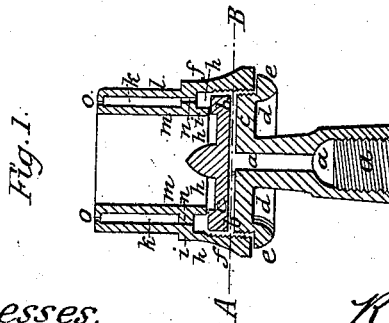
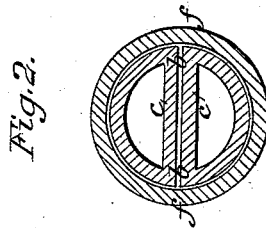
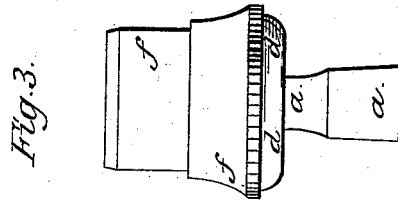


MURRAY & OAKES.

Argand Gas Burner.

No. 54,193.

Patented April 24, 1866.



Witnesses.
Sam^l M^r Barton.
Jonathan Gavett

Inventor.
R Murray & Oakes,
by their atty
Joseph Gavett.

UNITED STATES PATENT OFFICE.

ROBT. MURRAY AND GEO. OAKES, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN ARGAND GAS-BURNERS.

Specification forming part of Letters Patent No. 54,193, dated April 24, 1866.

To all whom it may concern:

Be it known that we, ROBERT MURRAY and GEORGE OAKES, both of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Argand Gas-Burners; and we do hereby declare that the following description, taken in connection with the accompanying plate of drawings, hereinafter referred to, forms a full and exact specification of the same, wherein we have set forth the nature and principles of our said improvement by which our invention may be distinguished from all others of a similar class, together with such parts as we claim and desire to have secured to us by Letters Patent.

The present invention relates to certain new and useful improvements in Argand gas-burners; and it consists in so arranging and constructing the burner as to produce a more perfect air-draft, to insure a more equal distribution of the gas, to obviate the peculiar singing noise produced by this kind of burner heretofore in use, to allow of its being taken apart so that its different parts may be got at more readily for the purpose of cleaning them, and to render it, by the simplicity of its construction, economical in cost. These results are attained in our improved Argand gas-burner in the following manner:

The burner is made in two castings, through both of which an air-draft is made to pass. Between and around the upper and lower casting a continuous distribution-chamber is formed, through which the gas has free circulation, and from which it is allowed to escape into an upper chamber, formed by the space between the outer and inner walls of the upper casting, through a series of apertures made in the bottom thereof. It then passes out in the usual manner through small orifices made in the top of this chamber. The lower casting is formed in such a manner that the upper portion of its outer rim or periphery comes nearly in contact with the inner periphery of the upper casting, so that the gas, as it enters from the lower casting into the distribution-chamber formed by the spaces above and around the two castings, passes from one to the other in the form of a film or thin sheet, and the singing noise, heretofore caused by the gas passing with full force from one portion of the burner to the other, is prevented.

By making the burner in two separate castings its construction is rendered less expensive, and its different parts are made more attainable for the purpose of cleaning them than would be the case if the burner was made as heretofore.

We will now proceed to describe in detail the arrangement and operation of our improved Argand gas-burner, which is represented in the accompanying plate of drawings, Figure 1 being a central vertical section; Fig. 2, a horizontal section taken in the plane of the line A B, and Fig. 3 an elevation of our improved Argand gas-burner.

a a a in the drawings, represent an induction-tube, through which the gas enters and from which it passes through a passage, *b b*, formed in a bar, *c c*, attached to the top of the induction-tube *a a a*, and extending across the center of the lower casting, *d d*. The bottom of this lower casting, *d d*, is formed with a lip, *e e*. Above this lip *e e*, extending from the top thereof to the bottom of the passage *b b*, screw-threads are cut, which are made to work in a female screw formed on the inside of the lower portion of the upper casting, *f f*.

The portion of the lower casting, *d d*, above the screw-threads is made of a slightly-less diameter than the inner diameter of the upper casting, *f f*, so as to leave a very narrow annular space or chamber, *g g*, between the two castings *d d* and *f f*, through which space or chamber *g g* the gas passes in a thin sheet or film from the passage *b b* into a distribution-chamber, *h h*, which is formed by the space between the top of the lower casting, *d d*, and the bottom *i i* of an upper chamber, *k k*, which is formed by the space between the outer wall, *l l*, and inner wall, *m m*, of the upper casting, *f f*. The bottom *i i* of the upper chamber, *k k*, is perforated at intervals with apertures *n n*, through which the gas passes from the distribution-chamber *h h*, through which it has free circulation, into the upper chamber, *k k*, from whence it escapes through the usual series of orifices *o o*, made in the top of the chamber *k k*.

The lower portion of the outer wall, *l l*, of the upper casting, *f f*, screws down over the upper portion of the lower casting, *d d*, and presses firmly upon the seat or bearing formed by the lip *e e*; and the inner wall, *m m*, of the upper casting, *f f*, extends some distance below the bottom *i i* of the chamber *k k*, so as

to form the inner side of the chamber *h h*, and is brought to bear firmly upon a seat or bearing formed by the upper rim of the lower casting, *d d*, so as to prevent any leakage of the gas.

By the above description, reference being made to the drawings, it will be observed that the chambers *h h*, *g g*, and *k k* above and around the lower casting, *d d*, being made continuous, the air-draft is more perfect, and the gas, as it enters from the lower casting, *d d*, into these chambers *h h*, *g g*, and *k k*, has free circulation therein and is more equally distributed than it otherwise is where the gas is first introduced into a distribution-chamber, from which its only delivery is through a series of perforated bars, cylinders, and the like means hitherto employed in the construction of Argand gas-burners.

It will also be observed that the upper portion of the lower casting, *d d*, being formed so as to come nearly in contact with the inside periphery of the lower portion of the upper casting, *f f*, causes the gas, as it escapes from the lower into the upper casting, to impinge against the inside periphery of the bottom part of the upper casting in such a manner that it passes from one to the other in a thin

sheet or film, and thereby regulates the pressure of the gas and prevents the singing noise heretofore produced by the passage of the gas in full force from one apartment of the burner to the other.

Having thus described our improvements, we shall state our claims as follows:

What we claim as our invention, and desire to have secured to us by Letters Patent, is—

1. Constructing an Argand gas-burner in two pieces, fastened together so as to form two gas-tight joints and an air-draft through both pieces, as described.

2. The arrangement of the upper and lower castings in such a manner that the outer periphery of the upper portion of the latter is brought in close proximity with the inside of the outer wall of the upper casting, as and for the purpose specified.

3. Constructing and arranging a chamber between the upper and lower castings, as described, and for the purpose specified.

ROBERT MURRAY.
GEORGE OAKES.

Witnesses:

JOSEPH GAVETT,
SAML. M. BARTON.