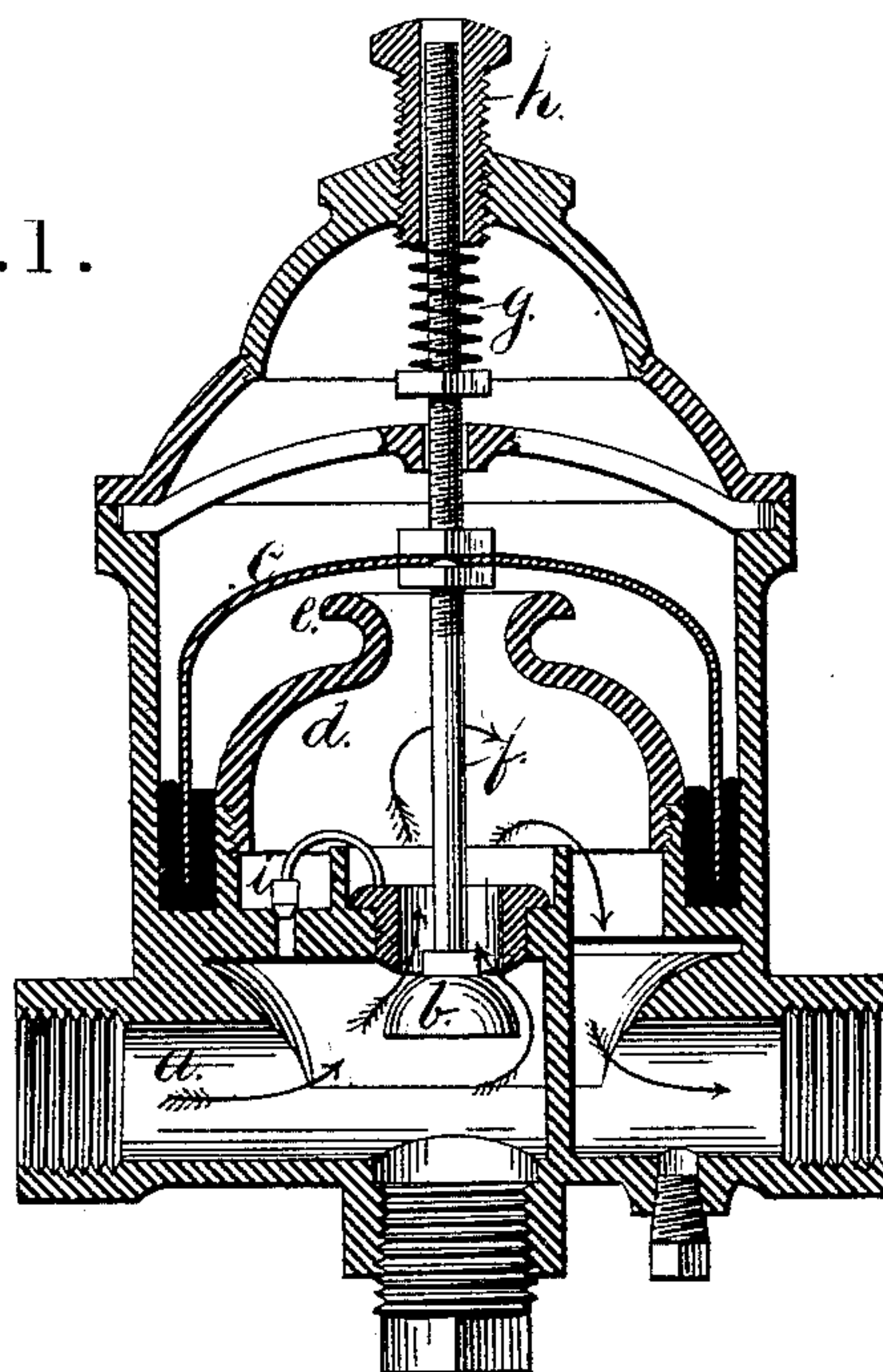


M. LEES.  
Gas-Pressure Governor.

No. 222,289.

Patented Dec. 2, 1879.

Fig. 1.



WITNESSES

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# UNITED STATES PATENT OFFICE.

MILES LEES, OF PROVIDENCE, RHODE ISLAND.

## IMPROVEMENT IN GAS-PRESSURE GOVERNORS.

Specification forming part of Letters Patent No. 222,289, dated December 2, 1879; application filed April 25, 1879.

*To all whom it may concern:*

Be it known that I, MILES LEES, of the city and county of Providence, and State of Rhode Island, have invented certain new and useful Improvements in Gas-Pressure Governors; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification.

The drawing is a sectional view of my improved gas-pressure governor, showing the diaphragm suspended in mercury or other gas seal, and the adjustable spring for regulating the external pressure.

This invention has reference to the class of gas-pressure governors in which the pressure of the gas is regulated by a valve operated by a cup-shaped diaphragm, the edge of which is immersed in mercury, so as to form a gas-seal; and it consists in the peculiar construction of the various parts, as will be more fully set forth hereinafter.

In the drawing, *a* is the gas-inlet; *b*, the regulating-valve; *c*, the cup-shaped diaphragm, the lower edge of which is immersed in mercury held in the annular space formed between the outer case and the dome *d*. This dome extends upward, surrounding the valve-stem, and the aperture in the apex of the dome is surrounded by the guard *e*. The object of this dome and the guard is to prevent the possibility of the mercury from any cause entering the valve, the pipes, or the gas-meter. The diaphragm *c* is secured to the valve-stem *f*, which, extending upward, is surrounded by a coiled spring, *g*, resting on a nut or its equivalent, and this spring is adjusted by the thumb-screw *h*, so that the pressure on the diaphragm can be regulated, and thus the maximum pressure of the gas, for as soon as the gas-pressure is increased the diaphragm *c*, and with it the valve *b*, will be raised and the supply dimin-

ished until the pressure falls, when the diaphragm also falls, and the valve is opened.

It happens at times that a sudden pressure of gas will close the valve, and thus shut off the gas-supply, by which lights are liable to be extinguished, and when the valve is again opened the gas will enter the building unconsumed. To prevent the entire closing of the gas-supply the relief-valve *i* is provided, held by a light spring.

The dome *d* may form part of an annular cup, and may be inserted into the governor. It may be made of glass, or it may be made of any other material protected by an enamel which is not affected by the mercury or the gas.

The mercury may be protected from contact with the gas, so as to prevent oxidation, by glycerine or other non-oxidizable matter; or a bag made of bladder, oiled silk, or other pliable material may be secured to the valve-stem or the diaphragm, and to or within the curve of the guard *e*, so that while the diaphragm *c* is filled with gas the gas cannot reach the mercury.

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

1. In a gas-regulator or pressure-governor, the combination, with an annular mercury-channel, of the dome *d*, provided with the guard *e*, and having a contracted central opening or aperture, substantially as set forth.

2. In a gas-pressure governor, the combination, with the valve *b* and dome *d*, provided with a guard, *e*, of the cup-shaped diaphragm *c*, valve-stem *f*, spring *g*, and adjustable nut *h*, substantially as set forth.

MILES LEES.

Witnesses:

JOSEPH A. MILLER,  
J. A. MILLER, Jr.