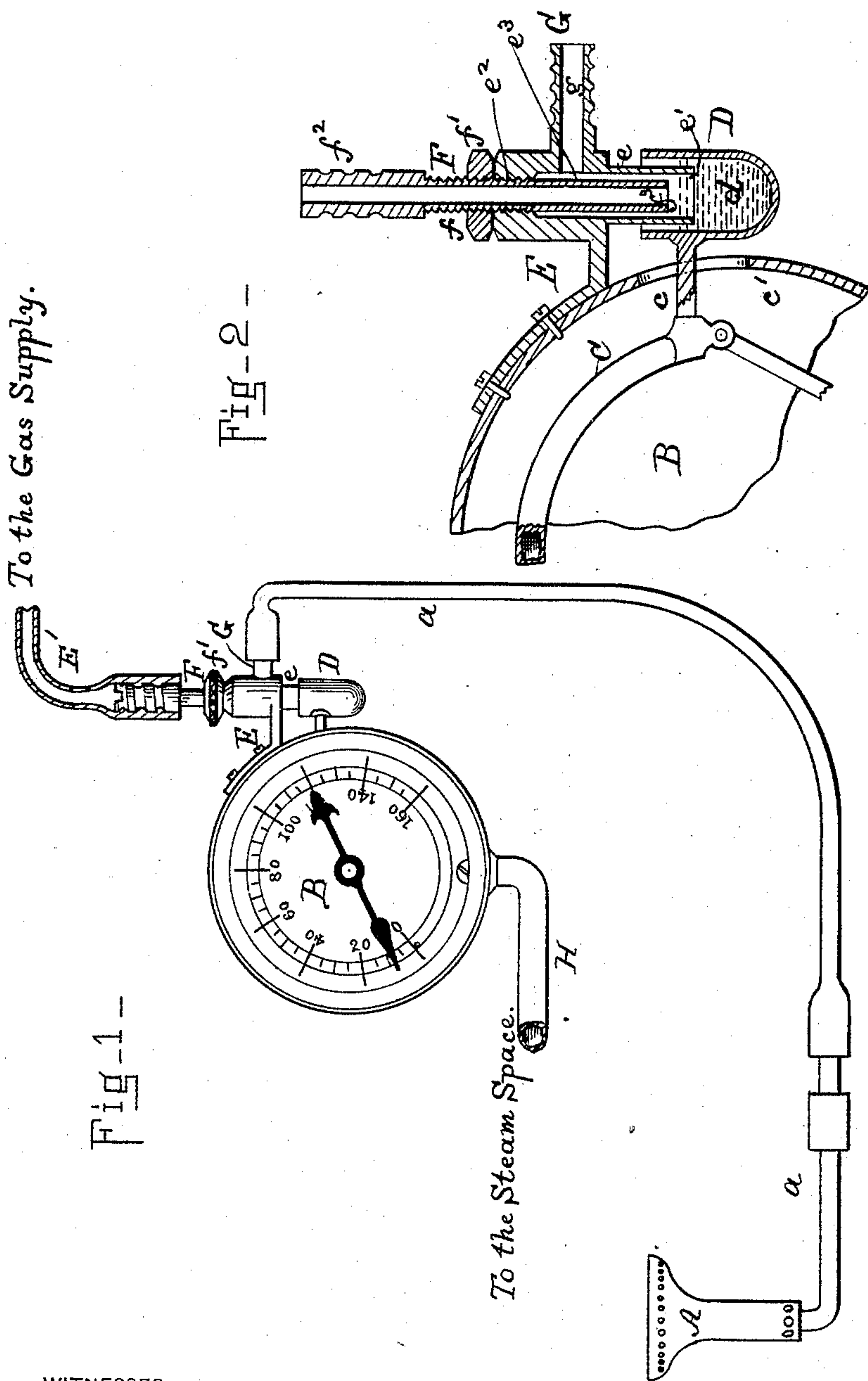


(No Model.)

C. B. BOSWORTH.
AUTOMATIC GOVERNOR FOR REGULATING THE SUPPLY OF
GAS TO BURNERS.

No. 473,447.

Patented Apr. 26, 1892.



WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

CHARLES BARTLETT BOSWORTH, OF EVERETT, ASSIGNOR TO THE CROSBY STEAM GAGE AND VALVE COMPANY, OF BOSTON, MASSACHUSETTS.

AUTOMATIC GOVERNOR FOR REGULATING THE SUPPLY OF GAS TO BURNERS.

SPECIFICATION forming part of Letters Patent No. 473,447, dated April 26, 1892.

Application filed November 27, 1891. Serial No. 413,283. (No model.)

To all whom it may concern:

Be it known that I, CHARLES BARTLETT BOSWORTH, a citizen of the United States, residing at Everett, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in an Automatic Governor for Regulating the Supply of Gas to a Burner; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 represents a side view, partly in section, of the device ready to be applied for use. Fig. 2 is a detail section.

This invention relates to an automatic governor for regulating the supply of gas to a burner; and it consists in the device hereinafter set forth.

In the annexed drawings, the letter A indicates an ordinary burner having the supply-pipe a , and B is an ordinary gage containing a Bourdon tube C. Between this gage and the burner is placed the governor.

Extending from the Bourdon tube is an arm c , which protrudes through the opening c' in the gage-case and carries a cup D. In the cup D is placed mercury d . Secured to the outside of the gage-case is a bracket E. This bracket E has a depending nozzle e , which enters the cup D. The edge e' of the nozzle when below the surface of the mercury d forms a seal. Aligned with this nozzle at the top this bracket E has the threaded orifice e^2 , leading into the chamber e^3 , which communicates with the nozzle e . Passing through this threaded orifice e^2 is a pipe F, threaded at f within the orifice e^2 and having the lock-nut f' outside of the bracket E. At the top this pipe F has the large thread f^2 for engagement with the pipe E' , leading to the gas-reservoir. The lower end f^3 of this pipe F is above the surface of the mercury. The bracket E also has a threaded projection G, which has a bore g communicating with the chamber e^3 . To this projection G the pipe a , leading from the burner A, is connected. To the Bourdon tube C the pipe H leads and

communicates with the steam or vapor space of whatever vessel, boiler, retort, &c., the heat of the burner A is applied to.

In use this apparatus is put in place, the burner A being under whatever device is to receive heat, and the pipe H communicating with the steam or vapor space of such device. The gas is turned in from the reservoir and passes down the pipes E' and F into the chamber e^3 , and through the projection G and the pipe a to the burner A, where it is ignited. As the heat increases, the steam or vapor passing through the pipe H operates the Bourdon tube, causing the cup D to rise. This continues until the surface of the mercury d comes up to the end of the pipe F, closing or partially closing the orifice at f^3 , thereby cutting off the supply of gas to the burner A and diminishing the flame and the consequent heat. Upon the reduction of the pressure of the vapor generated in the vessel heated the Bourdon spring of the gage falls, carrying with it the cup of mercury and opening the supply of gas to the burner. By a due adjustment of the pipe F the distance between its lower end f^3 and the surface of mercury can be regulated for the passage of the amount of gas desired at the burner, and the variations of the Bourdon tube will maintain this distance as a constant quantity.

Having thus described my invention, what I claim is—

1. The combination of a boiler or other receptacle to be heated, the burner for heating the same, a gage communicating with said boiler or receptacle, a supply-pipe for said burner, and a governor located in said supply-pipe and connected with the said gage, whereby the variations in the boiler or receptacle, as indicated by the gage, regulates the pressure in the supply-pipe, as set forth.

2. The combination of a gas-burner, a gage provided with a Bourdon tube, a mercury-cup attached to such Bourdon tube, and a coupling connected to pipes leading therefrom to the gas-burner and a gas-supply, and having a nozzle leading into the mercury-cup and communicating with both of said pipes, as set forth.

3. The combination of the gas-burner A, the pipe a , leading thereto, the pipe E' , lead-

ing from a gas-supply, the gage B, having
the Bourdon tube C, and the pipe H, con-
nected therewith and communicating with the
steam-space of a boiler or retort, the mercury-
5 cup D, attached to one arm of the Bourdon
tube, the bracket E, having the nozzle e , the
threaded orifice e^2 , and the projection G, the
last connected to the pipe a , and the pipe F,
passing through the orifice e^2 in the bracket

E and adjustable within the nozzle e , so that 10
its lower end f^3 may be above or immersed in
the mercury in the cup D, as set forth.

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

CHARLES BARTLETT BOSWORTH.

Witnesses:

JOSHUA H. MILLETT,
GEO. H. EAGER.