

No. 786,014.

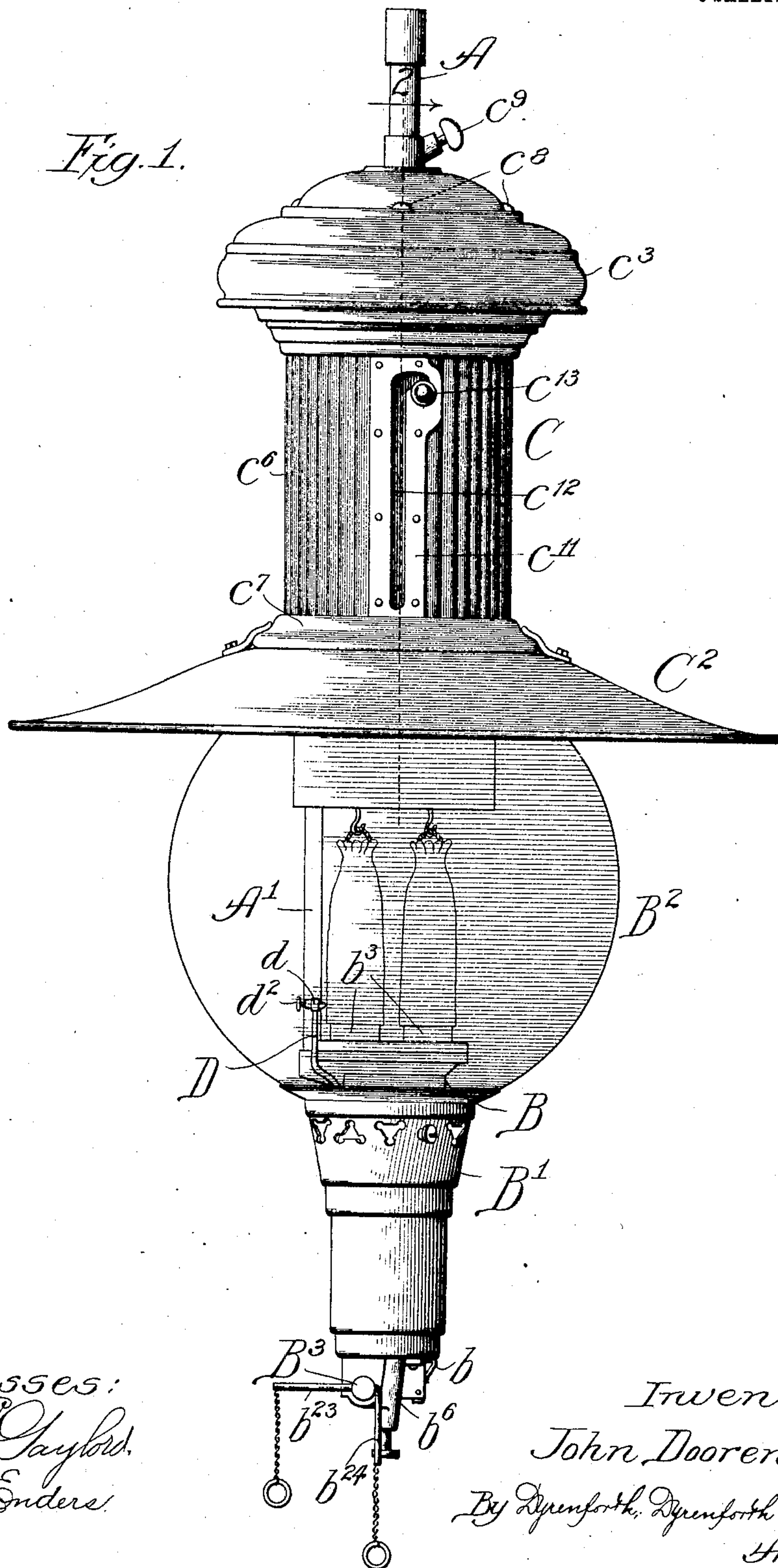
PATENTED MAR. 28, 1905.

J. DOORENBOS.
GAS LAMP.

APPLICATION FILED MAY 12, 1904.

3 SHEETS—SHEET 1.

Fig. 1.



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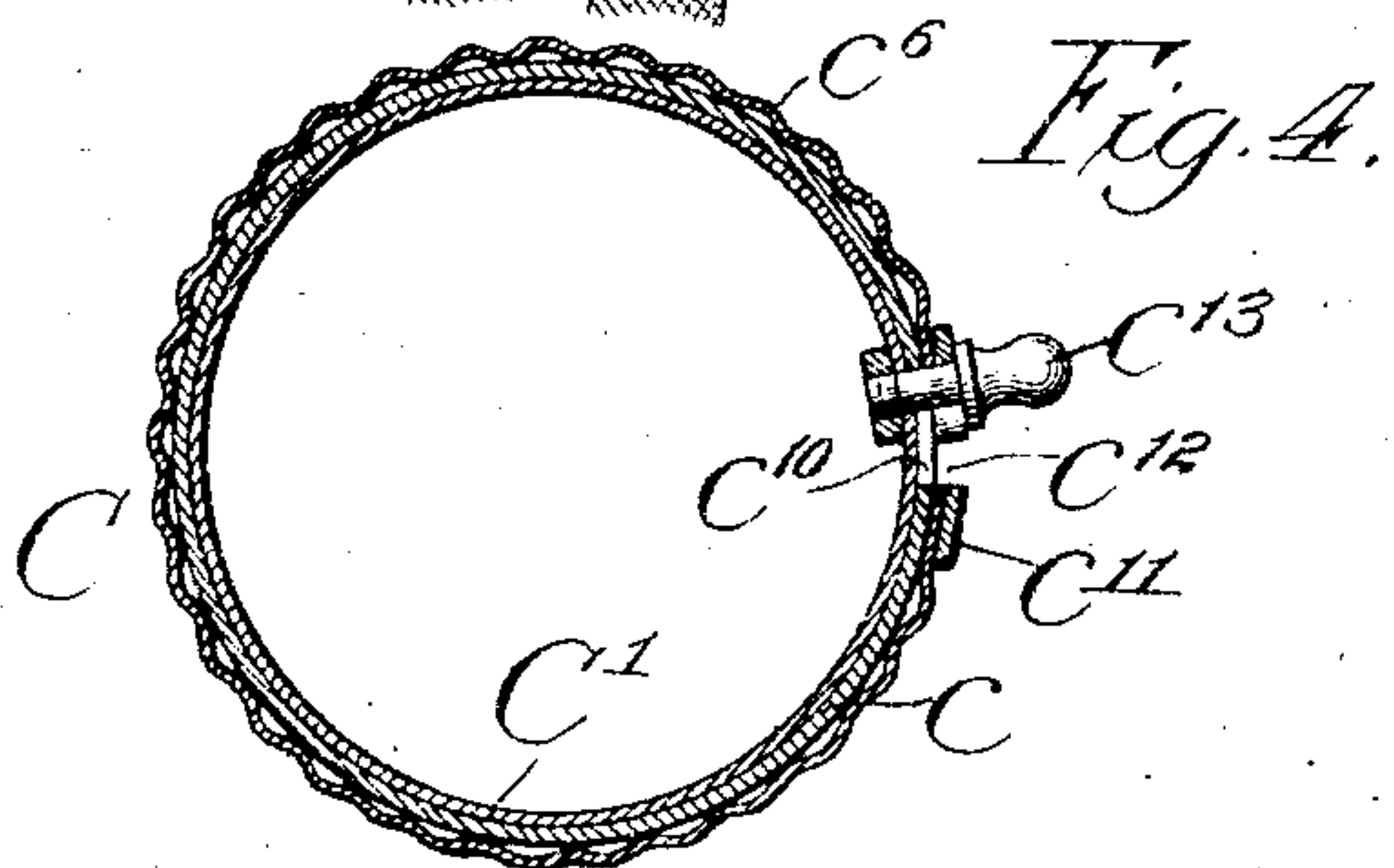
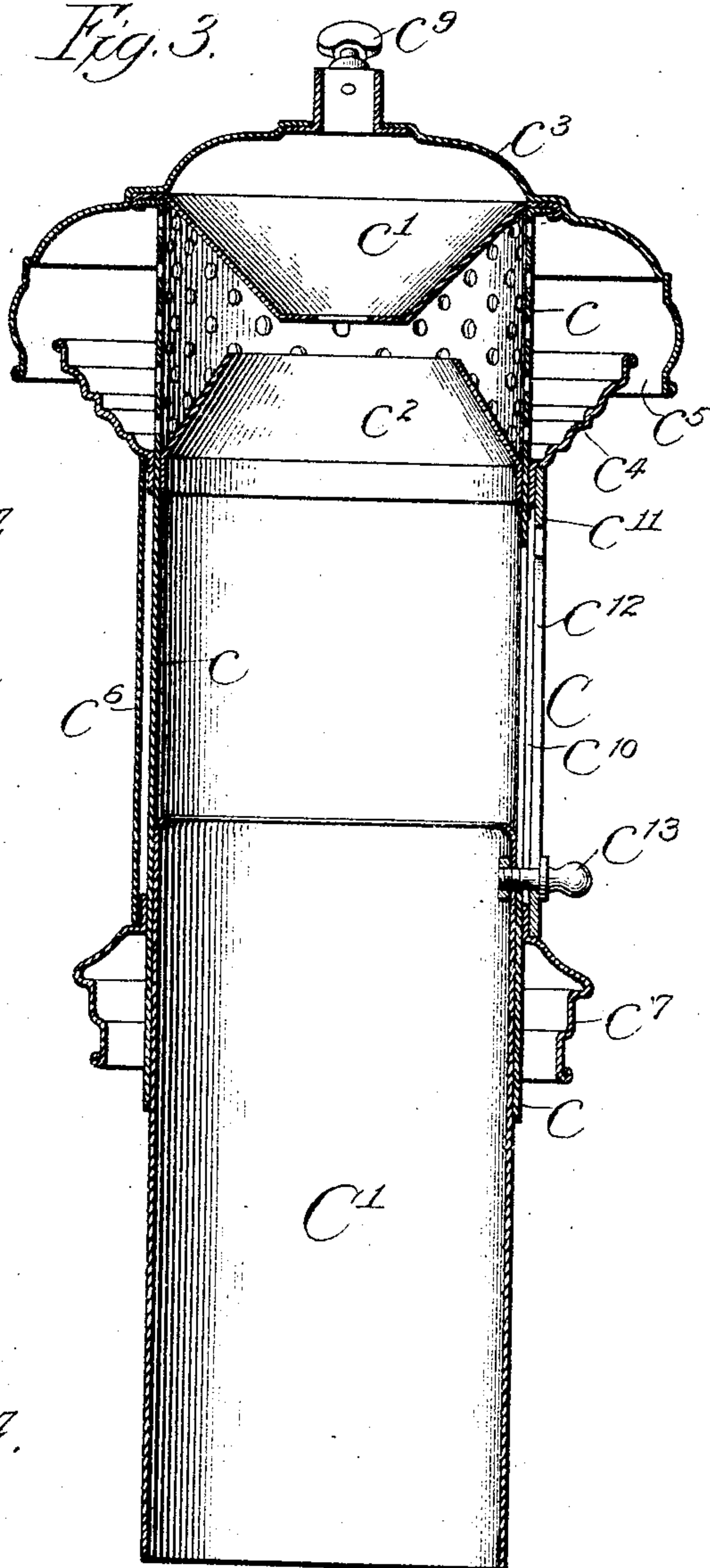
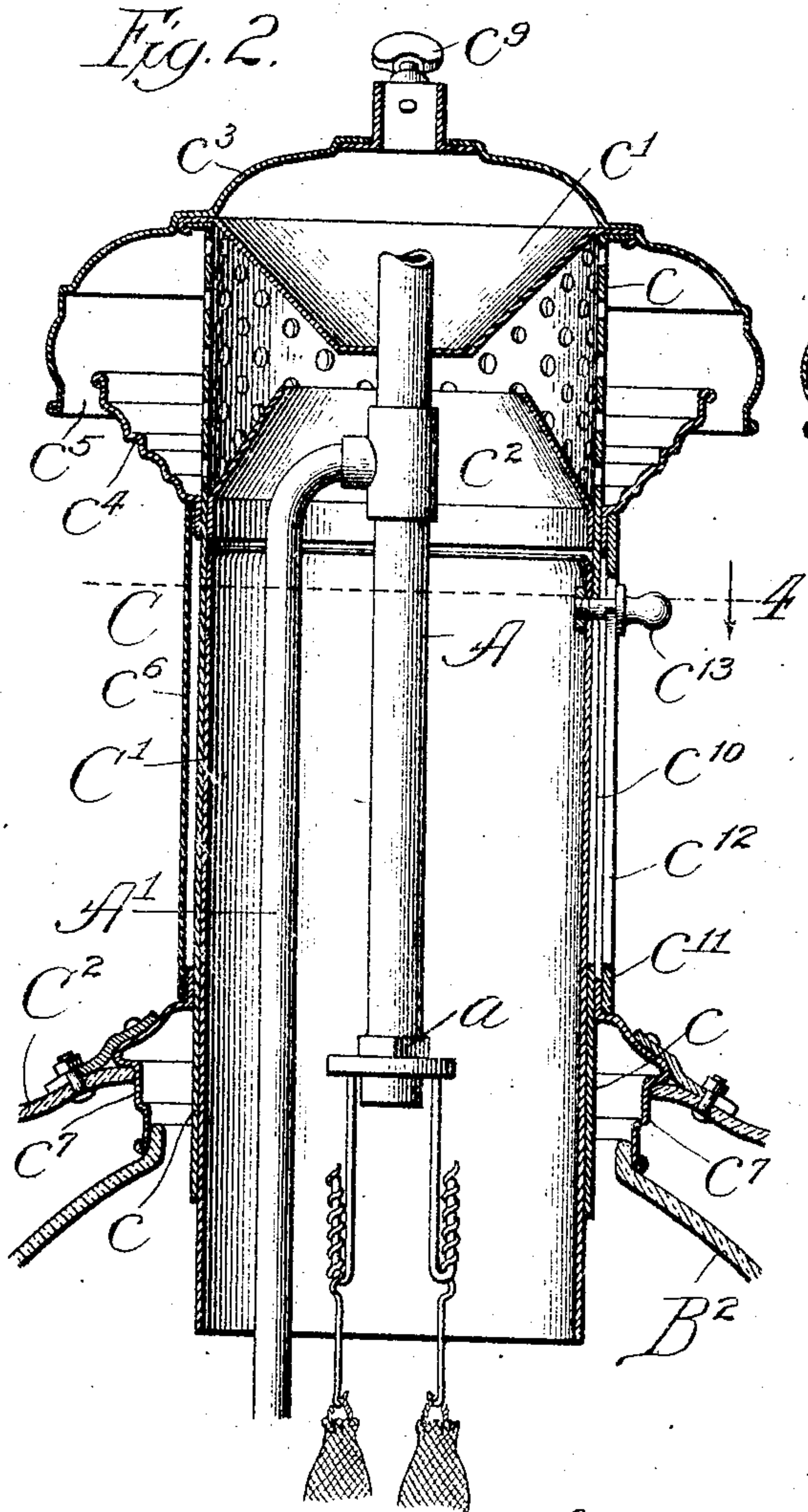
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3 SHEETS—SHEET 2.



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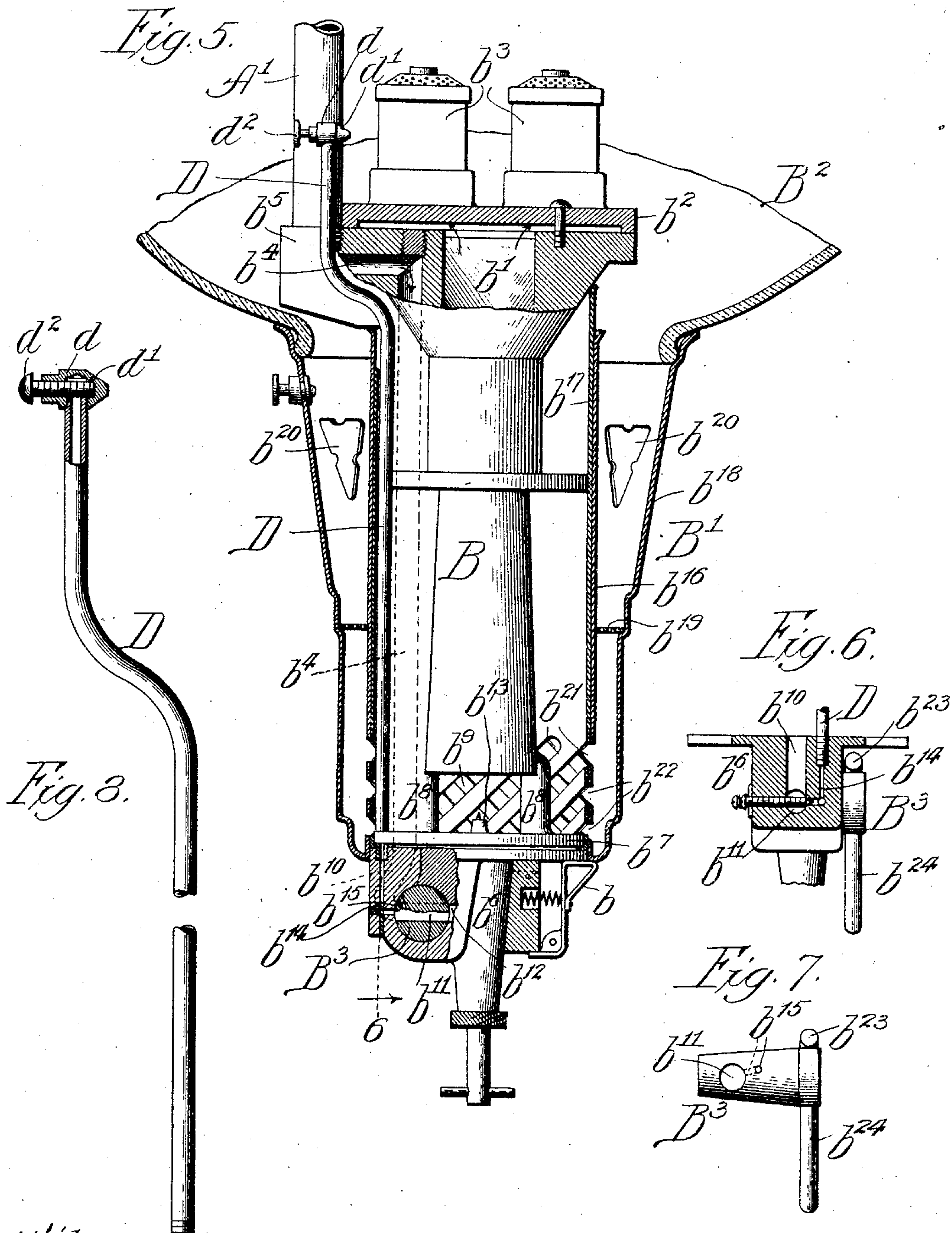
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

JOHN DOORENBOS, OF NEW YORK, N. Y.

GAS-LAMP.

SPECIFICATION forming part of Letters Patent No. 786,014, dated March 28, 1905.

Application filed May 12, 1904. Serial No. 207,524.

To all whom it may concern:

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

My invention relates particularly to gas-lamps for outdoor use; and my primary object is to provide improved means for guarding against wind and at the same time to provide a structure of greater durability and more pleasing appearance than any heretofore known.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is an elevational view of a street-lamp embodying my improvements; Fig. 2, an enlarged sectional view of the upper portion of the lamp, the section being taken as indicated at line 2 of Fig. 1; Fig. 3, a similar view, but showing the mantle-shield in its lowermost position; Fig. 4, a plan section taken as indicated at line 4 of Fig. 2; Fig. 5, an enlarged broken vertical section of the lower portion of the lamp; Fig. 6, a section taken as indicated at line 6 of Fig. 5; Fig. 7, a view of a valve employed, and Fig. 8 a detail of a pilot-burner employed.

In the illustrated preferred construction, A represents a pipe equipped at its upper end with a nipple, by means of which it may be suspended from a gas-pipe, and provided at its lower end with a cap α , to which are attached the mantle-supports; A', a branch pipe connected with the main pipe a short distance above the lower end thereof; B, a burner-body suspended from the lower end of the branch pipe; B', a depressible globe-support sustained by a spring-held catch b ; B², a globe supported by the member B' and which may be lowered therewith to permit access to the mantles or to enable the globe to be cleaned; B³, a valve controlling the admission of gas to the mixer-chamber; C, a chimney located above the globe and supported by the pipe A; C', an internal mantle-shield having pin-and-slot connection therewith to enable it to be lowered to protect the mantles when the globe is lowered; C², a shade supported by the chimney, and D a pilot-burner supported from the base of the lamp.

The burner-body B has a central mixer-chamber b' , a hollow head b^2 communicating therewith and equipped with a plurality of burner-tips b^3 , a lateral descending gas-passage b^4 , a hollow boss b^5 , connected with the branch pipe A' and in communication with the passage b^4 , and a base portion b^6 , connected by screws with a ring b^7 , supported by lugs b^8 at the lower end of the main portion of the burner-body. This provides spaces b^9 for the admission of air to the lower portion of the mixer-chamber b' . The member b^6 has a passage b^{10} , which registers with the lower end of the passage b^4 and intersects the bore of the valve B³. The valve B³ has a transverse passage b^{11} , which when the valve is in the position shown in Fig. 1 connects the passage b^{10} with a passage b^{12} , leading to the tip b^{13} below the mixer-chamber. There is also a passage b^{14} communicating with the pilot-burner and intersecting the bore of the valve B³. Said valve is provided with a passage b^{15} , which in one position of the valve supplies gas from the passage b^{10} to the passage b^{14} , through which the pilot-burner is supplied.

The globe-support B' comprises an inner cylindrical member b^{16} , fitting snugly upon the casing b^{17} of the burner-body and slidable vertically thereon, and an upwardly-flaring member b^{18} , joined at its lower portion to the lower portion of the member b^{16} . The members b^{16} b^{18} are preferably formed integrally with each other, and the member b^{18} has an internal annular shoulder upon which is supported a screen b^{19} . The member b^{18} is provided above said screen with air-inlets b^{20} . The lower end of the cylindrical guide or casing b^{17} is provided with spiral air-admission slots b^{21} and the inner member b^{16} of the globe-support is provided beneath the screen b^{19} with slots b^{22} at right angles to the slots b^{21} . The valve B³ is provided with operating-arms b^{23} b^{24} at substantially right angles to each other. The arm b^{23} projects into the path of the globe-support, so that when the latter is drawn downwardly upon the casing b^{17} as a guide the valve is automatically operated to shut off the supply to the main burner-orifices. During the 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 chimney comprises a cylinder c , an inverted hollow frusto-conical member c' , having peripheral flanged connection with the upper end of the cylinder c and provided with
 5 a central pipe-receiving perforation, a hollow frusto-conical member c'' , having at its base a short cylindrical portion secured within the cylinder c and having its upper end located slightly below the lower end of the member
 10 c' , a hood or dome c^3 , having a perforate center receiving the pipe A and provided peripherally with a downturned flange, an upwardly-flaring flange or fixed wind-shield c^4 , having its lower end closely encircling the cylinder c
 15 and its upper end located within the lower portion of the flange of the hood, from which it is separated by a small annular space c^5 , a vertically-corrugated cylinder c^6 , of non-corrosive material, inclosing the exposed portion
 20 of the cylinder c , and an annular hood c^7 , secured to the cylinder c near its lower end and having an annular shoulder beneath which the shade C^2 is received, the lower portion of said last-named hood being spaced from the
 25 cylinder c to receive the upper end of the shade.

The upper end of the cylinder c is provided with perforations to permit passage of gases. The hood c^3 has a flat annular portion bearing
 30 upon the flange of the member c' and is removably secured thereto by screws c^8 . The hood, preferably, is of copper or bronze and has a central hollow boss receiving the pipe A, and whereat it is secured to said pipe
 35 by a set-screw c^9 . The cylinder c has a vertical slot c^{10} , and the cylinder c^6 has a registering slot. The cylinder c^6 is preferably formed by forming corrugated brass or bronze sheet metal and connecting the vertical edges
 40 thereof with a binding-strip c^{11} , having a slot c^{12} registering with the other slot mentioned. A handle c^{13} is provided with a shank working in said slots and having its inner end connected with the shield C' . At the upper end
 45 of the slots is an offset or bay affording a shoulder for supporting the shield in its elevated position.

The pilot-burner D comprises a tube supported on the base b^6 and having its upper end
 50 adjacent to the group of main burner-orifices and equipped with a tip d , having a small orifice d' , regulated by a horizontal screw d^2 . In outdoor lamps it is important to maintain a comparatively large passage to the tip of the
 55 pilot-burner and provide for adjustment of the passage at a point within the globe, where sufficient heat will be maintained to prevent the minute passage from becoming choked with water of condensation. This prevents
 60 the flame from going out, as often happens in those constructions where provision for regulation occurs at or near the base of the lamp.

It is only necessary to remark concerning the manner of use that the mantle-shield may
 65 be lowered preparatory to lowering the globe,

the globe freely receiving the shield. The branch pipe is at a sufficient distance from the axis of the chimney to be out of the zone of intense heat and yet lies within the scope of the shield C' . The construction at the upper
 70 end of the chimney is such as to prevent the operation of the lamp from being interfered with from that quarter by gusts of wind, and the construction at the lower portion of the lamp is such that while all the air necessary
 75 to perfect combustion is admitted to the lamp violent winds may be withstood without causing the lamp to go out or flicker objectionably.

The members c^3 c^4 c^7 are circumferentially corrugated, and the envelop c^6 is longitudinally corrugated. All of the exposed parts are preferably of copper, brass, or bronze, and a particularly pleasing appearance results from the construction.

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

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

1. In a lamp, the combination of a chimney-cylinder having a perforate upper end, an inner downturned hollow frusto-conical top member secured thereon and depending into said perforate end, a surmounting hood encircling said perforate end, and a pipe extending through said hood and inner top member and supporting the chimney structure, for the purpose set forth.

2. In a lamp, the combination of a chimney-cylinder having a perforate upper end, a wind-shield encircling said cylinder below its perforate portion, and a hood surmounting said cylinder and having an annular flange inclosing said wind-shield and separated therefrom
 105 by a short space, for the purpose set forth.

3. The combination of a chimney-cylinder, equipped near its upper end with an encircling wind-shield, a hood having an annular flange encompassing said wind-shield, a protecting-cylinder of non-corrosive material inclosing said first-named cylinder beneath said wind-shield, said cylinders being provided with a vertical slot, a cylindrical mantle-shield within said first-named cylinder and equipped with a
 115 handle projecting at said slot, and an annular hood encircling the lower portion of said first-named cylinder, for the purpose set forth.

4. The combination of a chimney-cylinder having a perforate upper end, a downturned cone-frustum supported on the upper end of said cylinder and provided centrally with a perforation, a hood surmounting said cylinder and having a central perforation, an upturned hollow cone-frustum within said cylinder and connected therewith beneath its perforate portion, an inner cylindrical mantle-shield, and pin-and-slot connection between said mantle-shield and said cylinder, for the purpose set forth.

5. The combination of a chimney-cylinder having a surmounting hood, an annular hood encircling the lower portion of said cylinder and having its lower portion separated therefrom by a short space, said last-named hood having an annular shoulder for receiving a shade, a shade supported beneath said annular shoulder, and a Bunsen burner and a vertically-movable globe thereon having its upper end sheltered beneath said second-named hood, for the purpose set forth.

6. The combination of a supporting-pipe having a closed lower end, a parallel non-axial branch pipe connected therewith near the lower end thereof, mantle-supports connected with said supporting-pipe, a Bunsen burner supported by said branch pipe, a vertically-movable globe supported on said burner, a chimney-cylinder having a surmounting hood with a central perforation receiving said supporting-pipe, said chimney-cylinder being fixed to said supporting-pipe, and a shade supported by said chimney, for the purpose set forth.

7. The combination of a chimney-cylinder having a vertical slot, a protecting-envelop of sheet material having its vertical edges joined by a binding-strip equipped with a slot registering with said first-named slot, a surmounting hood for said first-named cylinder, an annular hood having a flange confined by the lower end of said protecting-envelop, and a mantle-shield within said chimney-cylinder and equipped with a handle projecting through said slots, substantially as and for the purpose set forth.

8. The combination of a supporting-pipe, a burner-body connected therewith, a globe-support guide, a vertically-movable globe-support on said guide comprising an inner and outer member, the outer member being perforate in its upper portion and imperforate at its lower portion, a screen between the outer and inner members of the globe-support below the perforate portion of said outer member, and a globe resting upon said globe-support, for the purpose set forth.

9. The combination of a Bunsen burner equipped at its upper end with a plurality of burner-orifices, a tubular guide inclosing the burner-body and provided at its lower end with a plurality of perforations, a globe-support comprising an inner member equipped at its lower end with a plurality of perforations, and an outer member having a perforate upper portion and imperforate lower portion, and a screen confined between the members of said globe-support and located above the perforations of the inner member and below the perforations of the outer member of the globe-support, for the purpose set forth.

10. The combination of a burner-body equipped at its upper end with a plurality of burner-orifices, a guide-cylinder connected with said burner-body and provided at its lower end with perforations, and a globe-support comprising an inner member fitting upon said guide-cylinder and provided at its lower portion with perforations registering with the perforations of the guide-cylinder, and an outer member formed integrally with the inner member and provided at its upper portion with perforations, the junction between the outer and inner members being at the lower ends thereof, for the purpose set forth.

11. The combination of a burner-body provided at its upper end with a plurality of burner-orifices, a base detachably connected with said burner-body and equipped with a yielding catch for a globe-support, a cylindrical guide connected with said burner-body, and provided at its lower portion with perforations, and a globe-support resting upon said catch and comprising an inner member slidable upon said cylindrical guide and provided at its lower portion with perforations, and an outer member connected at its lower portion with the lower portion of said inner member, and flaring upwardly, said outer member being provided at its upper portion with perforations, for the purpose set forth.

12. In a street-lamp, the combination of a burner-body, a vertically-depressible globe-support thereon, a globe depressible therewith, and a fixed chimney equipped with a surmounting hood and a screen thereat, said globe-support comprising an inner member provided at its lower end with air-inlets, an outer member provided at its upper end with air-inlets, and an annular screen confined between said inner and outer members beneath said last-named perforations, for the purpose set forth.

13. The combination of a Bunsen burner equipped with a main burner, a gas-conduit through which gas is supplied to the mixing-chamber of said Bunsen burner, a pilot-burner having a passage of adjustable size located adjacent to the main burner and external thereto, said pilot-burner having a passage connecting at the base of the burner-body with said gas-conduit, and a valve at the base of the burner-body controlling the passage of gas to the mixer-chamber and to the lower end of said second-named passage of the pilot-burner, substantially as and for the purpose set forth.

JOHN DOORENBOS.

In presence of—

WALTER N. WINBERG,
W. B. DAVIES.