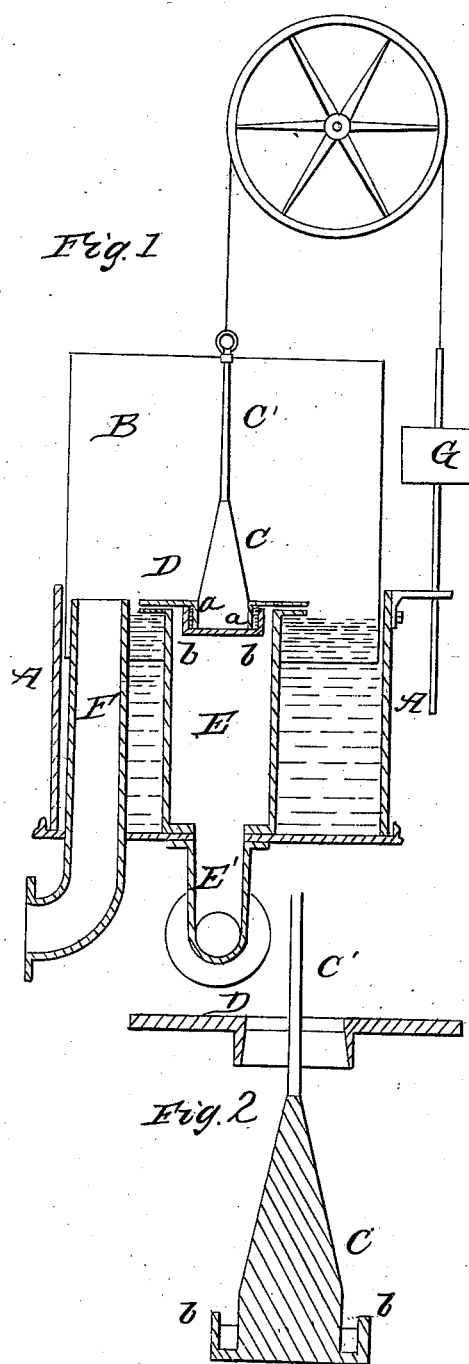


J. BATTIN.
Gas Regulator.

No. 5,300.

Patented Sept. 18, 1847.



UNITED STATES PATENT OFFICE.

JOSEPH BATTIN, OF PHILADELPHIA, PENNSYLVANIA.

GAS-REGULATOR.

Specification of Letters Patent No. 5,300, dated September 18, 1847.

To all whom it may concern:

Be it known that I, JOSEPH BATTIN, of the city of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in the Manner of Distributing Illuminating-Gas from Gasometers used at Gas-Works; by which improvement I am enabled to regulate the pressure by which the distributor is effected more perfectly and economically than by any of the methods heretofore practiced for that purpose, and I do hereby declare that the following is a full and exact description thereof.

In the distribution of illuminating gas by the means heretofore adopted, it has been found extremely difficult to equalize the pressure in the pipes of distribution; when the supply is too small there is, of course, a diminution of the light which the burners ought to give out, and when the pressure is too great, the gas meters are caused to overflow, by which they are rendered unfit for use, until they are again supplied with water.

The gas is forced through the distribution pipes by its own elasticity, as it is received from the generators, and by the descent of the upper, or floating, vessel of the gasometer, the weight of which is counterpoised to such extent as to allow it to have a descending power which shall approximate as nearly as may be to that required for the distribution; but, from various causes, this weight is liable to vary in its action, and does not suffice to produce the desired effect, as is well known to those familiar with gas works.

It has been attempted to regulate the flow of gas by placing a man to turn a wheel having an apparatus appended to it designed to equalize the flow, but this plan was soon abandoned; more recently a conical self acting governor has been introduced, which has partially obviated the difficulty stated; this self acting governor I will presently describe, as I employ it in my improved mode of constructing the regulating apparatus; but I have combined with it a mercurial seal, by which the self regulation is rendered efficient; my improvement removing the defect of an imperfect stoppage of the supply when the pressure is such as to require it. It was not, in fact, found possible so to construct this regulator

as to effectually cut off the supply of gas, when it was requisite so to do, until the mercurial seal was combined therewith by me.

In the accompanying drawing Figure 1, is a sectional view of a gasometer, taken vertically through its center, and representing my improvement in the manner of regulating the pressure in the distribution of gas. Fig. 2, is a separate view of my improved governor or regulator.

A, is the tank, or outer vessel, of the gasometer, and B, its floating vessel, suspended and counterpoised by weights in the usual manner, as shown at G. From the floating vessel B, is suspended, by the rod C', the conical regulating valve C, which is allowed to work up and down within the cylindrical space E, with the rising and falling of the vessel B. The space E, constitutes a part of the inlet pipe E', through which the gasometer is to be supplied.

F, is the outlet pipe communicating with the street mains.

D, is a cap or cover, adapted to the enlarged part E, of the inlet pipe. This cap is furnished with a descending rim *a, a*, that is intended to pass into an annular mercury cup *b, b*, that surrounds the conical regulating valve at its lower end. The conical valve, or regulator C, has been used without the mercury cup, and has to a certain extent, been found useful; but it is a point of great importance to be able perfectly to arrest the flow of gas into the gasometer when it has become filled, as otherwise the weight of the floating vessel and that of the elastic force with which the gas enters are combined in forcing the said gas into the outlet and distributing pipes, and the meters are liable to overflow. In a large and cumbrous apparatus, like that of the gasometer used at gas works, it was not found possible effectually to close the communication between the floating vessel and the inlet pipe by means of a valve; but by combining the mercury cup, or seal, with the conical valve or regulator C, I have attained the desired end.

The improved apparatus above described may be considered as a miniature gasometer, with the cone regulator and quicksilver seal attached thereto, and placed between the principal gasometer and the street main.

When under this arrangement, the

counter weights of the gasometer have been
duly regulated so as to give the desired pressure, and the influx of gas has been such as
to fill the gasometer, the conical regulator
5 will be raised so as to bring the quicksilver
seal into action, and thereby the further inflow of gas will be prevented, until the vessel B, of the gasometer again begins to descend; the inflow of gas will then take
10 place around the base of the conical valve, or regulator, but the space through which it passes will be comparatively small, but with its descent the space around the conical valve will be increased, and the generated gas will enter more fully. As the gas
15 again passes the regulating cone or governor, and the pressure within the gasometer is sufficiently increased, it will again rise, until the communication is closed by the
20 quicksilver seal, and all increase of pressure will be prevented.

Having thus fully described the nature of my improvement in the manner of regulating the distribution of the gas from a gasometer, what I claim therein as new, and 25 desire to secure by Letters Patent, is—

The manner herein set forth of combining the conical governor or regulator, and the quicksilver seal, with the gasometer, so as entirely to cut off, or to govern and regulate, the pressure of the gas within the distributing pipes. 30

I do not make claim to either of these devices when taken separately, and uncombined with the gasometer and inlet pipe, 35 but I limit my claim, exclusively, to the aforesaid combination, for the purpose herein fully made known.

JOSEPH BATTIN.

Witnesses:

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