

No. 648,294.

Patented Apr. 24, 1900.

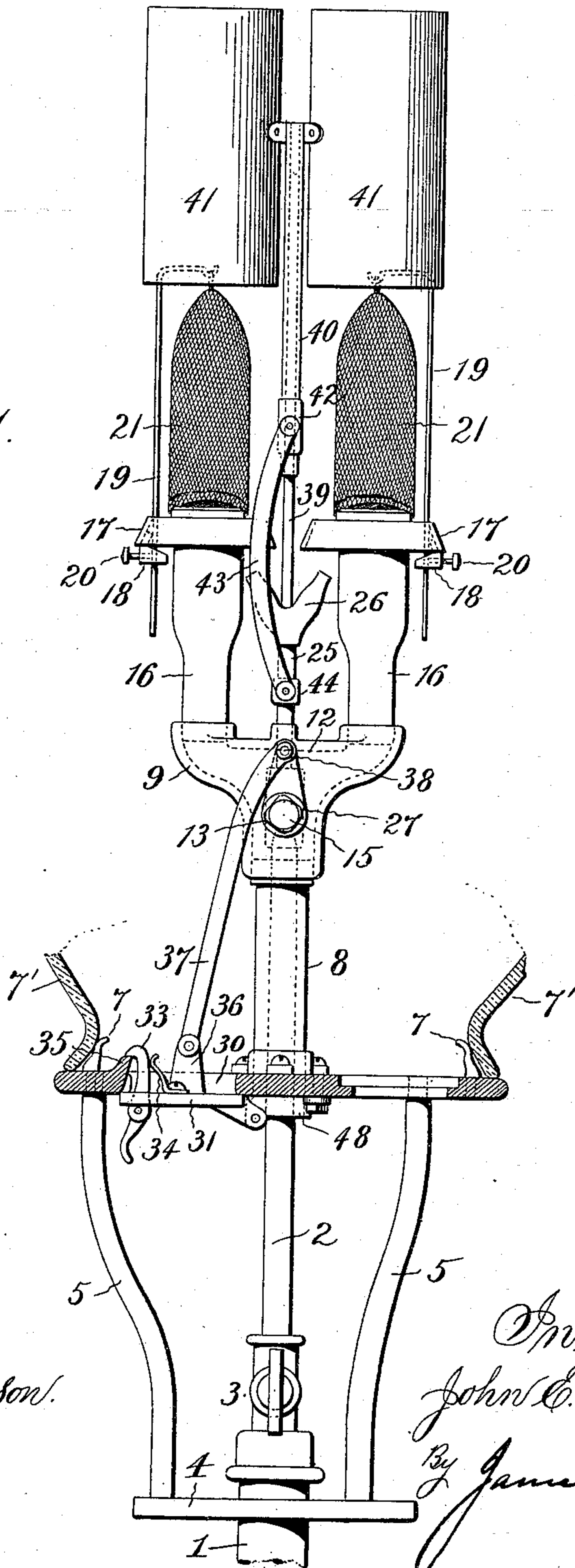
J. E. PRUNTY.
INCANDESCENT GAS STREET LAMP.

(No Model.)

(Application filed July 10, 1899.)

3 Sheets—Sheet 1.

Fig. 1.



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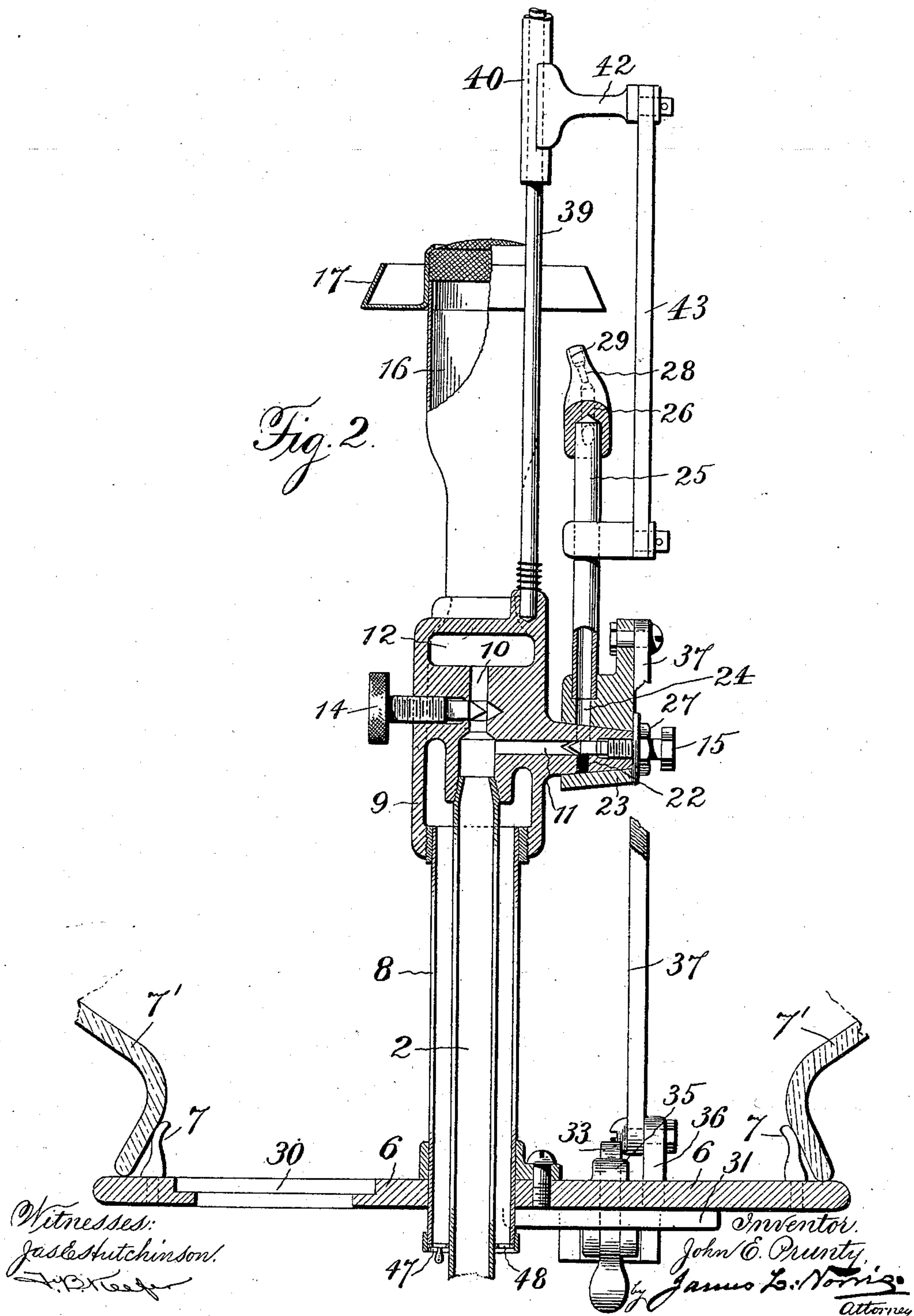
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3 Sheets—Sheet 3.

Fig. 3.

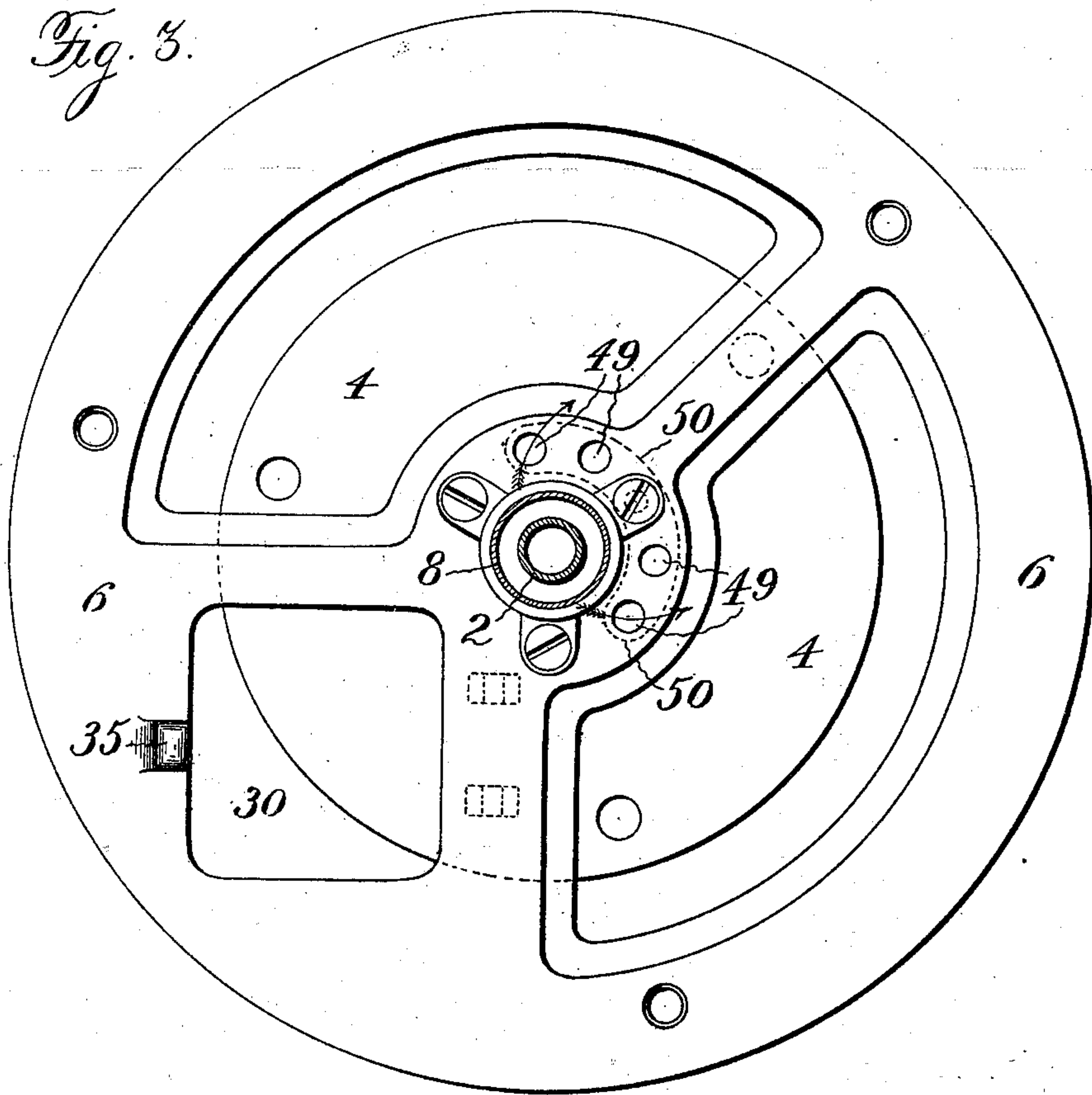


Fig. 4.

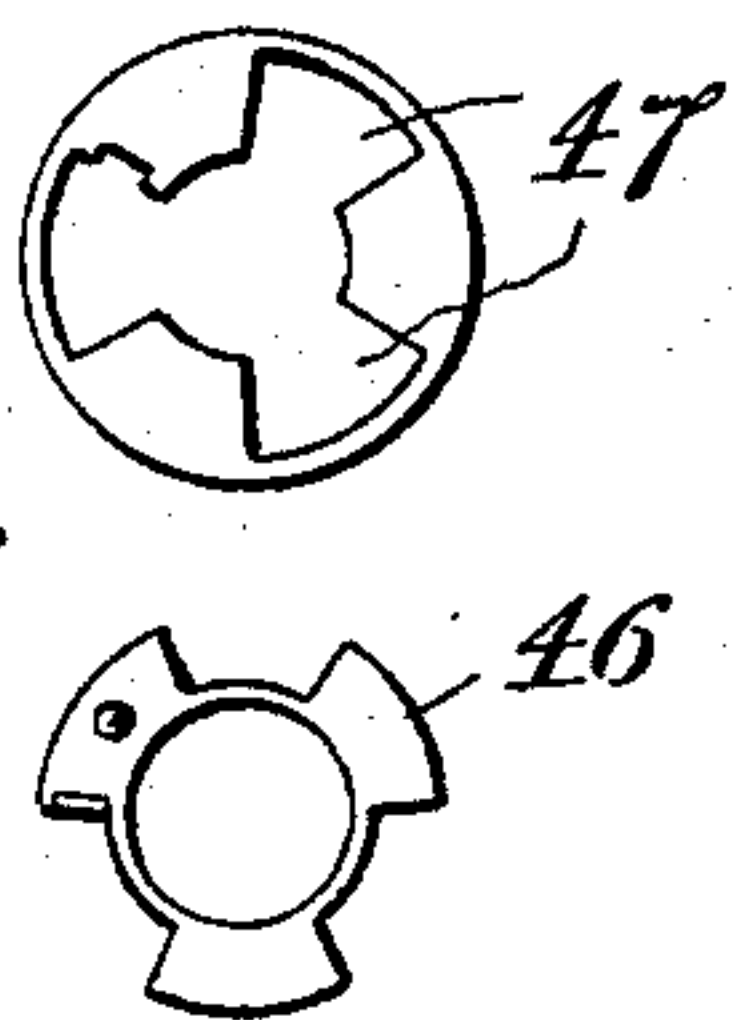
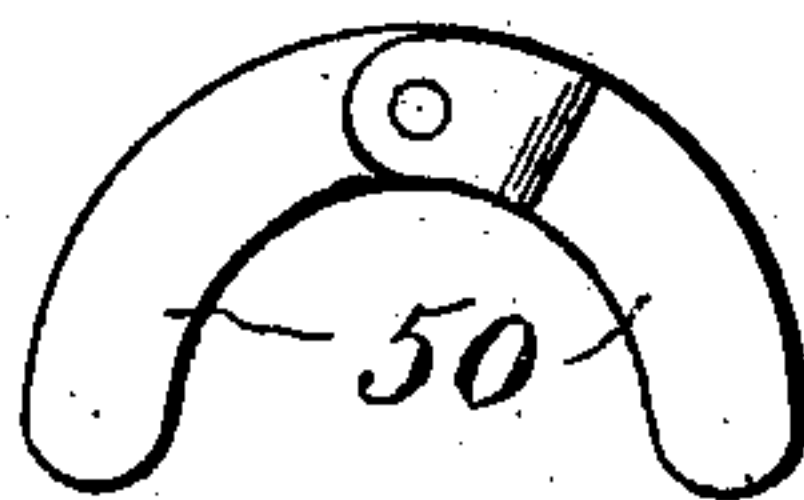


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN E. PRUNTY, OF BALTIMORE, MARYLAND.

INCANDESCENT GAS STREET-LAMP.

SPECIFICATION forming part of Letters Patent No. 648,294, dated April 24, 1900.

Application filed July 10, 1899. Serial No. 723,396. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. PRUNTY, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented new and useful Improvements in Incandescent Gas Street-Lamps, of which the following is a specification.

This invention relates to improvements in incandescent gas street-lamps, and is in the nature of an improvement on the lamp for which I obtained United States Letters Patent on the 23d day of May, 1899, No. 625,698. In the said Letters Patent I show and describe a lamp provided with an oscillating pilot-burner for lighting the gas-burner, said pilot-burner being connected with the door in the bottom of the lamp in such manner that when the door is opened the pilot-burner is lowered into convenient position for being lighted, and when the door is closed the pilot-burner is swung up and lights the gas-burner, the arrangement being such that the door must of necessity be closed in order to light the gas-burner.

One object of the present invention is to combine with such a lamp a protective hood that is adapted to descend and inclose and protect the mantle when the door is opened and to provide means whereby when the door is closed to swing the pilot-burner up into position to light the gas-burner the hood will be raised and held elevated.

It has also for its object to provide means for preventing shock to the mantle-support when the hood is lowered.

It has for a further object to adapt the gas-lighting burner to lighting a multiple burner.

It has for a still further object to provide novel means for admitting atmospheric air and mixing it with the gas before the latter escapes from the burner and to provide novel means for controlling the admission of air to the lamp-globe, and, finally, it has for its object to improve and simplify this class of lamps generally.

To these ends my invention consists in the features and in the construction, combination, and arrangement of parts hereinafter described, and particularly pointed out in the claims following the description, reference being had to the accompanying draw-

ings, forming a part of this specification, wherein—

Figure 1 is a view in elevation, partly in section, of my improved gas-lamp. Fig. 2 is a similar view taken at a right angle to Fig. 1. Fig. 3 is a bottom plan view of the base or bottom of the lamp. Fig. 4 is a detail view illustrating the means for regulating the admission of air to the mixing-chamber, and Fig. 5 is a similar view of the damper-plate for regulating the admission of air to the interior of the globe.

Referring to the drawings, the numeral 1 indicates a lamp-post provided with a gas-supply pipe 2, having a stop-cock 3, as usual. Fitted on the upper end of the lamp-post is a spider 4, to which are rigidly secured three upright arms 5, which at their upper ends are fitted into a metallic disk 6, forming the bottom of the lamp. Screwed into the disk 6 near its periphery are a plurality of spring-fingers 7, over which is adapted to be sprung the lower end of a globe 7, which forms the sides or inclosing casing of the lamp and is surmounted at its upper end with a hood (not shown) of usual or any preferred construction. Fitted centrally in the bottom 6 is an air-tube 8, the lower end of which communicates with the atmosphere, and the upper end is fitted in a valve-casing 9. The gas-supply pipe 2 passes centrally up through the air-tube 8 and is fitted in the valve-casing and communicates with passages 10 and 11, leading, respectively, to an air and gas mixing chamber 12 formed in said casing, and to a conical nipple 13, projecting from one side of the casing. A threaded valve 14 is screwed into the casing and controls the passage of the gas to the mixing-chamber 12, while a similar valve 15 is screwed into the end of the conical nipple 13 and controls the passage of the gas to the pilot-burner, as will hereinafter be explained. Fitted in the upper end of the valve-casing and communicating with the chamber 12 are two gas-burners 16 of well-known construction, about the upper ends of which are secured by arms 17^a or other suitable supports frusto-conical annuli 17, between which and the tops of the burners there is a space, as shown, and for the purpose hereinafter explained. Riveted to each of the annuli or

rings 17 is a vertically-perforated lug 18, through which passes a rod 19, that is held in the lug by a set-screw 20 and from the upper bent end of which is suspended a mantle 21 in the usual manner. An aperture 22 is formed in one side of the nipple 13 and communicates with the gas-passage 11. Rotatably fitted on the nipple is a sleeve 23, having formed therein a port 24, adapted to be thrown into and out of register with the aperture 22 in the nipple by turning the sleeve, and fitted in said sleeve and communicating with the port 24 is a small tube 25, on the outer or free end of which is fixed a duplex pilot-burner comprising two gas-burners 26, formed in a single integral casting and diverging from one another, as shown, whereby the pilot-burners are caused to approach the upper ends of the gas-burners 16 when the pilot-burners are swung up into position. The relative arrangement of the aperture 22 and port 24 is such that when the tube 25 is upright the supply of gas to the pilot-burners will be shut off, as the said aperture and port will be thrown out of register with each other; but when the tube 25 is swung from a vertical position the port and aperture will register, thus permitting the gas to flow from the gas-supply pipe 2 to the pilot-burners 26. Screwed over the threaded stem of the valve 15 is a lock-nut 27, by means of which the said valve may be locked in its adjusted position, and said nut also operates to hold the sleeve 23 in place on the nipple. Each of the pilot-burners is provided with a contracted discharge-port or jet-opening 28, which at its outer end is enlarged, as at 29. As the gas escapes from the jet-opening and is ignited it burns in the enlarged opening 29, the walls of which act as a hood or guard to protect the lighted jet and prevent its being blown out. Formed in the bottom 6 of the lamp is an aperture 30, which is normally closed by a door 31, hinged to one side at the bottom. In a slot 32 in the opposite edge of the door is pivoted a hooked catch 33, against the rear edge of the upper end of which bears the free end of a spring 34, attached to the door. When the door is closed, the hooked catch is caused to engage a beveled lug 35 on the bottom 6 and lock the door in its closed position. Cast integrally with the door is an upwardly-projecting lug 36, to which is pivoted one end of a link 37, the other end of which is pivoted to a lug 38, formed on the sleeve 23. When the door is opened, the link 37 rotates the sleeve 23 and swings the duplex pilot-burner down and over the aperture 30. When in this position, gas is supplied to the duplex pilot-burner in the manner before explained, and by inserting a lighted match through the aperture the pilot-burners are lit. The door is next swung upward to close the aperture 30 and is automatically fastened by the spring-catch, and in its upward movement it swings the pilot-burners upward to their raised position. Just before the pilot-burners come

to a state of rest they pass under the frusto-conical rings 17, which operate to guide or direct the jets from the pilot-burners to the gas-burners 16 and ignite the gas escaping from the latter.

Fitted at its lower end to the valve-casing 9 is a vertical rod 39, on which is adapted to slide a sleeve 40, to the upper end of which latter are attached two cylindrical hoods 41, each open at its opposite ends and preferably formed of thin sheet-aluminium, which besides being very light will not tarnish. The hoods are so arranged that each will be in alignment with one of the gas-burners and are of such size that when lowered they will inclose the mantles 21 without touching the latter. Projecting laterally from the sleeve 40 is an arm 42, to which is pivoted one end of a link 43, the other of which is pivoted to a sleeve 44 on the tube 25, carrying the duplex pilot-burner. It will be obvious that when the door is opened to swing down the pilot-burner the hoods 41, through the medium of the link 43 and sleeve 40, will be lowered over the mantles and protect the latter from sudden gusts or blasts of air, and when the door is closed to swing up the pilot-burners to light the gas-burners the hoods will be raised and held elevated above the mantles. In practice the parts should be so adjusted that the lower ends of the hoods when lowered shall not quite come in contact with the rings 17, and in order to effectually prevent said hoods from communicating any jar or shock to the mantles in their descent I dispose a coiled spring 45 on the lower end of the rod 39, which spring rests on the valve-casing 9 and absorbs the impact of the sleeve 40 when the latter is drawn down.

As the gas emerges from the port 10 into the mixing-chamber it meets a quantity of atmospheric air, which enters said chamber through the tube 8, and the air and gas are caused to mix and commingle before escaping to the burners, whereby the latter generate a very intense heat, thereby raising the mantles to a high state of incandescence. The quantity of air supplied to the mixing-chamber is regulated and controlled by a rotatable damper 46, sleeved upon the supply-pipe 2, immediately beneath the lower end of the air-tube 8, and adapted to be turned to cover and uncover to a greater or less extent a plurality of apertures 47, formed in an annular plate 48, fixed on the lower end of the air-tube 8.

For admitting air to the interior of the globe and controlling its admission I form a plurality of perforations 49 in the bottom 6 of the lamp, which perforations are disposed in the arc of a circle about the air-tube 8, and to the under side of the bottom 6 and over said perforations are pivoted the overlapping ends of two segment-shaped damper-plates 50. It is apparent that by turning the damper-plates 50 about their pivot the perforations 49 will be covered or uncovered to

a greater or less extent, and the quantity of air admitted to the globe thereby regulated.

I have illustrated the invention as applied to a duplex-burner lamp; but it will be obvious that it may be applied to a single-burner lamp or to a lamp having more than two burners.

The mantles used in incandescent lamps are extremely fragile and are easily broken—as, for example, when the lamp is opened for lighting or for any other purpose the wind or weather is apt to rupture the mantle, and when opened for cleaning, repairing, or adjusting the mantle is liable to be brushed against or otherwise disturbed and be thus injured or destroyed. Moreover, practice has proven that the doors of the lamps are frequently left open through inadvertence or carelessness on the part of attendants, resulting in an unnecessary and large loss of the mantles. By means of my invention, however, such results are entirely avoided, as it is absolutely impossible to open the lamp without lowering the hood about the mantle, and as the door must, of necessity, be closed before the burners are lit it is equally impossible to light the lamp without raising the hood, thereby leaving nothing to chance, inadvertence, or carelessness and supplying an absolutely-certain safeguard for the mantles.

Having described my invention, what I claim is—

1. In an incandescent gas-lamp, the combination with a gas-burner and its mantle, of an apertured bottom arranged below the burner, a globe or chimney supported on the bottom, a hinged door closing the aperture in the bottom, a vertically-movable hood arranged above the mantle, and means actuated by the door for lowering the hood about the mantle when the door is opened and raising said hood when the door is closed, substantially as described.

2. In an incandescent gas-lamp, the combination with a gas-burner and its mantle, of an apertured bottom arranged below the burner, a globe or chimney supported on the bottom, a hinged door closing the aperture in the bottom, a vertically-movable hood supported above the mantle, means actuated by the door for raising and lowering the hood, and a cushion for absorbing the impact of the hood when the latter is lowered about the mantle, substantially as described.

3. In an incandescent gas-lamp, the combination with a gas-burner and its mantle, of an apertured bottom arranged below the burner, a globe or chimney supported on the bottom, a hinged door closing the aperture in the bottom, a fixed rod extending vertically alongside the mantle, a sleeve vertically movable on said rod and having attached to its upper end a cylindrical hood, and a link pivotally connected to said sleeve and connected with the door whereby the hood is raised and lowered when the door is closed and opened, substantially as described.

4. In an incandescent gas-lamp, the combination with a gas-burner and its mantle, of an apertured bottom arranged below the burner, a globe or chimney supported on the bottom, a hinged door closing the aperture in the bottom, a rod fitted at its lower end in a fixed support and extending alongside the mantle, a sleeve vertically movable on said rod and having attached to its upper end a cylindrical hood normally resting above the mantle, a link pivotally connected to said sleeve and connected with the door whereby the hood is raised and lowered when the door is closed and opened, a coiled spring disposed about the lower end of the said rod and operating to receive the impact of the sleeve when the hood is lowered, substantially as described.

5. In an incandescent gas-lamp, the combination with a gas-burner and its mantle and a pipe for supplying gas to the burner, of an apertured bottom arranged below the burner, a globe or chimney supported on the bottom, a hinged door closing the aperture in the bottom, a pivoted pilot-burner connected with the gas-pipe and arranged to be swung downward from a vertical position into proximity to the said apertures, means actuated by the door for swinging said pilot-burner into both its lowered and raised positions, a rod supported alongside the mantles, a sleeve movable on said rod and supporting a cylindrical hood above the mantle, and a link pivotally connected at its ends to the sleeve and pilot-burner respectively, substantially as described and for the purpose specified.

6. In an incandescent gas-lamp, the combination with a gas-burner and its mantle and a gas-pipe for supplying gas to the burner, of an apertured base arranged below the burner, a globe or chimney supported on the base, a hinged door closing the aperture in the base, a pivoted pilot-burner connected with the gas-pipe and arranged to be swung downward from a vertical position into proximity to the said aperture, a vertically-movable hood arranged above the mantle, and means actuated by the said door for simultaneously swinging said pilot-burner and hood into their lowered and raised positions, substantially as described and for the purpose specified.

7. In an incandescent gas-lamp, the combination with a gas-supply pipe and a base or bottom supported thereon, of a valve-casing fitted on the upper end of the gas-pipe and provided with a mixing-chamber, a pilot-burner connected to and communicating with the interior of the valve-casing, a valve for controlling the admission of gas from the valve-casing to the mixing-chamber, an air-tube surrounding the gas-supply pipe, said tube being fitted at its lower end in a central aperture in the base or bottom and communicating at its upper end with the mixing-chamber, means for controlling the admission of air to the lower end of said tube, a gas-burner communicating with the mixing-chamber, and a globe or chimney supported

on the base or bottom, substantially as described.

8. In an incandescent gas-lamp, the combination with a gas-supply pipe and a base or
5 bottom supported thereon, of a gas-burner arranged on the supply-pipe, a mantle supported above the burner, a globe or chimney supported on the base or bottom, said base or bottom being provided with a plurality of
10 perforations arranged in the arc of a circle about the gas-supply pipe, and two segment-shaped dampers pivoted at their adjacent

ends to the base or bottom and over said perforations, whereby the admission of air to the interior of the globe or chimney may be 15 controlled, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN E. PRUNTY.

Witnesses:

JAMES L. NORRIS,
GEO. W. REA.