

(No Model.)

R. P. SCHWERIN.
ELECTRIC HEADLIGHT.

No. 580,557.

Patented Apr. 13, 1897.

Fig. 1.

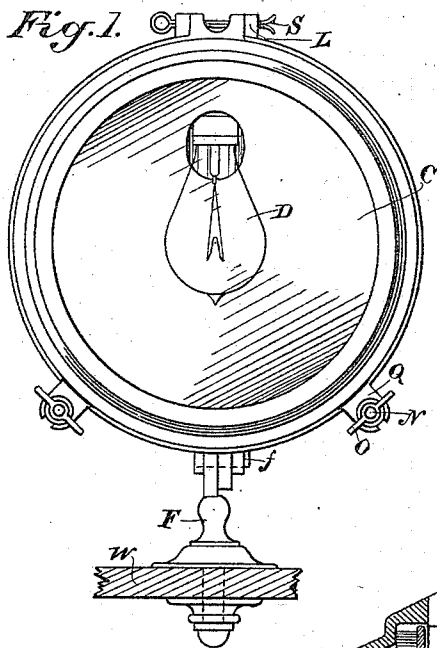


Fig. 2.

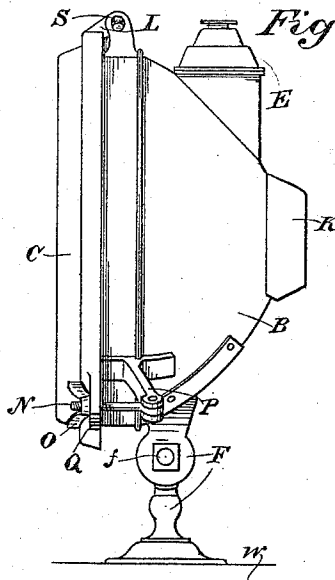
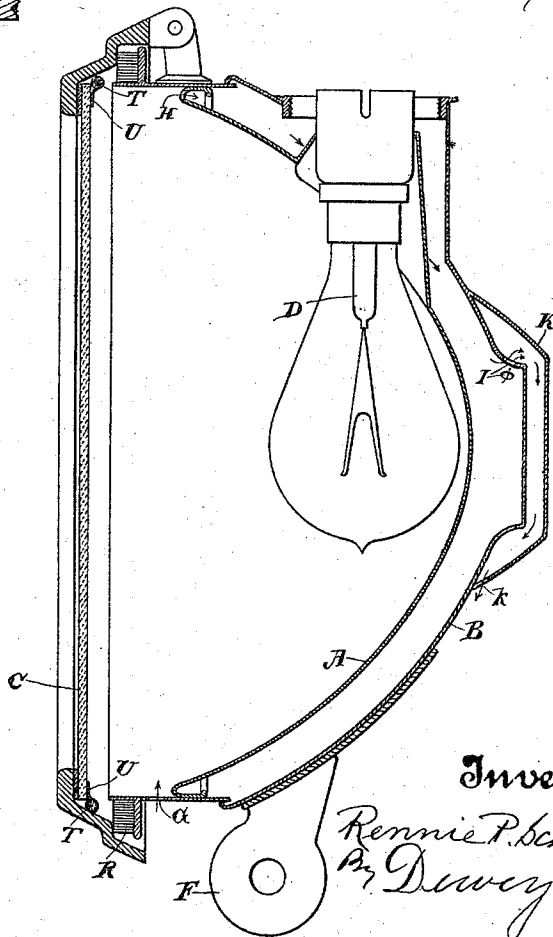


Fig. 3.



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UNITED STATES PATENT OFFICE.

RENNIE P. SCHWERIN, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO THE
MARKET STREET RAILWAY COMPANY, OF SAME PLACE.

ELECTRIC HEADLIGHT.

SPECIFICATION forming part of Letters Patent No. 580,557, dated April 13, 1897.

Application filed September 30, 1896. Serial No. 607,404. (No model.)

To all whom it may concern:

Be it known that I, RENNIE PIERRE SCHWERIN, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Electric Headlights; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of headlights especially adapted for the use of electric lights and to be carried by electric cars.

My invention consists of the parts and the constructions and combinations of parts hereinafter described and claimed.

The general object of my invention is to provide a simple and serviceable headlight adapted for the use of an incandescent electric lamp and one which shall be perfectly ventilated and which will permit ready access to its interior.

Referring to the accompanying drawings, Figure 1 is a front view showing the hinge and hinge-bolts. Fig. 2 is a side view of the headlight. Fig. 3 is a vertical section through the center of the headlight at right angles to the glass front.

The headlight consists of a silvered parabolic mirror A, inclosed by a metallic casing B, of like shape on the back, and by a circular flat glass hinged door C in front. This parabolic mirror has an opening in its upper surface through which depends vertically an incandescent electric lamp D, so that the center of the source of illumination is exactly in the focus of the mirror.

The casing B, above the opening therein, has an opening cut in it, and a suitable lamp-socket E is soldered in this opening, the necessary wires (not here shown) being admitted through the top of this socket.

The headlight-casing is supported on a single leg F, said leg being riveted at one end to the under side of the casing B and clamped at the other end through the car-roof W and having a joint at *f*, whereby the direction of light can be changed through an angle of one hundred and eighty degrees in a plane parallel to the direction of the track and can be clamped rigidly at any position in its travel. Means for securing ventilation are as follows: Cold air is admitted through holes G at the

base of the casing B and in front of the lower edge of the mirror. Thence passing up past the heated lamp-globe the air finds an exit through holes H between the casing and the mirror at the top, and is thence drawn out at the apex at the rear of the parabolic casing by the suction caused by the forward motion of the car. It thence passes through exits I at the back, which are protected from rain by a metallic cover K with an opening $\frac{1}{2}$ at its lower edge.

The means for opening and closing the glass front for the replacing of burned-out incandescent lamps and of the changing of cracked glass fronts are as follows: The door C is furnished with one hinge L at the top and is fastened at two points at the lower edge, as shown in Fig. 1, by hinge-bolts N, furnished with thumb-nuts O, said hinge-bolts being fastened at their base to lugs P, soldered to the casing, and swinging into slotted lugs Q, forming part of a metallic frame of the headlight-front. This front is furnished upon its under side with a packing-ring R, (shown in Fig. 3,) so that by means of the pressure exerted by the thumb-nuts the front is rendered water-tight.

The hinge at L is a removable one by the employment of a cotter-pin S for the pintle of the hinge, said pin being a split-ended one, as shown in Fig. 1, and adapted to be readily taken out, whereby the front can be easily removed for the purpose of changing the glass in the frame.

The glass is held in position against the frame of the hinge front by a wire-ring T, fastened at several points by clips U, of soft copper or other material, and is made water-tight by a luting of putty.

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

1. In an electric headlight, the combination of a parabolic casing having a top opening, a lamp-socket fixed in said opening, a parabolic mirror within the casing and separated therefrom to form a ventilating space or channel, an incandescent lamp fitted to said socket and passing through an opening in the mirror, a flat-glazed front for said casing, an air-inlet into the bottom of the casing just in front of

the lower edge of the mirror, an air-outlet between the upper portion of the mirror and the ventilating-space and an outlet from said space into the open air.

5 2. In an electric headlight, the combination
of a parabolic casing having an opening in its
top, a lamp-socket fixed in said opening, a
mirror within and conforming to the shape of
the casing, and separated therefrom to form
10 a ventilating space or channel between the
two and having an opening in line with the
opening in the casing, an incandescent electric
lamp fitted to said socket and passing
through the opening in the mirror, a flat-
15 glazed front door for the casing, means for
admitting air into the mirror just in advance
of its lower front edge, an opening between the
upper front portion of the mirror and the back
passage, a discharge at the apex of the cas-
20 ing and a controllably-jointed leg on which
said casing is supported and by which the
headlight is adjusted as to its angle.

3. An electric headlight consisting of a para-
bolic mirror, a casing of like shape protect-
25 ing the back of the mirror and separated
therefrom to leave an intervening passage for
ventilation, a glazed front, an aperture in the
base of the casing in front of the lower edge

of the mirror for the entrance of cold air,
holes between the top of the mirror and the 30
casing to permit the air to pass through to the
back passage between the casing and the mir-
ror, and exit-holes at the apex of the back cas-
ing for the escape of the air.

4. An electric headlight consisting of a para- 35
bolic mirror, a casing of like shape protect-
ing the back of the mirror and separated
therefrom to leave an intervening passage for
ventilation, a glazed front, an aperture in the
base of the casing in front of the lower edge 40
of the mirror for the entrance of cold air,
holes between the top of the mirror and the
casing to permit the air to pass through to the
back passage between the casing and the mir-
ror, and exit-holes at the apex of the back 45
casing for the escape of the air, and a shield
over said apex to protect the exit-holes, said
shield having a bottom opening through
which the air escapes.

In witness whereof I have hereunto set my 50
hand.

R. P. SCHWERIN.

Witnesses:

J. E. THOMPSON,
EDWIN ONETT.