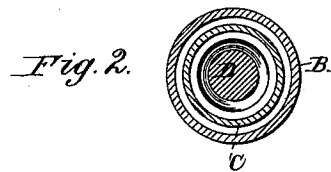
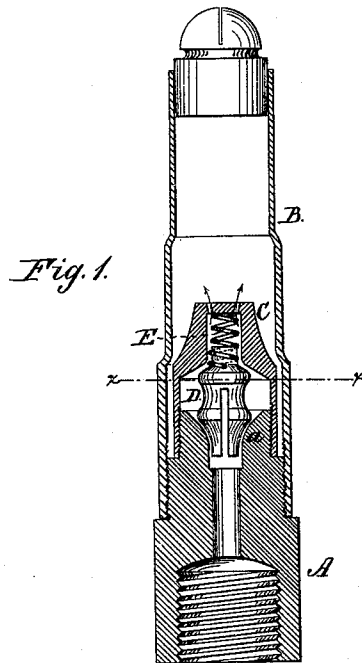


S. F. LEACH.
Gas-Regulator.

No. 213,910.

Patented April 1, 1879.



WITNESSES:

W. W. Hollingsworth
Amos W. Hart.

INVENTOR:

Samuel F. Leach

BY

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

SAMUEL F. LEACH, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN GAS-REGULATORS.

Specification forming part of Letters Patent No. **213,910**, dated April 1, 1879; application filed February 18, 1879.

To all whom it may concern:

Be it known that I, SAMUEL F. LEACH, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Gas-Regulator; and I do hereby declare that the following is a full, clear, and exact description of the same.

The object of my invention is to provide an efficient and cheap automatic gas-regulating attachment for gas-burners. To this end I place a valve in a recess or chamber formed in the base portion of a burner, and arrange a spring to co-operate with it, so that when the pressure of gas increases said valve will be raised and the spring compressed more or less, thereby narrowing the passage through which the gas has its exit, and correspondingly diminishing the quantity consumed while the increased pressure lasts.

In the accompanying drawings, forming part of this specification, Figure 1 is a vertical central section of a burner provided with my improved regulator. Fig. 2 is a horizontal section on line *xx* of Fig. 1.

The burner is formed in three parts, the base A, the top portion, B, and the inner cap, C. The top B and cap C are united to the base A by a screw-joint; but the cap screws on a reduced portion, *a*, of the base.

The wooden valve D and spring E are inclosed in the cap, as shown. Said cap thus forms a small chamber within the chamber of the burner proper. The lower end of the valve is slotted and conical, and fits in a conical cavity in the top of part *a*. The upper end of the valve enters a recess or cavity in the upper end of the cap C, which is perforated to allow escape of gas to the burner-tip. The spring is placed within such recess, and exerts a downward pressure on the valve, which is sufficient to hold its lower end in the conical mouth of part *a* so long as the pressure of gas is normal, or not above the usual degree. In such case the gas passes to the burner-tip through the slot in the lower end of the valve and

through the holes in the cap, as shown by arrows in Fig. 1. But if the gas-pressure increases beyond the usual limit, the valve, being light, is forced upward and the spring E compressed more or less, thus obstructing the passage of gas through the cap C in a corresponding degree. When the pressure of gas diminishes the valve falls back to its former position. The valve and spring thereby act as an automatic regulator of the quantity of gas delivered to the burner-tip in a given time, requiring no care or attention to insure its efficient and continuous operation.

In place of the screw-cap C, I may employ any other device or adapt any other construction which will form a suitable chamber or cavity in which to locate the valve and spring. I may, for instance, dispense with the cap altogether, and so construct the part B as will adapt it to perform the same office as the cap.

I am aware that a movable disk or flat valve has been placed in a tapering section of a gas-pipe, and that a spring has been arranged in connection with the same, for the purpose of forming a gas-governor for regulating the flow of gas to a series of burners; but I claim no such combination of parts.

What I claim is—

1. The combination, with the gas-burner, of the valve having a vertical slot in its lower end and the spring applied to its upper end, and the base portion *a* of the burner, whose mouth receives said lower end of the valve, all substantially as and for the purpose specified.

2. The removable screw-cap C, provided with holes and a recess in its upper end to receive the spring E, the slotted valve D, the base portion A, and the top B, of the burner, all of said parts being combined as shown and described.

SAMUEL FREDERICK LEACH.

Witnesses:

CHARLES JONES,
MARGARET LAWTON.