

(No Model.)

W. A. MITCHELL.  
GAS BURNER.

No. 596,900.

Patented Jan. 4, 1898.

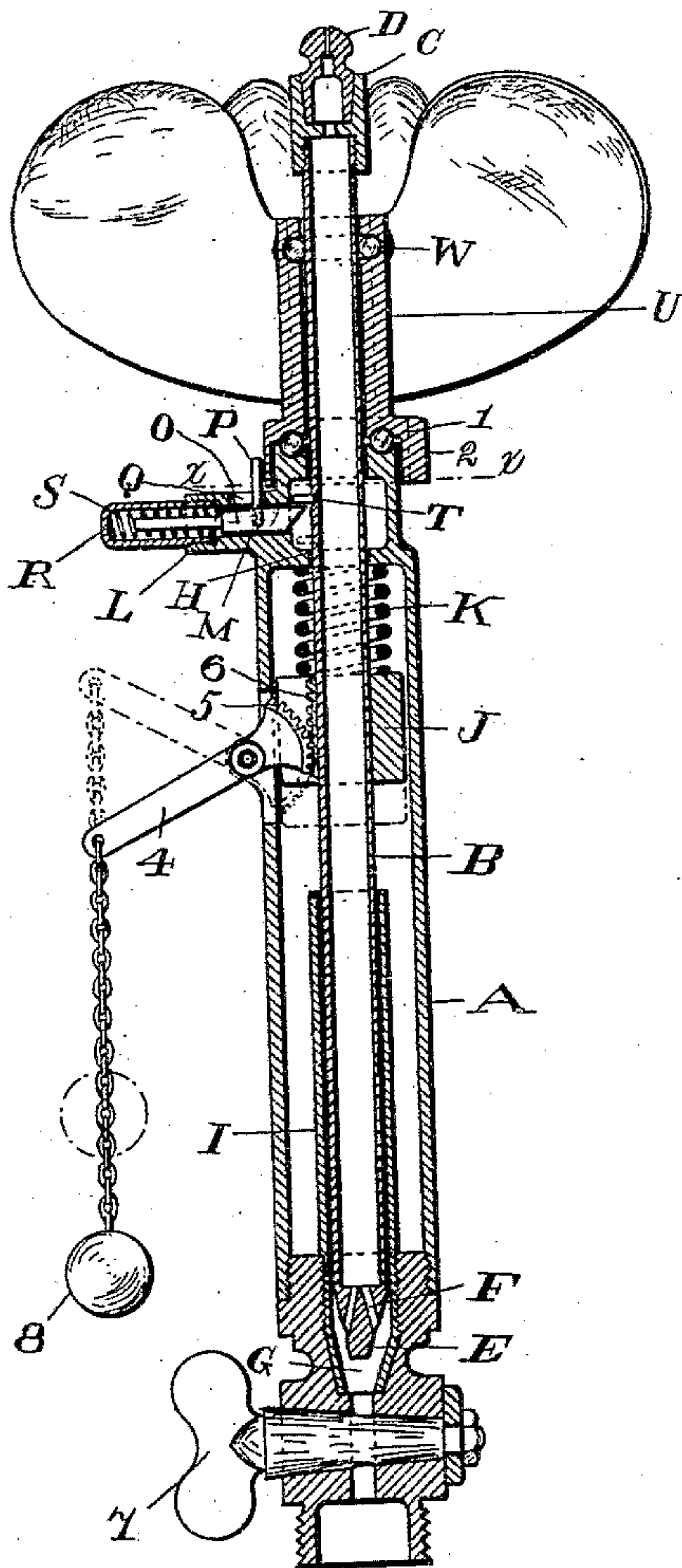


Fig. 1.

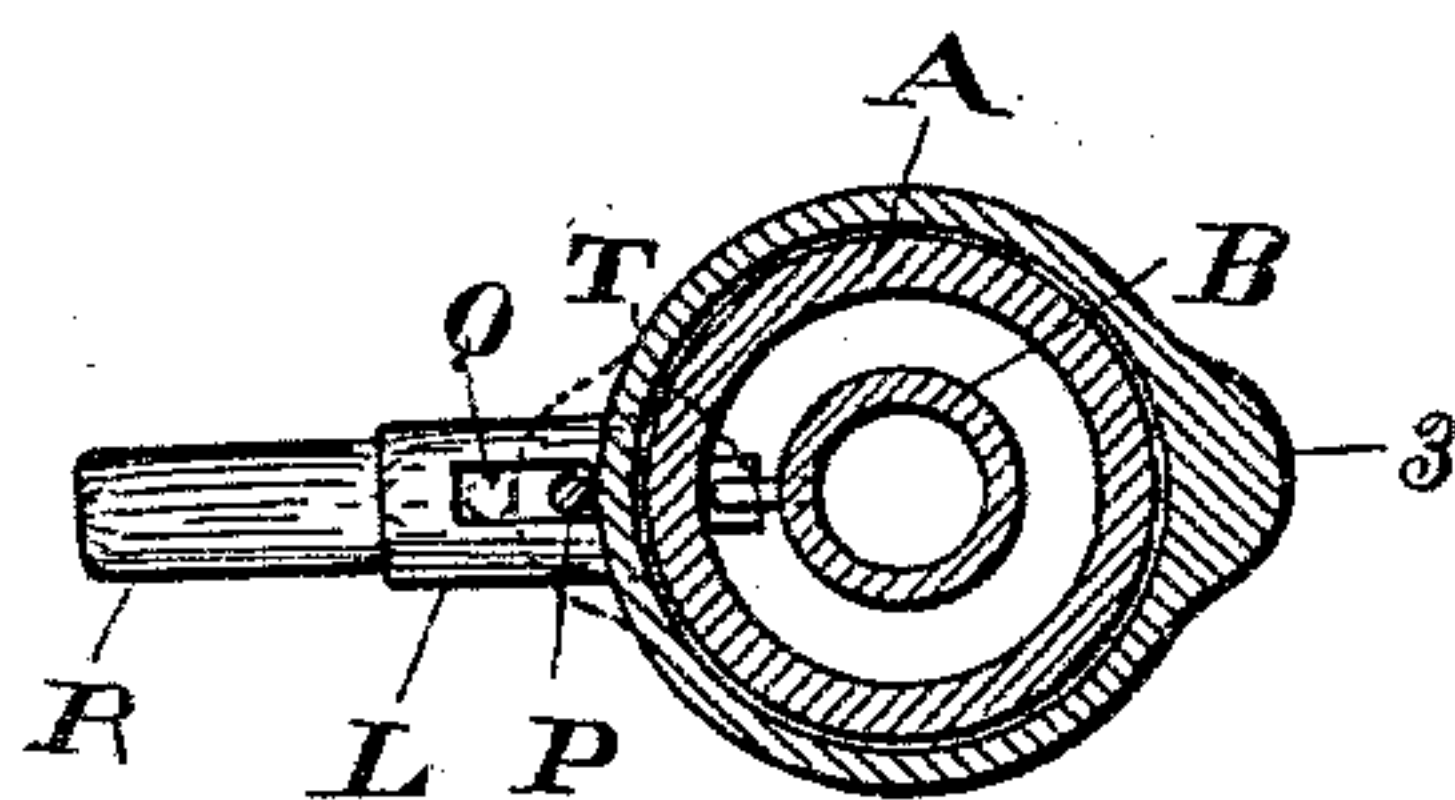


Fig. 2.

Witnesses:

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# UNITED STATES PATENT OFFICE.

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## GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 596,900, dated January 4, 1898.

Application filed March 23, 1897. Serial No. 628,809. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. MITCHELL, a citizen of the United States of America, residing at Saco, in the county of York and State of Maine, have invented certain new and useful Improvements in 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.

My invention relates to improvements in gas-burners, and especially to that class of gas-burners from which the supply of gas may be automatically cut off.

It consists of an outer casing in connection with the gas-supply, a tube provided with openings adapted to move vertically in said outer casing and to be held in an open connection with the gas-supply by means of a spring-actuated catch, of means for automatically releasing the spring-catch, of means for raising the inner tube, and in certain other details of construction which will hereinafter be more fully set forth and described.

In the drawings herewith accompanying and forming a part of this application, Figure 1 is a vertical section of my improved gas-burner, showing the inner tube raised. Fig. 2 is a section taken on line X X, Fig. 1.

Same letters and figures refer to like parts.

In said drawings, A represents an outer tube or casing adapted to be attached in any suitable manner to a gas bracket or chandelier. Mounted in and extending beyond said casing A and adapted to move vertically therein is a tube B. Said tube carries on its outer extremity a collar C, which is attached thereto in any suitable manner and in which is mounted a tip or burner D. The lower end of said tube is made solid and brought to a taper, as at E. In said tapering end E are vents F to allow the gas when the tube is raised to pass from the supply up through the said tube B to the burner. When the tube is lowered, said wedge-shaped or tapering portion fits into a socket of similar size and shape G, closing thereby the vents F and preventing the gas from coming from the source of supply into the tube B. The outer casing is provided with a shoulder H and a guideway I. The object of the shoulder and guideway

is to prevent the tube B from a lateral movement and to make the vertical movement more positive and direct and to prevent any escape of gas by the failure of said tube from fitting closely into socket G. The tube B fits closely into the guideway I, so as not to allow the escape of gas. A rubber washer or similar device may be inserted in the top of said guideway I, and thus will absolutely prevent the escape of any gas. Surrounding the top of the tube A and attached thereto in any desirable manner is a collar L. Drilled into said collar is a socket M, in which is inserted a catch O, having a lug P extending upwardly therefrom and through a slot Q in the top of said collar. Adapted to be inserted within said socket is a cap R, in which is seated a spiral spring S, which bears at one end against the catch and at the other end against the end of the cap R, thereby normally tending to keep the catch O forced inwardly. On the periphery of tube B is rigidly attached a lug T, which is adapted to rest against the catch O and hold the inner tube up and in open connection with the gas-supply. Seated within said casing A and adapted to bear against shoulder H in said casing A and against the shoulder J, rigidly attached to the inner tube B, is a spiral spring K for the purpose of forcing said inner tube downward when the catch O is released. Mounted on tube B and upon that portion which extends above the tube A is a fan U, provided with suitable wings and adapted to revolve on collar I. In order to insure the easy revolution of said fan and to cause the least friction possible, I insert ball-bearings W on the sides of the fan and in the base thereof other ball-bearings 1. The base of said fan is provided with a collar 2, having a cam-surface 3 on its periphery, as shown in Fig. 2. When the fan is revolved, cam-surface 3 bears against the lug P on the catch O, forces the lug backwardly, discharges the catch O from the lug T, and allows the tube B to be forced downwardly by means of the spiral spring K. The resiliency of the spring K drives the inner tube into the V-shaped portion in the base of the burner and closes the vents in the bottom of the tube, and thereby cuts off the supply of gas from coming to the



burner. In order to raise tube B, so that the gas may again be lighted, there is attached to the outside casing a small lever-arm 4, provided with a cog-surface 5, which is adapted to mesh with teeth 6 on a portion of the periphery of the inner tube. In order to raise the tube after the same has been forced downwardly by the catch O, having been forced out of connection with lug T, it is only necessary to pull down on the lever-arm 4, as the cog-teeth 5 on the extremity of the lever-arm 4 mesh with the teeth 6 of the periphery of the tube B. This causes the tube B to be raised to its open position. I also provide the base of the burner with a suitable cut-off 7 of a similar nature to those in use on all gas-burners for the purpose that the gas-supply may be cut off or the burner used in the same manner as any ordinary gas-burner. In order to operate lever-arm 4 easily, I attach thereto a ball and chain 8.

The operation of my improved device is as follows: A movement of the air sufficient to extinguish the flame will cause the fans to revolve. This will cause the collar at the bottom of the fans to revolve and bring the cam-surface against the lug on the catch, thereby forcing the catch back to a position as shown in dotted lines in Fig. 2, and allow the inner tube to drop and thereby cut off the supply of gas. To again raise the tube and allow the gas to rise to the burner, pull down on the lever-arm 4. If it is desired to have the burner ready for use and at the same time so arranged that the gas will not escape, the cut-off 7 may be turned so that the gas will not flow into the tube B.

It is a well-known fact that many serious accidents and deaths have been caused by the escape of gas in rooms and buildings or by being blown out through ignorance or

carelessness of people. It is to obviate this that this improved burner is designed.

Having thus described my invention and its use, I claim—

1. In a gas-burner, in combination, an outer casing connected with the gas-supply, a tube mounted in said outer casing and connected by suitable openings with said outer casing and adapted to move vertically therein, a spring-catch in the outer casing adapted to engage a lug on the inner tube and to hold said inner tube in an upright position and means for automatically releasing said catch and causing said tube to drop, substantially as and for the purposes set forth.

2. In a gas-burner, in combination, an outer casing in connection with a gas-supply, a tube adapted to move automatically therein and having a lug on its periphery adapted to engage a spring-catch mounted in the outer casing, a lug on said catch, a fan provided with a cam-surface adapted to engage the lug on said catch and force the same backward, substantially as and for the purposes set forth.

3. In a gas-burner, in combination, an outer casing, a tube provided with openings connecting it with said outer casing and adapted to move vertically within said outer casing, a catch seated in the outer casing adapted to engage a lug on the inner tube and means for automatically causing said inner tube to fall and means for raising the same, substantially as and for the purposes set forth.

In testimony whereof I affix my signature, in presence of two witnesses, this 10th day of March, A. D. 1897.

WILLIAM A. MITCHELL.

Witnesses:

ELGIN C. VERRILL,  
NATHAN CLIFFORD.