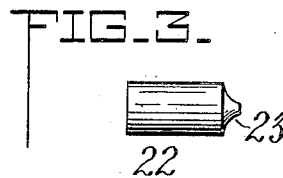
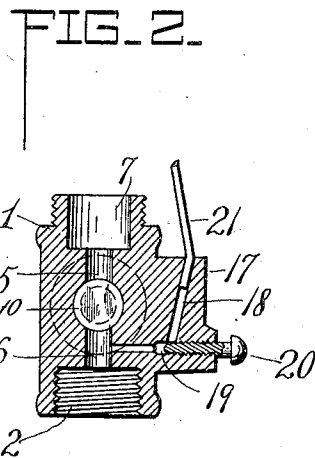
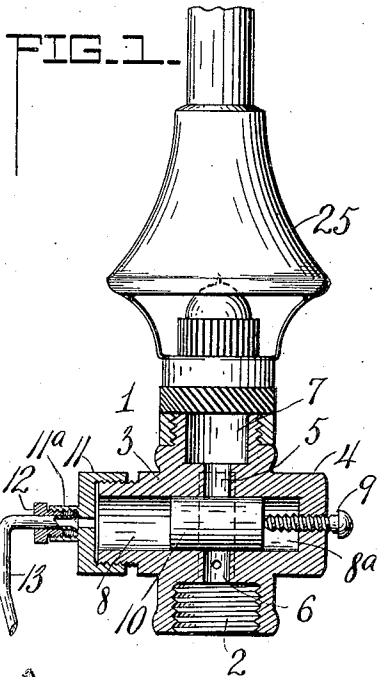


No. 879,890.

PATENTED FEB. 25, 1908.

R. N. OAKMAN.
DISTANCE LIGHTING GAS BURNER DEVICE.
APPLICATION FILED JUNE 18, 1907.



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RICHARD N. OAKMAN, OF BROOKLYN, NEW YORK.

DISTANCE-LIGHTING GAS-BURNER DEVICE.

No. 879,890.

Specification of Letters Patent.

Patented Feb. 25, 1908.

Application filed June 18, 1907. Serial No. 379,643.

To all whom it may concern:

Be it known that I, RICHARD N. OAKMAN, a citizen of the United States, residing at Brooklyn, State of New York, have invented certain new and useful Improvements in Distance-Lighting Gas-Burner Devices, of which the following is a specification.

This invention relates to distance lighting gas-burner devices of that kind in which a piston-valve is reciprocated to open and close the gas ports by pressure or exhaust of air or other fluid.

The object of my invention is to prevent the objectionable leakage of gas from this class of devices, by doing away with the air vent or duct heretofore used and leading from the rear end of the valve-chamber to the external air.

Another object is to overcome the liability of the piston-valve to stick or hang in the rear end of its chamber when pneumatic exhaust is applied for causing the valve to slide forward and open the gas ports to the burner.

In carrying out my invention I provide in the valve-chamber of the burner a solid reciprocating piston to close the gas ports when its body covers them and to open the ports when its end has passed beyond them; also a closed air space, in the rear end of the valve chamber, of sufficient depth to prevent more than slight compression of air therein, and consequent cushioning, when the piston valve is forced rearward. For the purpose of providing this closed air space the objectionable vent or duct, heretofore used, is omitted and an adjustable pin or screw is inserted in the rear end of the chamber so as to project into the same and serve as a stop for the reciprocating piston.

The matter constituting my invention will be defined in the claims.

The details of construction of the device are illustrated in the accompanying drawing in which—

Figure 1 represents a sectional elevation of a gas burner showing my valve construction, a pneumatic pump and pipe connection. Fig. 2 represents a vertical section of the valve casing of the burner taken at right angles to the view in Fig. 1. Fig. 3 represents a modified piston valve.

The burner pillar 1 is made with the usual screw-threaded socket 2 at the base and with an upward extension for attaching a gas and air mixing chamber 25 of an incandescent

burner. The pillar is preferably cast with the opposite bosses or extensions 3 and 4 for containing the transverse valve chamber 8, and is provided with the usual longitudinal gas passage 7 leading to the mixing chamber 25. The cylindrical valve chamber 8 is bored in the pillar and its bosses or extensions 3 and 4 and is provided centrally with the gas ports 5 and 6 opening into the longitudinal passageway 7. The rear end of chamber 8 is closed instead of having the vent or duct leading to the external air, heretofore used. An adjustable pin or screw top 9 is inserted through an opening in the rear end wall of chamber 8 and is projected a sufficient distance into the chamber to form an air space 8^a. The screw 9 will act as a stop to the reciprocating piston 10 and will provide a rear air space of sufficient depth to prevent undue compression of air and consequent cushioning or rebounding of the piston 10 when it is forced to the rear to close gas ports 5 and 6. I have found by practical tests with this construction of chamber, that the piston 10 may be readily forced by pneumatic pressure rearward to close ports 5 and 6 and may be as readily retracted or slid to the front of chamber 8 by exhaust to open said ports. An important advantage of this construction is that leakage of gas from the valve chamber is entirely prevented, thereby overcoming an objection to distance lighting burner devices. In this burner I use a short solid piston 10 with square or straight faced ends, Fig. 1, or a piston 22 with a cone end or central projection 23 as shown in Fig. 3. When a piston with projection 23 is used a shorter stop-pin or screw 9 may be used for arresting the piston.

The front end of chamber 8 is closed by a screw-cap 11, having a central and internally screw-threaded nipple 11^a. The end of air pipe 13 is spread and inserted in the nipple and held in place by the hollow nut 12 which is screwed into the nipple. Pipe 13 is connected at the other end by a suitable coupling to the air switch-pump 14, having the usual cylinder 24 and a piston 25 provided with the outwardly projecting push-button plunger 15. A reversing push-button plunger 16 connects by a vibrating lever 26 within the pump casing with the piston plunger 15. The construction of this air switch pump is not herein further shown or described, as it is made the subject of my application for patent, Serial No. 322,551, filed June 20, 1906.

The pillar 1 is provided on one side between the extensions 3 and 4 with a boss 17 for containing a by-pass leading to a pilot burner. In this boss is bored a downwardly extending passage 18 and a horizontal intersecting passage 19 which leads into the gas passage of the burner pillar. In the passage 19 is inserted a screw-threaded valve-plug 20 for controlling the flow of gas to the pilot burner.

10 In passage 18 is inserted the pilot tube 21.

In the use of distance lighting burners the pilot burner is kept lighted, the flow of gas thereto being controlled by valve 20. In Fig. 1 the piston valve 10 is shown in the rearward position so that its body covers the gas ports 5 and 6, and therefore shuts off the flow of gas to the main burner. When it is desired to ignite gas at the main burner the pump 14 will be operated to exhaust air or other fluid from the front end of chamber 8 and thereby cause the piston to slide into the front end and open the ports 5 and 6 when its end has passed beyond them. By providing a short solid piston it may be very readily reciprocated, and very little movement thereof is required to open or close the gas ports.

Having described my invention, what I claim and desire to secure by Letters Patent, 30 is:—

1. In a distance lighting burner device, a valve chamber having ports communicating with the longitudinal gas passage, said chamber being closed and free from vent at the rear end beyond said ports, in combination with a solid reciprocating piston to close

the ports when its body covers them and to open the ports when its end has passed beyond them in the chamber, and means for applying fluid pressure or exhaust in the chamber, substantially as described. 40

2. In a distance lighting burner device, a transverse cylinder having ports communicating with the gas passage to the burner, said chamber being closed and free from vent beyond said ports, in combination with a solid reciprocating piston, a stop device adapted to arrest the piston after it has closed the ports and leave an air space in the rear end of the cylinder, and means for applying fluid pressure and exhaust for reciprocating the piston, substantially as described. 50

3. In a distance lighting burner device, a valve chamber having ports communicating with the gas passage to the burner and closed beyond said ports, in combination with a solid reciprocating piston to close the ports when its body covers them and to open the ports when its end has passed beyond them, a stop-screw or pin inserted in the rear end of the chamber to stop the travel of the piston and provide that an air space shall always be left between the end of the piston and the rear end of the chamber, and means for pneumatically reciprocating the piston, substantially as described. 65

In testimony whereof I affix my signature in presence of two witnesses.

RICHARD N. OAKMAN.

Witnesses:

FRANK HAYWARD,
M. TURNER.