J. McHENRY.

Gas Burner.

No. 16,848. Patented March 17, 1857.

Fig. 2.

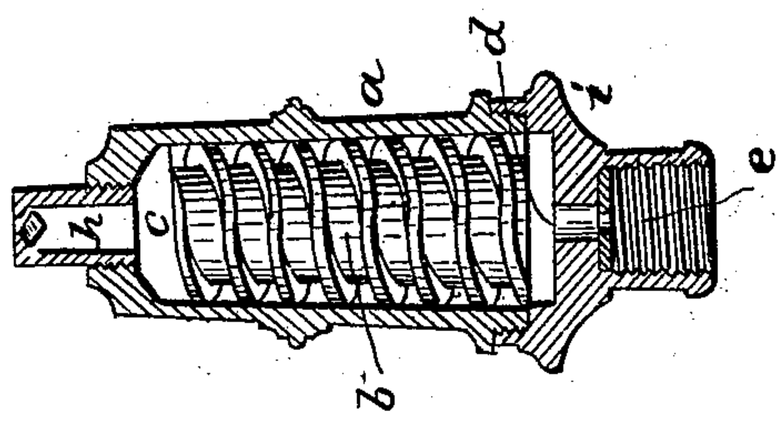


Fig. 3.

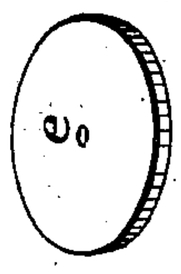
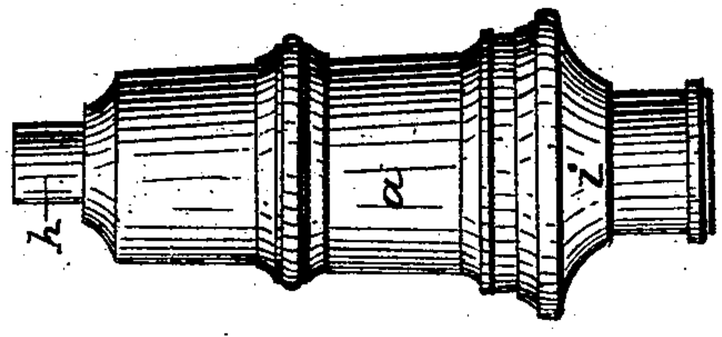


Fig. 1.



UNITED STATES PATENT OFFICE.

JOHN McHENRY, OF CINCINNATI, OHIO.

CONSTRUCTION OF GAS-BURNERS.

Specification of Letters Patent No. 16,848, dated March 17, 1857.

To all whom it may concern:

Be it known that I, JOHN McHENRY, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Gas-Burners; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing through letters of reference marked thereon, forming part of this specification, in which—

Figure 1, is a side elevation of my burner. Fig. 2, represents the shell and tip of the burner in section and the interior plug in elevation. Fig. 3, is a perspective view of the throat disk on an enlarged scale.

The specific gravity of carbureted hydrogen gas being but about $\frac{6}{10}$ths of that of atmospheric air causes a considerable tendency to ascend, it is therefore found to flow much more freely from the burners in the upper part of a building than from those in the lower part; the same feature is observable in different parts of a city, the pressure and discharge varying in proportion to the elevation; there is also a certain amount of gas to be emitted from every burner to yield the greatest amount of light the burner is capable of giving, it should therefore be so constructed as that it can never receive under any circumstances more than is necessary to produce this; to this end they have been constructed with contracted throats, but if this throat is of a proper size for an elevated position it will be too small for a lower one, and, vice versa, it is also found that by attenuating the gas in the burner an increased pressure is created, so that when the burner becomes thoroughly heated the gas will blow and a portion escape unburned.

To provide against these defects constitutes the only feature of my invention, which consists in constructing the burners with a removable throat, so that it may be supplied with one having an orifice of suitable size according to the elevation on which it is to be used, said ingress orifice being at all times sufficiently less than the egress orifice to allow the gas to expand freely without causing it to blow; the amount of light required less than the maximum capable of being produced by the burner being regulated by the ordinary stop cock as heretofore.

To enable others to make and use my improved burner I will describe its construction and operation by referring to the drawing in which (*a*) represents the case or shell which is made cylindrical or slightly conical somewhat larger than the pipe, ordinarily of about $\frac{3}{4}$ths of an inch diameter and about $1\frac{1}{2}$ inches long the lower end of this shell has a reducing neck (*i*) for connecting it with the pipe its upper end is fitted with a tip (*h*) forming any variety of burner; within the shell (*a*) and occupying its entire cavity, except a small space (*c*) and (*d*) at either end, is a plug (*b*) having a channel or groove of about $\frac{1}{8}$th of an inch diameter spirally around its periphery and which forms the only communication between the spaces (*c*) and (*d*) therefore the gas in its passage from the pipe to the burner is caused to pass the entire length of this spiral channel about 15 inches in contact with the heated surfaces of the shell and plug whereby it becomes sufficiently attenuated to effect a thorough and perfect combustion of the carbon.

In order to prevent the possibility of more than the maximum quantity of gas required to produce the greatest intensity of light, being supplied to the burner I provide disks with orifices of varying caliber, one of which is to be inserted in the neck of the burner beneath the spiral channel, making the size of the orifice of suitable area to compensate for the varying pressure at different elevations, and for its increase by expansion of the gas in the burner.

Having thus described my improved burner what I claim as new and desire to secure by Letters Patent is—

The removable disk (*e*) as a means of varying the size of the throat of the burner as and for the purposes set forth.

In testimony whereof I hereunto subscribe my name this 10th day of November 1856.

JOHN McHENRY.

Witnesses:

JOSEPH DRAPER,

HENRY P. ELIAS.