

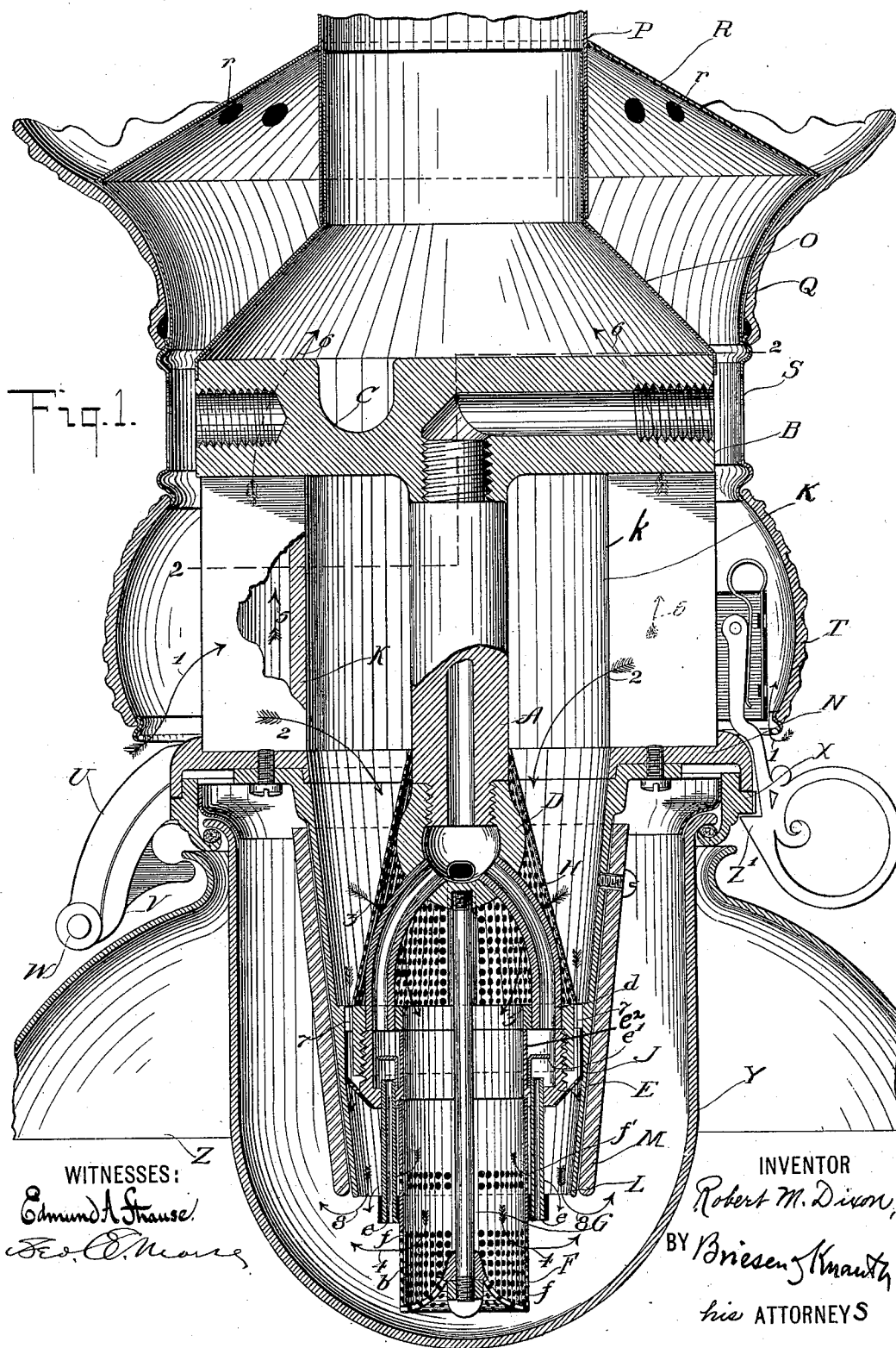
(No Model.)

2 Sheets—Sheet 1.

R. M. DIXON.
LAMP.

No. 598,912.

Patented Feb. 15, 1898.



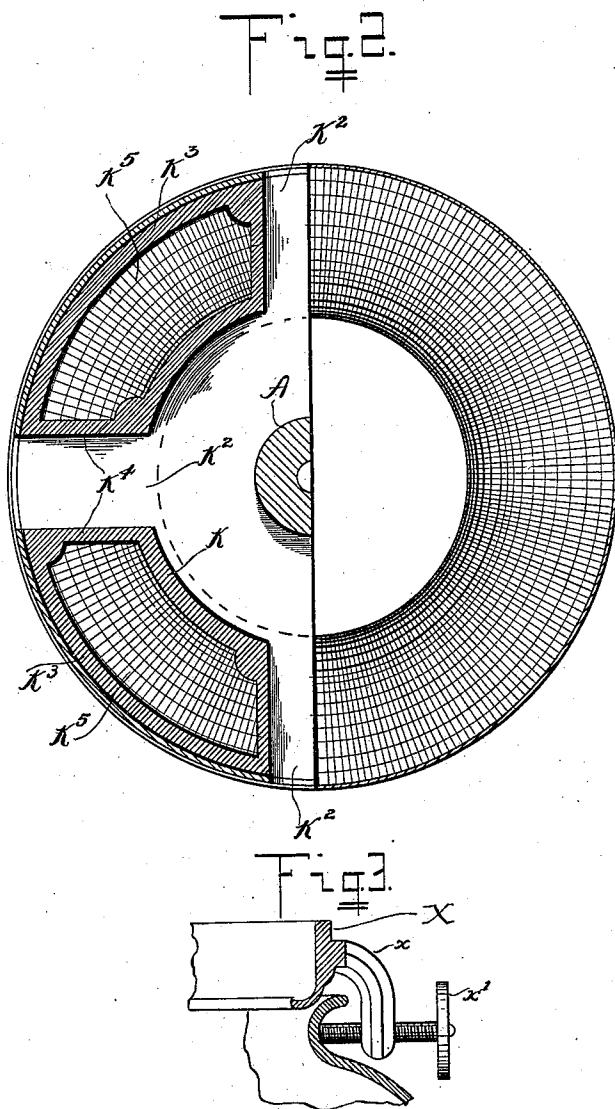
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WITNESSES:

Edmund A. Stauss.
Geo. C. Morris.

INVENTOR

Robert M. Dixon,
BY *Brienen & Knauth*
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UNITED STATES PATENT OFFICE.

ROBERT MUNN DIXON, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO THE SAFETY CAR HEATING AND LIGHTING COMPANY, OF NEW YORK, N. Y.

LAMP.

SPECIFICATION forming part of Letters Patent No. 598,912, dated February 15, 1898.

Application filed October 24, 1894. Serial No. 526,804. (No model.)

To all whom it may concern:

Be it known that I, ROBERT MUNN DIXON, a resident of East Orange, Essex county, in the State of New Jersey, have invented certain new and useful Improvements in Lamps, of which the following is a specification.

My invention relates to lamps, and has for its object to produce a highly-efficient and reliable lamp more especially designed for use in railway-cars and in like situations. It is well known that lamps of this character as heretofore constructed are defective for a variety of reasons, chief among which are the obscuring of the light by opaque portions of the lamp and the more or less complicated character of the arrangement of the air-passages for feeding air to the flame and conducting the products of combustion from the flame and out of the lamp. Now by my invention I produce a compact and simple lamp without, however, sacrificing any of the essentials of an efficient lamp.

My invention consists in the construction and arrangement of parts hereinafter set forth and claimed.

My invention will be understood by reference to the accompanying drawings, in which—

Figure 1 is a vertical section of a lamp embodying my invention. Fig. 2 is a section on the broken line 2 2 of Fig. 1, and Fig. 3 is a detail of the globe-holder ring.

In the drawings, A is a gas-pipe for conveying gas to the burner. This gas-pipe is centrally located in the lamp and communicates with a conduit B, connected to the gas-supply and shown in the present instance as forming an integral part of a head or partition C. Carried by the gas-pipe A is a nipple D, from which lead tubes d , which communicate with an annular equalizing-chamber E, from which lead burner-tubes e , which are arranged at intervals around the equalizing-chamber and form practically a circular gas-burner. Contained within the chamber E is a retardation-plate e' , which, serving to obstruct the flow of the gas, equalizes the flow, so that the light will not flicker with the jarring of the car, and also prevents the gas from issuing at the burner-tubes with too great force.

F is a foraminous spreader forming a prolongation of the inner wall e^2 of the chamber E. This spreader extends below the level of the ends of the burner-tubes and has perforations f located below the level of the ends of the burner-tubes. The spreader is also provided with perforations f' , located above the level of the burner-tubes. From these perforations f' air is projected against the highly-heated burner-tubes, which action cools the burner-tubes and efficiently heats the air which is projected to the burner.

G is a rod serving to hold the spreader in place in the lamp, which rod engages the spreader and is socketed in the nipple D. Surrounding the supply-pipe A and resting upon the equalizing-chamber E is a foraminous hood H, and surrounding the lower part of the equalizing-chamber is a perforated spacing-ring J.

All these various parts heretofore described are contained within a straight vertical central air-chamber formed by the inner wall k of the chimney-gallery K and the frusto-conical casing L, forming an extension thereof and serving as a support for a surrounding reflector M. This inner wall k is pierced with apertures k^2 , forming passages which serve as conduits for the incoming air-currents. (See Fig. 2.) This chimney-gallery consists of an outer wall k^3 , and an inner wall k , the openings k^2 being bounded by partitions k^4 , which, with the outer and inner walls, form a series of tubes or chimneys k^5 , which serve to conduct the products of combustion from the lamp.

N is the floor of the chimney-gallery, the top of which is formed by the partition C, both of which are pierced to allow the passage therethrough of the products of combustion through the chimneys k^5 . The chimneys k^5 communicate at their upper ends with a cowl O, which is surmounted by a chimney P, which conducts the products of combustion out of the car. Surrounding this cowl is a casing Q, having a top or cap R, perforated, as at r , and a depending section S, from which depends a casing T, which surrounds the chimney-gallery and central chamber. Projecting from the floor N of the gallery is a bracket U, to which is pivoted an arm V by

a hinge-joint W. This arm V carries a ring X, in which is carried the globe Y of the lamp. This globe is a bulb of glass entirely closed, except where it joins the body of the lamp, and admits the burner and its accessories. Surrounding the globe Y is a shade Z, which is carried by the ring X upon adjustable lugs or screws x' , carried by depending arms x , mounted on the ring X. This ring X is secured in place on the lamp by a catch Z', and by releasing the catch may be swung on its hinge W away from the lamp, carrying with it the globe and shade, uncovering the burner, and permitting access thereto.

15 The operation of my lamp is as follows: The gas is supplied through the conduits B, A, and d and lighted at the burner-tubes e . The air enters below the edge of the casing T, passes into the lamp, following the course of the arrows 1, traverses the lateral passages k^2 , following the course of the arrows 2, and enters the central chamber, which extends the greater extent of the entire lamp and within which are contained the operating parts of the lamp. At the hood or grating H the air-current divides, part passing around the hood and burner (by the course of arrows 7 and 8) to the outside of the flame, finally flowing around the casing L through the outlet-chimneys. The other part of the air-current passes through the foraminous hood and down through the spreader (by the course of arrows 3 and 4) and is projected through the spreader against the inside of the flame and into the globe below the flame. After passing against the inside and outside of the flame, respectively, the air-currents carrying the products of combustion pass upward through the globe and through the chimneys k , by course of arrows 6, into the cowl O and chimney P.

It will be observed that in my lamp all the parts which are liable to become greatly heated are contained within a central straight air-chamber, so that the incoming air-cur-

rents passing over the heated parts reduce their temperature. The incoming air is heated by passing over these heated parts and, as is well known, increases the efficiency of the burner. The superheated air is also projected from the spreader against the inside and outside of the flame, so as to equalize the pressure thereon and at the same time efficiently spread the same. It will also be observed that the air passes from the outside of the lamp into the central chamber by lateral passages k^2 , so that the regularity of the flow of air through this central chamber to the burner will not be disturbed by reason of the oscillations of the car. The light will thus burn very steadily during all oscillations of the car, it being remembered that regularity of flow of gas is insured by the equalizing-chamber E and retardation-plate e' . It will thus be seen that I have produced a simple, efficient, and reliable lamp.

What I claim, and desire to secure by Letters Patent, is—

In a lamp, the combination of an inlet air-chamber which extends the greater extent of the entire lamp and is straight throughout its entire length, a gas-supply pipe inclosed within said chamber, a circular burner constructed of separate burner-tubes carried by said gas-supply pipe, an equalizing-chamber interposed between the gas-supply pipe and the burner, a removable foraminous spreader carried also by said gas-supply pipe inclosed within the periphery of the burner and provided with holes located above and below the level of exit of gas from the burner, a foraminous hood surrounding the gas-supply pipe, and exit air-passages surrounding the inlet air-chamber and forming the sole means of egress for the products of combustion, substantially as described.

ROBERT MUNN DIXON.

Witnesses:

H. G. DARWIN,
J. A. DIXON.