(No Model.)

W. S. HAMM.

HEADLIGHT.

No. 553,406. Patented Jan. 21, 1896.

Fig. 1.

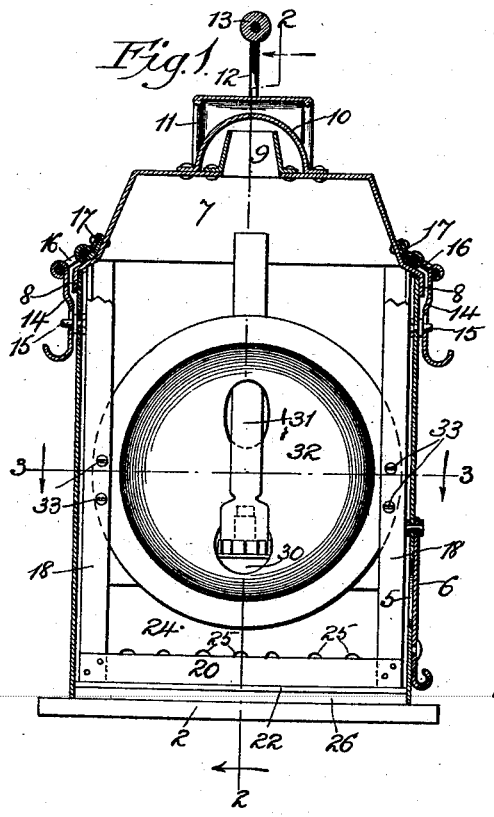


Fig. 2.

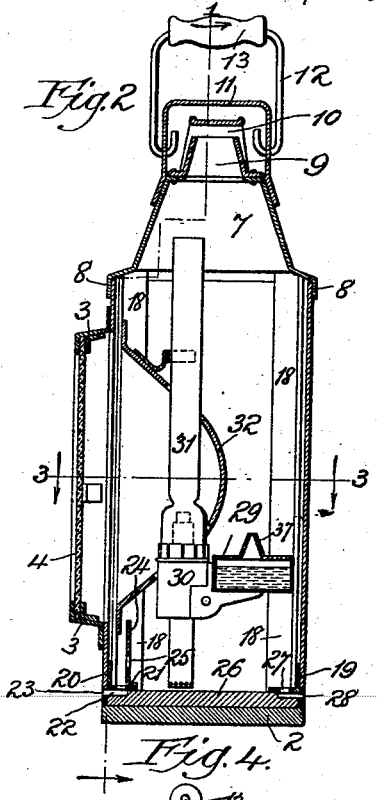


Fig. 3.

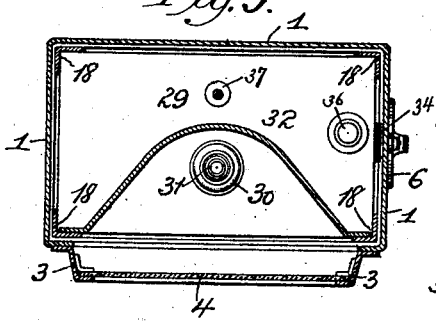
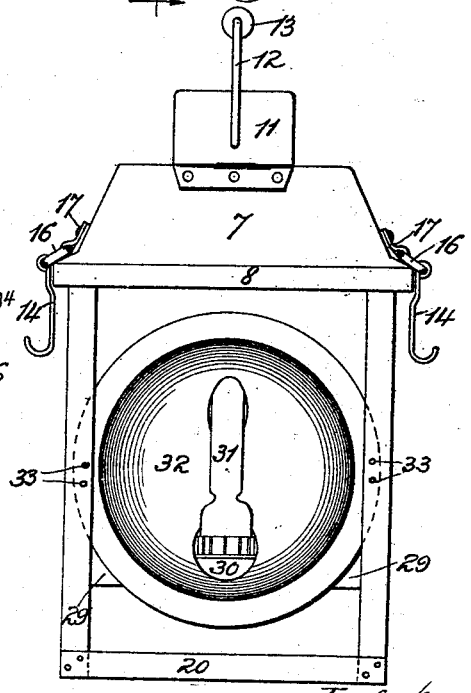


Fig. 4.



Witnesses:
Wm. L. Fleming
Jno. L. Condon

Inventor:
Wm. S. Hamm
By Raymond & Quigg
Attorneys.

ANDREW B. GRAHAM, PHOTO-LITHO. WASHINGTON, D.C.

UNITED STATES PATENT OFFICE.

WILLIAM S. HAMM, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE UNITED STATES HEAD LIGHT COMPANY, OF NEW YORK.

HEADLIGHT.

SPECIFICATION forming part of Letters Patent No. 553,406, dated January 21, 1896.

Application filed July 10, 1893. Serial No. 480,024. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. HAMM, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Headlights, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to that class of illuminating appliances known as "headlights," which are usually mounted upon the front ends of railway-locomotive boilers and which serve to illuminate the road-bed ahead of such locomotives; and my invention is applicable to this general type of headlights whether used upon railway-locomotives, railway-cars, boats, or other vehicles, or in various other situations in which the surroundings are to be illuminated.

Among the primary objects of my invention is included that of producing a headlight which shall be so constructed as to entirely avoid all possibility of accidental displacement from the outer casing of the principal illuminating parts, such as the oil fountain or reservoir, the burner, the reflector, and their immediate appurtenances.

A further primary object of my invention is to produce a headlight in which such principal illuminating parts shall be so connected together as to form practically a single part readily insertible into and removable voluntarily from the outer casing of the headlight, but not accidentally removable therefrom, and which, when in position in the headlight-casing, shall be readily accessible for filling the fountain or reservoir, adjusting the wick, and for similar purposes.

A still further primary object of my invention is to produce a headlight the principal illuminating parts of which shall be so connected together as to form a separate part of the headlight, and also in such manner as to be free from all liability to injury when removed from the casing and likewise readily insertible into and removable from any one of a number of similar casings.

To the above purposes and also to such others as may appear from the ensuing description my invention consists in certain peculiar and novel features of construction and arrangement, as hereinafter described and claimed.

The more precise nature of my invention will be better understood when described with reference to the accompanying drawings, in which—

Figure 1 is a vertical sectional view of a headlight embodying my invention, the plane of the section being parallel with the glass front of the casing, as indicated by the section-line 1 1 of Fig. 2. Fig. 2 is a vertical sectional view of the headlight, the plane of the section being at right angles to that of the section in Fig. 1, as indicated by the section-line 2 2 of Fig. 1. Fig. 3 is a horizontal section of the headlight, taken on the plane indicated by the section-lines 3 3 of Figs. 1 and 2, the direction of view being downward, as indicated by the arrows applied to these section-lines. Fig. 4 is a front elevation of the principal illuminating parts removed from the headlight-casing.

Previous to my present invention the principal illuminating parts of headlights, such as the oil fountain or reservoir, the burner and the reflector, have been connected together in such manner as to slide laterally out through one side of the external casing of the headlight, a door being provided at such side of said casing, which must be opened before the parts can be reached and closed and locked after such parts have been pushed back within the casing. It frequently happens that these doors are carelessly left unlocked, so that when a railway-locomotive running at a high rate of speed rounds a short curve, or strikes an obstruction, or encounters a defective part of the road-bed the side lurch of the locomotive will throw the movable parts either entirely or partly out of the headlight-casing. When the locomotive is thrown over upon its side, the movable parts of the headlight are frequently thrown out of the casing and ruined. Moreover, on construction-trains, wrecking-trains, boats, in excavating work, &c., these headlights are often used as parts of the portable equipment and are placed here and there or elsewhere as

required. In such instances, if the headlights are overturned their movable interior parts are liable to be thrown out of the casing and more or less injured. The interior parts of these headlights are by no means inexpensive in construction, and such accidents as are above enumerated are expensive as well as annoying.

As will be seen from the ensuing description, I have produced a headlight in which the movable parts are exempt from all liability to accidental displacement from their casings by reason of the causes above mentioned or other causes.

Referring now to the drawings, 1 designates the external casing of the headlight, such casing being shown as secured at its bottom to a base-board 2, and as of rectangular form in horizontal section, Fig. 3. The external casing may of course be of any desired form or contour, and may also be constructed of any suitable or preferred material, and, as shown, this casing 1 is formed at its front with an opening 3 covered by a transparent pane 4, and at one side with an opening 5 covered by a swinging lid 6 and located near the bottom of the casing for a purpose to be hereinafter explained.

7 designates the cap or top of the headlight, this cap being either of the frusto-pyramidal form shown or of any other suitable or preferred form. In any event this cap 7 fits tightly but removably upon the open upper end of the casing 1, so as to normally close such end, the lower margins 8 of the cap being shown as extended downwardly to form flanges which embrace the upper end of the casing 1 and thus afford a strong and close connection between the casing and its cap. Obviously any other type of suitably strong and close and at the same time removable connection between the cap and the casing may be adopted, as circumstances may suggest. The cap 7 is also shown as formed with an outlet-opening 9 for the products of combustion from the lamp-burner and with a double hood or draft-deflector 10 11 for protecting the opening 9 from downdrafts, and also with a handle 13. (Shown as connected to the hood-section 11 by a bail 12.) These are minor appurtenances, however, which may be used or changed or dispensed with, as may be found desirable, it being usually necessary, in any event, to provide the cap with one or more handles to facilitate the removal and replacement of the cap. Furthermore, the cap is shown as provided at its two opposite sides with pendent catches 14 slotted to engage turning studs 15 projecting outwardly from the upper parts of the two opposite sides of the casing 1, the catches being shown as connected by metal links 16 with metal straps 17 riveted to the adjacent sides of the cap 7.

The precise form of catches shown may be departed from widely, if desired, or such catches may even be dispensed with, if preferred; but some form of catch is usually preferable for connecting the cap to the casing, so that when the headlight is used as a portable appliance there will be no danger of the outer casing dropping from the cap.

18 designates four parallel vertical frame-bars, the upper end of each of which is riveted or otherwise firmly and strongly connected to the cap 7 at one corner thereof, said frame-pieces depending vertically from said cap and being of a length approximating the internal height or length of the casing 1, and being also preferably or desirably of L shape in cross-section, as shown in Fig. 3. The lower ends of the two rearmost frame-pieces 18 are connected together by a horizontal cross-piece 19, which is shown as riveted at its ends to said frame-pieces, but which may be formed integrally with said frame-pieces, or secured thereto in any suitable, strong and rigid manner, said cross-piece being preferably or desirably of L shape in cross-section, as shown. The lower ends of the two front frame-pieces 18 are connected together in like strong and rigid manner by a cross-piece 20 similar in form to the cross-piece 19. The inwardly-extending lower flange of this cross-piece 20 is, however, shown as formed with a suitable number of holes 21 for the admission of air to supply the burner of the headlight, the front of the base 2 being rabbeted, as at 22, to permit air communication with the holes 21, and the front of the casing 1 being shown as having at its lower part a suitable number of air-inlet openings 23 communicating with the rabbet 22.

A vertical plate 24, which serves as a wind-guard, is shown as extending transversely of the headlight at the lower part of the front thereof, and as formed with a suitable number of air-inlet openings 25, which permit the indirect passage of air to the burner. If desired, an additional base-piece or bottom piece 26 may be secured to the lower ends of the frame-pieces 18, so as to rest upon the bottom 2 of the headlight, the rabbet 22 being formed in the front part of this bottom piece 26, as shown. In such event also the rear cross-piece 19 may be formed with air-inlet openings 27 communicating with a rabbet 28 at the rear margin of the bottom piece, as shown in Fig. 2.

29 designates a suitable oil fountain or reservoir, which is interposed horizontally between the frame-pieces 18 and suitably secured thereto, preferably strongly and rigidly, at points somewhat below the mid-length of said frame-pieces.

30 designates a burner communicating with the oil fountain or reservoir, and of any suitable or preferred type.

31 designates the chimney of the burner 30, and 32 the reflector, the burner and its chimney extending as usual through openings in the back part of the reflector, so as to bring the burner-flame in front of the center of the reflector.

It is to be observed that the reflector 32 is shown as simply riveted or screwed at its opposite margins, as at 33, to the two front frame-pieces 18, and that this is an advantageous feature of the invention, inasmuch as it enables the usual complicated pivot-supports at the back of the reflector to be wholly dispensed with. The door 6 being opened, access is conveniently attained to the adjusting-rod 34 of the lamp-burner without necessitating any lateral movement of the interior parts of the headlight. The reservoir 29 is shown as provided with a filling-aperture having a suitable cap 36 and also with a vent 37; but the vent may, if preferred, be formed in the cap of the filling-aperture or otherwise, as desired.

It will also be perceived that the outer casing entirely surrounds the illuminating parts and the latter are firmly secured to the skeleton frame, so that the frame carrying the said parts is removed from the headlight-casing for cleaning, refilling, &c. The said illuminating parts when removed from the casing are thoroughly protected by the strong skeleton frame, so that it is practically impossible to injure them by accidentally upsetting, dropping them, or by their being blown over by sudden gusts of wind. Further, the glass pane being attached to the outer casing or frame and the lamp to the inner skeleton frame there is no danger of breaking the pane while cleaning, trimming and filling the lamp, as the inner frame and lamp are removed from the outer frame during this operation.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. In a locomotive headlight, the combination with an outer casing open at the top and provided with a transparent pane, of a skeleton frame arranged entirely within said casing and extending the full length of the same, a cap rigidly secured to the upper portion of the skeleton frame and provided with means for fastening the frame and casing together, and the burner, reservoir and reflector rigidly mounted within and secured to the frame and adapted to be bodily withdrawn from the case without moving the latter by lifting the cap, substantially as shown and described.

2. In a locomotive headlight, the combination with an outer casing open at the top and having air-ports at the bottom, of an open rectangular skeleton frame arranged within the casing and extending the full length of the same, said frame also having air-ports at the bottom, the wind-guard also attached to the frame for regulating the draft, the burner, reservoir, and reflector mounted within the frame and rigidly secured thereto, a ventilating cap rigidly secured to the skeleton frame, and extending over the upper edges of the outer casing, and means for fastening the cap and case together, all substantially as and for the purpose specified.

WILLIAM S. HAMM.

Witnesses:
TODD MASON,
V. HUGO.