O. LOWY.

SAFETY GAS BURNER.

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1,038,772. Patented Sept. 17, 1912.

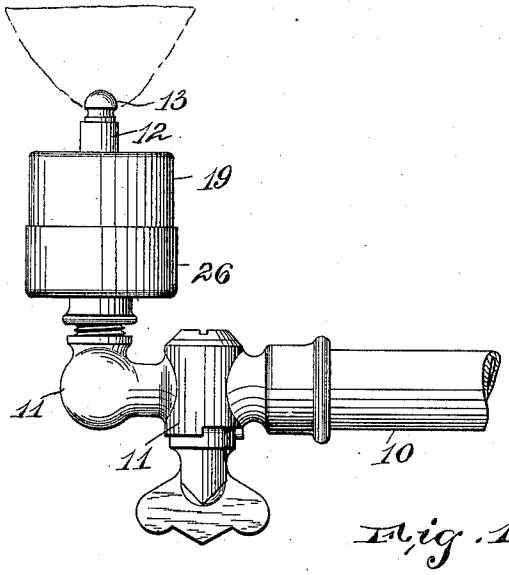

Fig. 1

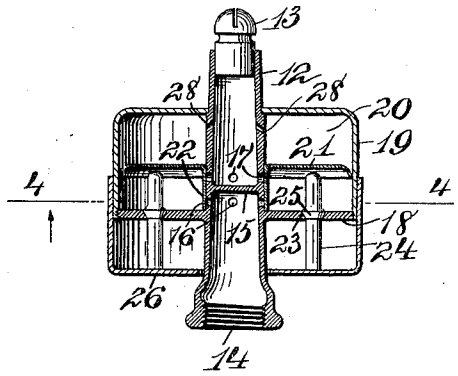

Fig. 2

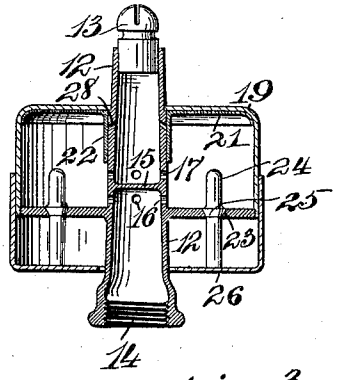

Fig. 3

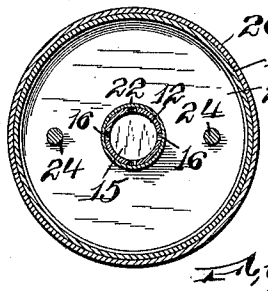

Fig. 4

WITNESSES

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SAFETY GAS-BURNER.

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To all whom it may concern:

Be it known that I, OTTO LOWY, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Safety Gas-Burners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates to a safety gas cock and is particularly designed to provide a gas cock which does not permit the issue of gas through the burner even when the gas cock is turned on, but which when manipulated permits the passage of gas through said burner and acting while the gas passes through the burner up to a certain pressure to permit said passage of gas. As soon, however, as the gas pressure goes below a certain point, a closing means in the burner is operated to prevent the passage of gas through the burner. The closing means is not opened by gas under pressure, but is held open after it is manipulated to its open position. A gas cock of this kind is to be used when coin-controlled meters are installed. In meters of this type cases have occurred where the meter has delivered the gas which was prepaid, but the precaution has not been taken to turn the cock off. On the insertion of a new coin the issue of gas through an open burner has in some cases caused asphyxiation and also explosions on the lighting of a match in a room where such open gas cock is located.

The invention presented in this application shuts off the gas when the pressure goes down, even if the gas cock stays open, and on a renewal of the pressure the closing means does not open, but is only opened after it is manipulated, that is, handled by the person intending to light the gas.

The invention is illustrated in the accompanying drawing, in which—

Figure 1 is a side view of a gas cock showing my improved burner. Fig. 2 is a vertical section of the burner in its normal position closing the gas off. Fig. 3 is a view similar to Fig. 2, but showing the burner arranged to permit the passage of gas through the burner. Fig. 4 is a section on line 4, 4, in Fig. 2.

The burner is mounted on any usual gas pipe 10 and I show a gas cock 11 for controlling the admission of gas to the burner. The burner itself consists of a tube 12 which is open at both ends, one end being an outlet end and receiving any usual form of tip 13, the other open end, 14, being adapted to be fastened to the gas pipe or gas cock. The tube is provided with a partition 15 which is substantially transverse and closes the tube. Side openings 16 are arranged on one side of the partition, and side openings 17 are arranged on the other side of the partition, the function of these side openings being described hereinafter. On the tube is a disk 18 onto which is screwed a casing 19, the disk and the casing forming a chamber 20 into which is arranged a diaphragm 21 having a flange 22. The flange 22 slides on the outside of the tube 12 and closes the side openings 16 and 17 when it is in its normal position shown in Fig. 2, and the gas under pressure coming into the tube of the burner presses against the flange 22, but has no opportunity of having a raising tendency on the diaphragm, and the diaphragm with its flange shuts the side openings. The disk 18 is provided with perforations 23 through which pass studs 24, the studs projecting up within the casing and having enlargements 25 which co-act with the walls of the perforations 23 to form valves to close the perforations 23 against the leakage of gas. To further guard against leakage of gas, the studs are fastened to a thimble 26, the flange 27 of which fits around the outside of the casing 19.

When the gas is turned on from the cock it can not pass through the burner, since the burner is in the position shown in Fig. 2, the diaphragm and also the thimble and the studs being held in position by gravity. When it is desired to have the gas issue from the burner, the thimble 26 is pushed upward and it carries its studs with it, the studs pushing the diaphragm up to the position shown in Fig. 3, this being possible on account of the venting of the chamber through the passages 28 which are only covered after the gas passes from the side openings 16 and 17. The diaphragm 21 has considerable area, and the gas under pressure passing through the chamber, which acts as a by-

pass, holds the diaphragm in the position shown in Fig. 3, but the thimble and its studs drop to the position shown in Fig. 3, giving the diaphragm opportunity to descend to the position shown in Fig. 2 when the gas pressure is reduced beyond a certain point.

If the gas is shut off either by the gas cock or from the meter, by reason of a coin meter having delivered its prepaid supply, the diaphragm is no longer sustained by the pressure and it falls to the position shown in Fig. 2. On the re-admission of gas under pressure the diaphragm is not raised by said gas, but remains in the position shown in Fig. 2 until it is manually operated.

Having thus described my invention, what I claim is:—

1. A safety gas burner comprising a tube having an end opening for a tip, a partition closing the tube intermediate of its ends, the tube having openings on both sides of the partition, a chamber surrounding the tube and inclosing the side openings, the chamber acting as a by-pass for conducting gas from the side openings on one side of the partition to the side openings on the other side of the partition, means for closing the side openings when said last-mentioned means is in its normal position, and operating means extending to the exterior of the chamber for manipulating the closing means to cause said closing means to open the side openings, said closing means being held in its open position by the gas under pressure passing through the burner.

2. A safety gas burner comprising a tube open on both ends and having side openings therein, a partition closing the tube on the inside, the openings being disposed on both sides of the partition, a chamber surrounding the tube so as to inclose the side openings, a diaphragm in the chamber, the diaphragm when in normal position closing the side openings to prevent the issue of gas from the side openings, and means for manipulating the diaphragm to raise it from the side openings, said diaphragm being held in its raised position by the pressure of gas passing through the burner.

3. A safety gas burner comprising a tube having its ends open and having a partition between its ends, the tube having side openings on both sides of the partition, a chamber inclosing the side openings, a diaphragm having a flange thereon, said flange embracing the tube to close the side openings when the diaphragm is in its normal position, and means extending to the exterior of the chamber for moving the diaphragm to its operated position, the diaphragm being held in this last-mentioned position by gas under pressure.

4. A safety gas burner comprising a tube having its ends open and having a partition between its ends, the tube having side openings on both sides of the partition, a chamber inclosing the side openings, a diaphragm having a flange thereon, said flange embracing the tube to close the side openings when the diaphragm is in its normal position, a thimble embracing the burner, the marginal flange of the thimble embracing the outside of the casing, the chamber having openings in its bottom, and studs extending through said openings and engaging the diaphragm on its under side whereby when the thimble is raised the diaphragm is moved to its operated position to permit the issue of gas from the side openings, said gas acting to maintain the diaphragm in its operated position when the thimble resumes its normal position, the studs and the walls of the perforations in the chamber having co-acting means for closing said openings, when the thimble is in its normal position, against the escape of gas.

5. A safety gas burner comprising a tubular burner, means for preventing the passage of gas through said burner, and means for manipulating said first-mentioned means to permit the passage of gas through said burner, said first mentioned means being held in its operated position by gas under pressure passing through the burner, but not being adapted to be moved from its normal position by gas under pressure.

In testimony, that I claim the foregoing, I have hereunto set my hand this 6th day of January, 1912.

OTTO LOWY.

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."