

(No Model.)

W. T. SUGG.
GAS REGULATOR.

No. 245,579.

Patented Aug. 9, 1881.

Fig. 1.

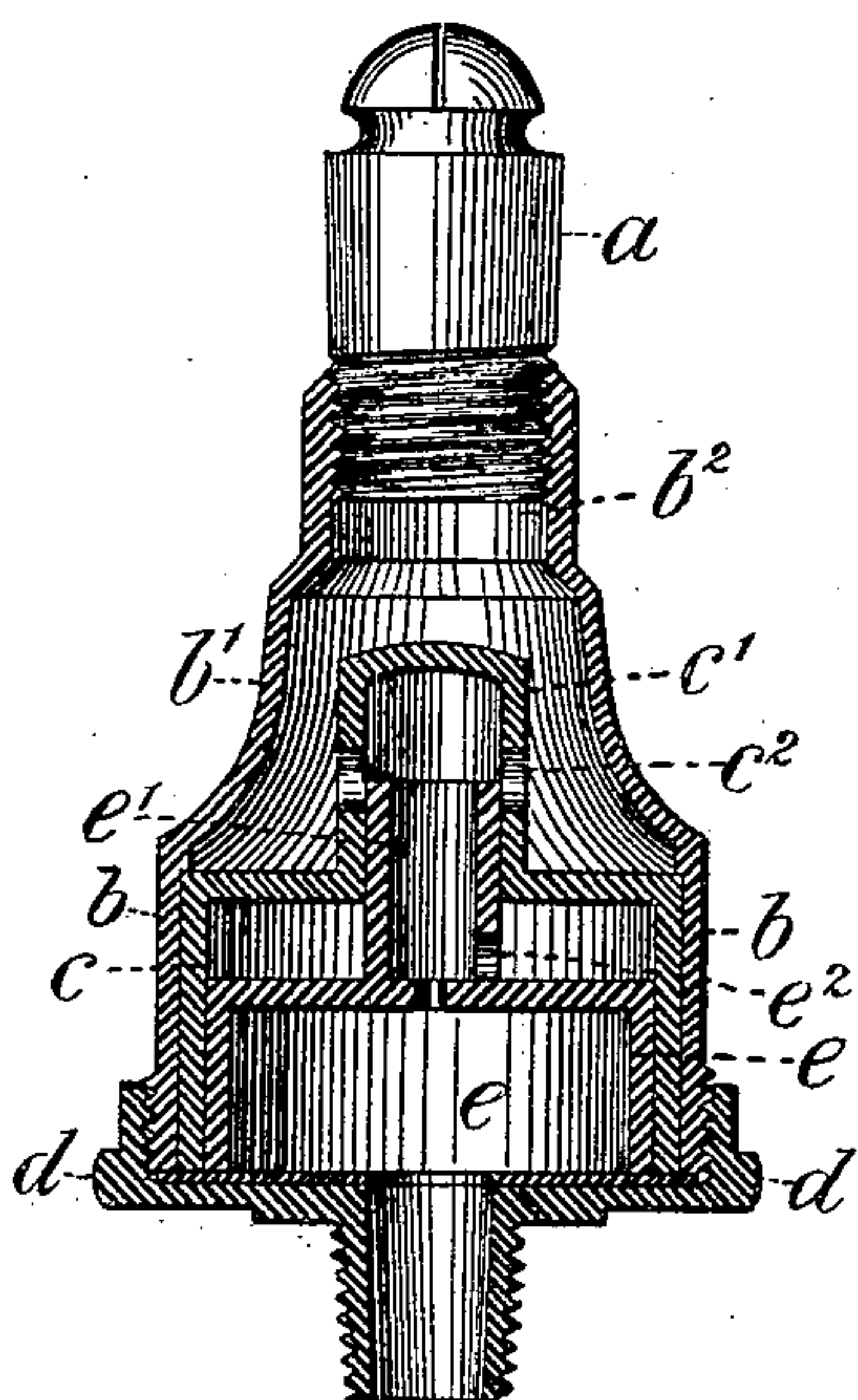


Fig. 2.

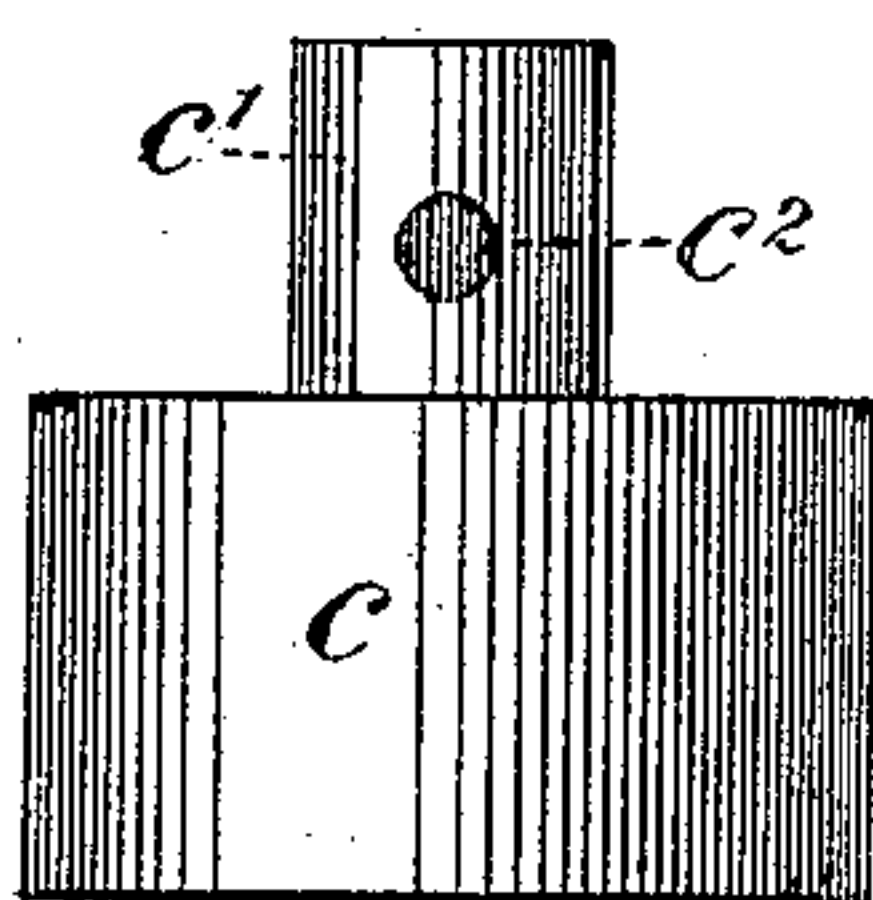
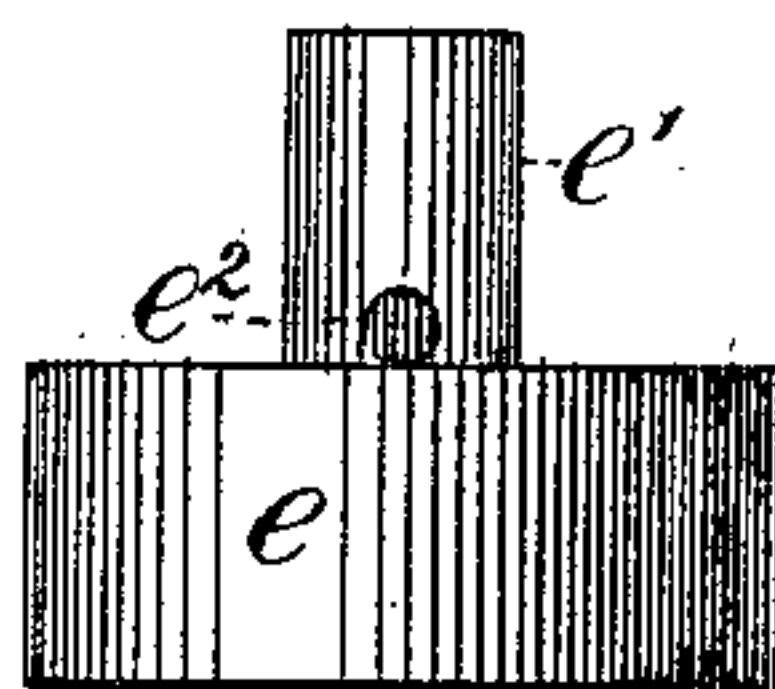


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM T. SUGG, OF WESTMINSTER, ENGLAND.

GAS-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 245,579, dated August 9, 1881.

Application filed March 31, 1881. (No model.) Patented in England May 6, 1880.

To all whom it may concern:

Be it known that I, WILLIAM THOMAS SUGG, of Vincent Street, in the city of Westminster, England, have invented certain Improvements in Gas-Regulators, of which the following is a specification.

In the gas-regulators at present in use great inconvenience has been experienced from the corrosion of the metals of which they are formed, such corrosion serving to fix the floating part of the regulator and stop its action; and to avoid this so loose a fit has been given to the floating portion of the regulator that a large proportion of gas was enabled to escape past its periphery.

The object of the present invention is to provide a gas-regulator that will not allow the gas to pass through without regulation, its floating part having no tendency to become fixed in its cylinder through the corrosive action of the gas.

The invention applies, chiefly, to small regulators attached to burners; and it consists in fitting within a cylindrical chamber in the lower part of the burner a floating gas-holder, composed, by preference, of steatite, which holder will be free to rise and fall according to the varying pressure of the gas, and by its movements increase or diminish the supply of gas to the burner.

The invention admits of various modifications, as will be presently explained.

In the accompanying drawings, Figure 1 shows in vertical section, on an enlarged scale, my improved gas-regulator fitted to a flat-flame burner. Below the burner *a* is a cylindrical chamber, *b*, in which is fitted, so as to form a lining thereto, an inverted cylindrical vessel of steatite, *c*, which has a central tubular extension, *c'*, that is closed at top and has lateral passages *c²* for admitting the gas into the neck *b'* of the casing *b*.

Fig. 2 is an external view of the lining detached from its chamber or casing. The chamber *b* is closed at bottom by a threaded metallic piece, *d*, having a screwed neck which fits into the gas-supply pipe. Within the vessel *c*, I fit what may be termed a "floating gas-holder," *e*, which is free to rise and fall in the inclosing-vessel without allowing gas to pass

between it and the lining *c*. This gas-holder carries at its upper end a cylindrical tube, *e'*, which acts as a check-valve, and is drilled through the center to admit of a definite quantity of gas passing up through it.

Fig. 3 shows the gas-holder *e* with its cylindrical valve *e'* as detached from the regulator. The tube *e'*, acting as a valve, enters the tubular extension *c'* of the lining *c*, and it is free to slide up and down therein as the pressure of the gas varies. The lateral passages *c²* in the tubular extension *c'* allow of the gas which passes up through the valve *e'* escaping into the neck *b'* and so passing off by a central opening, *b²*, at the upper end of the casing to the burner *a*. When the normal pressure of the gas is exerted the gas will flow upward in the course indicated to the burner. The action, however, of any undue pressure will be to lift the gas-holder and with it the valve *e'*, which will then partially close the lateral passages *c²*, and thus diminish the supply. To prevent a too sudden rise of the valve a lateral opening, *e²*, is made in it to supply gas to the space in the chamber *b* above the gas-holder *e*. The elasticity of this imprisoned gas will effectually prevent the too sudden rise of the valve, which might otherwise have the effect of extinguishing the light.

I would remark that by enlarging the diameter of the regulator it may be used for controlling two or more burners; but it is not intended to take the place of those classes of gas-regulators which control the whole supply of a large establishment.

In some cases I propose to make the gas-holder and valve of non-oxidizable metal, which will work smoothly and without risk of sticking within a steatite lining and valve-seat; or I may use a non-oxidizable metallic lining and form the valve-seat of the same material, using therewith a gas-holder and valve of steatite, as explained. The steatite will be shaped in the lathe when in its natural or comparatively soft state, and it will admit of being polished and used without further treatment; but in some cases I may find it convenient to subject the steatite portions of my regulator to furnace heat, which will greatly increase their hardness and strength.

I am aware that it has been proposed to employ soapstone or steatite in the manufacture of valves and valve-seats of the character in which the valve closes against the seat, the function of the material being to resist the wearing action of hot gases, &c. My improvement, on the contrary, relates to sliding valves operated by a varying pressure of gas, and the function of the soapstone is to prevent the interference with the movement of the valve due to corrosion or oxidization.

I am also aware that a sliding valve having a lateral opening below the valve-seat has been used in a gas-regulator, but said lateral opening did not occupy such a relation to the valve-seat, casing, and float as to render it capable of performing the function of the lateral opening e^2 in my valve.

Having now explained my invention, I wish it to be understood that I claim—

1. The combination, in a gas-regulator, of

the outer casing, a tubular valve-seat, c' , arranged therein, and having a lateral opening, c^2 , and a tubular valve, e' , fitted snugly to said seat, and adapted to be controlled by the pressure of gas, the valve or its seat being composed of steatite, whereby corrosion of the surfaces and interference with the sliding movement of the valve is prevented, as set forth.

2. The combination of the outer casing, the tubular valve-seat c' , having a lateral passage, c^2 , and the tubular valve e' , having beneath the valve-seat a lateral passage, e^2 , and float e , as set forth.

London, March 1, 1881.

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