

No. 863,182.

PATENTED AUG. 13, 1907.

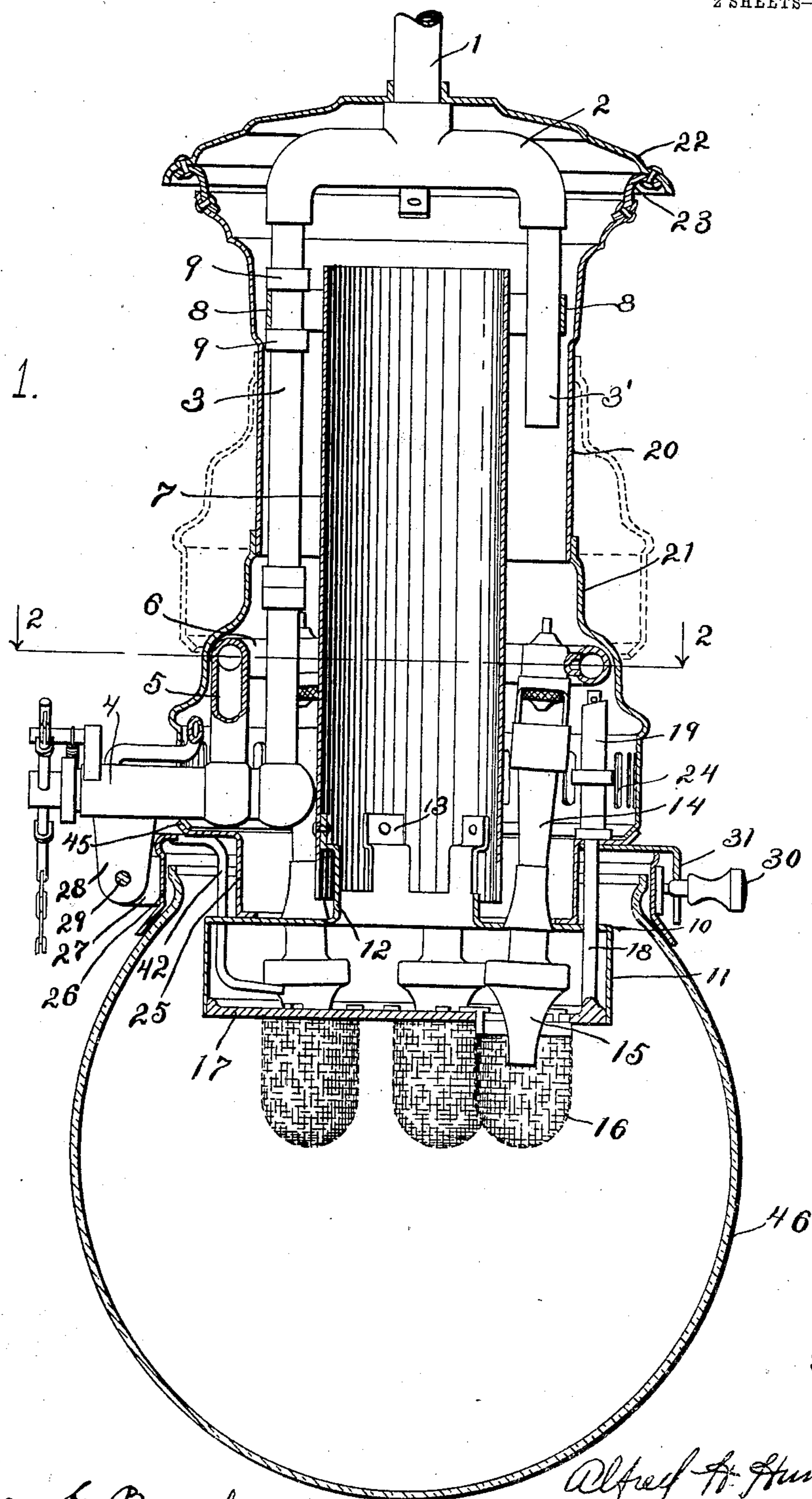
A. H. HUMPHREY.

GAS LAMP.

APPLICATION FILED JUNE 6, 1907.

2 SHEETS—SHEET 1.

Fig. 1.



Inventor

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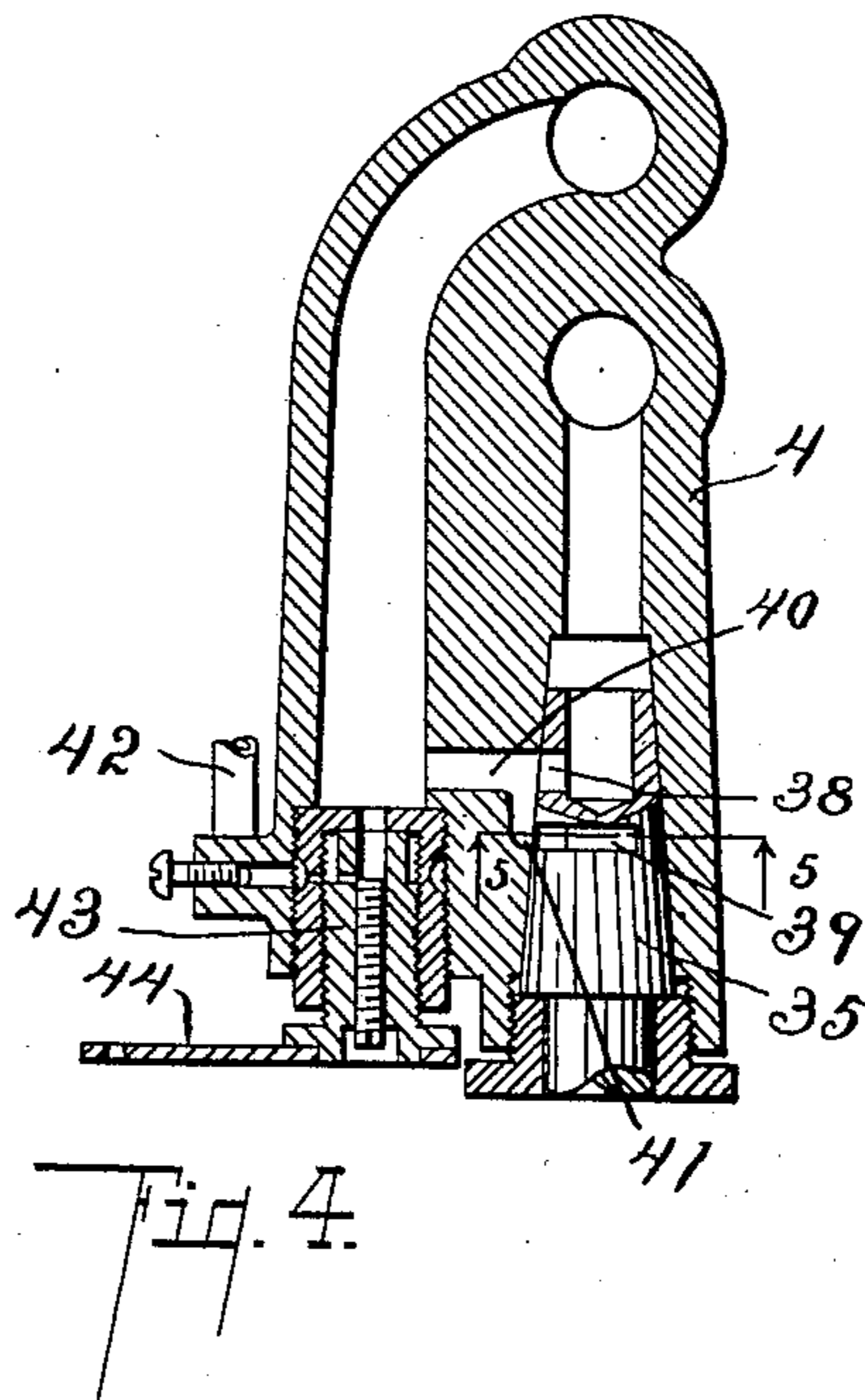
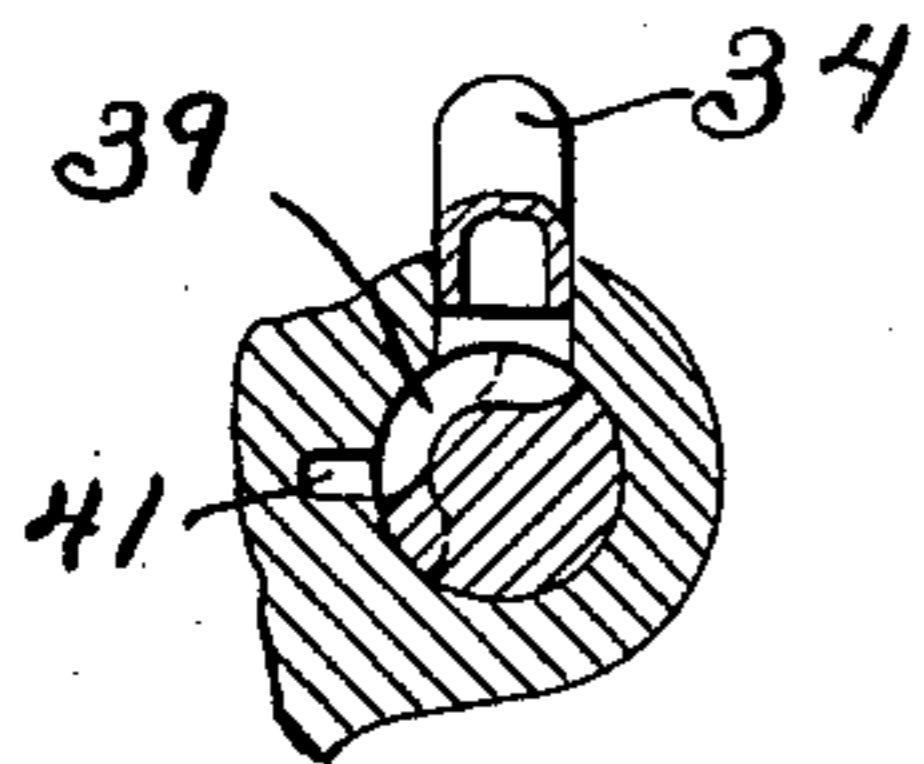
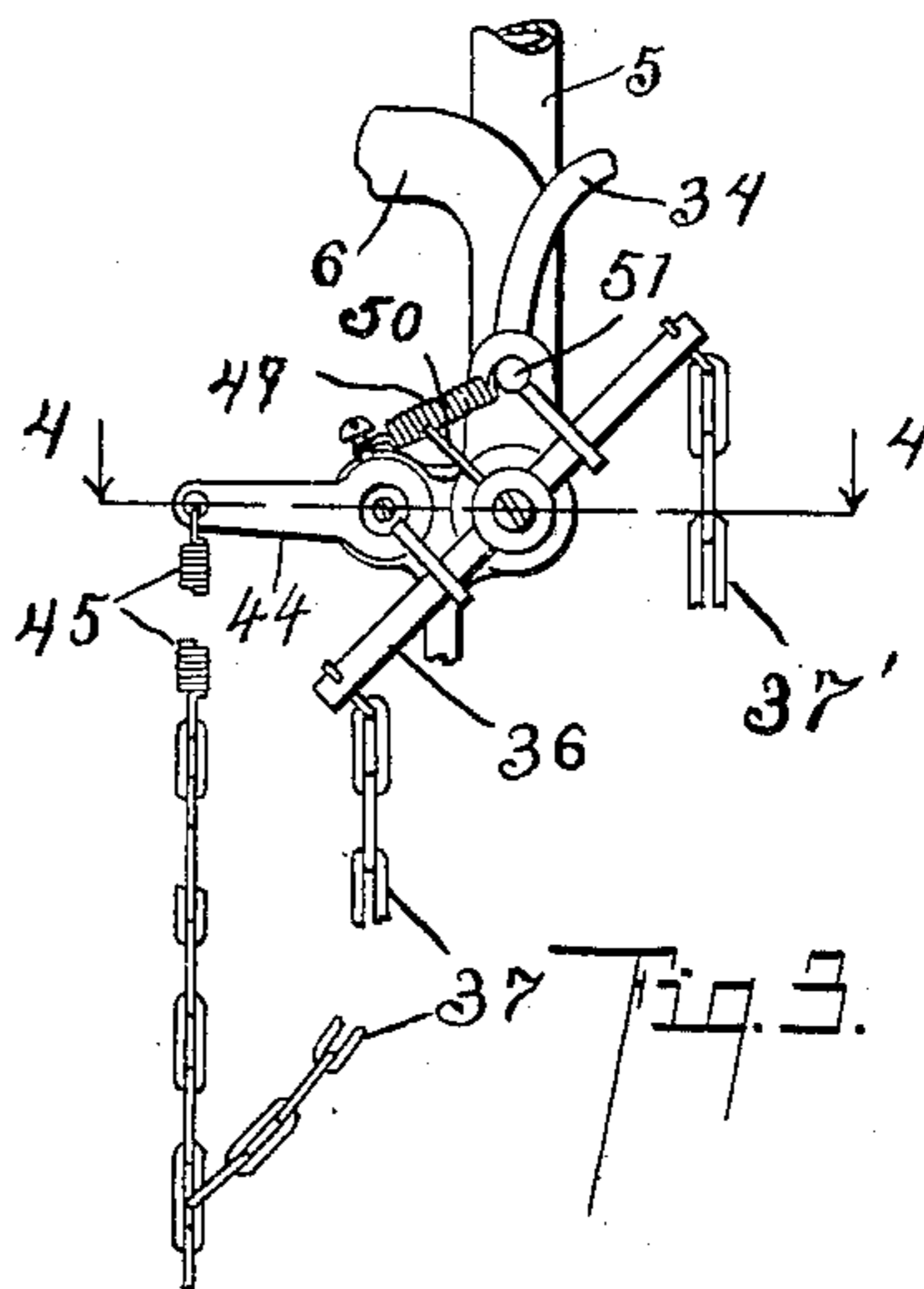
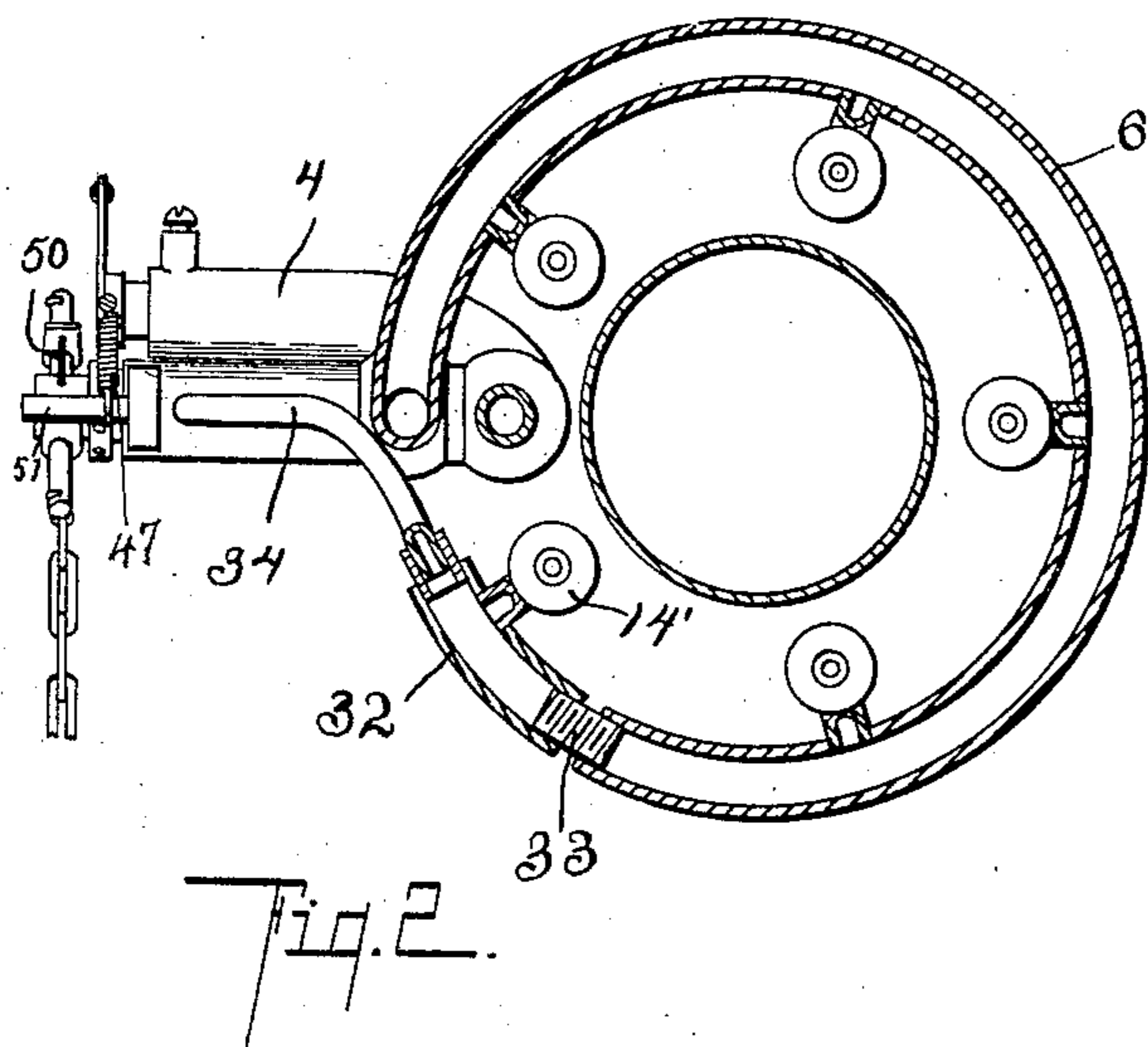
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2 SHEETS—SHEET 2.



Inventor

Alfred H. Humphrey
Chappell & Earl

Witnesses

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By

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UNITED STATES PATENT OFFICE.

ALFRED H. HUMPHREY, OF NEW YORK, N. Y.

GAS-LAMP.

No. 863,182.

Specification of Letters Patent.

Patented Aug. 13, 1907.

Application filed June 6, 1907. Serial No. 377,651.

To all whom it may concern:

Be it known that I, ALFRED H. HUMPHREY, a citizen of the United States, residing at the city of New York, county of New York, State of New York, have invented certain new and useful Improvements in Gas-Lamps, of which the following is a specification.

This invention relates to improvements in gas lamps.

It relates particularly to improvements in gas lamps of the inverted burner type, such as are shown and described in United States Letters Patent issued to me on January 15th, 1907, No. 841,323, and my application for Letters Patent filed May 15, 1907, Serial No. 373,823, and is a modification of and in some respects an improvement and an adaptation of the structures there illustrated.

The main objects of this invention are: first: to provide an improved gas lamp which is so constructed and arranged that the parts above the inverted burners are prevented from becoming heated to an undue extent; second: to provide an improved gas lamp of the inverted type which is very efficient and at the same time comparatively economical in structure; third: to provide an improved gas lamp having inverted burners in which the parts requiring adjustment or regulation or other care in the operation of the lamp are readily accessible.

Further objects, and objects relating to details of construction, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which:

Figure 1 is a central vertical section of a gas lamp embodying the features of my invention, the gas delivery pipe, the valve casing and the burners being shown in full lines; Fig. 2 is a horizontal section taken on a line corresponding to line 2—2 of Fig. 1; Fig. 3 is a detail end elevation of the valve mechanism, looking from the left of Figs. 1 and 2; Fig. 4 is an enlarged section through the valve casing and valves taken on a line corresponding to line 4—4 of Fig. 3; and Fig. 5 is a detail section taken on a line corresponding to line 5—5 of Fig. 4.

In the drawings, the sectional views are taken looking in the direction of the little arrows at the ends of the section lines, and similar characters of reference refer to similar parts throughout the several views.

Referring to the drawing, the gas delivery pipe is preferably made up of the supply pipe 1, having a T-coupling at its lower end, to which the pipe sections 3

and 3' are connected, the pipe section 3' being a dummy. At the lower end of the gas delivery pipe is a valve casing 4, which controls the delivery of gas to the gas delivery ring 6, this gas delivery ring being connected to the valve casing by the short section 5.

The chimney 7 is preferably supported from the gas delivery pipe, being connected thereto by straps 8, suitable collars as 9 being provided on the pipe for holding the straps in position thereon. At the lower end of the chimney is an outwardly-projecting flange or deflector plate 10. This deflector plate is preferably provided with a downwardly-projecting flange-like rim 11 at its outer edge, and is also preferably provided with an upwardly-projecting flange-like rim 12 about its central opening. This rim 12 projects into the lower end of the chimney. The flange or deflector 10 is preferably connected to the chimney and supported by the straps 13, which are formed on the rim 12 thereof. The deflector plate and chimney are so arranged as to provide for the passage of air from above the plate into the chimney.

The burners 14 are arranged through the flange or deflector plate 10, substantially as shown and described in my patent above referred to. The burner tips 15 are arranged below the chimney flange deflector plate and within the downwardly-projecting rim thereof. The mantles 16 therefor are preferably supported by the plate-like mantle holder 17, which is adjustably supported by the rod 18. This rod is held adjustably in position by the sleeve 19. As this mantle supporting plate and the adjustable support therefor form no part of this invention, I do not describe the same in detail herein.

The outer casing of my improved lamp is preferably made up of an upper section 20 and a base section 21, the sections being arranged to telescope on each other when it is desired to secure access to the burner valves or the parts of the burners above the deflector plate. The upper section 20 of the outer casing is preferably suspended from the deflector 22 by means of suitable straps as 23. The outer casing is open at its upper end for the outlet of the products of combustion and the heated air, the same passing out from under the deflector 22. The outer casing is preferably perforated or provided with suitable inlets as 24 at its lower end for the admission of air to the burners and also to cause a circulation through the outer casing for its proper ventilation, and for the cooling of the parts above the deflector plate. A portion of the air passing through these openings passes to the air ports of the burners to secure the proper burning mixture, and a portion is caused by the draft of the chimney to pass downwardly into the base of the chimney. This air, passing over or across the burners, cools the same in an effective manner. A portion also of this incoming air is caused

to circulate up through the outer casing outside of the draft chimney, thus effectively ventilating it and cooling the parts of the lamp. The lower section of the outer casing is preferably supported on the casing band 5 25, which is provided with an outwardly-projecting flange at its upper end on which the lower casing section 21 rests. The casing band rests upon the deflector plate or chimney flange 10 and is supported thereby. The outer casing is slotted at 45 to receive the valve casing 4. The globe, as 46, is supported by the globe-supporting band 26, which is provided with an outwardly-projecting hinge member 27. The hinge member 27 on the globe supporting band is secured to the downwardly-projecting hinge member 28 on the valve casing 4 by means of the pivot 29. The globe supporting band is held in its closed position by means of the finger pin 30, which is carried by the bracket 31. Thus supported, the globe may be swung down when it is desired to have access to the burner tips or the mantles, 10 thus making all the parts of the burners completely accessible. 20

My improvements are illustrated as applied to a lamp having a cluster or group of burners. In such a structure it is sometimes desirable that only one of the 25 burners should be in operation. To accomplish this I provide one of the burners 14' with a by-pass or independent connection to the valve. I preferably accomplish this by securing the delivery pipe section 32 to the gas delivery ring 6 by means of the threaded plug 30 33, it being threaded into the ring 6 and also into the section 32, as clearly appears in Fig. 2. This section 32 is connected by the tube or pipe 34 to the valve casing. The valve 35, which is of the rotary or globe type, is provided with two ports as 38 and 39, the port 38 35 being adapted to control the delivery of the gas to the gas delivery ring 6, and the port 39 to the delivery pipe 34. The valve port 39 is made longer than the port 38, so that after the valve has been moved far enough to close the port 38, the port 39 still remains open, as is 40 indicated in Fig. 5. This cuts off the gas from all excepting one burner 14', and on further rotation of the valve the gas is cut off from this burner. These ports 38 and 39 are preferably arranged side by side in the valve, the passage 40 in the valve casing having an extension 41 at one side to connect it to the port 39. 45 The valve 35 is preferably provided with a cross arm 36 on its stem, to which the operating chains, as 37 and 37' are connected. To indicate to the operator when the valve is in position to supply gas to the individual burner only, I provide the valve stem with a spring stop pin adapted to engage the arm 51 when the valve is in position to admit gas to the individual burner. On the continued pull on the operating chain, the stop yields sufficiently to pass under the arm, substantially the same as shown in U. S. Letters Patent, 55 No. 722,306, issued to me on March 10, 1903.

The pilot light 42 is controlled by the pilot light valve 43. The pilot light valve is provided with an arm 44 on its stem, to which the operating chain 45 is 60 connected. This operating chain is preferably connected to the valve opening chain 37, so that on the opening of the valves of the main burner valves, the pilot is opened. When the chain is released the pilot valve is closed by means of the spring 47.

65 By thus arranging the parts, the parts above the de-

flector plate are not only protected from the direct heat, which is deflected into and carried off by the chimney, but a current of air is caused to flow across the burners, thus assisting in the cooling. The air is also caused to circulate through the outer casing, which 70 effectively ventilates it and assists in cooling the parts.

By the burner connections described, all of the burners may be used, or only the single burner, as desired.

I have illustrated and described my improved gas lamp in detail in the form preferred by me on account 75 of its structural simplicity and economy and convenience in use. I am, however, aware that it is capable of considerable variation in structural details without departing from my invention, and I desire to be understood as claiming the same specifically, as illus- 80 trated, as well as broadly.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a gas lamp, the combination with a gas delivery pipe, of a chimney; a flange or deflector plate arranged at the lower end thereof, said flange or deflector plate being 85 provided with a downwardly-projecting rim at its outer edge and with a central opening, said central opening being provided with a rim projecting into said chimney, said deflector plate and chimney being arranged so as to permit the passage of air above said deflector plate into said chimney; straps on said upwardly-projecting rim on said deflector plate secured to said chimney; a plurality of inverted burners provided with valves and burner tips arranged through said deflector plate with their tips below 95 the same and within the downwardly-projecting rim thereof, and their valves above the same, said burners being connected to said gas delivery pipe; and an outer casing open at its upper end and provided with air inlets at its lower end. 100

2. In a gas lamp, the combination with a gas delivery pipe, of a chimney; a flange or deflector plate arranged at the lower end thereof, said flange or deflector plate being 105 provided with a downwardly-projecting rim at its outer edge and with a central opening, said central opening being provided with a rim projecting into said chimney, said deflector plate and chimney being arranged so as to permit the passage of air above said deflector plate into said chimney; straps on said upwardly-projecting rim of said deflector plate secured to said chimney; and a plurality of 110 inverted burners provided with valves and burner tips arranged through said deflector plate with their tips below the same and within the downwardly-projecting rim thereof, and their valves above the same, said burners being connected to said gas delivery pipe. 115

3. In a gas lamp, the combination with a gas delivery pipe, of a chimney; a flange or deflector plate arranged at the lower end thereof, said flange or deflector plate being 120 provided with a downwardly-projecting rim at its outer edge and with a central opening, said central opening being provided with a rim projecting into said chimney, said deflector plate and chimney being arranged so as to permit the passage of air above said deflector plate into said chimney; a plurality of inverted burners provided with valves and burner tips arranged through said deflector plate with 125 their tips below the same and within the downwardly-projecting rim thereof, and their valves above the same, said burners being connected to said gas delivery pipe; and an outer casing open at its upper end and provided with air inlets at its lower end. 130

4. In a gas lamp, the combination with a gas delivery pipe, of a chimney; a flange or deflector plate arranged at the lower end thereof, said flange or deflector plate being 135 provided with a downwardly-projecting rim at its outer edge and with a central opening, said central opening being provided with a rim projecting into said chimney, said deflector plate and chimney being arranged so as to permit the passage of air above said deflector plate into said chimney; and a plurality of inverted burners provided with valves and burner tips arranged through said deflector 140 plate with their tips below the same and within the down-

wardly-projecting rim thereof and their valves above the same, said burners being connected to said gas delivery pipe.

5. In a gas lamp, the combination with a gas delivery pipe, of a chimney; a flange or deflector plate arranged at the lower end thereof, said flange or deflector plate being provided with a central opening, said central opening being provided with a rim projecting into said chimney, said deflector plate and chimney being arranged so as to permit the passage of air above said deflector plate into said chimney; straps on said upwardly-projecting rim of said deflector plate secured to said chimney; a plurality of inverted burners provided with valves and burner tips arranged through said deflector plate with their tips below and their valves above the same, said burners being connected to said gas delivery pipe; and an outer casing open at its upper end and provided with air inlets at its lower end.

6. In a gas lamp, the combination with a gas delivery pipe, of a chimney; a flange or deflector plate arranged at the lower end thereof, said flange or deflector plate being provided with a central opening, said central opening being provided with a rim projecting into said chimney, said deflector plate and chimney being arranged so as to permit the passage of air above said deflector plate into said chimney; straps on said upwardly-projecting rim of said deflector plate secured to said chimney; and a plurality of inverted burners provided with valves and burner tips arranged through said deflector plate with their tips below and their valves above the same, said burners being connected to said gas delivery pipe.

7. In a gas lamp, the combination with a gas delivery pipe, of a chimney; a flange or deflector plate arranged at the lower end thereof, said flange or deflector plate being provided with a central opening, said central opening being provided with a rim projecting into said chimney, said deflector plate and chimney being arranged so as to permit the passage of air above said deflector plate into said chimney; a plurality of inverted burners provided with valves and burner tips arranged through said deflector plate with their tips below and their valves above the same, said burners being connected to said gas delivery pipe; and an outer casing open at its upper end and provided with air inlets at its lower end.

8. In a gas lamp, the combination with a gas delivery pipe, of a chimney; a flange or deflector plate arranged at the lower end thereof, said flange or deflector plate being provided with a central opening, said central opening being provided with a rim projecting into said chimney, said deflector plate and chimney being arranged so as to permit the passage of air above said deflector plate into said chimney; and a plurality of inverted burners provided with valves and burner tips arranged through said deflector plate with their tips below and their valves above the same, said burners being connected to said gas delivery pipe.

9. In a gas lamp, the combination with a gas delivery pipe, of a chimney; a flange or deflector plate arranged at the lower end thereof, said flange or deflector plate being provided with a downwardly-projecting rim at its outer edge, there being air inlets provided for the admission of air into said chimney from above said deflector plate; a plurality of inverted burners provided with valves and burner tips arranged through said deflector plate with their tips below the same and within the downwardly-projecting rim thereof, and their valves above the same, said burners being connected to said gas delivery pipe; and an outer casing arranged to inclose the parts of said burners above said deflector plate, said outer casing being provided with air inlets at its lower end and being adapted to permit the passage of air from its upper end.

10. In a gas lamp, the combination with a gas delivery pipe, of a chimney; a flange or deflector plate arranged at the lower end thereof, there being air inlets provided for the admission of air into said chimney from above said deflector plate; a plurality of inverted burners arranged through said deflector plate with their tips below and their valves above the same, said burners being connected to said gas delivery pipe; and an outer casing

arranged to inclose the parts of said burners above said deflector plate, said outer casing being provided with air inlets at its lower end and being adapted to permit the passage of air from its upper end.

11. In a gas lamp, the combination with a gas delivery pipe, of a chimney; a flange or deflector plate arranged at the lower end thereof, said flange or deflector plate being provided with a downwardly-projecting rim at its outer edge, there being air inlets provided for the admission of air into said chimney from above said deflector plate; and a plurality of inverted burners provided with valves and burner tips arranged through said deflector plate with their tips below the same and within the downwardly-projecting rim thereof, and their valves above the same, said burners being connected to said gas delivery pipe.

12. In a gas lamp, the combination with a gas delivery pipe, of a chimney; a flange or deflector plate arranged at the lower end thereof, there being air inlets provided for the admission of air into said chimney from above said deflector plate; and a plurality of inverted burners arranged through said deflector plate with their tips below and their valves above the same, said burners being connected to said gas delivery pipe.

13. In a gas lamp, the combination with the gas delivery pipe, of a chimney; a flange or deflector plate arranged at the lower end thereof, there being an inlet provided for the admission of air into said chimney from above said deflector plate; an inverted burner arranged through said deflector plate and connected to said gas delivery pipe, whereby the products of combustion are directed to and carried away by said chimney and a current of air is caused to flow across the parts of the burner above said deflector plate; and an outer casing arranged to inclose the parts of said burner above said deflector plate, said outer casing being provided with air inlets at its lower end and being adapted to permit the passage of air from its upper end.

14. In a gas lamp, the combination with the gas delivery pipe, of a chimney; a flange or deflector plate arranged at the lower end thereof, there being an inlet provided for the admission of air into said chimney from above said deflector plate; and an inverted burner arranged through said deflector plate and connected to said gas delivery pipe, whereby the products of combustion are directed to and carried away by said chimney and a current of air is caused to flow across the parts of the burner above said deflector plate.

15. In a gas lamp, the combination with the gas delivery pipe, of a chimney; a flange or deflector plate arranged at the lower end thereof, there being an inlet provided for the admission of air into said chimney from above said deflector plate; an inverted burner arranged through said deflector plate and connected to said gas delivery pipe; and an outer casing arranged to inclose the parts of said burner above said deflector plate, said outer casing being provided with air inlets at its lower end and being adapted to permit the passage of air from its upper end.

16. In a gas lamp, the combination with the gas delivery pipe, of a chimney; a flange or deflector plate arranged at the lower end thereof, there being an inlet provided for the admission of air into said chimney from above said deflector plate; and an inverted burner arranged through said deflector plate and connected to said gas delivery pipe.

17. In a gas lamp, the combination with the draft chimney, of a deflector member arranged at the lower end of said chimney; an inverted burner arranged through said deflector member; and an outer casing surrounding the parts of said burner above said deflector member, said chimney being in communication with the said casing, whereby the products of combustion are carried away from the burner and a draft of air created through said casing.

18. In a gas lamp, the combination with a gas delivery pipe, of a valve casing at the lower end thereof; a gas delivery ring connected to said gas delivery pipe; a chimney arranged through said gas delivery ring and connected to said gas delivery pipe, whereby it is supported, said chimney having a flange or deflector plate at its lower end; a plurality of inverted burners arranged through said de-

deflector plate, said burners being connected to said gas delivery ring; a deflector arranged above said chimney; an outer casing made up of telescoping sections, the upper section being secured to said deflector; a casing band on which the lower casing section is adapted to rest arranged on said deflector plate, said lower casing section being slotted to receive said valve casing; a globe; and a globe supporting band hinged to said valve casing.

19. In a gas lamp, the combination with a gas delivery pipe; a gas delivery ring connected to said gas delivery pipe; a chimney arranged through said gas delivery ring and connected to said gas delivery pipe, whereby it is supported, said chimney having a flange or deflector plate at its lower end; a plurality of inverted burners arranged through said deflector plate, said burners being connected to said gas delivery ring; a deflector arranged above said chimney; an outer casing made up of telescoping sections, the upper section being secured to said deflector; and a casing band on which the lower casing section is adapted to rest arranged on said deflector plate, said lower casing section being slotted to receive said valve casing.

20. In a gas lamp, the combination with a gas delivery pipe, of a valve casing at the lower end thereof; a gas delivery ring connected to said gas delivery pipe; a chimney arranged through said gas delivery ring and connected to said gas delivery pipe, whereby it is supported, said chimney having a flange or deflector plate at its lower end; a plurality of inverted burners arranged through said deflector plate, said burners being connected to said gas delivery ring; a deflector arranged above said chimney; an outer casing made up of telescoping sections, the upper section being secured to said deflector; a globe; and a globe supporting band hinged to said valve casing.

21. In a gas lamp, the combination with a gas delivery pipe; a gas delivery ring connected to said gas delivery pipe; a chimney arranged through said gas delivery ring and connected to said gas delivery pipe, whereby it is supported, said chimney having a flange or deflector plate at its lower end; a plurality of inverted burners arranged through said deflector plate, said burners being connected to said gas delivery ring; a deflector arranged above said chimney; an outer casing made up of telescoping sections, the upper section being secured to said deflector.

22. In a gas lamp, the combination with a gas delivery pipe, of a valve casing at the lower end thereof; a chimney connected to said gas delivery pipe, whereby it is supported, said chimney having a flange or deflector plate at its lower end; an inverted burner arranged through said deflector plate; a deflector arranged above said chimney; an outer casing made up of telescoping sections, the upper section being secured to said deflector; a casing band on which the lower casing section is adapted to rest arranged on said deflector plate, said lower casing section being slotted to receive said valve casing; a globe; and a globe supporting band hinged to said valve casing.

23. In a gas lamp, the combination with a gas delivery pipe, of a chimney connected to said gas delivery pipe, whereby it is supported, said chimney having a flange or deflector plate at its lower end; an inverted burner arranged through said deflector plate; a deflector arranged

above said chimney; an outer casing made up of telescoping sections, the upper section being secured to said deflector; and a casing band on which the lower casing section is adapted to rest arranged on said deflector plate.

24. In a gas lamp, the combination with a gas delivery pipe, of a valve casing at the lower end thereof; a chimney connected to said gas delivery pipe, whereby it is supported, said chimney having a flange or deflector plate at its lower end; an inverted burner arranged through said deflector plate; a deflector arranged above said chimney; an outer casing made up of telescoping sections, the upper section being secured to said deflector; a globe; and a globe supporting band hinged to said valve casing.

25. In a gas lamp, the combination with a gas delivery pipe, of a chimney connected to said gas delivery pipe, whereby it is supported, said chimney having a flange or deflector plate at its lower end; an inverted burner arranged through said deflector plate; a deflector arranged above said chimney; and an outer casing made up of telescoping sections, the upper section being secured to said deflector.

26. In a gas lamp, the combination with a gas delivery pipe, of a valve casing at the lower end thereof; a chimney connected to said gas delivery pipe, whereby it is supported; a burner connected to said gas delivery pipe; an outer casing made up of telescoping sections, the lower casing section being slotted to receive said valve casing; a globe; and a globe supporting band hinged to said valve casing.

27. In a gas lamp, the combination with a gas delivery pipe, of a valve casing at the lower end thereof; a chimney connected to said gas delivery pipe, whereby it is supported; a burner connected to said gas delivery pipe; a globe; and a globe supporting band hinged to said valve casing.

28. In a gas lamp, the combination with a gas delivery pipe, of a valve casing at the lower end thereof; a chimney connected to said gas delivery pipe, whereby it is supported; a burner connected to said gas delivery pipe; and an outer casing made up of telescoping sections.

29. In a gas lamp, the combination with a gas delivery pipe, of a chimney having a flange or deflector plate at its lower end; an inverted burner provided with a burner tip and valve arranged through said deflector plate with its tip below and its valve above the same; and an outer casing made up of telescoping sections adapted to inclose the parts of said burner above said deflector plate, for the purpose specified.

30. In a gas lamp, the combination with the gas delivery pipe, of a chimney; a burner provided with a burner tip and valve arranged with its valve outside of said chimney; and a casing made up of telescoping sections, adapted to inclose the parts of said burner on the outside of said chimney, for the purpose specified.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

ALFRED H. HUMPHREY. [L. S.]

Witnesses:

PHILIP J. LEVI,
D. SCHWARZ.