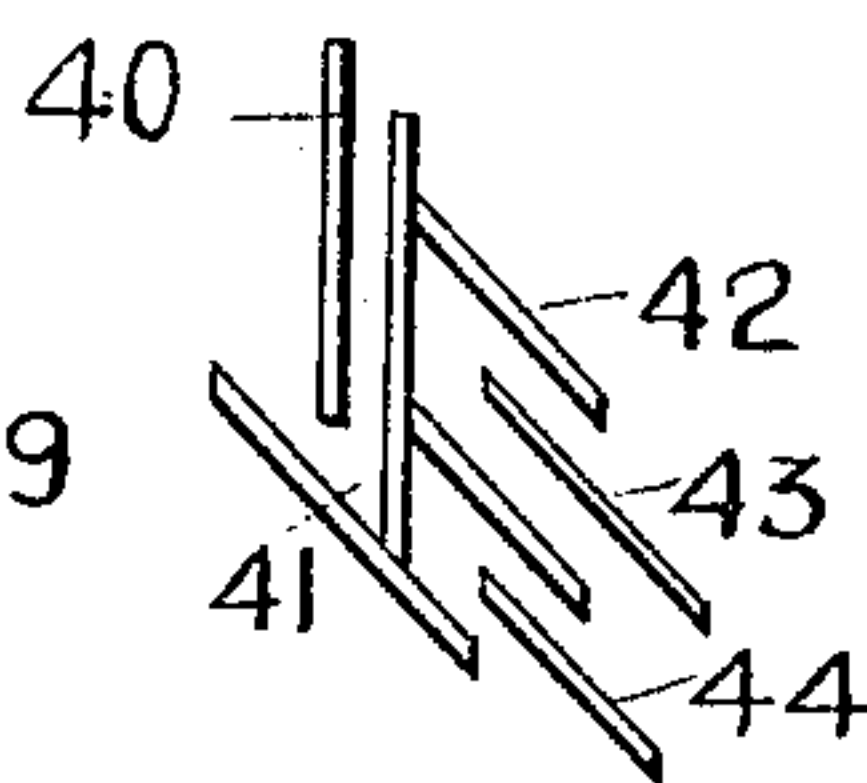
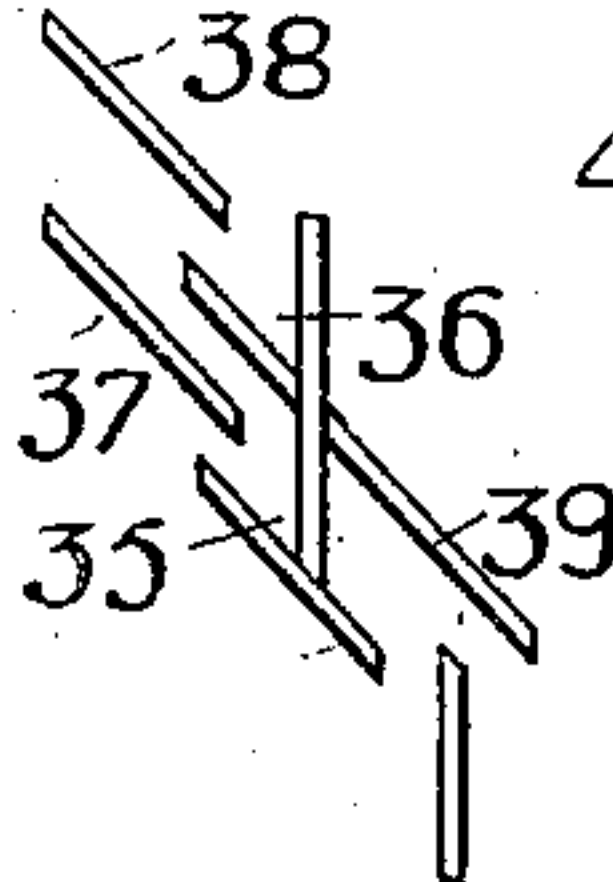
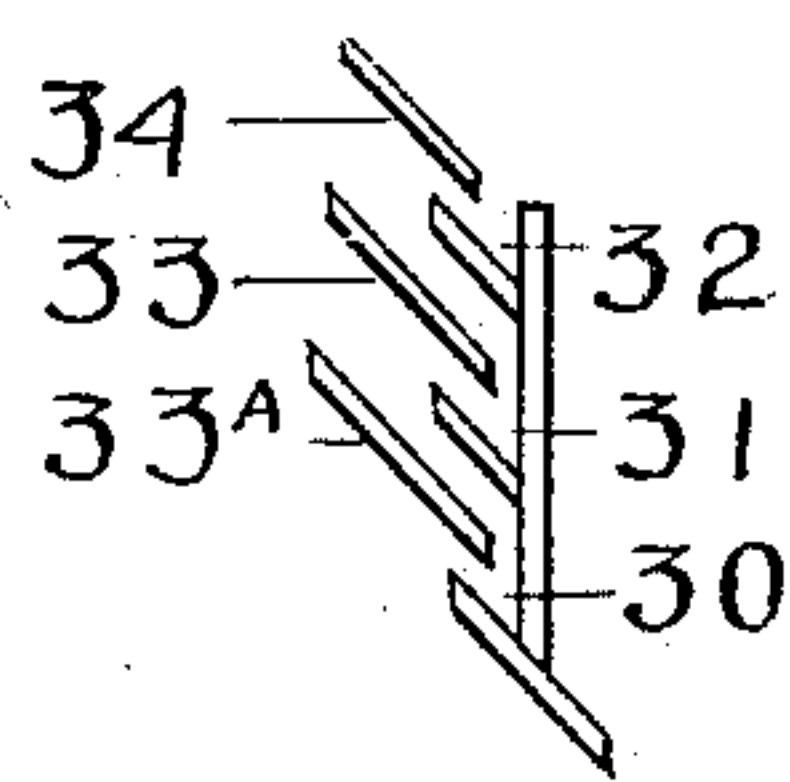
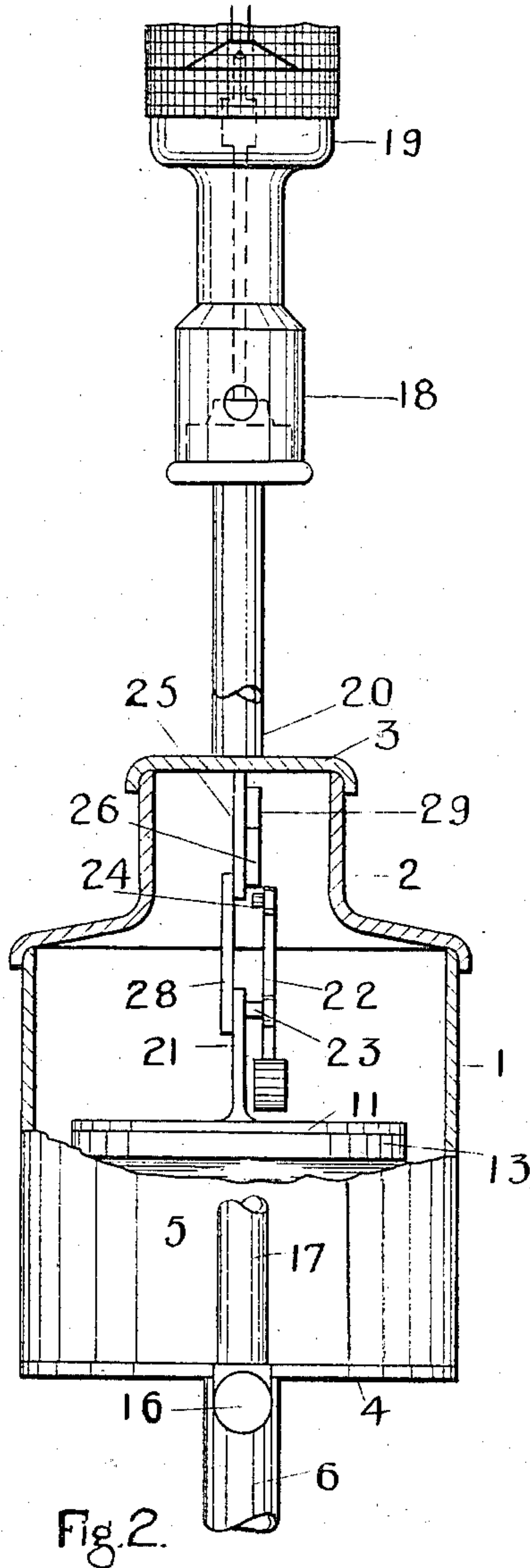
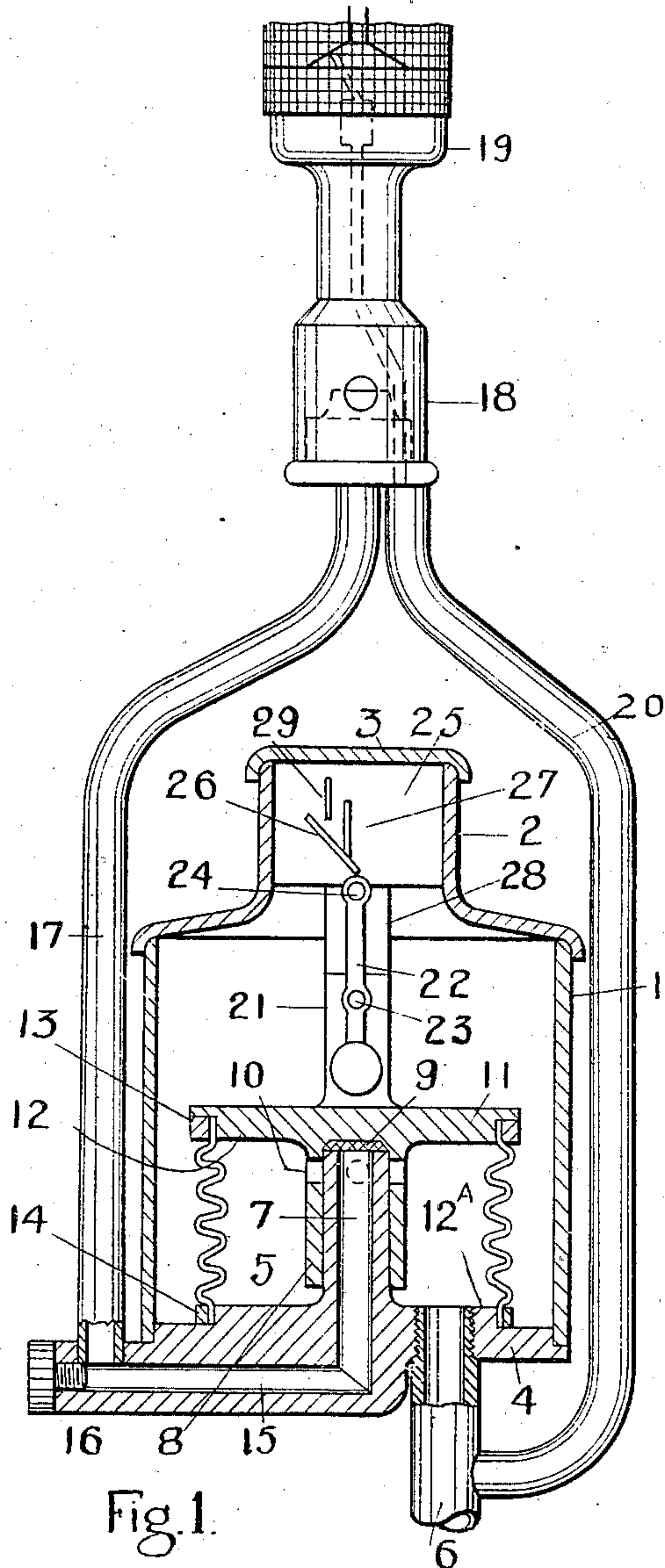


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 LIGHTING AND EXTINGUISHING DEVICE FOR STREET LAMPS.
 APPLICATION FILED FEB. 19, 1909.

966,379.

Patented Aug. 2, 1910.



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LIGHTING AND EXTINGUISHING DEVICE FOR STREET-LAMPS.

966,379.

Specification of Letters Patent.

Patented Aug. 2, 1910.

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To all whom it may concern:

Be it known that I, ARTHUR JOHN BEDFORD, of 33 William street, Melbourne, in the State of Victoria, Commonwealth of Australia, a subject of the King of Great Britain and Ireland, have invented certain new and useful Improvements in Lighting and Extinguishing Devices for Street-Lamps, of which the following is a specification.

My present invention relates to a device for automatically lighting from a pilot light, and extinguishing street gas lamps controllable from a central station or gas works where gas regulating governors are employed.

In carrying out my invention I employ a flexible gas holder provided with a diaphragm and also a gas supply and cut off valve, which are operated conjointly by certain gradations of gas pressure for the admission of gas to the burner for lighting between sunset and midnight, and thereafter move under a reduced pressure for lighting from midnight to daylight until such pressure has been further increased for the purpose of freeing the valve of the device, and finally again reduced for cutting off the gas supply to the street lamp burner at daylight. And further, in the invention herein described and claimed means are also provided for suspending the flexible gas holder with the supply and cut off valve in certain positions, in order that all of the street gas lamps may remain lighted under certain gas pressures, or be extinguished simultaneously, or a certain number of lamps may be left lighted after other lamps have been extinguished.

Other novel features are hereinafter described and claimed.

My invention will be better understood upon reference to the accompanying sheet of drawings, in which like characters denote like parts.

Figure 1 is a central sectional elevation of the various parts comprising my device shown connected with an ordinary incandescent gas mantle burner and a gas supply pipe. Fig. 2 is a part sectional and external elevation of Fig. 1 taken at right angles thereto. In each of these views the flexible diaphragm is shown collapsed and the supply of gas to the street lamp shut off. Figs. 3, and 4 and 5, are diagrammatic views of three additional forms of segments and recesses with guide ribs in various positions

for use in connection with my device, so that it may be used on gas lamps located in a second, and also a third district.

Referring to the drawings, Figs. 1 and 2, (1) denotes a tubular metal casing forming the compartment in which the various parts of my invention are disposed. The casing is provided with a bell shaped cover (2) on which is placed a removable loose cap (3) to allow of easy access to the interior of device. A disk (4) formed with two shouldered bosses comprises the bottom of the casing and that of a flexible gas holder (5) which is contained within said casing and is supplied with gas from a supply pipe (6) the inner end of which is suitably secured in a hole formed in said bottom.

Upon a gas outlet pipe (7) integrally forming part of the bottom cover (4) is slidably socketed the cylindrical valve (8) depending from and formed integrally with the underside of the diaphragm (11) which is of sufficient weight to fall by gravity and close down upon the outlet pipe with a minimum pressure. (10) represents inlet ports provided in said valve to admit gas from the gas holder to the outlet pipe (7). Against the inner face of valve (8) I place a leather disk (9) to render it gas tight when seated upon the top end of said outlet pipe. The diaphragm (11) as also the bottom (4) have each a projecting boss (12) and (12^a) upon which the ends of the flexible gas holder are tightly held by the slip rings (13) and (14). The outlet pipe (7) communicates with the gas passage (15) of the radial rib of said bottom (4). The outer end of this passage (15) is screw threaded to receive the milled headed screw plug (16) which is easily removable to permit the brushing out of any foreign matter that may accumulate within said passage. A screw threaded hole is provided in the outer end portion of said rib to receive the threaded end of the gas conducting pipe (17) to communicate with said gas passage and the Bunsen bell (18) of the burner (19). A pilot light tube (20) has its lower end communicating with the gas supply pipe (6), while its upper end terminates at the ignition point of the burner (19). A stem (21) upon the topside of diaphragm carries a counter-weighted arm (22) pivoted at (23) to normally assume a vertical position. A pin (24) is projected from said arm, and located above this pin, upon a vertical guide

plate (25), is a V shaped segment having two legs (26) and (27), one longer than the other. A guide arm (28) projected from said stem (21) engages the said guide plate (25) so that as the diaphragm (11) rises and falls with the cylindrical valve (8) it will not cant sidewise. The guide plate (25) is suitably slid into vertical grooves formed in the inner walls of the cover (2).

A guide rib (29) is also secured to said plate (25) so that the counter-weighted arm pin (24) will be guided in and out of the recess of the segment according to the gas pressure applied to the gas holder.

The novel features previously referred to relate to the different forms of segments and recesses with guide ribs therefor shown at Figs. 3, 4 and 5, for use in connection with my device when fixed on street gas lamps located in three different districts, one form for each district. In this case all lamps are lighted simultaneously but extinguished first in one district and consecutively in the others. For instance, for the simultaneous lighting of all the lamps in the districts the gas holder of each device would be expanded at a pressure of say forty-five tenths in order to open the valve (8) and lift up the counterweighted arm (22) for placing the pin (24) in each of the recesses (30), (31), and (32), (35) and (36) and (41) of the V shaped segments in Figs. 3, 4 and 5 respectively. As each engagement of the pin (24) takes place with these recesses the gas holder is collapsed with a minimum gas pressure of eighteen tenths. On increased pressure being applied the counter-weighted arm pin (24) is guided upwardly by the guide ribs (33^A), (33), (34), in Fig. 3 for the first district, while (37) and (38) serve for the second, and guide rib (40) for the third district. After the counter-weighted arm pin (24) passes over the top of the vertical leg of each form of segment illustrated, the extinguishing of the street gas lamps takes place. For this purpose the maximum gas pressure is decreased in order that the arm (22) will fall angularly as the pin (24) moves into, and consecutively engages with the recesses of the inverted V shaped segments formed by the guide ribs (39), (42), (43), and (44), while said arm (22) finally assumes the normal or starting position shown at Figs. 1 and 2.

For operating my invention shown at Figs. 1 and 2, I introduce to the gas holder a gas pressure of say forty-five tenths of an inch from a central station or gas works, to expand the flexible gas holder which lifts the cylindrical valve (8) until the holes (10) are clear above the gas outlet pipe (7), thereby allowing the gas to pass through the holes (10), outlet pipe (7) and the passage

(15), thence to the conducting pipe (17) and to the burner, while the counter-weighted arm simultaneously moves angularly to place the pin (24) at the upper end of long leg (26) of said segment to the "first position."

When the gas pressure is reduced to the minimum of eighteen tenths the counter-weighted arm and diaphragm fall with the gas holder to a suspended or "second position" leaving the pin (24) engaging the segmental recess formed by the two legs (26) and (27) while the gas is at constant working pressure, thereby preventing the cylindrical valve (8) shutting off the supply of gas to the burner. On increased pressure being applied to the gasholder the latter expands and lifts up the arm (22) so that the pin (24) will be guided by the rib (29) out of the segmental recess, and over the other leg (27) of said segment to the "third position." On the gas pressure being reduced the counter-weighted arm (22) carrying said pin (24) falls to its "normal" or "starting" position as shown at Figs. 1 and 2. When the pressure has been reduced as aforesaid the flexible gas holder slackens and allows said cylindrical valve to immediately descend and press upon and close the open end of the outlet pipe (7), thereby cutting off the gas supply to the street lamp burner.

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

In a device for automatically lighting from a pilot light, and extinguishing street gas lamps, by variations of gas pressure, a flexible gas holder contained within a tubular metal casing and provided with a weighted diaphragm adapted to open or close a cylindrical valve depending therefrom and slidably socketed upon a gas outlet pipe, a counter-weighted arm pivotally mounted on a stem projected from said weighted diaphragm and having a projecting pin upon said arm to engage a V shaped segment disposed above said flexible gas holder, a gas outlet pipe projected into the flexible gas holder to communicate with a gas passage in the bottom of said tubular casing provided with a screw plug to permit of the brushing out of any foreign matter contained in said passage, as substantially described and as shown.

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

ARTHUR JOHN BEDFORD.

Witnesses:

ALBERT E. S. SWANSON,
CHARLES HARKETT.