

(No Model.)

2 Sheets—Sheet 1.

W. H. SMITH.  
Center Lamp.

No. 236,638.

Patented Jan. 11, 1881.

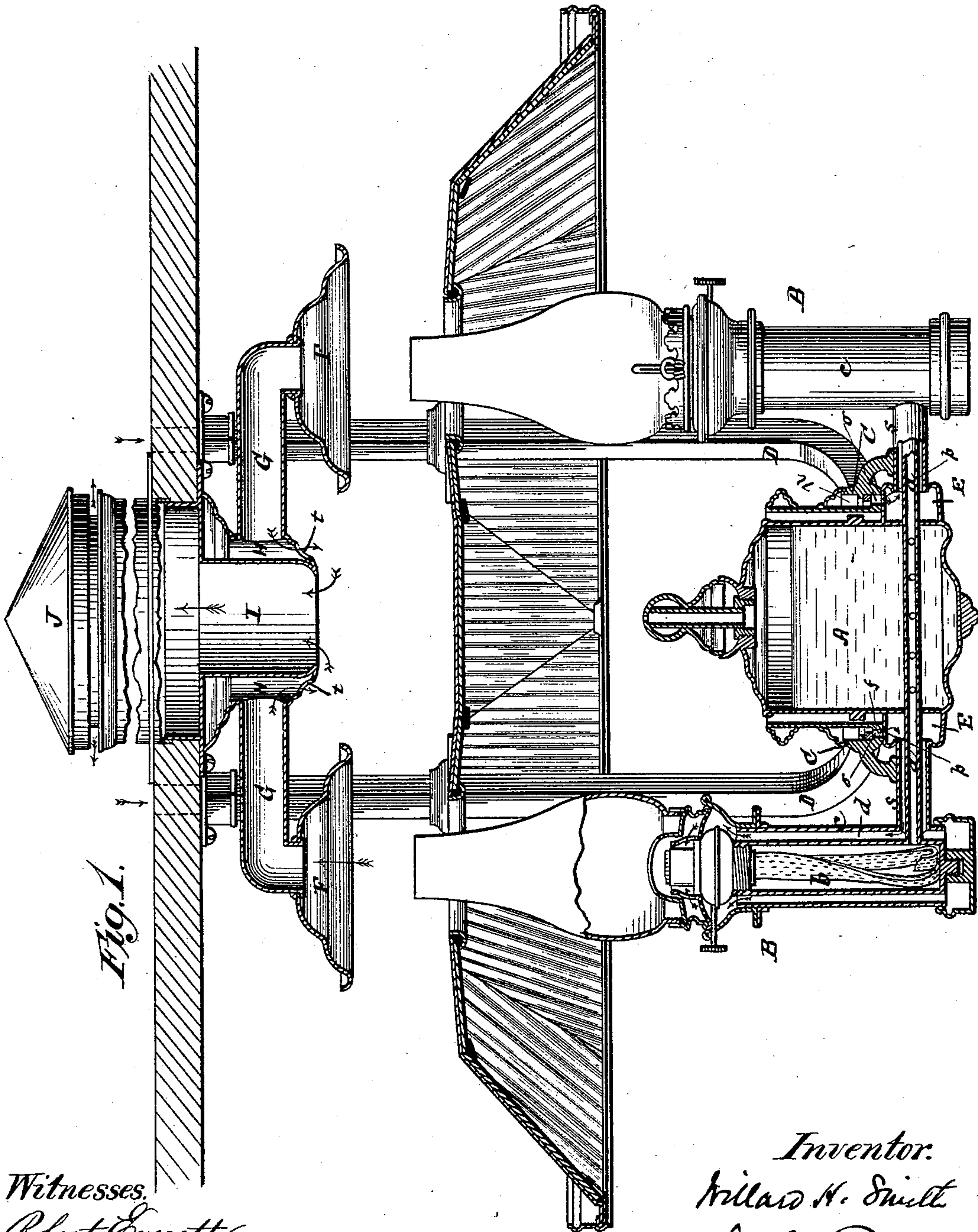


Fig. 1.

Witnesses.

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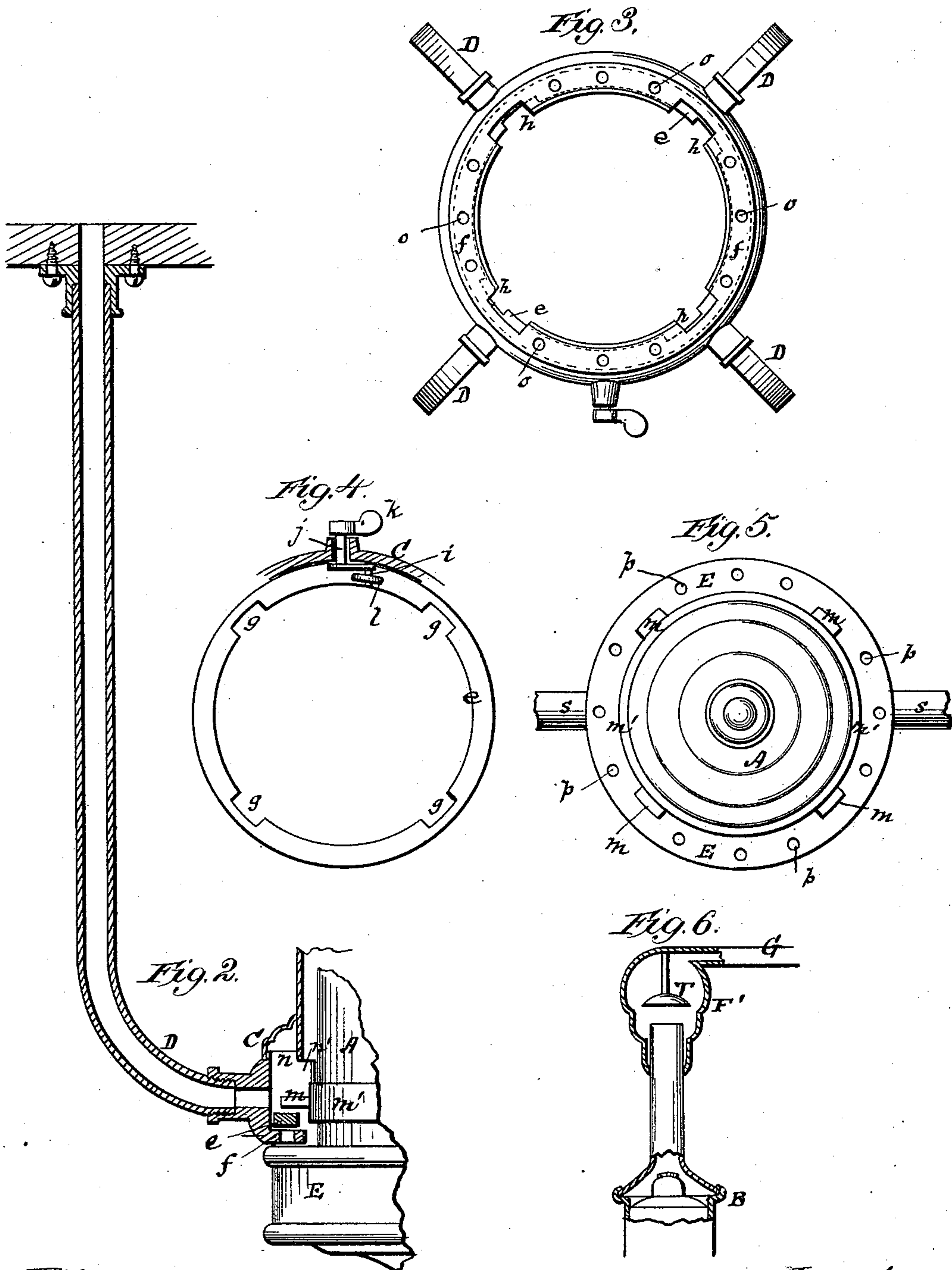
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Inventor.  
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by W. Bailey  
Attorney.



# UNITED STATES PATENT OFFICE.

WILLARD H. SMITH, OF NEW YORK, N. Y.

## CENTER-LAMP.

SPECIFICATION forming part of Letters Patent No. 236,638, dated January 11, 1881.

Application filed November 26, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, WILLARD H. SMITH, of the city, county, and State of New York, have invented certain new and useful Improvements in Center-Lamps for Cars and other Vehicles or Structures, of which the following is a specification.

My improvements are principally directed to means for supplying air to the burners of the lamp for the purpose of supporting combustion, to mechanism for locking the lamp in place in the gallery, and to the arrangement of the flues or passages for escape of the heated air and products of combustion. They can best be explained and understood by reference to the accompanying drawings, in which—

Figure 1 is a vertical central (partly sectional) view of a center-lamp for railroad-cars embodying my improvements. Fig. 2 is a vertical section through one of the air-supply tubes and the lamp-gallery, with a portion of the lamp in elevation. Fig. 3 is a plan of the under side of the lamp-gallery. Fig. 4 is a plan of the locking-ring and means for actuating the same. Fig. 5 is a plan of the oil-reservoir. Fig. 6 is a view of a modification, hereinafter referred to.

The lamp shown in the drawings is a two-light burner, and resembles the lamp shown and described in my Letters Patent No. 221,477, of November 11, 1879, in that the supply of air to support combustion is drawn directly from the exterior of the car through one or more ducts, which do not communicate with the body of the car or other structure in which the lamp is situated.

The lamp consists of a central reservoir or oil-fount, A, from which extend tubular branch arms *a*, two or more, as the case may be, each branch carrying a lamp-burner of any approved construction. In this instance there are two branch arms, *a*, and two burners, B. Each burner has an oil-tube, *b*, communicating with the branch *a*, and a surrounding jacket, *c*, between which and the oil-tube is an air-space, *d*, through which air passes to the flame in order to support combustion.

The oil-reservoir is supported in the annular lamp-gallery C by suitable means—such, for instance, as those described in my Letters Patent No. 221,475 or No. 221,477—which will admit of the lamp being filled and secured to or removed

from the gallery at pleasure. I find that a fastening device, as represented in the drawings, answers admirably, especially with a lamp of the kind herein shown, which, owing to its branching burners, requires a very secure and positive fastening. This device consists of an annular plate, *e*, which rests on the annular bottom ledge, *f*, of the gallery, and is provided with notches *g*, which, by rotating the plate *e*, can be brought into coincidence with or removed away from or to one side of similar notches, *h*, formed in the ledge *f* below. This sliding plate is actuated by a crank-pin, *i*, on a rotary shaft, *j*, supported in bearings in the gallery and provided with an external handle, *k*, by which it may be turned. The pin *i* works in a vertical staple, *l*, attached to the plate *e*. When the handle is turned to one extreme it brings the notches *g h* into coincidence, at which time the lamp-body A can be fitted up into or removed from the gallery, the studs or projections *m*, which project laterally from a ring, *m'*, with which said lamp-body is provided, passing through the openings formed by the coinciding notches. When the lamp is fitted in place the projections *m* are above the sliding plate *e*, and by then turning the handle *k* to the other extreme the notches *g h* will be out of coincidence, and the lamp A will thus be held most securely and firmly in the gallery.

The annular lamp-gallery is hollow, as shown at *n* in Fig. 1, and more plainly in Fig. 2, and the projections *m* on the lamp-body project through openings *n'*, formed in the inner wall of the hollow gallery, as shown in Fig. 2. The gallery is supported by arms D, attached to the roof of the car, one or more of which arms are tubular, communicating at the upper end with the exterior of the car and at the lower end with the space *n* in the gallery, as indicated in Fig. 2. The outer end of the tubular arm is preferably surmounted on the roof of the car by a cowl or hood. (Not shown.)

The lower portion of the oil-reservoir A is surrounded by an annular air-jacket, E, the flat top of which, when the lamp is in place in the gallery, fits snugly against the under face of the ledge *f* of the gallery. Air-passages *o* are formed in the ledge, and corresponding air-passages *p* are formed in the top of the annular air-jacket, said passages *o* and *p* register-



ing with one another, so that air passing down into the hollow gallery from the tubular arms D may thence pass into the annular air-jacket. The latter is put in communication with the  
 5 air-space *d* of the burner by means of tubes *s*, which surround the branch pipes *a*, and open at one end into the air-jacket E and at the other end in the burner-jacket *c* through the space *d*. The air thus supplied from the air-  
 10 jacket E passes to the burners, as indicated by the arrows in Fig. 1.

Over the lamp-chimney of each burner is a hood, F, the several hoods being connected, by horizontal tubular branch-arms G, with a cen-  
 15 tral annular chamber, H, the lower end of which is perforated or otherwise made open, as at *t*, to permit the passage therefrom of the heated air and products of combustion. These products, which are thus permitted to escape  
 20 into the interior of the car, are at once drawn up through the central opening, I, which is surrounded by the annular chamber H, and which, communicating with the exterior of the car, and surmounted by a jack or cowl, J, con-  
 25 stitutes a flue to carry off these products, as well as other gases or impure air which may gather in the upper part of the car.

The hood F, instead of being made as indicated in Fig. 1, may be formed as shown at F' in Fig. 6, so as to receive and fit snugly around  
 30 the upper end of the lamp-chimney, in this way preventing fluctuations in the light due to occasional irregularities in air-currents over the top of an open chimney. Within the hood  
 35 F', and at a suitable distance above the top of the chimney, is a plate, T, to protect the flame against the direct action of possible irregularities in the draft.

Having described my improvements, and  
 40 the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is—

1. The lamp-gallery formed with a notched supporting-ledge, the notched locking-ring car-

ried in said gallery and provided with a han- 45 dle extending through and to the exterior of the gallery, in combination with the oil fount or reservoir having lugs thereon, substantially as and for the purposes hereinbefore set forth.

2. The combination, substantially as here- 50 inbefore set forth, of the lamp-gallery provided with an annular notched supporting-ledge, the sliding notched locking-ring carried by said gallery, the crank-handle for operating said ring, and the oil-reservoir provided with lat- 55 eral projections corresponding to the notches in the ring and ledge.

3. The hollow lamp-gallery and one or more tubular air-supply arms leading from the ex- 60 terior of the car or other structure into the gallery, in combination with the oil-reservoir formed with an air-chamber provided with openings to register with like openings in the lamp-gallery, substantially as and for the pur- 65 poses hereinbefore set forth.

4. The combination, substantially as herein- before set forth, of the hollow lamp-gallery, one or more tubular air-supply arms leading into the same from the exterior of the car, the oil-reservoir provided with an annular air- 70 chamber which communicates with the air-space in the gallery, the lamp-burners, and the air and oil supply pipes leading from the air and oil chambers of the reservoir into the air and oil spaces of the burner. 75

5. The chimney-hoods and their tubular branch arms, in combination with the annular discharge-chamber opening into the interior of the car, and the central discharge-flue, sub- 80 stantially as and for the purposes hereinbe- fore set forth.

In testimony whereof I have hereunto set my hand this 17th day of November, 1880.

WILLARD H. SMITH.

Witnesses:

E. A. DICK,  
 N. C. LANE.