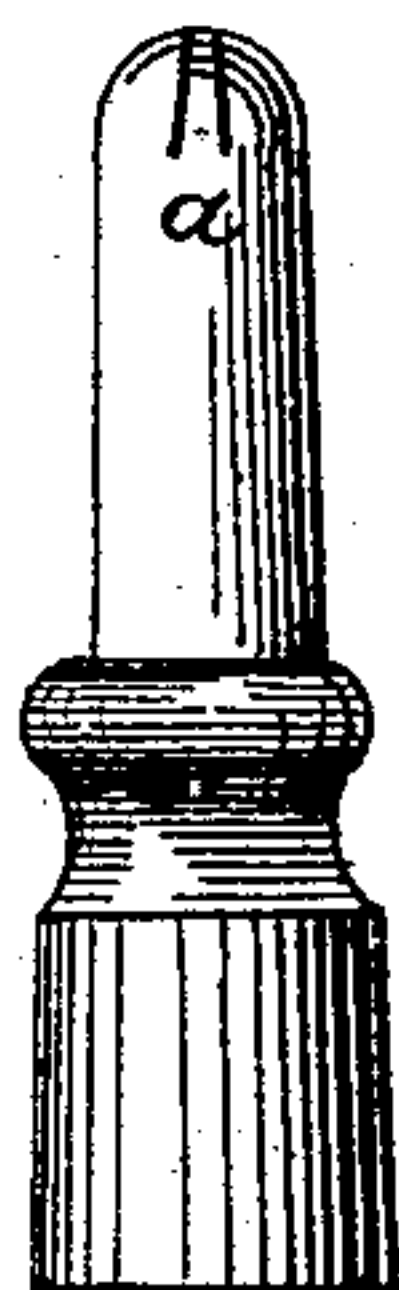


J. BATTIN.
Gas Burner.

No. 4,563.

Patented June 6, 1846.



UNITED STATES PATENT OFFICE.

JOSEPH BATTIN, OF PHILADELPHIA, PENNSYLVANIA.

GAS-BURNER.

Specification of Letters Patent No. 4,563, dated June 6, 1846.

To all whom it may concern:

Be it known that I, JOSEPH BATTIN, of Philadelphia, in the State of Pennsylvania, have invented a new and useful improvement in the manner of constructing that kind of burner which is usually known under the name of the "bat-wing burner;" and I do hereby declare that the following is a full and exact description thereof.

My improvement consists in the particular manner in which I cut two slits in the end of the burner for the issuing of the inflammable gas, said slits having that relative position which will cause the two broad thin volumes or sheets of flame produced by the ignited gas issuing from them, to unite soon after they leave the openings and to form one combined sheet of flame, the effect of which is, that the amount of light obtained from a given volume of gas is increased nearly or quite one third, thereby causing two feet of illuminating gas when consumed by the aid of my improved burner to be equal, or nearly so, in value to three feet when used in the ordinary burner.

In the accompanying drawing I have represented a burner of the ordinary form, but with the two slits which I make therein shown at *a* in its upper end, in the position which I give to them, where it will be seen that they approach each other very nearly at the apex of the burner and gradually recede as they descend; they may for example be about the thirty-second part of an inch apart at the apex, and about double this at their termination or lower part; but great precision in this particular is not necessary. When so constructed, the supply of atmospheric air, which is requisite to the com-

bustion of the gas, is given in a manner more effective than in any burner with which I am acquainted. This is not a theoretical deduction but is the result of experiments made with care. The reason of this superiority in the production of light appears to me to be the following:

For the proper combustion of one foot of carbureted hydrogen, of the quality usually produced at the gas works, ten cubic feet of atmospheric air are required. If an excess of atmospheric air is brought into contact with the flame than is really necessary to the perfect combustion of the gas the heat, and consequently the brilliancy of the flame, is thereby reduced. By uniting my two thin broad sheets of flame, that which would have been their inner sides provided they did not meet, are in a great degree protected from contact with what appears (from the result) to be a superfluous, and consequently cooling current of air.

Having thus fully described the nature of my improvements in the bat-wing gas-burner, what I claim therein as new and desire to secure by Letters Patent, is—

The cutting of two slits in the end of such burner, the relative situation of which slits is to be such as is herein designated, and such as by their proximity and position will cause the flames from each slit to unite immediately after their escape therefrom and form one combined flame; by which arrangement I obtain the desirable result herein set forth.

JOSEPH BATTIN.

Witnesses:

A. H. CRAGIN,
ORAN OTT.