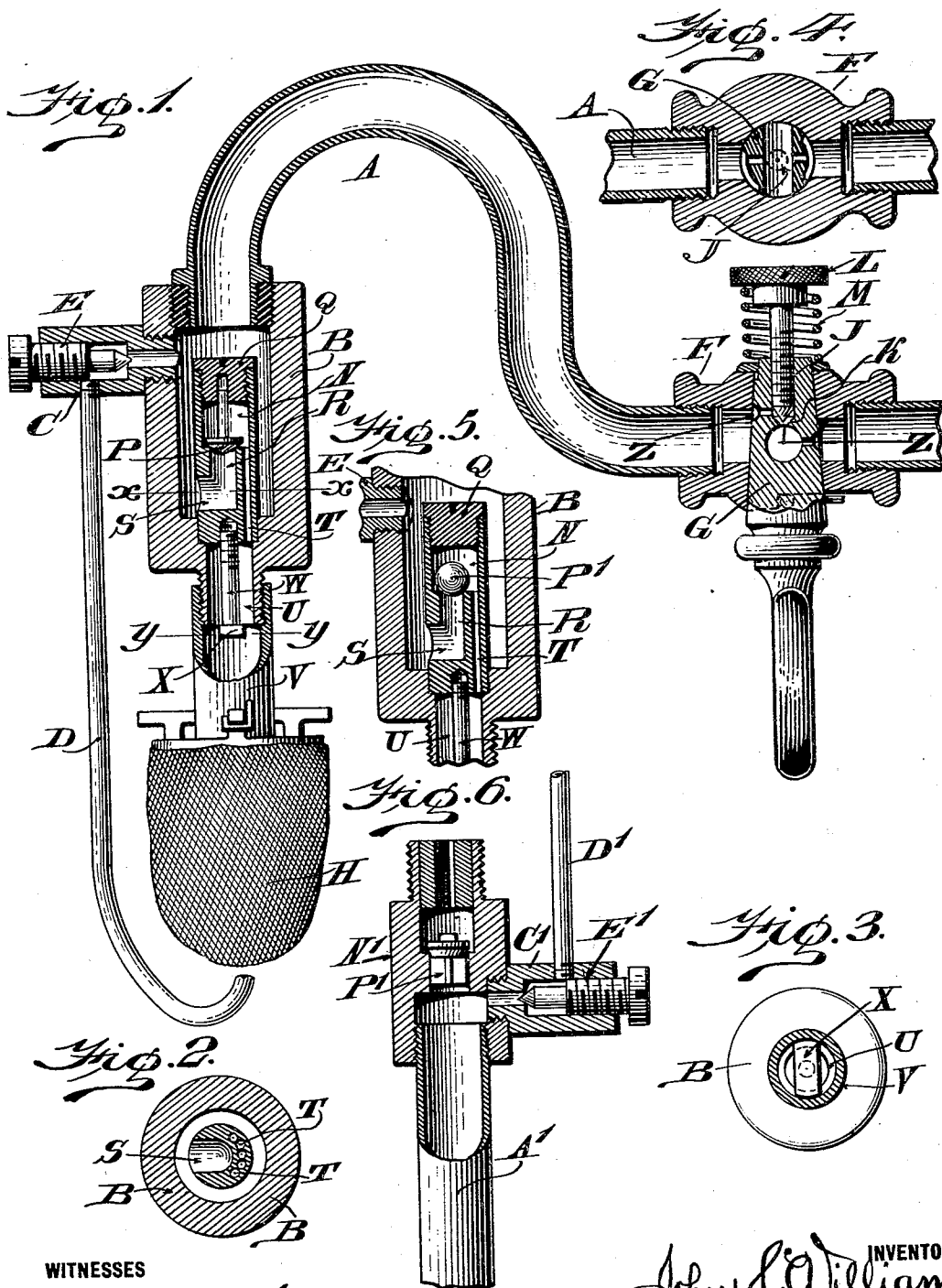


J. L. WILLIAMS.
GAS BURNER.
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1,058,125.

Patented Apr. 8, 1913.



WITNESSES

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JOHN L. WILLIAMS, OF PHILADELPHIA, PENNSYLVANIA.

GAS-BURNER.

1,058,125.

Specification of Letters Patent.

Patented Apr. 8, 1913.

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To all whom it may concern:

Be it known that I, JOHN L. WILLIAMS, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Gas-Burner, of which the following is a specification.

My invention consists of a gas burner embodying a valve adapted to be opened by the pressure of gas admitted thereto, and a by-pass for the connection of a pilot light tube, means being provided for supplying the gas to said valve and tube and maintaining the light at said tube when the main supply of gas is cut off in which instance, said valve is closed and gas is prevented from escaping into the apartment at the burner.

The invention is satisfactorily illustrated in the accompanying drawing, but the important instrumentalities thereof may be varied, and so it is to be understood that the invention is not limited to the specific arrangement and organization shown and described.

Figure 1 represents a longitudinal section of a gas burner embodying my invention. Fig. 2 represents a horizontal section of a portion on the line $x-x$, Fig. 1. Fig. 3 represents a horizontal section of a portion on the line $y-y$, Fig. 1. Fig. 4 represents a horizontal section of a portion on line $z-z$ Fig. 1. Fig. 5 represents a vertical section of a portion of a modification of the type shown in Fig. 1. Fig. 6 represents a vertical section of a portion of another embodiment of the invention.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings:—A designates a supply pipe which is connected with the gas receiving chamber B to the wall of which is attached the by-pass C of the depending pilot light pipe D, said by-pass being provided with the valve E for regulating the flow of gas to said pipe D. Connected with the supply pipe A which in the present case is of the form of an ordinary goose neck, is the cock F, whose plug G has therein ports which are adapted to regulate the flow of gas to the chamber B, or permit gas to flow to the latter sufficient to maintain the burning of the pilot light at the mantle H, but the gas for said light may be adjusted and entirely cut-off by means of the valve J, which enters freely the plug G

and has its seat K on the bore for the gas of the pilot light, said valve having a head L between which and the shell of the cock F is interposed the spring M which presses upwardly on said head and serves to keep the plug in position and cause the same to have a sufficiently tight joint with the bore of the shell which it occupies.

In the gas chamber B is the valve chamber N in which is the rising and falling valve P whose stem is guided in the plug Q which closes the top of said chamber N. The seat of said valve is on the top of the wall of the gas passage R within said chamber N, below said valve, the side wall of said chamber having in it the passage S which forms the communication between the interior of the gas chamber B and said passage R, whereby the gas may reach the valve P and lift the same by pressure as will be hereinafter more fully referred to.

In the wall of the gas chamber are vertically extending ducts T, see Figs. 1 and 2, which form communication between the interior of the valve chamber and the neck U at the bottom of said chamber, said neck having connected with it the supporting tube V of the mantle H.

In order to hold the valve chamber N in position, while resting on a shoulder on the base of the chamber B, I employ the screw W which passes through the neck U, and enters the base of said chamber, the head X of said screw being flattened or cut-away on its side so that while it may bear against the bottom wall of the neck U, and so draw the chamber tightly against the shoulder as above, the gas may pass said head on its way from the neck into the tube V. It will now be seen that when the gas is supplied to the chamber B, some of the same will enter the passages S, R, and so reach the valve P, and lift the same from its seat. Some of the gas will enter the by-pass and so reaches the pipe D, when it may be lighted at the lower end of the latter as the pilot light of the mantle. Gas flows from the valve P into the ducts T and so reaches the mantle through the neck U, and tube V when the gas will be ignited at said mantle by the pilot light. It will be noticed here that the valve P is lifted by the pressure of the inflowing gas but when the gas is turned off at the cock F, while gas may enter the by-pass to preserve the burning of the pilot light, for the sub-

sequent reestablishing of the light at the mantle, said valve P closes on its seat, and there will be no supply of gas to the mantle and consequently no escape of the same into the apartment. It will be noticed furthermore, that this construction is of the order of what is known as an inverted burner or light. As another form of the same, I may employ the ball valve P, as shown in Fig. 5, in lieu of the conical valve in Fig. 1, without, however, producing different results, but for a mantle that may rise from the gas chamber and be supported above the same, see Fig. 6, the valve chamber N' has the by-pass C' connected with the side of the same and the pilot light tube D' is connected with said by-pass and rises therefrom. The supply pipe A' enters the chamber N' so that the gas by its pressing serves to lift the valve P', the operation and result being similar to that in the previous case.

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

1. A gas burner having a gas-receiving chamber and a valve chamber within the same, a valve in said valve chamber, a by-pass connected with the gas-receiving chamber, a pilot light tube connected with the by-pass outside said chambers, said valve being adapted to be automatically opened by the pressure of the inflowing gas, and a closure for the end of said valve chamber, said valve having a stem guided in said closure and the valve adapted to engage a seat within the valve chamber.

2. A gas burner having a gas-receiving chamber and a valve chamber therein and resting on a shoulder of said gas receiving chamber, a valve in said valve chamber, a by-pass connected with the gas-receiving chamber, a pilot light tube connected with the by-pass, said valve being adapted to be automatically opened by the pressure of the inflowing gas, and means retaining said valve chamber on said shoulder within the gas-receiving chamber and said means engaging said gas receiving chamber and con-

structed to permit the flow of gas through said valve chamber to the mantle.

3. A gas burner having a gas-receiving chamber, a valve chamber removably held therein, a gas supply pipe for said gas-receiving chamber, said valve chamber having a valve seat, and an automatically actuated valve therefor, said valve chamber having a passage forming a communication between the same and said gas-receiving chamber and the wall of said chamber having a vertical passage, communication between which and the gas supply is closed when said valve is on its seat and adapted when said valve is opened to form a communication between said valve chamber and the burner proper.

4. A gas burner comprising a gas-receiving chamber, a gas supply pipe therefor, a by-pass attached to said chamber, a valve in said by-pass, a pilot light tube connected with said by-pass and extended outside said chambers, a valve chamber in said gas-receiving chamber and having a valve seat, a lateral passage and a vertically disposed duct communicating with the burner proper, said by-pass and chambers being in communication with the supply pipe, and a valve closing communication between said duct and lateral passage of the valve chamber, said valve being confined within the valve chamber between said valve seat and the closed end of the chamber, and guided by the latter.

5. In a gas burner, a gas receiving chamber, a valve chamber therein, having a valve seat, a gravity valve fitted to said seat, a screw connected with said valve chamber and having its head adapted to engage the wall of the outlet portion of said gas receiving chamber, and a burner proper connected with said outlet portion, the sides of said head being adapted to allow gas to pass the same.

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Witnesses:

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