

J. G. HANNING.
GAS-BURNER.

No. 193,604.

Patented July 31, 1877.



Fig. 1.

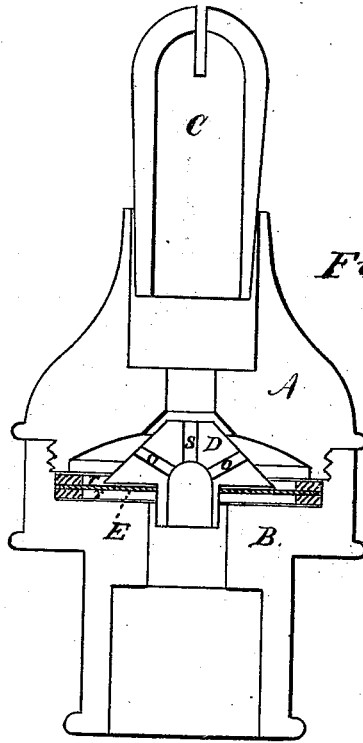


Fig. 2.

Witnesses.

O. F. Mayhew
A. J. York

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UNITED STATES PATENT OFFICE.

JOHN G. HANNING, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO PIONEER
BRASS WORKS, OF SAME PLACE.

IMPROVEMENT IN GAS-BURNERS.

Specification forming part of Letters Patent No. **193,604**, dated July 31, 1877; application filed
June 11, 1877.

To all whom it may concern:

Be it known that I, JOHN G. HANNING, of Indianapolis, county of Marion and State of Indiana, have invented certain Improvements in Gas-Burners, of which the following is a specification:

This invention relates to that class of gas-burners in which the flow of gas through it is automatically regulated by the action of the burner itself; and it consists in the peculiar construction of a valve and the arrangement of the gas-passage through it, with reference to the port and valve-seat, in combination with the valve hung in a flexible diaphragm which will allow of its free movement in such manner that the ejection of the gas into the air at the point of ignition will be as nearly constant as practicable at irregular pressure, thereby causing better combustion and illumination than is common in most burners, and preventing waste of gas.

Figure 1 of the accompanying drawing is a full size view of a gas-burner embodying my invention. Fig. 2 is a vertical section through the center of the same, much enlarged, to show more clearly its construction and arrangement.

The body of the burner is composed of two parts or sections, A B. The tip C is constructed of the usual material and in the ordinary manner. D is the valve having gas-passages *o s o*, arranged, as shown, with reference to the port and valve-seat in the section A. The valve D is hung in a flexible, air-tight diaphragm, E, preferably made of vulcanized india-rubber, so that it may not be injuriously affected by the gas. This diaphragm is insulated from the metal of which

the burner is composed, and made gas-tight by two rings, *r r*, of paper, horn, or other material, to prevent chemical reaction between the metal, gas and diaphragm.

The valve D and diaphragm are intended to weigh $\frac{1}{10}$, or just enough to remain stationary or fully open at ordinary pressure, and the gas passages through it are of such capacity and arranged in such manner that at ordinary pressure the proper quantity of gas will pass through and be ejected into the air with the proper force to produce the most effective light, but in case of an increase of pressure from any cause the valve will be raised up, and close the port in section A and thereby diminish the flow of gas, so that the force of its ejection will remain more constant. Should the pressure be extraordinary the valve D will be forced up into the seat, so as to close the flow through passages *o o* entirely, though the reaction of great pressure upon the diaphragm through passages *o o* would tend to drive it downward, and thus permit some gas to escape around the valve.

It will be understood, of course, that the passage *s* will not be large enough to admit of the escape of sufficient gas, except at very high pressure.

I claim as my invention—

The burner composed of the two sections A B, in combination with the valve D, constructed as shown, and hung in the flexible diaphragm E, arranged and operating substantially as set forth.

JOHN G. HANNING.

Witnesses:

O. F. MAYHEW,
J. M. COMMONS.