No. 611,806. Patented Oct. 4, 1898.

F. BILLINGHAM.

LAMP.

(Application filed June 30, 1896.)

(No Model.) 2 Sheets—Sheet 1.

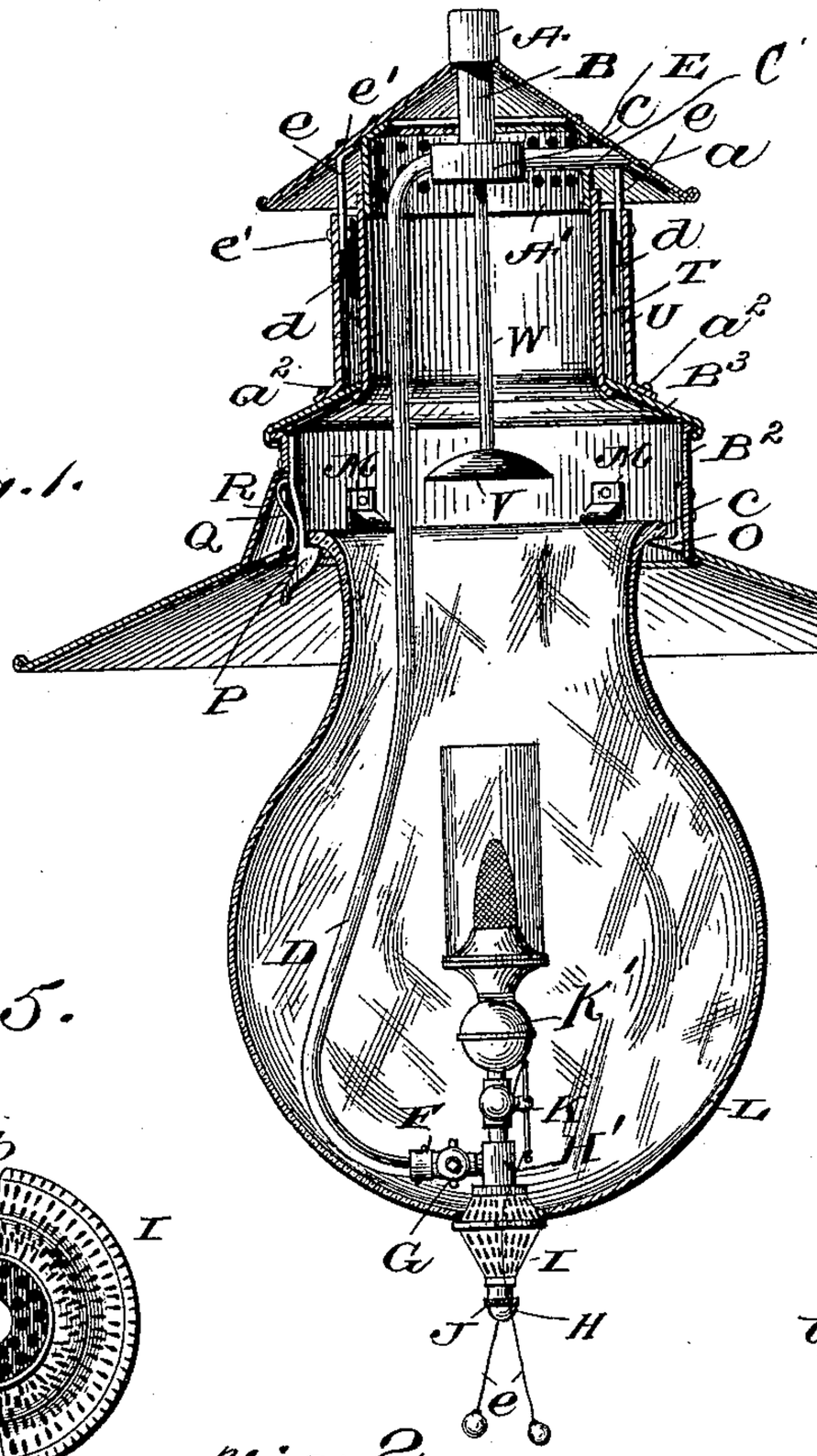


Fig. 1.

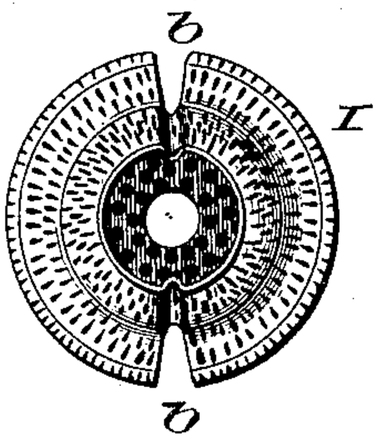


Fig. 5.

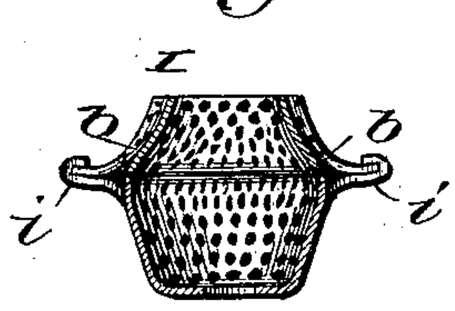
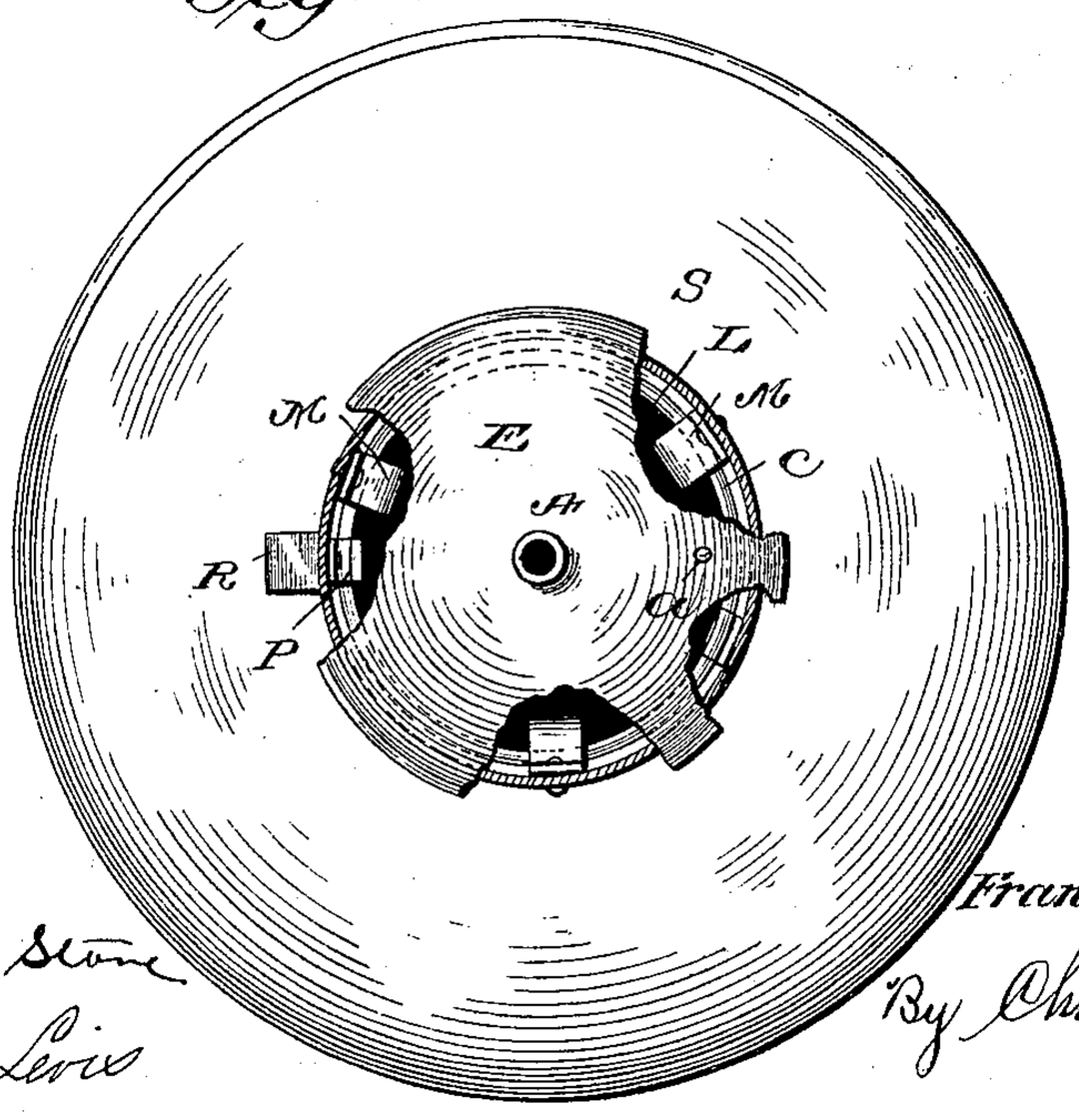


Fig. 6.

Fig. 2.



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Grace L. Levis

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(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

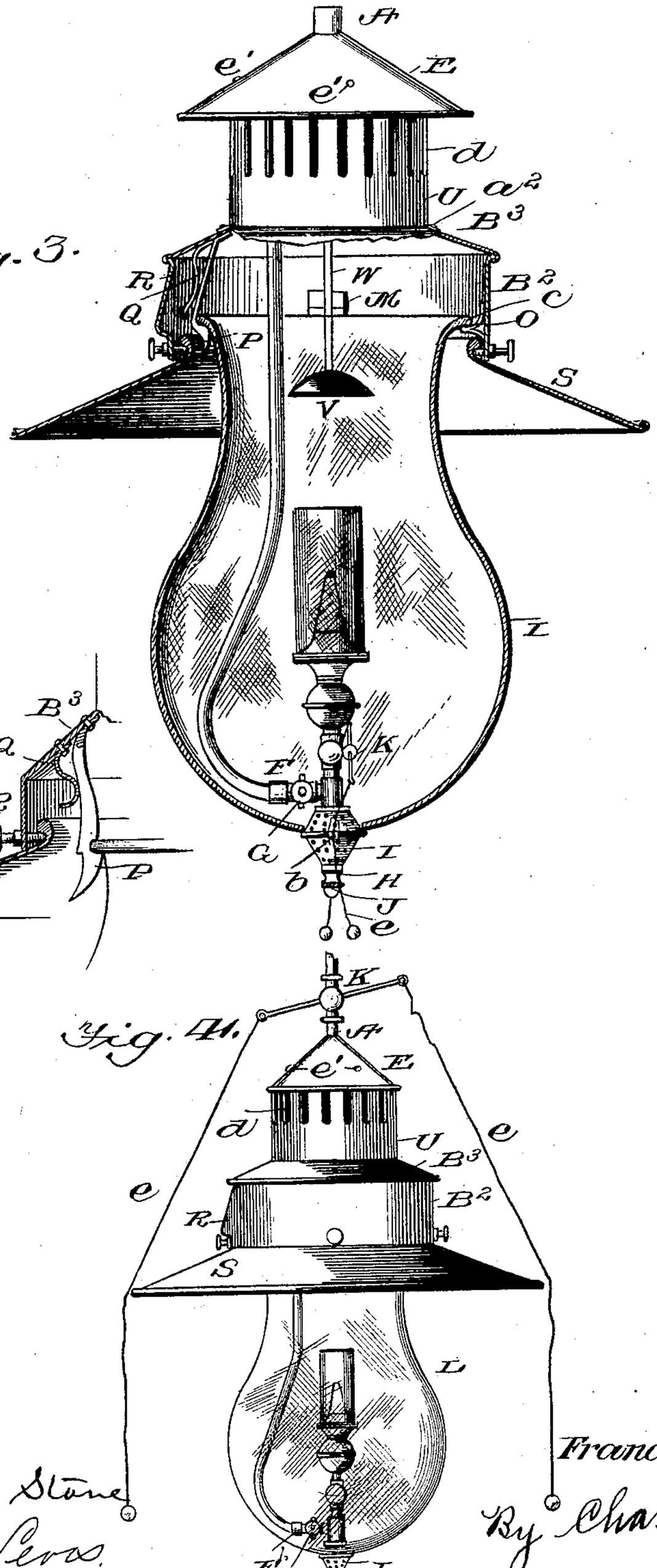

Fig. 7.

Fig. 4.

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UNITED STATES PATENT OFFICE.

FRANCIS BILLINGHAM, OF NEW YORK, N. Y.

LAMP.

SPECIFICATION forming part of Letters Patent No. 611,806, dated October 4, 1898.

Application filed June 30, 1896. Serial No. 597,511. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS BILLINGHAM, a citizen of the United States, residing at New York, (Brooklyn,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Lamps for Argand, Welsbach, and Similar Burners, of which the following is so full, clear, and exact a description as will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of my improved lamp. Fig. 2 is a top plan view of the same. Fig. 3 is a section of another form of my invention. Fig. 4 is a side elevation of my improved lamp. Fig. 5 is a plan view of the perforated wind-guard. Fig. 6 is a sectional view of the same. Fig. 7 is a detail, partly in section, showing some of the devices for supporting the shade and globe.

Referring to the drawings, A represents a coupling or socket into which a short pipe B is screwed. This pipe carries at its lower end a hollow head C, from one side of which the burner-supply pipe C leads, it being understood that gas is supplied to the head C through the pipe B and socket A or in any other suitable manner.

E represents a conical cap, through the apex of which the pipe B passes and serves as a support for the cap, the two being secured together in any suitable manner.

One or more braces C′ will be secured at one end to the head C and at the other end to the cap E, in the latter case preferably by means of a rivet, as indicated at *a*. The cap will thus be securely and steadily supported in position.

U and T are two concentric tubes supported below the cap E. The upper end of the outer tube U is in substantially the same plane as the lower end of the cap E, and this tube is supported by a series of strips *e*, riveted at their upper ends to the cap E and at their lower ends to the tube U, as indicated at *e′*. The lower end of the tube U is turned outwardly and riveted to the oblique section B^3 of the main hood, as indicated at a^2, and the oblique section secured to the vertical section B^2 in any suitable manner. The inner tube T is turned out at its lower end and secured inside the opening in the top of the section B^3. The upper end of the tube T extends above the plane of the upper end of the cap E, and a perforated tube A′ extends from the upper end of the tube T into engagement with the cap E, to which latter it is firmly secured, preferably by rivets.

The perforated tube will permit the heated air, smoke, &c., to freely escape from the upper part of the lamp into the open air, but will at the same time effectually exclude bugs, flies, and other insects.

The outer tube U is provided with a series of slots or perforations *d*, and these permit a free circulation of air between the tubes U and T, which tends to keep the upper part of the lamp from becoming unduly heated. The annular space between the tubes U and T is closed at its lower end by the oblique portion of the hood.

To the inner face of the vertical portion B^2 of the main hood a series of inwardly-projecting stops M are secured, against which the upper open end of the globe L is adapted to abut. Said upper end flares outwardly to form a bead *c*, which is supported on a ledge O and a catch-lock P, which latter is held normally in operative position by a spring Q, secured within a housing or offset R on the vertical portion B^2 of the main hood.

To the lower end of the burner-supply pipe D a coupling F is attached, provided with a drip cock or plug G, the function of which is to drain the pipe should the gas condense. This coupling F carries a Welsbach burner K′, to which gas is supplied through the pipe D and said coupling. The coupling is provided with a downward extension H′, having a threaded opening in its end.

I represents a hollow perforated strainer provided with a flange *i* intermediate of its ends and open at its top and bottom. The portion of said strainer above the flange *i* extends up through an opening in the bottom of the globe, while the flange engages the outer surface of the globe. A rod H, having a milled head J, extends up through the strainer and screws into the threaded opening in the extension H′ to securely hold the strainer in position. The strainer serves the double function of admitting air to the interior of the globe and of steadying the lower end of the latter and preventing it from swinging.

In Figs. 1 and 3 I have shown an ordinary

by-pass cock K just below the burner, and in this construction the cords or wires *e*, which operate the cock, pass through recesses formed in the strainer.

In Fig. 4 the by-pass cock K is shown in the main supply-pipe above the lamp, and in such case the recesses *b* are not necessary.

S indicates a reflector which may be detachably connected to the main hood in any suitable manner.

V indicates a heat-deflector carried by a rod W, depending from the head C. This deflector is directly in line with the burner and serves to deflect or diffuse the heat from the burner to prevent it from burning out the top of the lamp.

This lamp, which is designed especially for use in places where it may be exposed to strong drafts or currents of air, will burn steadily at all times, since by the peculiar construction no strong current of air can pass downwardly through it to affect the flame, and at the same time a sufficient quantity of air for combustion will be supplied in a steady and uniform manner through the strainer at the bottom of the globe. The globe will also be supported steadily on the lamp no matter how strong the current of air, and access of insects to the interior of the globe is prevented, which features especially adapt it for outdoor use. By removing the strainer and releasing the lock P the globe can be entirely removed for the purpose of cleaning it.

It will be observed that the globe is supported both at its top and bottom—from above by the hood, from which it is suspended, and at the bottom upon the bead, which forms an integral part of the air-strainer. It will also be seen that the portion of the strainer within the globe is of less diameter throughout than the opening through which it extends, whereby said strainer is removable independently of the globe; and, further, it will be seen that while the relative construction of the parts is such that the globe cannot be removed without first detaching the strainer, the provision of the by-pass cock renders it unnecessary to remove the globe when it is desired to illuminate, as the burner is always lighted, so that removal of the globe is necessary only when it is desired to clean the same or have access to the burner for other purposes than to illuminate.

Having thus described my invention, what I claim is—

1. In a lamp, the combination with the main hood, of an open-topped globe, supported at its upper end by said hood and depending therefrom, said globe having an opening in its lower end, a burner supply-pipe within the globe, having a by-pass cock provided with operating means outside the globe, an air-strainer the lower portion of which projects through the lower opening in the globe and has a flange to engage said globe so as to support and steady the same from beneath, and a rod extending through said strainer and removably connected to the supply-pipe, said rod having a head to engage said strainer and support the globe in position, substantially as and for the purposes set forth.

2. A street-lamp, consisting of a main gas-supply pipe having a hollow head at its end and provided with a by-pass cock, a cap, a brace connecting said cap with the head, concentric tubes depending from said cap, said tubes being arranged and constructed to permit the escape of heated air, a hood supported by the lower ends of said tubes and closing the lower end of the annular space between the same, a globe removably connected at its upper end to the hood and supported thereby from above, a burner connected with said supply-pipe, and a strainer engaged with the lower end of said globe so as to also steady and support the same from below, said strainer being detachable independently of the globe and said globe having in its lower end an opening into which said strainer extends, substantially as described and for the purposes set forth.

3. In a lamp of the character described, a main gas-supply pipe having a hollow head at its end, a conical cap through the apex of which the said pipe extends, and a brace connected to the head and cap, combined with concentric tubes connected at their upper ends to the cap, the inner tube extending above the outer tube and having perforations above the plane of the lower end of the cap, and the outer tube having slots below the plane of the lower end of the cap, a hood supported by the lower ends of the tubes and closing the lower end of the annular space between them, a globe supported at its upper end by the hood, a burner supply-pipe leading from said head through said inner tube and into the globe, a burner at the lower end of said pipe, substantially as described and for the purposes specified.

4. The herein-described lamp for outdoor use, consisting of a main gas-supply pipe having a hollow head at its end, a conical cap through the apex of which the said pipe extends, a brace connected to the head and cap, concentric tubes connected at their upper ends to the cap, a hood supported by the lower ends of said tubes and closing the lower end of the annular space between them, a globe removably connected at its upper end to the hood, a reflector detachably secured to said hood, a burner supply-pipe leading from said head through the inner tube and into said globe, a burner at the lower end of said pipe, and means serving both to steady the lower end of said globe and to strain the air thereto, said means being detachable, all substantially as shown and described.

In testimony whereof I affix my signature in the presence of two witnesses.

FRANCIS BILLINGHAM.

Witnesses:
E. F. GENNERT,
W. G. SCHERRER.