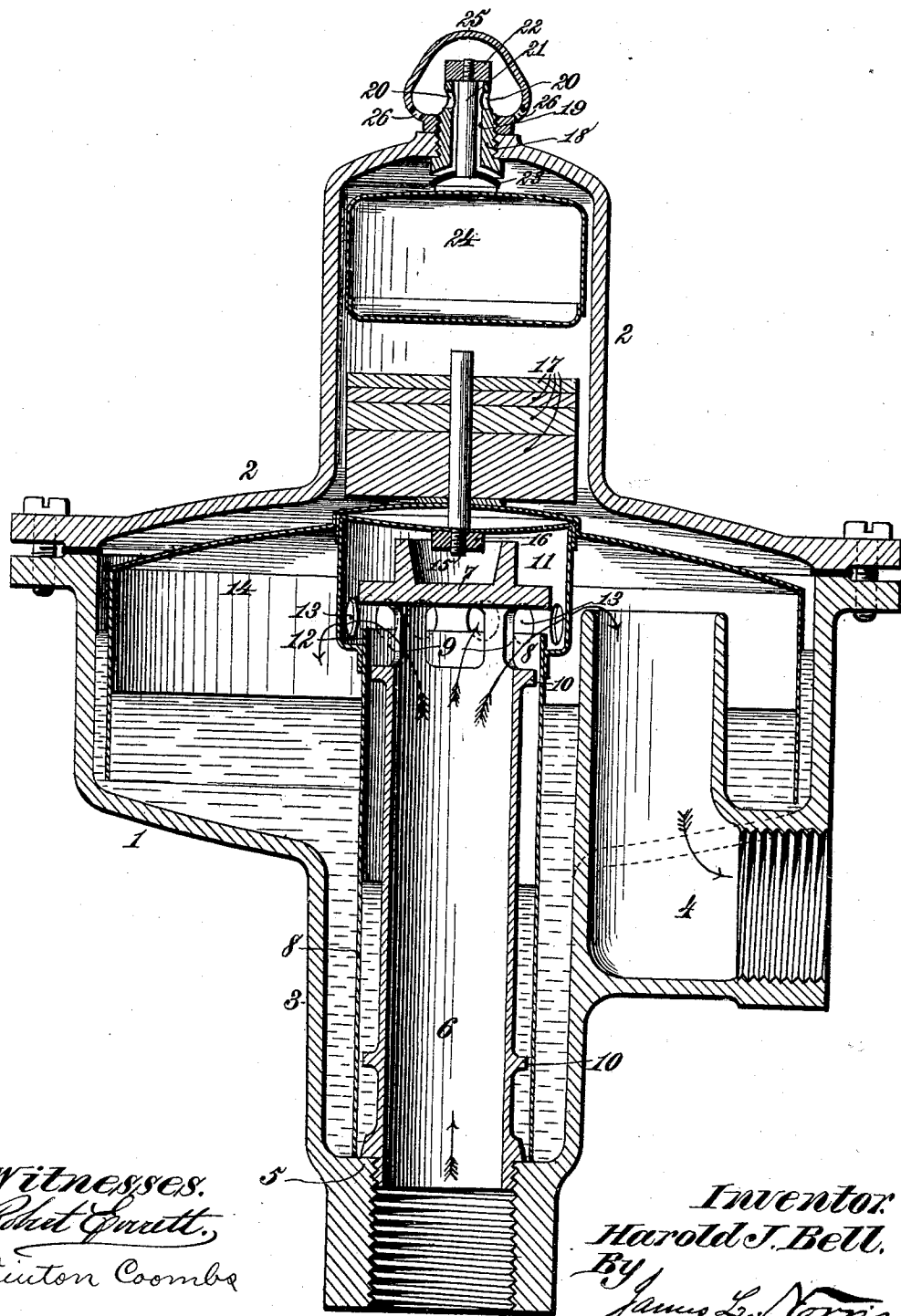


(No Model.)

H. J. BELL.
GAS GOVERNOR.

No. 408,071.

Patented July 30, 1889.



Witnesses.
Robert Smith,
Vinton Coombs

Inventor.
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UNITED STATES PATENT OFFICE.

HAROLD J. BELL, OF GLOUCESTER CITY, NEW JERSEY, ASSIGNOR TO THE
WELSBACH INCANDESCENT GAS LIGHT COMPANY, OF NEW JERSEY.

GAS-GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 408,071, dated July 30, 1889.

Application filed January 16, 1889, Serial No. 296,518. (No model.)

To all whom it may concern:

Be it known that I, HAROLD J. BELL, a citizen of the United States, residing at Gloucester City, in the county of Camden and State of New Jersey, have invented new and useful Improvements in Gas-Governors, of which the following is a specification.

This invention relates to gas-governors adapted for use in connection with gas-meters, though also capable of attachment to chandeliers of large size.

The invention consists in a gas-governor having the peculiarities of construction hereinafter described and claimed.

The invention is illustrated in the annexed drawing, which represents a central vertical section of a gas-governor embodying my improvements.

The governor-casing consists of a lower shell 1 and an upper shell 2, both composed of cast metal. The lower shell 1 is provided at the bottom with a central tubular portion 3, which forms the governor-inlet. On one side of the inlet 3 is an outlet 4, which curves upward into the governor-casing.

In the lower part of the inlet 3 is a centrally-perforated diaphragm 5, in which is secured a central vertical inlet-tube 6, having a closed upper end 7, which projects laterally in the form of an annular flange, that serves as a valve-seat for a tubular valve 8, which surrounds said inlet-tube. In the upper part of the gas-inlet tube beneath its closed top are lateral openings or gas-exits 9, and on the outside of said tube, near its upper and lower ends, are annular guides 10 for the tubular valve.

An enlarged tubular gas-chamber 11, closed at the top, is secured to the upper portion of the valve-tube 8, near its upper end, which forms an annular valve-lip 12 to contact with the lower surface of the valve-seat 7 at the top of the gas-inlet tube. The gas-chamber 11 is provided with lateral openings 13 for the passage of gas from said chamber to the space beneath a bell-shaped float 14, which is secured to the gas-chamber 11, and through said chamber to the tubular valve.

The valve-tube 8 and gas-chamber 11 are connected by soldering or otherwise, and the

gas-chamber may be connected to the bell-shaped float 14 by means of a bolt 15 and nut 16, as shown, the bolt being passed through the tops of the chamber and float, and extended vertically, if desired, for attachment of a series of weights 17 to counterbalance the float and increase the pressure of gas in the governor, as may be required.

The bell-shaped float 14 surrounds the lateral gas-outlet tube 4, as well as the central gas-inlet tube and its valve, and dips into a liquid—preferably glycerine—which is contained in the lower shell of the governor-casing. This liquid seals the lower end of the tubular valve and the lower portion of its bell-shaped float.

The upper shell 2 is centrally contracted around and above the weights 17, and forms the top or removable cover of the governor-casing, being detachably secured to the lower shell 1 in any convenient manner.

In the top of the upper central portion of the shell 2 is a screw-threaded opening, in which is inserted a threaded bushing 18, that projects both above and below the upper part of the shell. This bushing 18 has a central vertical air-opening 19, which is intersected by lateral air-openings 20 above the shell. Through the vertical air-opening 19 is passed a valve-stem 21, which is provided on its upper end with a shoulder or nut 22, that normally rests on the top of the bushing, thereby suspending the valve-stem 21 loosely within said bushing. On the lower end of the valve-stem 21 is a convex disk-valve 23, which seats against the lower concaved end of the bushing, and to the under side of this valve is attached a float 24 of any suitable construction. The upper projecting end of the bushing 18 is surrounded by a cap 25, that is secured to said bushing and provided with air-openings 26, as shown. Gas enters and passes through the governor in the directions indicated by the arrows in the drawing, and its volume is controlled by the rise and fall of the bell-shaped float 14 and connected tubular valve 8 in a well-known manner.

Under normal conditions of the governor the air-valve 23 is inoperative; but should the pressure of gas beneath or within the float 14

become excessive, as when the gas is shut off on the governed slide, the fluid rises between the walls of the shell 1 and float 14 and forces the air out of the space above the surface of the float, thereby lowering the fluid inside the float. As soon as the fluid strikes the bottom of the air-valve float 24 this float is raised by fluid-pressure and closes the air-valve, thereby preventing escape of the fluid, no matter what pressure exists beneath the gas-float.

In a gas-governor of this construction the movable parts of the gas-valve are so arranged that a contact of gas at a right angle anywhere within the valve is balanced by a similar contact on the opposite side, thus providing an absolutely-balanced valve of simple construction.

What I claim as my invention is—

1. In a gas-governor, the combination, with the governor-casing and a balanced gas-regulating valve inclosed in said casing, of a bush-

ing 18 inserted in an opening in the upper part of the governor-casing, a perforated cap 25, attached to said bushing above the governor-casing, an air-valve 23, having its stem suspended in the bushing, and a float 24, attached to the under side of said valve, substantially as described.

2. In a gas-governor, the combination, with the governor-casing and a balanced gas-regulating valve inclosed in said casing, of a bushing inserted in the upper part of the governor-casing and provided with air-openings 19 and 20, an air-valve suspended in said bushing, and a float attached to the under side of said air-valve, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HAROLD J. BELL.

Witnesses:

WILLIAM E. BARROWS,
CLAUDE A. SIMPLER.