

O. H. HINDS.
GAS LIGHTING AND EXTINGUISHING APPARATUS.
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911,009.

Patented Jan. 26, 1909.
2 SHEETS—SHEET 1.

Fig. 1.

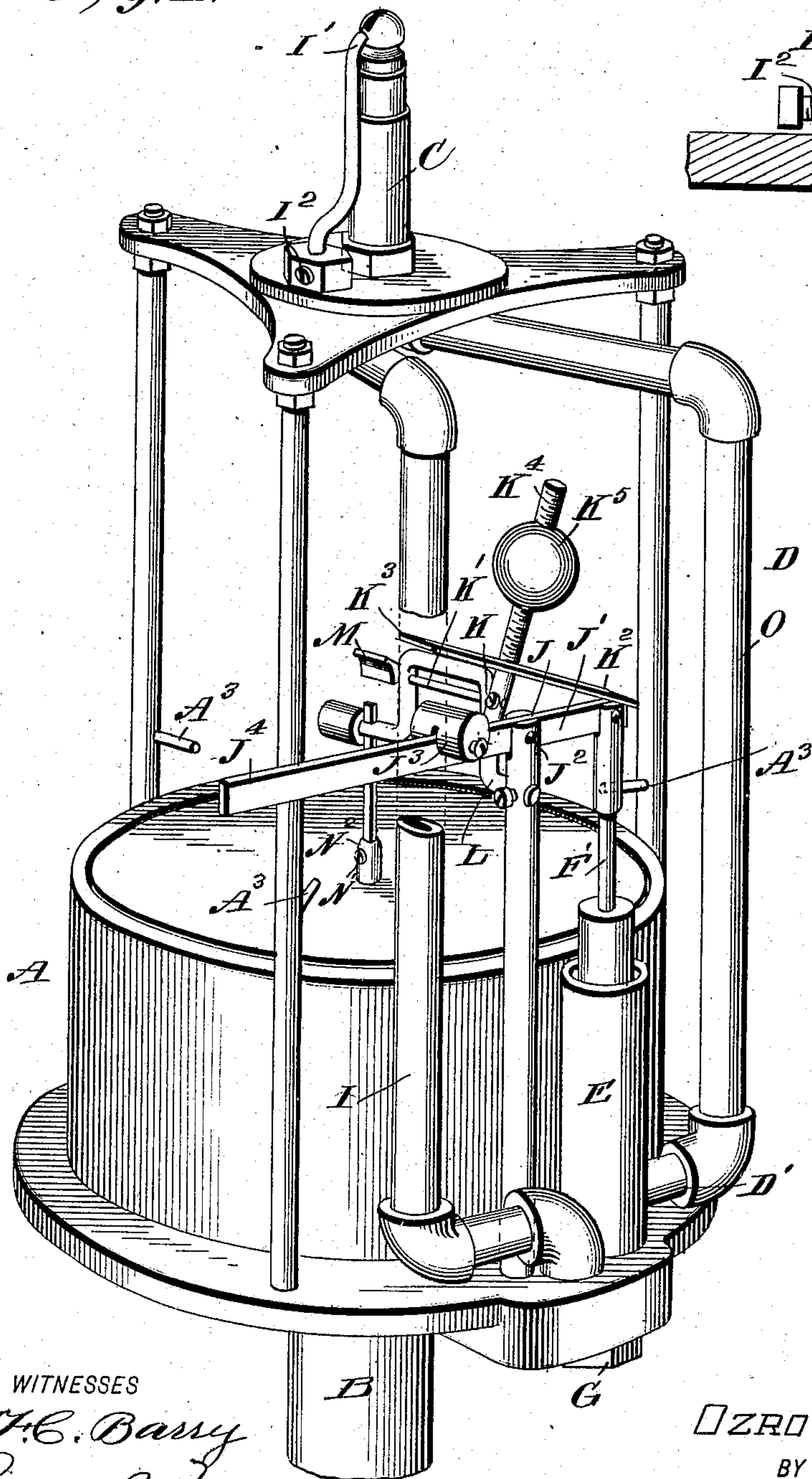
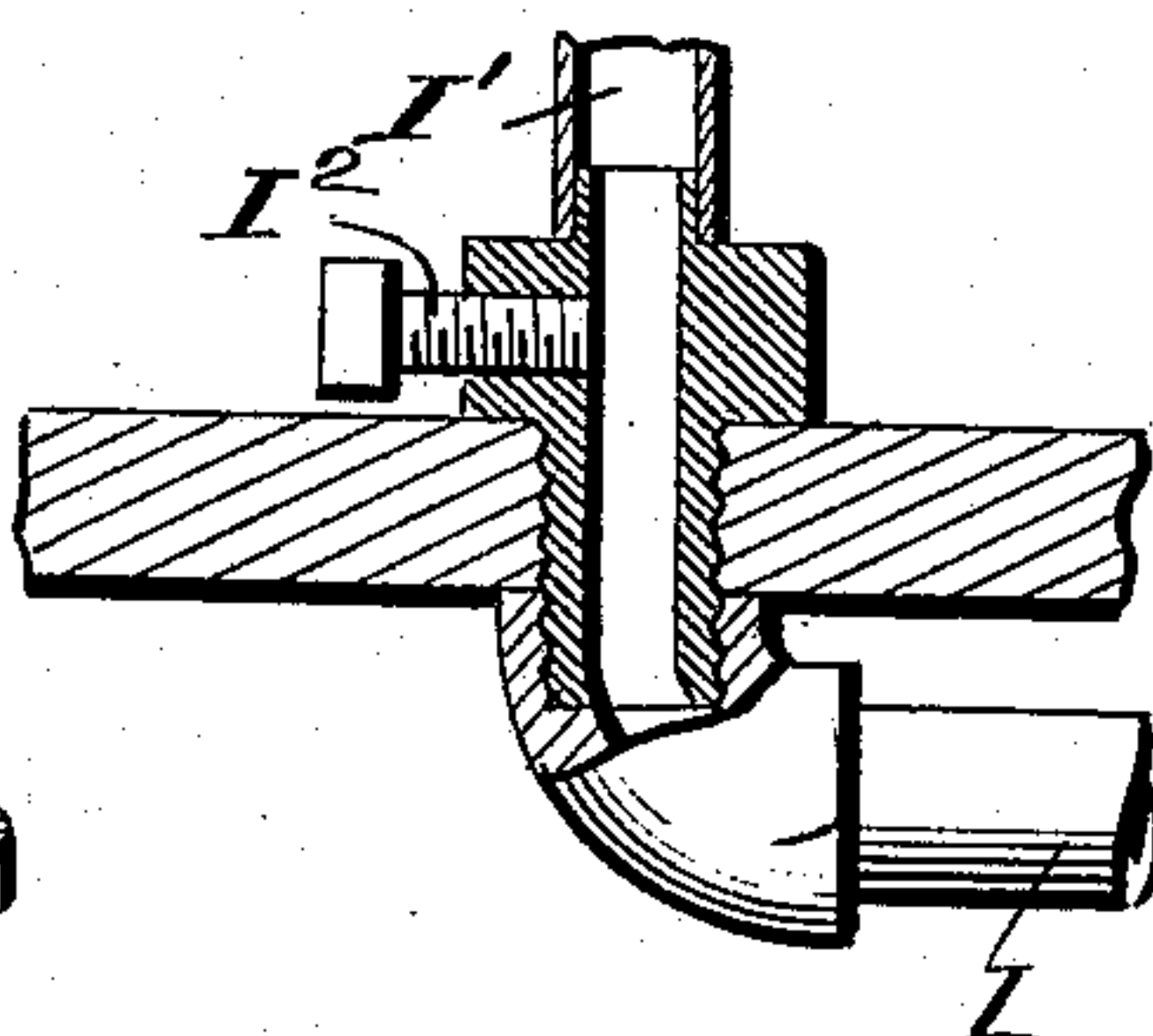


Fig. 5.

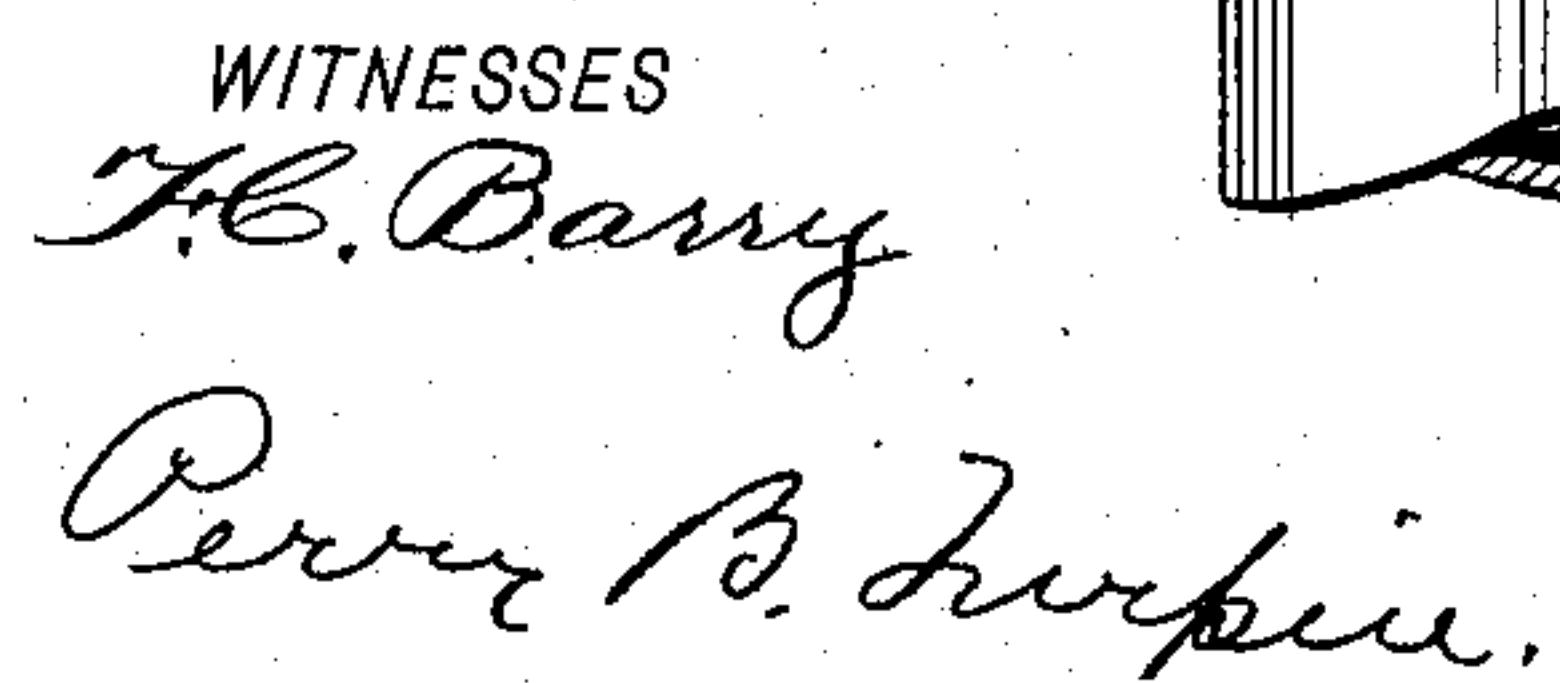


WITNESSES
J. E. Barry
Perry B. Turpin.

INVENTOR
OZRO H. HINDS
BY *Munn & Co.*
ATTORNEYS

911,009.

2 SHEETS—SHEET 2.



INVENTOR
OZRO H. HINDS
BY *Munn & Co.*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

OZRO H. HINDS, OF LE MARS, IOWA.

GAS LIGHTING AND EXTINGUISHING APPARATUS.

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To all whom it may concern:

Be it known that I, OZRO H. HINDS, a citizen of the United States, and a resident of Le Mars, in the county of Plymouth and State of Iowa, have invented certain new and useful Improvements in Gas Lighting and Extinguishing Apparatus, of which the following is a specification.

This invention is an improvement in apparatus for lighting and extinguishing gas; and consists in certain novel constructions and combinations of parts as will be hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of an apparatus embodying my invention. Fig. 2 is a vertical longitudinal section thereof. Figs. 3 and 4 are detail views illustrating the shifting rod and abutment in different positions. Fig. 5 is a detail view showing the regulating device for the pilot light, and Fig. 6 shows a modified form of controlling valve.

By my invention I seek to provide a novel construction whereby a temporary increase of pressure in the gas supply pipe or main may operate to open or close the supply valve leading to the burner or burners whereby the burner may be lighted or extinguished by the opening or closing of its supply valve.

In carrying out the invention I employ a pressure operated device A in connection with the supply pipe or main B. This pressure operated device may be of any suitable well known form such as a bellows, or a gasometer as shown in Figs. 1 and 2, and in which a movable part A' is caused to rise by increase of pressure in the supply pipe and permitted to fall when such pressure is reduced. The gasometer shown has its dome A, mercury sealed and is sufficiently weighted to overcome the normal gas pressure and to stand normally in the lowered position shown in Figs. 1 and 2, stops A³ being provided to limit the upward movement of the dome when operated by the temporary increase of pressure in the supply pipe or main B. This temporary increase of pressure may be effected by means of a "booster" of any ordinary type or other suitable means for increasing the pressure in the main so that by producing such temporary increased pressure the gasometer dome will be lifted from its normal position to operate the devices connected with the valve as presently more fully described.

The burner C has a pipe D connecting at D' with the valve chamber E, said valve

chamber communicating through a port E' and passage E² with the gas space A⁴ of the gasometer, and the valve chamber is provided immediately below the valve F with a plug G, which may be removed to permit the valve to be lowered out of the valve chamber E so it can be conveniently and thoroughly cleaned whenever desired. The valve is mercury sealed at H and manifestly the form of the valve may be modified and in addition to being mercury sealed at H¹⁰, as shown in Fig. 6, the valve F¹¹, as shown in said figure, may also be mercury sealed when closed and arranged to open out of the mercury as will be understood from Fig. 6 of the drawing.

The pipe I leading to the pilot I' is in constant communication with the gas supply so that the pilot light burns constantly. This pilot light may be regulated by a screw I², as shown in Figs. 1 and 5 of the drawings.

The valve F has its stem F' connected with one arm J' of a lever J, the latter being pivoted at J² and suitably counterbalanced at J³ by a weight movable along the arm J⁴ of the lever J. By rocking this lever J the valve F can be opened and closed. To effect this rocking of the lever J I provide what for convenience of reference I term the operating rocker K, having a shaft K' journaled in a supporting bracket L, arms K² and K³ which operate respectively upon the arms J' and J⁴ of the lever J, and the rocker is also provided with an upwardly projecting rod K⁴ on which a weight K⁵ is adjustably mounted by means of threads so it can be adjusted in and out to operate properly in adapting the apparatus for different gas pressures, it thus aiding the tilting of the lever J by the bearing of the arms K² and K³ thereon in the operation of the invention.

The shaft K' is provided with what for convenience of reference I term the abutment M, which is fixed to and rocks with the shaft K' and may therefore be termed a rocking abutment. This rocking abutment M has the opposite faces M' converging toward the meeting angle M¹², which latter is thrown past the center in its different positions as shown in Figs. 3 and 4 and as more fully described hereinafter.

Near their upper edges the faces M' of the abutment merge in downwardly facing shoulders M², which are engaged by the shifting rod presently described when near the end of its upper stroke and thus aid in completing the desired movement of the rocking abut-

ment to open or close the valve F according to the position of the abutment when the pressure operated device is operated to lift the shifting rod.

5 The shifting rod N is preferably a spring bar moving between its ends through a guide L' which may be supplied by the bracket L, and the said rod N is arranged in alinement with the center of the abutment M and
10 moves at its upper end when adjusted upwardly along one or the other of the faces M' of the said abutment according to the position of the abutment when the shifting rod moves from below into engagement there-
15 with.

The rod N is held by a screw N' adjustably in a socket N² on the moving part A' of the pressure operated device, and the operation of the apparatus will be readily understood
20 from the foregoing description and what follows.

Referring to Figs. 1 and 2 it will be noticed that the movable part A' of the pressure regulated device is in its lowermost position,
25 or that position it occupies when the normal pressure is on. If now the valve F should be in the position shown in Fig. 2, the gas would pass to the burner C and the latter would be burning. To extinguish the light it is only
30 necessary to temporarily increase the pressure in the supply pipe B to a sufficient extent to lift the dome of the gasometer A, which would lift the shifting rod N to cause its upper end to engage with the face M' of
35 the abutment M, crossing the line of motion of said rod N, and the rod by its continued upward movement would rock the abutment to the opposite position and thus tilt the rocker K from the position shown in Fig. 1 in
40 which its arm K² bears upon and depresses the arm J' of the lever J, to a position in which the arm K³ of the rocker will bear upon and depress the arm J⁴ of the lever J, thus closing the valve F upon its seat E' and shut-
45 ting off the supply of gas to the burner C, thus extinguishing the latter. When the temporary increase of pressure is released from the supply pipe B, the gasometer will fall without affecting the position of the rock-
50 ing abutment. Then when it is desired to relight the burner C it is only necessary to again temporarily increase the pressure in the supply pipe B to lift the gasometer and thus operate through the shifting rod N to
55 readjust the rocker K to the position shown in Fig. 1, opening the valve F as shown in Fig. 2 and permitting gas again to flow to the burner.

The construction is simple, easily operated
60 and can be relied on in practical operation to light any series of lights on a common main, it being understood that ordinarily one of the improved devices is located at each lamp throughout the series and that the tem-
65 porary increase of pressure may operate the

several pressure operated devices throughout the series.

It will be understood that my invention is especially designed for street lighting wherein a series of lamps are arranged on a main or
70 supply pipe, and in this use of the invention one of the lighting and extinguishing devices as before described, is provided at each lamp.

It will be also understood that the con-
75 struction of the rocking abutment with the two faces at an inclined angle to each other to rock past the center for operation by the shifting rod, is an important feature of the invention, and when applied as described se-
80 cures the operation of the valve in a positive forcible manner.

I claim—

1. An apparatus substantially as herein described, comprising a valve, a lever piv-
85 oted between its ends and having one arm connected with the valve, a rocker above the said lever and having arms extending over and adapted to engage their respective arms of the lever, the said rocker having an up-
90 wardly projecting rod and a weight adjustable along the same, an abutment connected with the rocker and having the opposite faces converging toward their meeting edge, the
95 said meeting edge rocking past the center of the abutment, and a gasometer and a spring rod carried by the dome thereof and engaging with the faces of the abutment, substantially
as and for the purposes set forth.

2. In an apparatus substantially as de-
100 scribed, the combination of a burner supply pipe, a valve controlling the same, a pressure operated device, a rocking abutment having faces at an angle to each other, intermediate
105 devices between said abutment and the valve, and a spring rod carried by the pressure operated device and held rigid at one end and having its other or free end spring-
110 ing into position to engage with one or the other of the faces of the abutment, substan-
tially as set forth.

3. The combination of an abutment hav-
115 ing sloping faces and shoulders at the upper end thereof, means for yieldingly holding the abutment in its different positions, a valve, intermediate
120 devices between the abutment and valve, and a shifter engaging the abutment and consisting of a spring rod below the abutment and having its upper end free and
125 engaging the abutment and springing into position to engage with the faces thereof.

4. In an apparatus substantially as de-
130 scribed, the combination of a burner supply pipe, a valve controlling the same, a rocking abutment having faces at an angle to each
135 other, a lever for holding said abutment in its different positions, intermediate devices between the abutment and the valve where-
140 by the rocking of the abutment may open and close the valve, a pressure operated de-
145

vice and a shifter operated by said pressure device and arranged below the rocker and movable into engagement with said rocker whereby to adjust the same to its different positions, substantially as set forth.

5 5. In an apparatus substantially as described, the combination with a burner supply pipe, of a valve controlling the same, a rocking abutment means for yieldingly holding the abutment in its different positions, intermediate devices between the abutment and the valve, whereby the rocking of the abutment may open and close the valve, a shifting rod having a springing end engaging
10 with said abutment, and a pressure operated device for operating said shifting rod, substantially as set forth.

6. The combination in an apparatus substantially as herein described, of a burner
20 supply pipe, a valve controlling the same, a lever pivoted between its ends and having one arm connected with the valve, a rocker having arms extending above those of the lever and rockable into position to cause one or the other of its arms to engage with its respective lever arm, and pressure operated devices for rocking said rocker, substantially as set forth.

7. The combination with a burner supply
30 pipe and a valve controlling the same, of a pressure operated device having a movable part, a shifting rod held at one end to the said movable part and free at its other end, a rocking abutment having faces at an angle to each other and movable past the center in its different positions, whereby to present one or the other of its faces to the free end of the shifting rod, the latter springing at its free end into position for engagement with the
40 faces of the abutment, and intermediate devices between the abutment and the valve, substantially as described.

8. The combination in an apparatus substantially as described, of a burner supply
45 pipe, a valve controlling the same, a lever pivoted between its ends and having one of

its arms connected with the valve, a rocker having a shaft, an upwardly projecting arm provided with a weight and oppositely projecting arms extending over their respective
50 arms of the valve lever, a bracket having bearings for the shaft of the rocker and also provided with a guide for a shifting rod, an abutment on the rocker shaft and having faces at an angle to each other and moving
55 by the center above the shifter rod guide, a pressure operated device and a shifter rod carried thereby and moving through the guide in the bracket into engagement with one or the other of the abutment faces, sub-
60 stantially as described.

9. In an apparatus substantially as described the combination of a rocking abutment, and a shifter consisting of a spring rod movable longitudinally toward and from
65 said abutment, and having a free end springing into position to engage with said abutment and a valve operated by the abutment.

10. The combination in an apparatus substantially as described of a burner supply
70 pipe, a valve controlling the same, a lever pivoted between its ends and connected with the said valve, a rocker having arms extending above those of the lever and arranged to be engaged with the corresponding lever
75 arms to operate the said lever, an abutment having inclined faces, and a spring rod movable into and out of engagement with the faces of said abutment.

11. The combination of a burner supply
80 valve, a rocking abutment, intermediate devices between the abutment and valve whereby the rocking of the abutment may operate the valve, pressure operated devices for rocking the abutment, and means for
85 yieldingly holding said abutment in its different positions whereby to prevent its accidental movement, substantially as set forth.

OZRO H. HINDS.

Witnesses:

SOLON C. KEMON,
PERRY B. TURPIN.