

J. CRAWFORD.
GAS-REGULATOR.

No. 175,940.

Patented April 11, 1876.

Fig. 1.

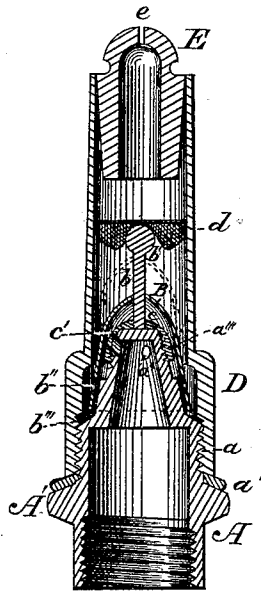


Fig. 2.

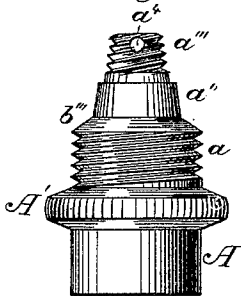


Fig. 3.

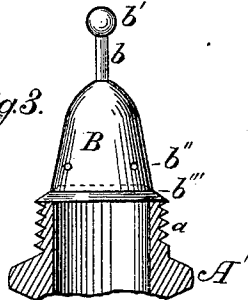
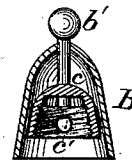


Fig. 4.



Attest:

H. Schott.
J. Mason

Inventor:

John Crawford
By A. Crawford
att'y.

UNITED STATES PATENT OFFICE.

JOHN CRAWFORD, OF NEW YORK, N. Y.

IMPROVEMENT IN GAS-REGULATORS.

Specification forming part of Letters Patent No. 175,940, dated April 11, 1876; application filed March 14, 1876.

To all whom it may concern:

Be it known that I, JOHN CRAWFORD, of the city, county, and State of New York, have invented an Improvement in Gas-Burners, of which the following is a specification:

The object of this invention is to produce a complete combustion of the gas and regulate the light under any pressure of gas; and it consists in the construction of the parts composing the burner and their arrangement with relation to each other so that the object will be effected, as will be fully hereinafter described.

In the drawings, Figure 1 represents an upright sectional view of the burner and its interior parts. Fig. 2 is a side view of the base of the burner. Fig. 3 is a side view of the automatic valve; and Fig. 4 is a section of same and its guide.

A represents the cylinder or base-tube to be screwed to the supply-pipe in the usual manner, and has a projection, A', to form a seat for the shell and packing of the shell. a is a screw-thread to secure the shell of the burner to cylinder A and upon the annular packing a' that fits upon the projection or thumb-rim A'. a'' is a section of cylinder A above the projection A' of less diameter than the body and slightly tapering as it extends upward to section a''' above it. a^4 is an annular hole near the upper part of screw-section a''' inclined downward at quite an angle until it intersects or comes into the bore of the cylinder A, which is smaller in diameter within sections a'' and a''' than at its base, and is closed at the top above the hole a^4 . There may be two or more of these holes, according to their size, and the amount of gas to pass through them to supply the burner. B is a loose or automatic hollow conical thimble-valve, with a hole at the apex of the cone to allow a guide-rod, b , having a ball or knob, b' , on its upper end to limit the reciprocation of the valve in its upward direction, and has a number of small holes through its sides near its base, while its base fits upon its inclined seat b''' at the top screw-thread a . At the lower end of guide-rod b , and fast thereto, is another hollow regulating cone c , with screw-internal threads, to screw

onto screw-thread section a''' of cylinder A with the same number of holes c' therein, and to be coincident with the holes a^4 in the top section of cylinder a''' , and so that gas will flow out from the bore of cylinder A through holes a^4 and c' in cone c on guide-rod b . D is the shell of the burner screwed at its lower end upon the screw-threads a of the cylinder A, and upon the packing a' of the projection A' to make it gas-tight. d is a diaphragm of fine wire-cloth placed within the shell D, as seen in Fig. 1. E is the ordinary burner plug or button slit at its upper end at e until the slit opens into the bore in the lower end of the plug or burner.

When the parts are all together, as seen in Fig. 1, and the pressure of gas flowing upward through the cylinder A through holes a^4 at its upper end, and through holes c' in regulating cone c , the gas impinges against the inner side of the cone thimble-valve B; thence out through the holes b'' therein into the space outside the cone thimble-valve within the shell D; thence upward through the wire-gage d , where the small particles of dust or other floating substances in the gas are arrested while the pure gas flows upward through the internal bore of the burner and out at the slit e where it is burned.

When the pressure of gas that passes through holes a^4 and c' is greater than will pass through the holes b'' in the thimble-valve B, the valve will rise upward on guide-rod b , and the gas will flow out between the base of the cone-valve and the valve-seat b''' on cylinder A, but by turning guide-pin b so that the holes c' in the inner cone c will not be coincident, or only partially so, with hole a^4 , the flow of gas through the holes will be less than when exactly coincident, thus regulating the flow of gas to the burner under any pressure in the pipes or cylinder.

Having thus described my invention, what I claim, is—

1. The cylinder A, having screw-section a''' , with holes a^4 , in combination with the cone c' having gas-escape holes c' , constructed and arranged to operate in the manner described.

2. The cylinder A, constructed as described,

with gas-holes a^4 and valve-seat b''' , and cone c with holes c' , in combination with the automatic conical valve B, constructed and operating as described.

3. In a gas-burner, the combination of the cylinder A, regulating cone c , and automatic valve B, with the shell D, containing the

gauze diaphragm d , slitted plug E, substantially as and for the purposes described.

JOHN CRAWFORD.

Witnesses:

FANTON SHERWOOD,
THOS. O. RIELLY.