(No Model.)

F. ELLIS.

GAS GOVERNOR.

No. 452,946. Patented May 26, 1891.

Fig. 1.

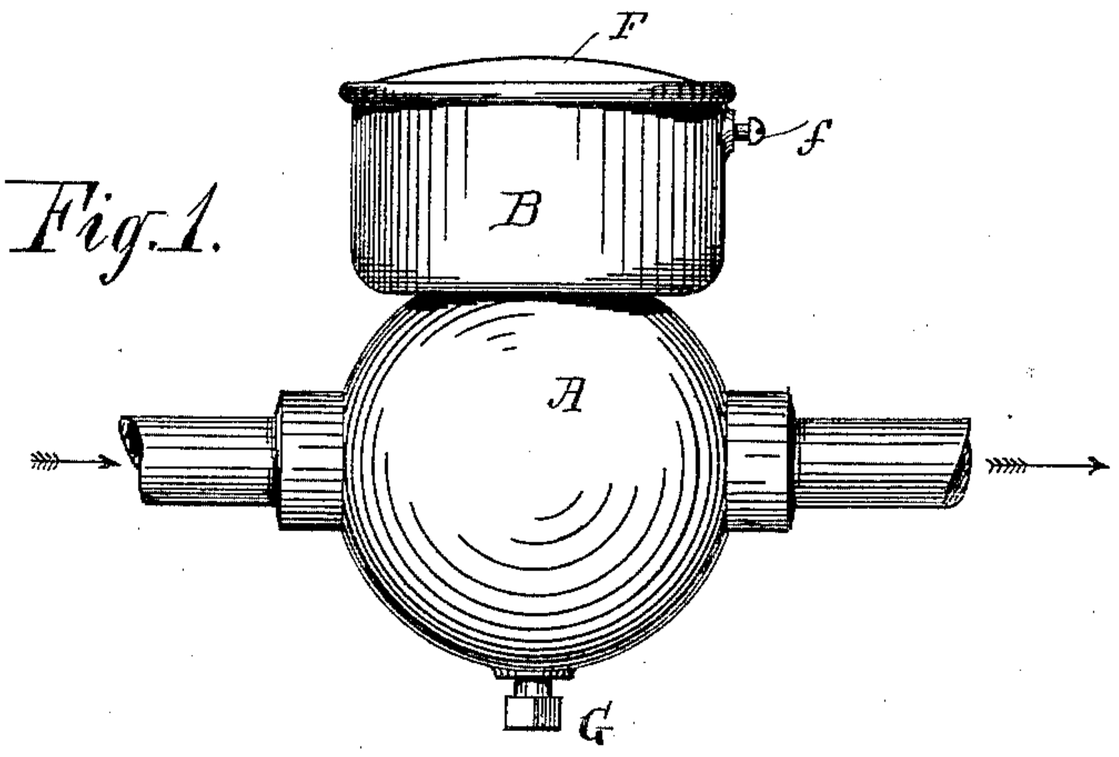


Fig. 2.

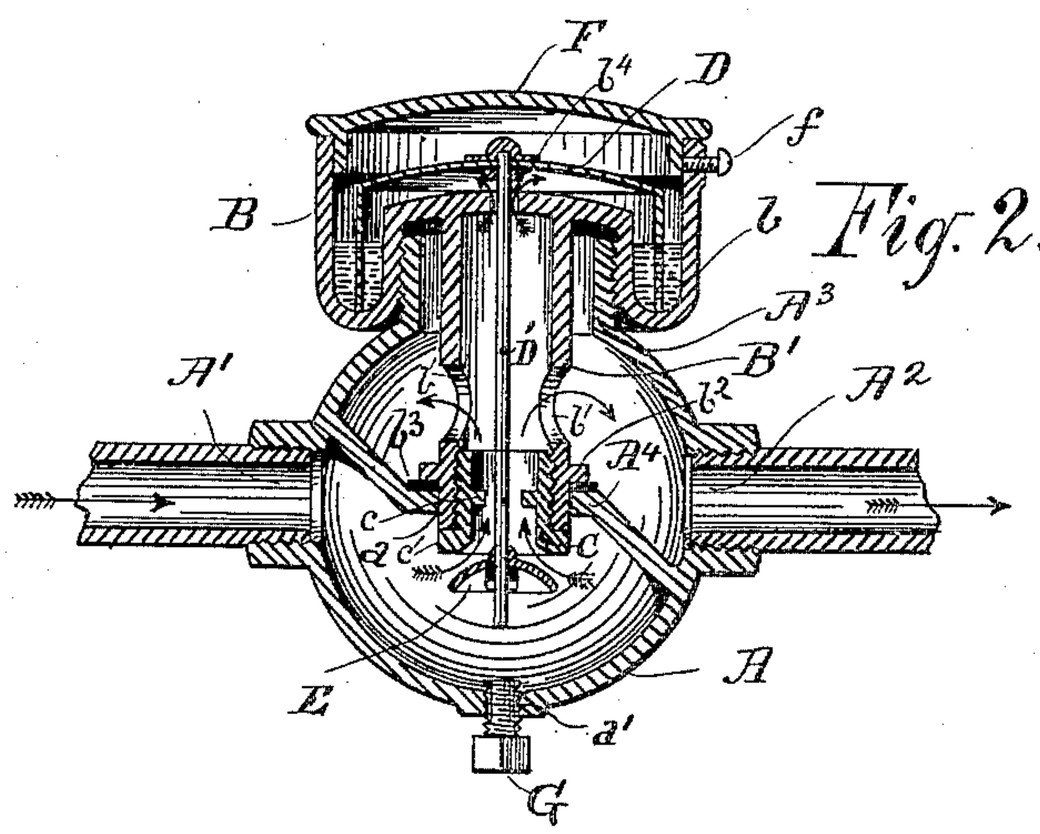
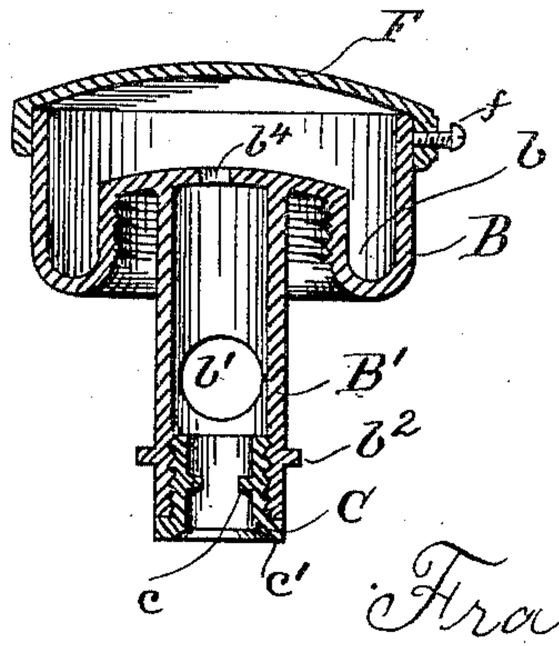


Fig. 3.



Witnesses.
H. Hollanteverde.
A. C. Ryan.

Inventor.
Franklin Ellis
by A. H. Ste Marie
atty

UNITED STATES PATENT OFFICE.

FRANKLIN ELLIS, OF SAN FRANCISCO, CALIFORNIA.

GAS-GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 452,946, dated May 26, 1891.

Application filed November 17, 1890. Serial No. 371,733. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN ELLIS, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Improvement in Gas-Governors, of which the following is a full, clear, and exact description.

This invention has reference to that class of devices used for regulating the flow of gas while on its passage from the mains to the feed-pipes of a building, and its object is to provide a governor of simple construction, compact in form, and easily taken apart for cleaning purposes.

It consists of peculiar details of construction, which I will now proceed to describe with reference to the accompanying drawings, which form part of this specification.

In the drawings, Figure 1 is a front elevation of the whole governor as it appears when in position and ready for use. Fig. 2 is a sectional elevation of the same, taken from the center of Fig. 1; and Fig. 3 is a similar view of the top piece removed from the body of the governor.

The same parts are indicated by the same letters of reference in the three views.

Let A represent the body of the governor, which consists of a casing, usually globular in form, provided with an inlet A′ and an outlet A^2, placed diametrically opposite on each side thereof, and an externally-threaded neck A^3, upwardly projecting therefrom.

Across the center of the casing is a diaphragm A^4, cast integral therewith. The central portion of this diaphragm lies in a horizontal plane in the axial line of the inlet and outlet, and its sides are respectively bent upward and downward, the left one rising diagonally to a point above A′ and the right one descending in a like direction to a point below A^2, thus isolating these two passages and preventing any communication between them, except such as is provided through a central opening *a*.

B is a cylindrical piece, the bottom of which is centrally raised to form an annular trough *b*, and internally threaded, so as to engage the externally-threaded neck A^3, which it surrounds and covers.

From the under side of the piece B depends a tube B′, which extends into the body of the governor from within the neck A^3 down through the opening *a* to a point below the diaphragm A^4. This tube has openings *b′ b′* in its sides and below these an outwardly-projecting annular flange b^2, seated upon the central portion of the diaphragm, with a packing b^3 interposed, so as to form a gas-tight joint.

The lower end of the tube B′ is internally threaded and engaged by an externally-threaded bushing C, the thickness of which may vary according as one wants to enlarge or narrow the entrance to the tube. Lugs or ribs *c c* on the inside of the bushing afford a hold for a wrench when handling it, and a flange *c′* at its bottom end prevents it from being forced too far upward.

The trough *b* is nearly filled with mercury or other sealing-liquid, and in it dips a bell-shaped float D. Depending from the center of D is a stem D′, which passes through a suitable opening b^4 in the bottom of the piece B and reaches down through the tube B′ some distance below the bushing C.

To the lower end of the float-stem is secured a segment-valve E, which finds its seat upon the flanged end of the bushing.

The piece B is capped by a cover F, the depending flange of which may be fitted either in the inside or on the outside of B, as preferred, both styles being illustrated in the drawings herewith. A set-screw *f* secures the cover in place. The bottom of the governor is further provided with an aperture *a′*, through which the casing may be cleaned without removing it. This aperture is stopped by a plug or thumb-screw G.

In my improved governor, as in other devices of similar nature, the gas is regulated by the rise and fall of the float and the consequent widening or narrowing of the space to be found between the valve and its seat. As indicated by the arrows, the gas enters the lower part of the casing through the inlet A′, thence goes up the tube B′ through the port controlled by the valve, from there passes out into the upper part of A through the openings in the sides of the tube, and finally flows out through the outlet A^2. If the

pressure be excessive, some of the gas is forced up through the opening in the bottom of the piece B and proportionately raises the float, thereby lifting the valve and reducing the volume of gas permitted to reach the outlet. If, on the contrary, the pressure is light, very little gas is forced up higher than the openings *b'*, and the float and valve fall down of their own weight, leaving the flow of gas unchecked.

It will be observed that while I make use of various parts commonly employed in gas-governors I construct and combine them in a way that is conducive to greater convenience and effectiveness. Above all may be pointed out that peculiarity of construction whereby the liquid-containing trough, the float dipping therein, and the regulating-valve—in fact, all the working parts—are formed into one compact whole, so to speak, being so united and combined that they may all be removed at once and in a very few moments without taking down the body of the governor or interfering with the connecting-pipes. Thus if the body of the governor has to be cleaned this may be done without trouble after taking off the top piece and depending parts and removing the plug at the bottom of the casing. Should the working parts, on the other hand, require overhauling, the gas need not be turned off but for a moment to allow their removal, as one can place a temporary cap over the neck of the casing and let the gas flow to the feed-pipes, as usual, until the needed repairs have been made.

Without confining myself to the particular forms and precise details of construction hereinbefore described, and illustrated in the accompanying drawings, what I claim as my invention, and desire to secure by Letters Patent of the United States, is—

A gas-governor comprising a casing provided with an inlet, an outlet, and an externally-threaded neck, a centrally-apertured diaphragm separating said inlet from said outlet, an internally-threaded liquid-containing trough engaging said neck, a float dipping in said liquid, a laterally-perforated tube depending from said trough and fitted in said apertured diaphragm, said tube provided with an outward flange seated upon said diaphragm, with a packing interposed, a bushing in the lower end of the same, a valve seated upon said bushing, and a valve-stem secured to said float, substantially as set forth.

In witness whereof I have hereunto set my hand and affixed my seal in presence of two witnesses.

FRANKLIN ELLIS. [L. S.]

In presence of—

JOHN M. RODGERS,

A. H. STE MARIE.