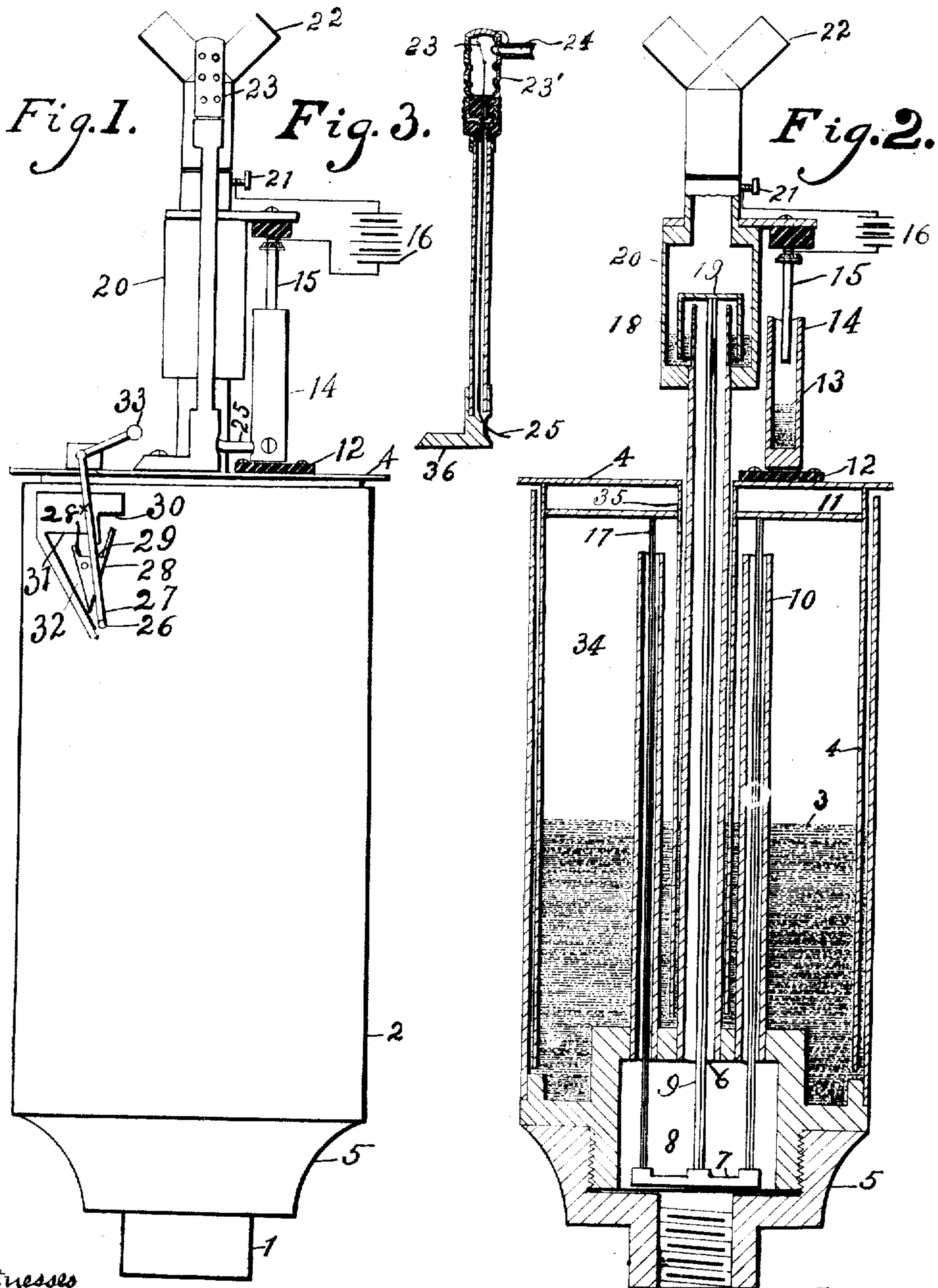


J. C. LANDES.  
AUTOMATIC GAS LIGHTER.  
APPLICATION FILED JULY 8, 1907.

916,459.

Patented Mar. 30, 1909.



Witnesses

Milton C. Landes.  
Alvin B. Landes.

Inventor.

Joseph C. Landes.



# UNITED STATES PATENT OFFICE.

JOSEPH C. LANDES, OF COLLEGEVILLE, PENNSYLVANIA.

## AUTOMATIC GAS-LIGHTER.

No. 918,459.

Specification of Letters Patent.

Patented March 30, 1909.

Application filed July 8, 1907. Serial No. 382,714.

*To all whom it may concern:*

Be it known that I, JOSEPH C. LANDES, a citizen of the United States, residing at Collegeville, in the county of Montgomery, State of Pennsylvania, have invented a new and useful Automatic Gas-Lighter, of which the following is a specification.

My invention consists of an improvement in automatic gas lighters similar to the forms shown in my several applications for Letters Patent, filed by me on the 15th day of November, 1906, Serial Number 343,481, and February 15, 1907, Serial Number 357,499, also February 23, 1907, Serial Number 358,765, the object being to automatically light the burner by the movement of the movable parts, and to automatically extinguish the same with less variation, or increased gas pressure in the gas mains. By this present improvement there is practically no additional resistance offered the float in operating the gas valve, the filament, the closing of electrodes, or the regulator, all of them being normally supported by the float and practically no additional resistance offered to move them to a perfect operation. In my former applications above referred to the resistance to the float is increased when the float is actuated, and therefore requiring a greater pressure to operate, over the present application. I attain these objects by the mechanism illustrated in the accompanying drawing in which—

Figure 1. represents a side elevation of a lighter embodying my invention. Fig. 2. represents a central vertical section thereof. Fig. 3. represents a central vertical section of filament and tube.

Similar numerals, of reference indicate corresponding parts in the figures.

Referring to drawings. 1 represents a nipple connecting to gas mains.

2 represents the exterior casing supported on base 5 open at top and practically closed at the bottom, except for the parts hereinafter designated.

3 designates mercury or other sealing solution.

4 designates a rising and falling vessel (or float) which is closed at top and open at the bottom; the sides of said float 4 being interposed in the space or chamber 34, the lower portion dipping into mercury or other sealing solution 3.

8 represents a chamber connecting with supply pipe 6 and tubes 10 connecting with

gas chamber 34, also affording space for cross bar 7 connecting rods 9 and 17.

11 represents a cup for weight to hold the float (4) down under normal gas pressure.

20 represents a gas valve, closed by cap 19 dipping into mercury or other sealing solution 18, the same being actuated by the movement of float 4 through connecting rods 9 and 17 and cross bar 7.

14 represents an electrode chamber containing mercury or other electrical conducting liquid 13, insulated from float 4 at 12.

Suitably fitted over supply pipe 6 is pipe 35 sealed in 3 at lower portion.

Suitably connected on float 4 is filament base 36, the outside forming one conductor and connecting through float and supply pipe to battery, the inside conductor 25 connecting to electrode chamber 14, insulated from float at 12.

Suitably connected to casing 2 is a regulating device adapted to regulate the movement of float 4.

When lighting is desired, the pressure in the gas mains is increased, causing the float 4 and pin 26 in rod 27 to move upward to the limit at 30 of the regulating device, 26 being a pin at right angles with rod 27 passing along the outer edge (or right side) of cam 28 to limit at 30 with the first upward movement of float 4 at which point the cap 19 being lifted from the mercury or other sealing solution 18 in valve 20 permitting a flow of gas to pass to the burner 22, at this point electrode chamber 14 being elevated sufficiently to cause electrode 15 to dip into electrode 13 and closing an electrical connection with battery 16 through filament 23, causing it to glow and ignite the gas conveyed to it by tube 24. The features of the filament itself do not form the subject matter of any claim of invention, they being old in the art. Tube 24 being hinged to filament case 23' so as to adjust itself in space between the burner 22 and filament case 23' when the float 4 is lowered from the burner. When the lights are to be extinguished the pressure is again increased carrying pin 26 with float 4 to point at 31 after which the pressure is reduced to normal and float 4 with rod 27 and pin 26 returning through channel 32 to place of beginning, cam 28 moving forward affording room for pin 26 to pass through and closing thereafter when pin 26 and float 4 are again in position for lighting.



The elevation at 31 being less than 30, electrodes 13 and 15 do not connect, and the electrical connection is not formed with the battery until pin 26 is again carried to limit 5 at 30 for lighting.

The operation is as follows, the parts being in position as seen in Fig. 1: An increased gas pressure placed in the gas mains causes the float 4 to move upward carrying cap 19 (in valve 20) upward and permitting the gas to flow to the burner 22, at which time the same upward movement of float 4 carrying electrode chamber 14 and causing electrode 13 and 15 to close a circuit of battery 16 through filament 23 which is made to glow and ignite the gas conveyed to it through tube 24. The pressure then being reduced to normal in the gas mains, float 4 with rod 27 and pin 26 returns, thus bringing the pin 26 to point 29. The parts are thus sufficiently lowered to disconnect the battery circuit at 13 and 15 but cap 19 still remains above seal 18 and gas will continue to flow to the burner and lights will continue to burn. An increased gas pressure in the gas mains causes the float 4 to move upward. As the float rises, the cap 19 is raised with the same due to the rod 9, cross-bar 7 and rod 17, the latter being attached to the float. Said cap is thus removed from the seal 18, while the light is burning, and retained in said position owing to the pin 26 having passed the cam 28. Then owing to the weight 33 on the rod or lever 27, said pin abuts against the stop 30, and so limits the ascent of the cap. When the pressure of gas is normal, the pin drops upon the top 29 of the cam limited in its movement to the left by the lip 28\*. When the light is to be extinguished, the pressure is increased, then the pin rises to greater extent and then turns to the left and over said lip, it abutting against the part 31 as a stop. Then the pressure is decreased, when the pin rides down the passage or channel 32 and returns to its first position. The stop 30 is higher than the stop 31, whereby when the float is at its highest point, the electrode 13 contacts with the electrode 15, thus completing a circuit. When the pressure is relieved, the electrode 13 lowers, and the circuit is broken, and remains so until further operation of the device.

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

1. In a device of the character described, the combination of a casing, a float adapted to be actuated by the pressure of gas, a burner, a stationary contact piece supported thereby, a movable contact chamber carried by said float, a sealing valve controlling the flow of gas to the burner, and means in suitable connection with said valve and said float whereby said valve is actuated by the movement of said float and means for limiting the upward movement of the valve.

2. In a device of the character described, the combination of a casing, a float adapted to be actuated by the pressure of gas, a burner, a stationary contact piece supported thereby, a movable contact chamber carried thereby, a sealing valve controlling the flow of gas to the burner, means connected with said valve and said float for opening said valve upon one upward movement of the float, and for closing said valve on the next upward and return movement of said float to normal position.

3. In a device of the character described, the combination of a casing, a float adapted to be actuated by an increased pressure, a burner, a stationary contact piece supported thereby, a movable contact chamber carried thereby, a battery in suitable connection with said movable and said stationary contact pieces, a filament with a tube attached, said filament being located on said float, and carried thereby in circuit with contact chamber.

4. In a device of the character described, the combination of a casing, a float adapted to be actuated by an increased pressure, a burner, a stationary contact piece supported thereby, a movable contact chamber carried thereby, and adapted to contact with first mentioned pieces when the float is elevated, a regulating device actuated by said float adapted to hold the float upon an elevated plane and the valve open permitting gas to flow to burner.

JOSEPH C. LANDES.

Witnesses:

MILTON C. LANDES,  
ALVIN B. LANDES