

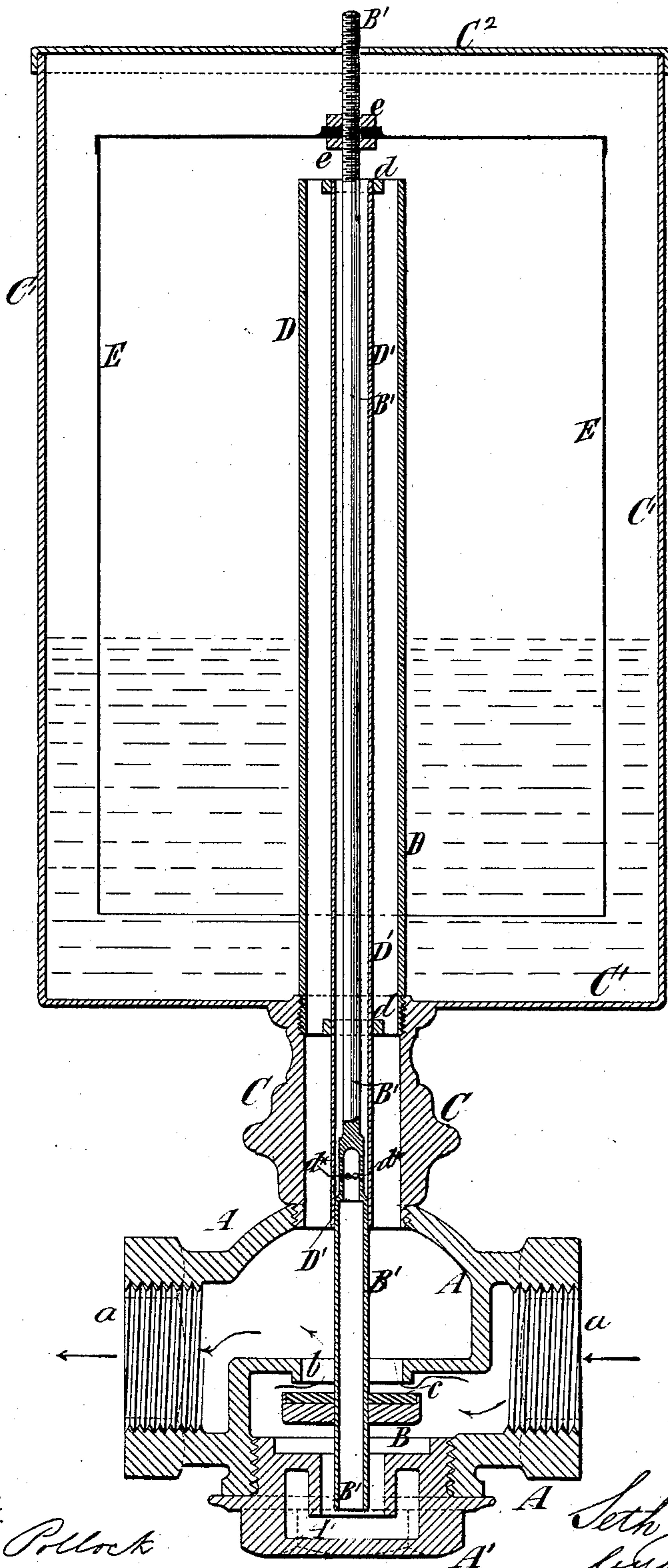
(No Model.)

S. J. WAKELEY.

GAS GOVERNOR.

No. 322,083.

Patented July 14, 1885.



Witnesses:

*Henry S. Lee*  
*Matthew Pollock*

Inventor

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# UNITED STATES PATENT OFFICE.

SETH J. WAKELEY, OF NEW YORK, N. Y.

## GAS-GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 322,083, dated July 14, 1885.

Application filed February 25, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, SETH J. WAKELEY, of the city and county of New York, in the State of New York, have invented a new and useful  
5 Improvement in Gas-Governors, of which the following is a specification.

My invention relates to governors for controlling the supply of gas to a system of pipes and burners, in order to maintain a compar-  
10 atively uniform pressure within the pipes leading to the burners however the pressure in the main and service pipes may vary. My governor, like others of the same class, has a valve which is controlled by the pressure of  
15 gas in a drum or shell having a liquid seal, and which may be loaded, as desired, to set it for admitting more or less gas to the pipes leading to the burners.

The object of my invention is to provide a  
20 governor in which provision is afforded for the leakage or by-pass of a small quantity of gas independent of the valve, and whether it be open or closed, whereby the governor is made more sensitive to slight variations in pressure,  
25 and which enables the governor to be regulated for the very lowest pressure which can be possible.

My invention is illustrated in the accompanying drawing, which represents a sectional  
30 elevation of a governor, and will be hereinafter described, and pointed out in the claim.

A designates the valve shell or casing, which has at opposite ends pipe-sockets *a*, which are in line, and a downwardly-presented valve-  
35 seat, *b*. Below this seat is a valve, B, having a facing, *c*, of any suitable packing material which will not be corroded or destroyed by the action of gas. This valve closes by an upward movement, and when open permits gas  
40 to pass through the seat in the direction indicated by arrows.

The bottom of the valve-casing A is closed by a screw-plug, A', which is of sufficient size to permit of the valve B being introduced up-  
45 ward through the opening when the plug is removed. From the top of the casing A extends upward a short neck or cylindric portion, C, which is surmounted by a large shell or casing, C', open at the top, and serving to  
50 contain water or other liquid seal to prevent gas from escaping.

Screwed or otherwise secured in the neck or socket C, and forming an upward continuation thereof, is a pipe, D, which extends upward nearly to the top of the shell or casing C'; and  
55 D' designates a smaller pipe arranged concentrically therein and extending from the upper end thereof down to the valve-shell A. As here shown, the pipe D has cross-bars or bridges *d* in which the tube D' is fixed. 60

The valve B is attached to a stem, B', which extends upward through the pipe D', and is guided in the said pipe. The stem from the lower end upward to a point within the pipe D' is tubular or hollow, and at the top of its  
65 internal cavity it has side openings, *d\**, through which gas may escape from the tubular stem B' into the pipe D', and thence upward into the casing C'. The stem B' is here shown as reduced in size above the tubular portion, and  
70 it extends upward above the top of the pipe D', and has secured to its upper end an inverted cup shaped drum or cylinder, E, the lower open end of which is immersed in the liquid in the shell or casing C', and is thereby  
75 sealed to prevent the escape of gas. The upper end of the stem B' is screw-threaded, and the drum E is attached thereto by nuts *e*, which provide for adjusting it relatively to the valve-  
80 stem. This drum E may be loaded by weights proportionate to the pressure which it is desired to maintain in the pipes leading to the burners, and when this pressure is exceeded the drum and valve-stem B' will be lifted, and the  
85 valve B closed on or moved toward the seat *b*, to more or less prevent the inflow of gas. It will be observed that the valve opening downward provides for admitting to the drum only the back-pressure from the pipes leading to the burners, and not the pressure which is in  
90 the main supply-pipe leading to the regulator or governor.

The hollow stem B', with its fine holes *d\**, provides a by-pass for a small quantity of gas even when the valve B is closed. This passage  
95 of gas through the governor independently of the valve enables the governor to be regulated or set for the very lowest pressures, and renders the governor very sensitive to comparatively slight variations in pressure. 10

The portion of the valve-stem B' which is below the holes *d\** fits and moves snugly with-

in the pipe D'; but the stem B', at and above the holes  $d^*$ , is reduced in diameter, so that the gas passing through the holes  $d^*$  will find its readiest avenue of escape upward through the pipe D' and into the drum E.

When the burners are all turned off, there will be no pressure upon the drum E, and hence it will be in its lowermost position, with the valve full open.

To regulate the governor, one burner is lighted, and the valve is set by loading the drum E to any pressure desired. This may be done in the laboratory by means of a test-gage. This being done the governor will properly control the pressure of gas in the pipes leading to the burners, whether any number of burners from one to the full number for which the governor is intended to be used be lighted.

Another advantage of the small by-pass in-

dependent of the valve is that it always lets enough gas through to prevent the burners from being wholly extinguished in case the governor gets out of order and the valve becomes or is held permanently closed.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, with the valve-shell A, having the downwardly-presented seat  $b$ , of the neck or socket C, shell or casing C', and pipe D, surmounting the shell A, the valve B, and its stem B', made tubular at the lower portion and having the side opening,  $d^*$ , whereby there is formed a by-pass for gas independent of the valve, substantially as herein described.

SETH J. WAKELEY.

Witnesses:

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