

No. 787,086.

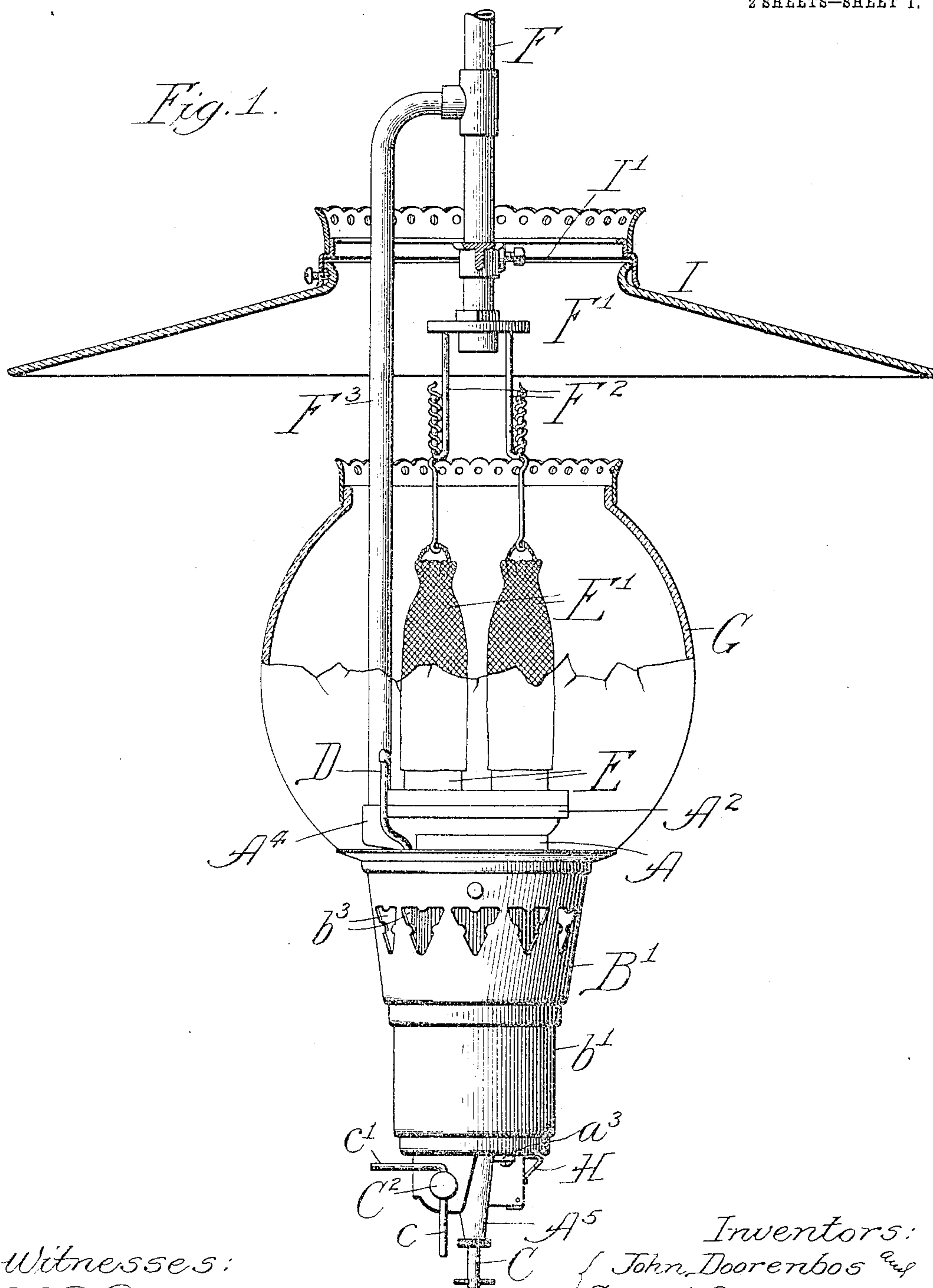
PATENTED APR. 11, 1905.

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GAS LAMP.

APPLICATION FILED MAY 12, 1904.

2 SHEETS—SHEET 1.



Witnesses:

Chas. E. Chayford.  
John Enders.

Inventors:

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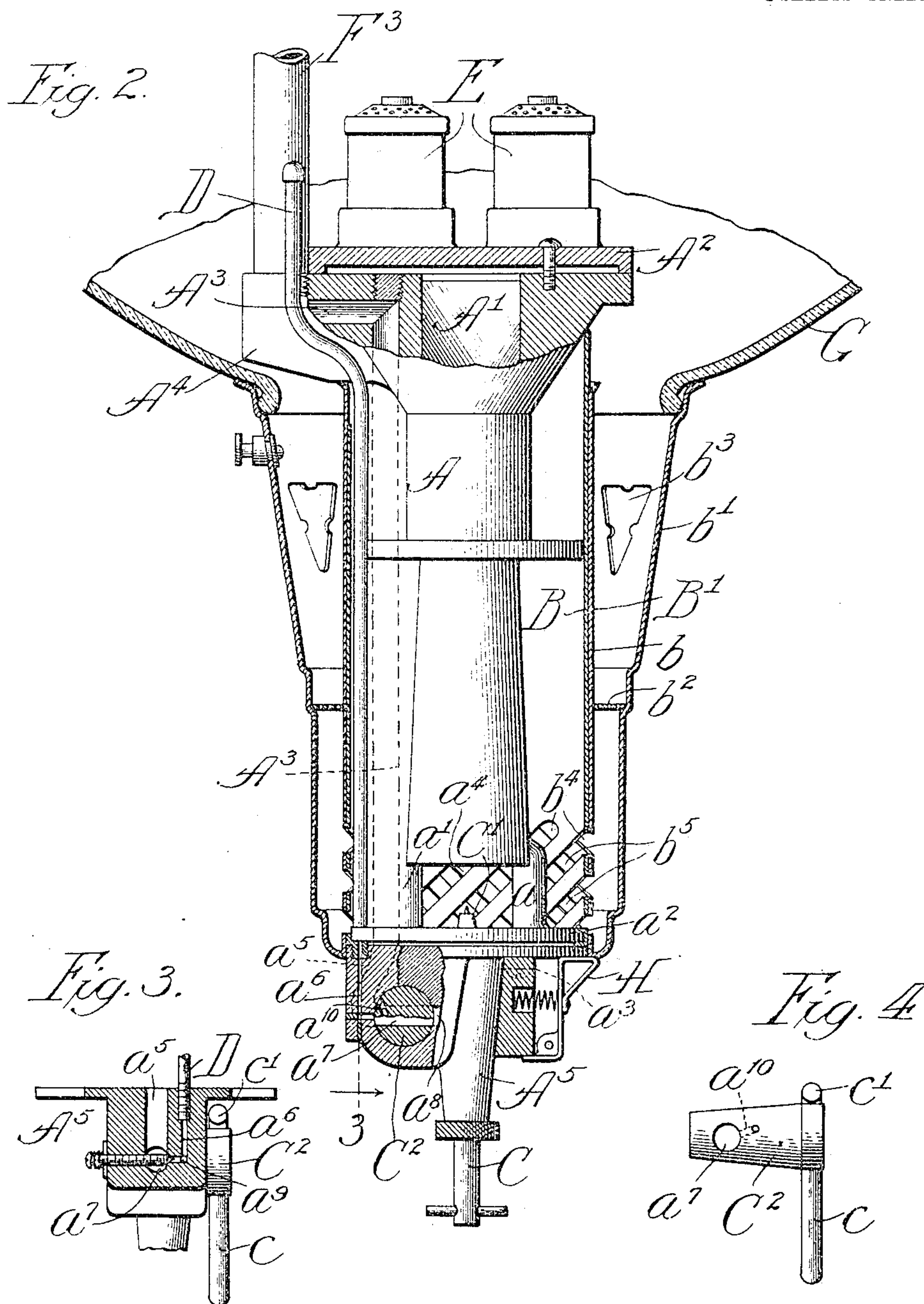
Dyrenforth, Dyrenforth and Lee,  
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J. & G. G. DOORENBOS.

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2 SHEETS—SHEET 2.



Witnesses  
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# UNITED STATES PATENT OFFICE.

JOHN DOORENBOS, OF NEW YORK, N. Y., AND GARRETT G. DOORENBOS,  
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## GAS-LAMP.

SPECIFICATION forming part of Letters Patent No. 787,086, dated April 11, 1905.

Application filed May 12, 1904. Serial No. 207,526.

*To all whom it may concern:*

Be it known that we, JOHN DOORENBOS, residing at New York, in the county of New York and State of New York, and GARRETT G. DOORENBOS, residing at Kalamazoo, in the county of Kalamazoo and State of Michigan, citizens of the United States, have invented a new and useful Improvement in Gas-Lamps, of which the following is a specification.

Our invention relates particularly to gas-lamps employing a plurality of mantles of the Welsbach type which are heated to incandescence by means of burners particularly adapted to generate heat.

The primary object of our invention is to provide improvements in details of construction calculated to render more practical lamps of the general construction mentioned.

Our invention is illustrated in the accompanying drawings, in which is also shown the construction of a globe-support peculiarly adapted for use in connection with gas-lamps for outdoor use, said globe-support being claimed in an application of John Doorenbos, No. 207,524, of even date herewith.

In the drawings, Figure 1 is a broken view, partly in section and partly in elevation, of a lamp embodying our improvements; Fig. 2, an enlarged broken vertical section of the lower portion of the lamp; Fig. 3, a section taken as indicated at line 3 of Fig. 2, and Fig. 4 a detached view of a valve employed.

In the preferred construction, A represents a burner-body having a central mixer-chamber A', a hollow head A<sup>2</sup> communicating therewith, a descending gas-passage A<sup>3</sup>, a hollow boss A<sup>4</sup> in connection therewith, and a base-portion A<sup>5</sup>; B, a tubular casing inclosing the burner-body and affording a guide for a globe-support B'; C, a vertically-disposed needle-valve controlling the passage of gas from the centrally-located tip or orifice C', which is located a short distance beneath the lower end of the burner-body A; C<sup>2</sup>, a horizontally-disposed stop-cock or valve controlling the passage of gas from the passage A<sup>3</sup>; D, a pilot-burner; E, a plurality of main burner-orifices; E', mantles surmounting the

same; F, a depending gas-pipe equipped at its lower end with a cap F', provided with depending mantle-supports F<sup>2</sup>; F<sup>3</sup>, a branch pipe communicating with the pipe F and supporting the burner-body through the medium of the boss A<sup>4</sup>, into which it is screwed; G, a globe mounted on the upper end of the support B' and inclosing the mantles, mantle-supports, and branch pipe; H, a spring-held catch supporting the globe-support and secured in turn to the base A', and I a shade carried by a supporting-spider, I', attached to the pipe F beneath its junction with the pipe F<sup>3</sup>.

The burner-body is provided at its lower portion with depending lugs a a', which support a horizontally-disposed base a<sup>2</sup>, to which the member A<sup>5</sup> is detachably connected by screws a<sup>3</sup>. This provides spaces a<sup>4</sup> for the admission of air to the lower portion of the mixer-chamber A'. The member A<sup>5</sup> has a passage a<sup>5</sup>, which registers with the lower end of the descending gas-passage A<sup>3</sup> and intersects the bore of the valve C<sup>2</sup>. Said member is also provided with a passage a<sup>6</sup>, which registers with the lower end of the tube of the pilot-burner and intersects the bore of the valve C<sup>2</sup>. The valve C<sup>2</sup> has a transverse passage a<sup>7</sup>, which when the valve is in the position shown in Fig. 1 connects the passage a<sup>5</sup> with a passage a<sup>8</sup> leading to the tip C'. There is also a passage a<sup>9</sup> connecting the passage a<sup>5</sup> with the passage a<sup>6</sup>. The valve C<sup>2</sup> is provided with a passage a<sup>10</sup> communicating with the passage a<sup>7</sup> and which in one position of the valve C<sup>2</sup> registers with the passage a<sup>5</sup>, supplying the pilot-burner.

The globe-support B', which is not herein claimed, comprises an inner cylindrical member b, fitting snugly upon the casing B and slidable vertically thereon, and an upwardly-flaring member b', joined at its lower portion to the lower portion of the member b. The members b b' are preferably formed integrally with each other, and the member b' has an internal annular shoulder upon which is supported a screen b<sup>2</sup>. The member b' is provided above said screen with air-openings b<sup>3</sup>. The lower end of the casing B is provided



with spirally-arranged air-admission slots or openings  $b^4$ , and the inner member  $b$  of the globe-support is provided at its lower portion with slots  $b^5$  at right angles to said first-named slots. The valve  $C^2$  is provided with operating-arms  $c$   $c'$  at substantially right angles to each other. The arm  $c'$  projects into the path of the globe-support  $B'$ , so that when the latter is drawn downwardly upon the casing B as a guide the valve is automatically operated to shut off the supply to the main burner-orifices. During this operation and just prior to the shutting off of the supply to the main burner-orifices the supply to the pilot-burner is turned on.

The burner device employed at the main burner-orifices may be of any desired construction, the construction illustrated being now well understood in the art.

The shade I encircles the lower or dead-end portion of the pipe F and the upper portion of the branch pipe  $F^3$ , the connection of the branch pipe with the pipe F being at a sufficient distance above the shade to prevent objectionable heating of the gas passing into the lamp. The shade is separated from the upper portion of the globe by a small distance, as shown. The branch pipe passing within the globe insures a desirable preparatory heating of the gas and being located away from the center of the lamp prevents the heating of the gas to such a high degree as to cause the pipe to become choked. It will now be understood that the burner is in reality a large Bunsen burner with a single mixer-chamber which is equipped at its upper end with a plurality of burner-orifices, whereat a proper mixture of gas and air is supplied to the mantles. The provision of the branch pipe  $F^3$  guards against clogging of the descending passage for the gas, inasmuch as the branch pipe is removed from the zone of intense heat. Moreover, the disposition of the shade with relation to the globe and the relative size of the parts is such as to provide for just the proper amount of heat for the branch pipe. At the same time the branch pipe is inclosed within the globe and the resulting construction is an exceedingly neat one.

The general operation is well understood by those skilled in the art, and it is only necessary to add that the air-supply to the Bunsen burner is through the openings  $b^2$ , past the screen  $b^2$ , and through the openings  $b^4$   $b^5$  into the lower end of the mixer-chamber  $A'$ .

It may be observed that the dead-end portion of the pipe F serves chiefly as a shade and mantle support, and if it were left unplugged it would serve also as a trap for impurities. However, a more convenient place for a trap may be preferred, in which case the dead end of the pipe may be plugged, as

suggested, so that it will serve only as a shade and mantle support.

Changes in minor details of the construction within the spirit of our invention are contemplated. Hence no undue limitation should be understood from the foregoing detailed description.

What we regard as new, and desire to secure by Letters Patent, is—

1. In a gas-lamp, the combination of a supporting-pipe, a branch pipe connected therewith and out of alinement therewith, a shade encircling the lower end of said first-named pipe and the upper portion of said branch pipe below the junction of said pipes, a burner-body supported by said branch pipe and equipped with a plurality of burner-orifices, the connection between said supporting-pipe and said burner-body being at one side of the upper portion of the burner-body and adjacent to the group of burner-orifices, a globe-support connected with said burner-body beneath said connection, and a globe having its lower portion supported on the upper end of said globe-support and its upper portion located a short distance beneath said shade, for the purpose set forth.

2. In a gas-lamp, the combination of a supporting-pipe having a closed lower end, and a mantle-support connected with the lower end of said pipe, a shade-support connected with the lower end of said pipe, a shade connected with said shade-support, a burner-body, a vertically-slidable globe-support connected with said burner-body, a globe having its lower end resting upon said globe-support and its upper end located beneath said shade, and a branch pipe out of alinement with said first-named pipe and forming a junction therewith above said shade, and supporting said burner-body, for the purpose set forth.

3. In a gas-lamp, the combination of a central supporting-pipe, a branch pipe connected therewith and out of alinement therewith, a mantle-support depending from said supporting-pipe beneath the junction thereof with said branch pipe, a burner-body supported by said branch pipe and equipped with a guide for a globe-support, a normally elevated, vertically-depressible globe-support on said guide, a globe mounted on said globe-support and freely depressible with said globe-support, and a shade supported through the medium of said supporting-pipe and located beneath the junction of said branch pipe and supporting-pipe, substantially as and for the purpose set forth.

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In presence of—

WALTER N. WINBERG,

W. B. DAVIES.