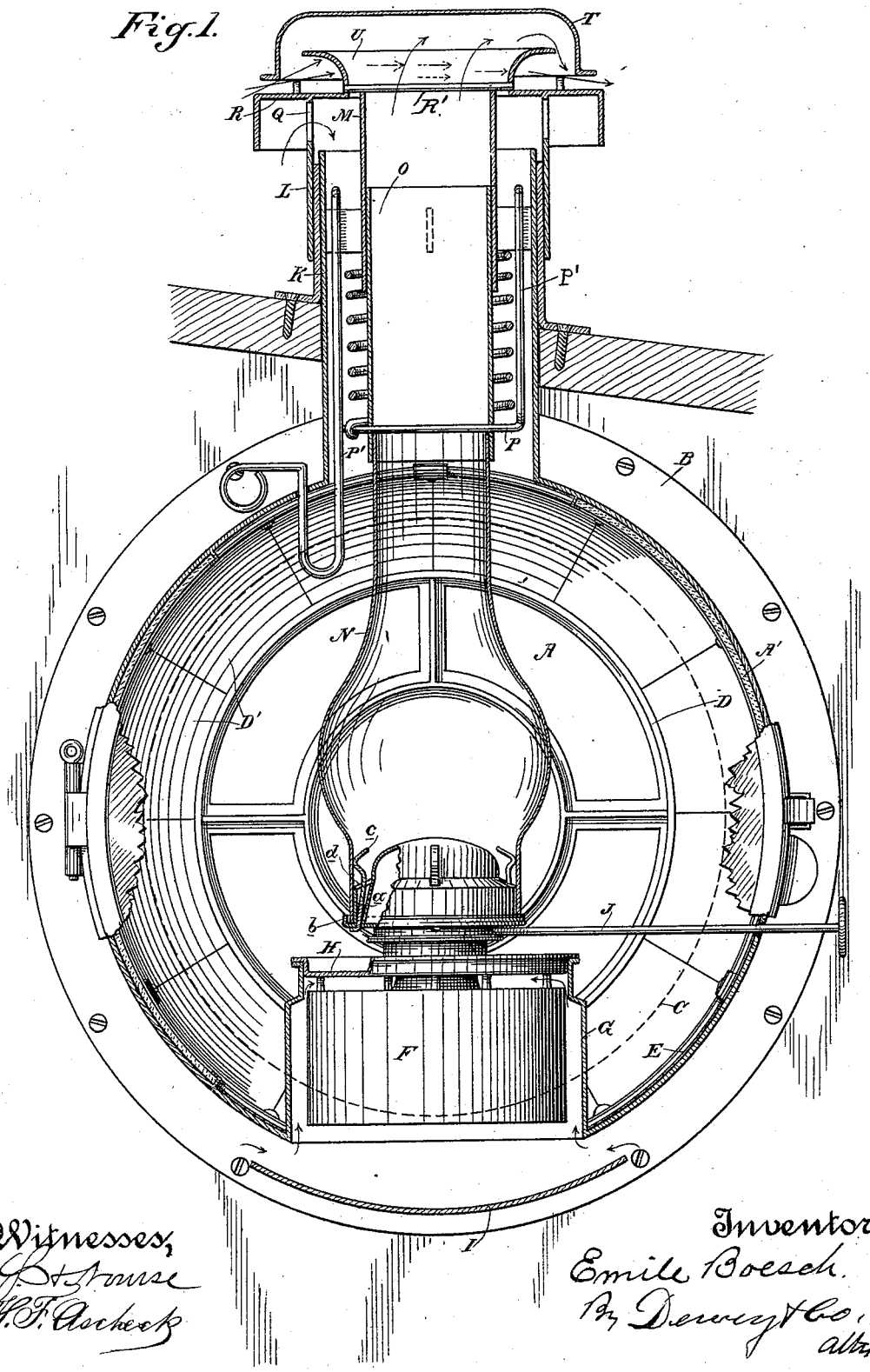
(No Model.) 2 Sheets—Sheet 1.

E. BOESCH.

CAR LAMP.

No. 492,954. Patented Mar. 7, 1893.

Fig. 1.



Witnesses,
J. L. Howse
H. F. Aschbach

Inventor,
Emile Boesch.
By Dewey & Co.
Attys.

(No Model.) 2 Sheets—Sheet 2.

E. BOESCH.

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No. 492,954. Patented Mar. 7, 1893.

Fig. 2.

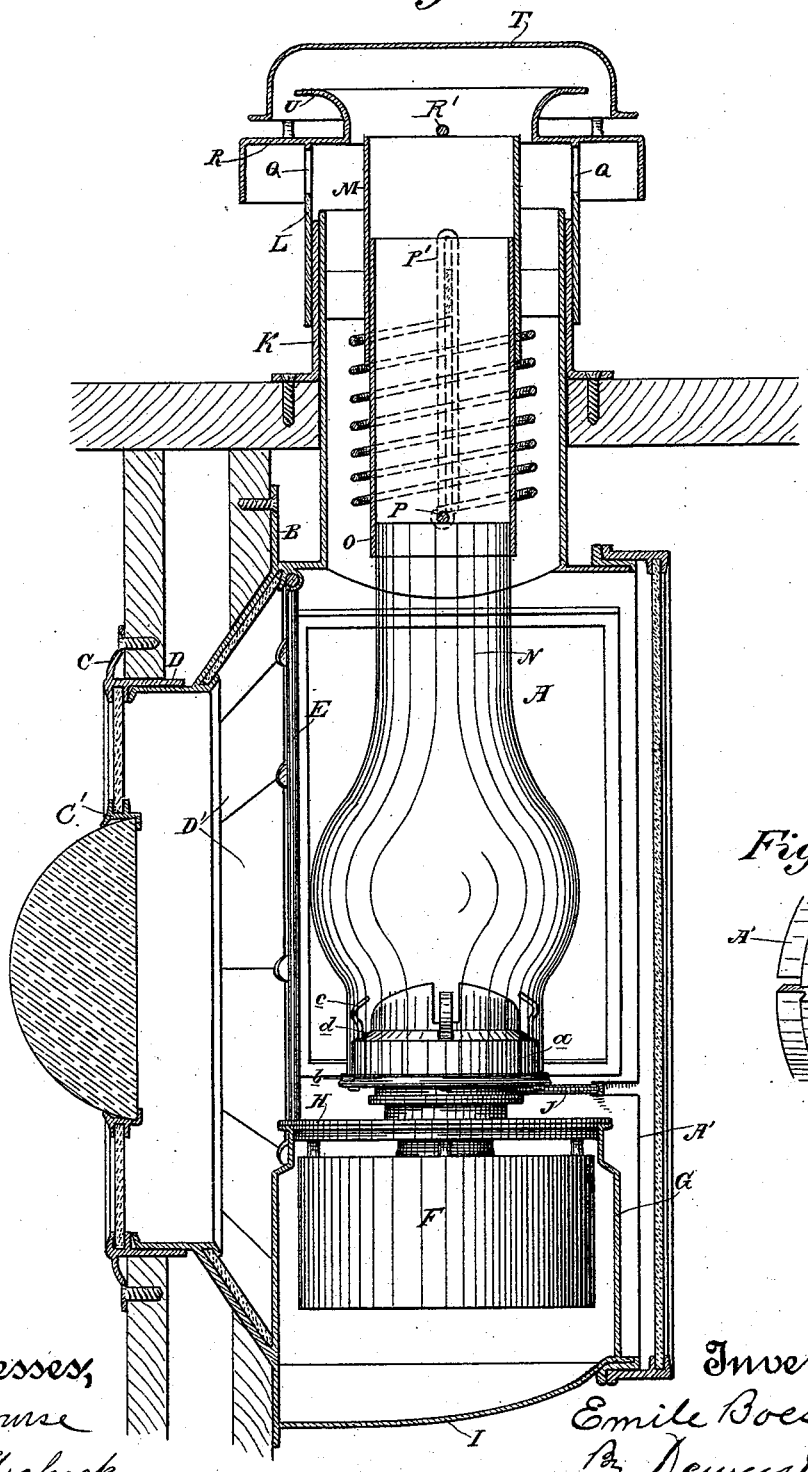

Fig. 3.

Witnesses,
H. F. Elscheck

Inventor,
Emile Boesch
By Dewey & Co. Attys

UNITED STATES PATENT OFFICE.

EMILE BOESCH, OF SAN FRANCISCO, CALIFORNIA.

CAR-LAMP.

SPECIFICATION forming part of Letters Patent No. 492,954, dated March 7, 1893.

Application filed April 6, 1892. Serial No. 428,052. (No model.)

To all whom it may concern:

Be it known that I, EMILE BOESCH, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Car-Lamps; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to improvements in car lamps of that sort which are fixed in the side or end of the car, and have glazed surfaces for the passage of the light upon two or more sides of the lamp.

My invention consists in certain details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a vertical cross section through my lamp. Fig. 2 is a similar section taken at right angles to the sectional line of Fig. 1. Fig. 3 is a detail.

This invention is a street car end reflector lamp, such as is used to light the car lengthwise, and is so constructed as to light also the platform with the same burner. It feeds the heated air coming down through channels from a point near the exhaust outlets as shown in a previous application of mine, Serial No. 391,560, filed May 4, 1891. The fount and burner are introduced through the door, and act from above into a chamber provided with special ventilation to prevent the overheating of the oil. The body is provided with tight joints to prevent the admission of air except from above. The wick can be raised from the outside, and the chimney is securely connected to its extension and held on the burner thereby. The burner is provided with an improved chimney-holder. The exhaust tube is protected so that no wind can enter it. Such lamps are secured to and into the woodwork of the end of a car. The hollow part of said woodwork is used on one side by the sliding car door, while into the hollow part of the other side enters that part of this lamp casing which contains the circular reflector made of small sections, and it is secured therein by means of the flange B and screws as shown in Fig. 2. The burner and glass chimney are within the car and inside the inner line of woodwork, reflector and flange B. This part of the lamp casing A is provided with a cylindrical glass front formed of sections; one of clear glass bent to correspond with the form of a short cylinder is secured to the side toward the entrance of the car, filling out the space between flange B and supplemental casing, thereby illuminating both the entrance and the fare box as shown in my patent No. 283,693. Opposite said clear glass I use a section of opal or of other reflector glass of the proper size and shape, in order to reflect back any rays of light which would be lost or pass out the car through the windows. Another section of glass is fitted into the hinged door frame. When the lamp is secured in the middle of the end of a car, clear sections of glass are used all around the front part projecting into the car.

A is the casing which is made, as shown in the present case, in the form of a short cylinder of sufficient diameter to receive the oil fount and chimney, and it has a flange B which fits against the inner surface of the wood-work of the car. A hole of sufficient diameter is made through the side of the car to allow that part of the casing which is exterior to this flange to pass through it, and a second flange C projects from the rim D which carries an outer glass. This is a plain glass having an open center which is bounded by a double flanged frame or rim C′, and into the open center of this plain glass, and fitted to the said rim, is let a colored glass as shown in Fig. 2. The rim D fits and telescopes over a corresponding circular rim which projects from the exterior of the casing A. This last rim has the outer edge turned inward to make an easy connection and a finish on the inside in holding the outer edge of the glass. This outer glass and rim are of considerably smaller diameter than the main casing A, and between these two the reflecting surface D′ is fixed. This consists of any suitable reflecting plates, the inner edges of which are supported by a flange turned up from the inner rim as shown. The outer edges of these reflectors are held by small lugs of metal which are attached to the main casing and turned down over the edges of the reflector so as to hold them securely in place. In order to cover these lugs and present a finished appearance of the outer periphery of the reflector I fit a supplemental

ring E into the body which is held in place by small clamps at intervals around the periphery.

The oil fount F is fitted into a chamber or casing G open from below which arises from the lower part of the casing A, and is sufficiently larger than the oil fount to leave an air space entirely around the latter. The top of the oil fount has a flange H fitting properly around the upper opening of the casing G when the fount is in place, and makes a tight joint to prevent any air entering the interior of the casing A from below.

The lower part of the casing A is cut away to present an opening from below into the casing or chamber G, and beneath this is a cup-shaped disk I secured to the bottom of the casing A, and having openings at the sides through which air may enter freely to pass up around the oil reservoir and keep it cool. At the same time the flange at the top of the oil reservoir prevents any of this air from entering the interior of the casing A. The receptacle I at the bottom serves to receive any oil which escapes from the oil fount by capillary attraction, or by other means. It also serves to hide the bottom of the fount, and to make a finish to the bottom of the casing A.

The outer face of the casing A is inclosed, as previously described, by the glass and bull's-eye which opens out upon the car platform, and the inner face is closed by a circular glass door which is hinged to one side of the flange of casing A, and is held to the opposite side by a suitable catch.

The chimney holder of the burner has an inner vertical rim *a* of proper height and diameter, with resting flange at its base most convenient to receive, hold and steady the glass chimney. This device cannot get out of order, nor accumulate bits of charred wick or matches, which do not permit the chimney to rest properly on the burner and which take fire when soaked with kerosene and heated. The small edge *b* turned upward from the flange is to deflect the horizontal puffs of air from entering the burner between it and the chimney. But as glass chimneys vary in size and in thickness (say less than one-eighth of an inch) although intended to fit the same burner, I use prongs or springs *c* to press evenly on the inner surface of the glass. Said prongs are guided by holes, sockets or loops *d* in or on the rim *a* through which they pass and are held near their upper end. These will not only prevent the prongs from bending aside in or out and often entirely out of shape, rendering it most difficult to get the chimney on or off, but said guides will always hold the springs in readiness to receive the chimney and hold the same with the burner central within it.

The shaft J of the burner by which the wick is raised and lowered extends out through a slot made through the side of the supplemental casing A', so that the thumb-piece by which it is turned is exterior to the casing, and when the door closes over the supplemental casing, it holds this shaft in place and prevents any entrance of air through the slot When the lamp is to be removed the door is opened, and the oil fount turned a little to withdraw the shaft from the slot when the oil fount can be lifted out, the shank itself serving as a handle for that purpose if desired.

When the lamp is burning the door should never be opened as it is desirable in this peculiar construction of lamp not to allow any air to enter the lamp or escape therefrom except from the outside of the car. In order to accomplish this, a hole is made through the wood-work and roof of the car, and through this the cylindrical extension K passes, and upon the outside of it is fitted the telescopic extension L which allows of proper adjustment of the two to suit the thickness of the wood-work through which it is to pass. This construction being fully shown, described and claimed in my former application, Serial No. 3 1 560 before referred to.

Within the cylinder K is supported a second cylinder M by means of strips extending from it to the interior of the cylinder K to which they are secured. Within this inner cylinder M moves an extension tube O or continuation of the lamp chimney N, the lower end of which rests upon the burner in the usual manner, and the upper end passes into the extension O.

In order to introduce and remove the glass chimney from the burner, I use an interior extension chimney or tube O, the upper end of which fits into M and the lower end extends downward some distance below it and receives the upper end of the glass chimney. Across the lower end of this tube O is fixed a bar P which is always maintained parallel with the face of the door so that when the upper end of the chimney is introduced into this movable extension tube O, it rests against this bar P and turns about it as upon a pivot until the chimney is in a vertical position when the lower end can be set upon the lamp. This movable extension tube O is surrounded by a spiral spring which presses it down with some little force so as to insure the chimney being held in place upon the burner, and to prevent air entering around the bottom of the chimney, or the chimney from shaking loose by jar or movement of the car. The bar P preferably extends through the sides of the extension O, and is turned upward and bent upon itself so as to form an elongated slotted guide P' upon one or both sides and these guides inclose two of the lugs by which the tube M is held in place within the tube K. This always insures the bar P remaining parallel with the door so that the glass chimney will rest upon and turn about it as it is being inserted into the lamp. The outer cylinder L has perforations made around its top, as shown at Q, and from the flange R fixed above these holes a rim projects downwardly

over them as shown, and a bar R is put across the opening of the flange to serve as a stop to the chimney M. Above this opening is a collar or deflector U with a flaring or bell-shaped mouth, and above the collar and flange is the cap T. Between the collar or deflector U and the cap T is an open space through which the products of combustion from the lamp chimney escape, thence out between flange and cap, while the air to support combustion passes downward into the casing of the lamp through the holes around the top of the tube K as previously described. The curved collar or deflector U surrounds the opening of the flat flange and is secured to the outer surface thereof, and being of a much larger diameter on top than on the base, on account of its bell shape, when covered by the special shaped cap it forms a large air chamber within, leaving an opening of a small diameter between deflector and cap for the passage of exhaust air, and an opening of a large diameter between the flat outer edges of the flange and cap.

Horizontal puffs of wind can only enter the large opening and this on one side only at a time, and owing to the construction of a flat flange with the bell-shaped deflector, said wind has no upward tendency, but is deflected at once through and out the opposite side of the large opening, and thus prevented from entering above the deflector, and it thus draws out the heated exhaust air.

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

1. In a lamp or lantern, the combination of the exterior casing having an open bottom to admit air and having a flange entering the main chamber, and a lamp or lantern having an oil fount or reservoir located within said open bottom and forming an air tight seat upon said flange, said fount or reservoir being of smaller diameter than the interior of the casing whereby a free circulation of air is provided around the fount or reservoir cut off from the interior of the main chamber.

2. In a lamp or lantern, the combination of a main casing having a chamber G at its lower portion extending into the main chamber and open at both ends, and a lamp or lantern having a reservoir or oil fount provided with a flange adapted to close the upper end of the chamber G to prevent the admission of air into the main chamber, said reservoir or fount adapted to be wholly confined within the chamber G and having a diameter less than the chamber, whereby the air entering said chamber G circulates around the fount or reservoir to keep the same cool, but is prevented from entering the main chamber.

3. In a lamp or lantern having a chamber G extending upwardly from its lower portion into the main chamber, and with its upper and lower ends open, a lamp or lantern having a fount or reservoir confined within the said chamber and closing the upper end thereof against the admission of air to the main chamber, and a plate or disk below the open lower end of the chamber to cover said open bottom and conceal the fount or reservoir, said plate or disk having openings for the admission of air to the chamber G and said fount or reservoir having a diameter less than that of the chamber to permit the free circulation of air about it, substantially as herein described.

4. In a lamp or lantern, the oil reservoir having a supplemental disk or plate supported a short distance above the top, a chamber within which the oil reservoir is wholly confined and supported with openings at the base to supply cool air from outside to circulate around the reservoir and in the space above the top between it and the plate, said plate having a flange fitting properly around the upper opening of the chamber containing the reservoir, and making a tight joint and preventing the admission of air into the main chamber, substantially as herein described.

5. In a car reflector lamp, the outer glass, the flange to fit around the hole on the outside of the wood-work having a rim to enter said hole, in combination with a corresponding rim projecting from the lamp casing, both rims telescoping until fitting the various thicknesses of wood or wall of car between the inner flange of the lamp casing and said outer flange, and making a joint to prevent the admission of air into the casing at that point, substantially as herein described.

6. In a lamp or lantern, the metal chimney extension having a cross wire to rest upon the upper edge of the glass chimney, said extension being movable upward to admit the glass chimney and downward so that it rests upon and forms a continuation of a chimney when the fount and burner are in place, substantially as herein described.

7. In a lamp or lantern, a vertically movable extension chimney having a bar across the lower end against which the upper end of the chimney rests, and upon which it turns when the glass chimney is being introduced and placed upon the burner, the guides maintaining the bar in the same position at all times and preventing the extension from falling down, substantially as herein described.

8. In a lamp or lantern, a vertically movable extension to the glass chimney, an exterior cylindrical tube within which said extension is guided, a spiral spring surrounding it and normally pressing it downwardly, and a transverse bar in the lower part on which the spring presses to force the extension down after the chimney is inserted or removed, and which acts also to retain the chimney in place upon the burner, substantially as herein described.

9. In a lamp or lantern, the vertical movable extension to the glass chimney, the cross bar P having its ends extended to form the slotted guides, and one of said guides being also extended through the side of the

lamp or lantern casing to form a handle by which the extension is moved, substantially as herein described.

10. A lamp or lantern chimney top provided with a bar across the opening of the flange at the point regulating and stopping the upper end of the exhaust tube within the chimney top when placed over the concentric tubes of the lamp body, substantially as herein described.

11. In a lamp or lantern chimney top, the deflector consisting of the flat flange, the outwardly curved collar around the opening on the upper surface of said flange, in combination with the cap leaving an air passage between it and the collar and another opening between it and the flange at their largest diameter, allowing the wind to enter on one side as far as the curved collar, whence it is deflected around and out on the opposite side, drawing along with it the heated air from the exhaust tube, substantially as herein described.

In witness whereof I have hereunto set my hand.

EMILE BOESCH.

Witnesses:
S. H. NOURSE,
H. F. ASCHECK.