-tapering flue extending upwardly from the base of the screen, and a plate extending inwardly from the dome above its induction ports.

3. In an upper draft lamp, in combina-

tion, a dome having induction ports, a square screen depending from the dome into the body of the lamp, a square upwardly-tapering flue extending upwardly from the base of the screen, a plate extending inwardly from the dome above its induction ports, and perforated baffle plates extending downwardly from the last-named plate and joining the corners of the screen and the flue.

4. In an upper draft lamp, in combination, a dome having induction ports, a screen depending from the dome into the body of the lamp and having a shoulder resting upon the dome, an upwardly-tapering chimney rising from the base of the screen, and an openable cap for the top of the dome.

5. In an upper draft lamp, in combination, a dome having induction ports, a screen depending from the dome into the body of the lamp and having a shoulder resting upon the dome, an upwardly tapering chimney rising from the base of the screen, and a hinged cap constituting the upper portion of the dome.

6. In an upper draft lamp, in combination, a dome having induction ports, a screen depending from the dome into the body of the lamp and having a shoulder resting upon the dome, an upwardly tapering flue rising from the base of the screen, a hinged cap constituting the top of the dome, and an instanding plate located above the induction ports.

7. In an upper draft lamp, in combination, a dome having induction ports, a square screen removably fitted within and depending from the dome into the body of the lamp and being removable from the top of the dome, such screen having an inturned flange at its bottom, a square upwardly tapering chimney supported from the bottom flange of the screen and projecting above the induction ports, baffle plates uniting the corners of the screen and chimney, a hinged cap constituting the top of the dome, and an instanding plate above the induction ports and extending from the dome wall to the chimney.

8. In an upper draft lamp, in combination, a dome having induction ports, a square screen depending from the dome into the body of the lamp, a square upwardly-tapering flue extending upwardly from the base of the screen, a plate extending inwardly from the dome above its induction ports, perforated baffle plates extending downwardly from the last-named plate and joining the corners of the screen and the flue, the outer marginal portions of the baffle plates being imperforate.

9. In an upper draft lamp, in combination, a dome having induction ports, a square screen depending from the dome into the body of the lamp, a square upwardly-tapering flue extending upwardly from the base of the screen, a plate extending inwardly from the dome above its induction ports, perforated baffle plates extending downwardly from the last-named plate and joining the corners of the screen and the flue, the outer marginal portions of the baffle plates and the adjacent portions of the walls of the screen being imperforate.

10. In an upper draft lamp, in combination, a dome ring having induction ports, an upwardly tapering chimney extending through the dome ring, a depending perforated screen surrounding the chimney and extending from the dome to the base of the chimney, radial perforated baffle plates extending from the chimney wall to the screen, the outer marginal portions of the baffle plates and the adjacent portions of the screen being imperforate.

11. In an upper draft lamp, in combination, a dome ring having induction ports, an upwardly tapering chimney extending through the dome ring, a depending perforated screen surrounding the chimney and extending from the dome ring to the base of the chimney, radial baffle plates extending from the chimney wall to the screen, the portions of the walls of the screen adjacent the baffle plates being imperforate.

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