

(No Model.)

D. W. SUGG.
INVERTED BURNER FOR GAS LAMPS.

No. 479,922.

Patented Aug. 2, 1892.

Fig: 2.

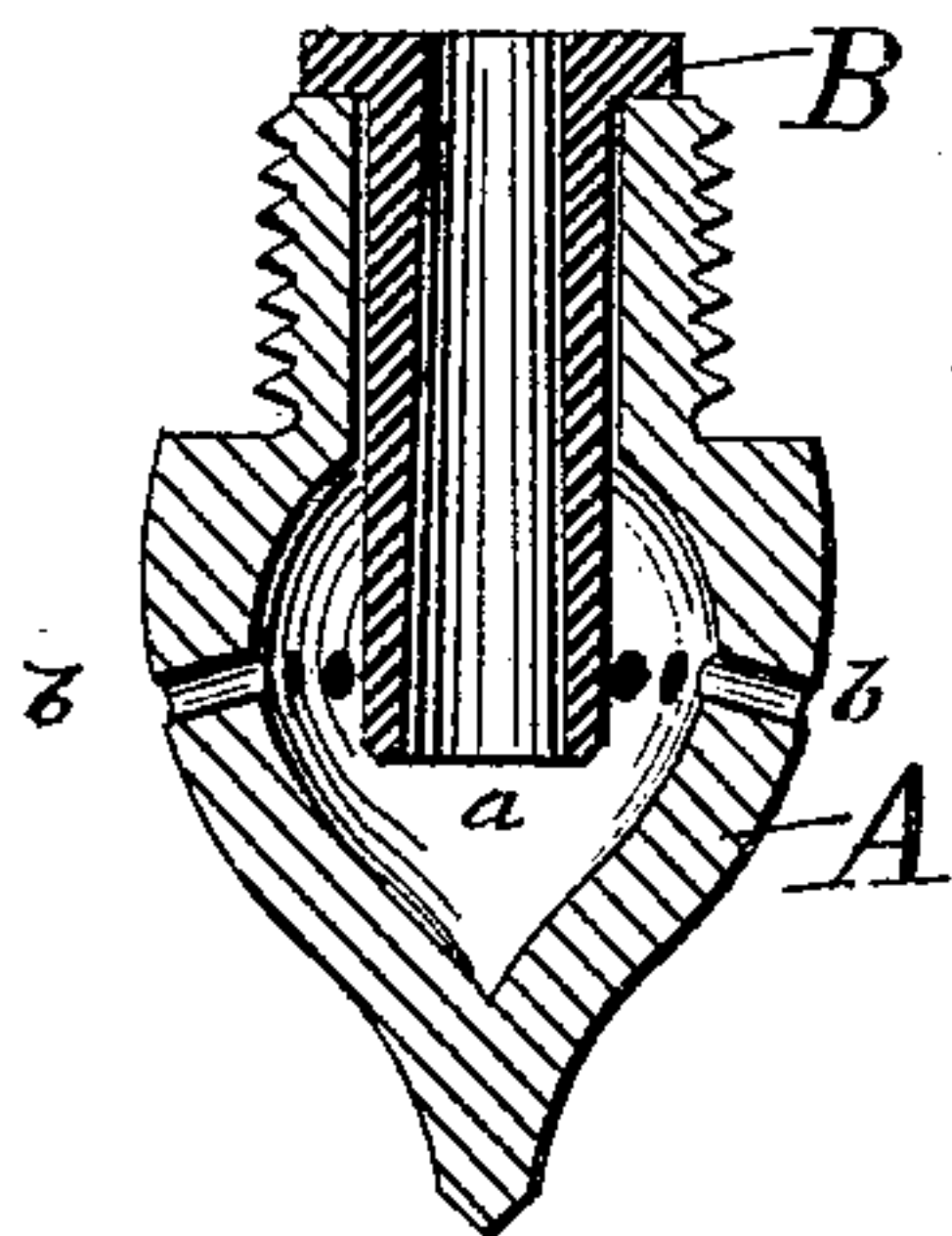


Fig: 1.

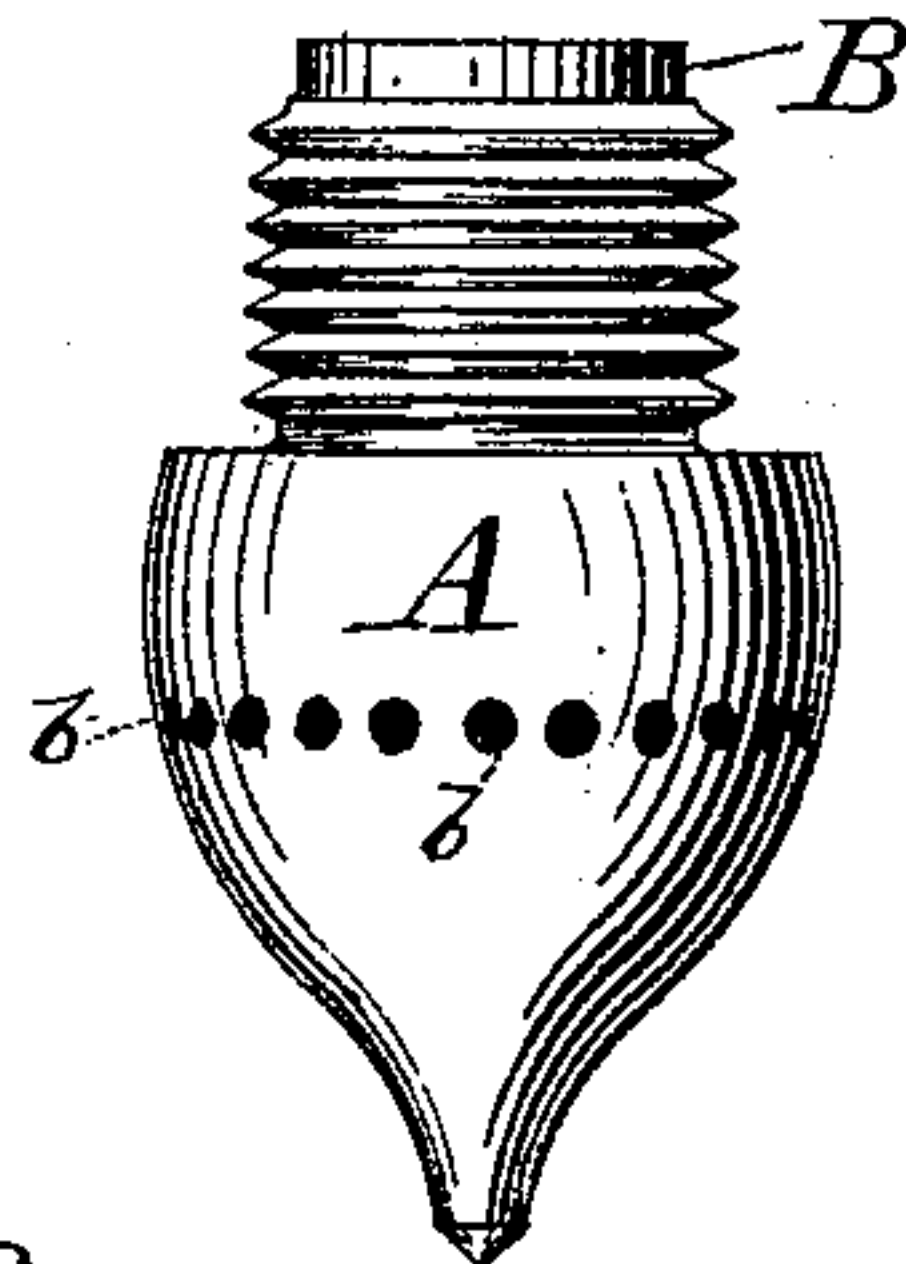


Fig: 3.

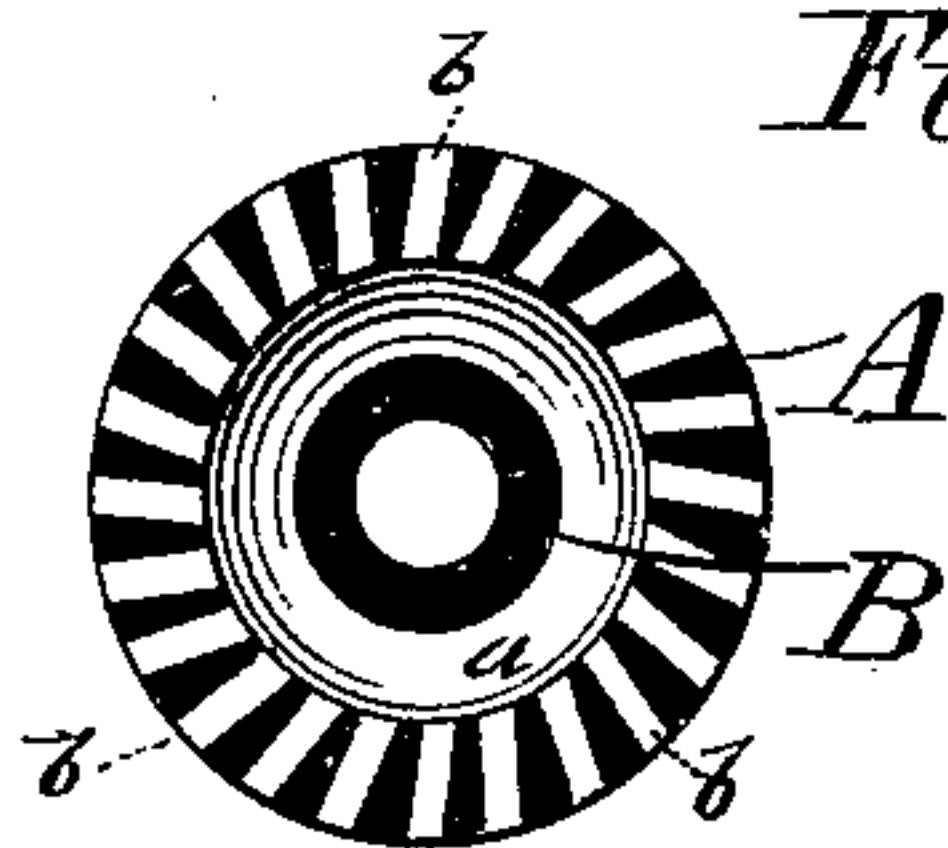
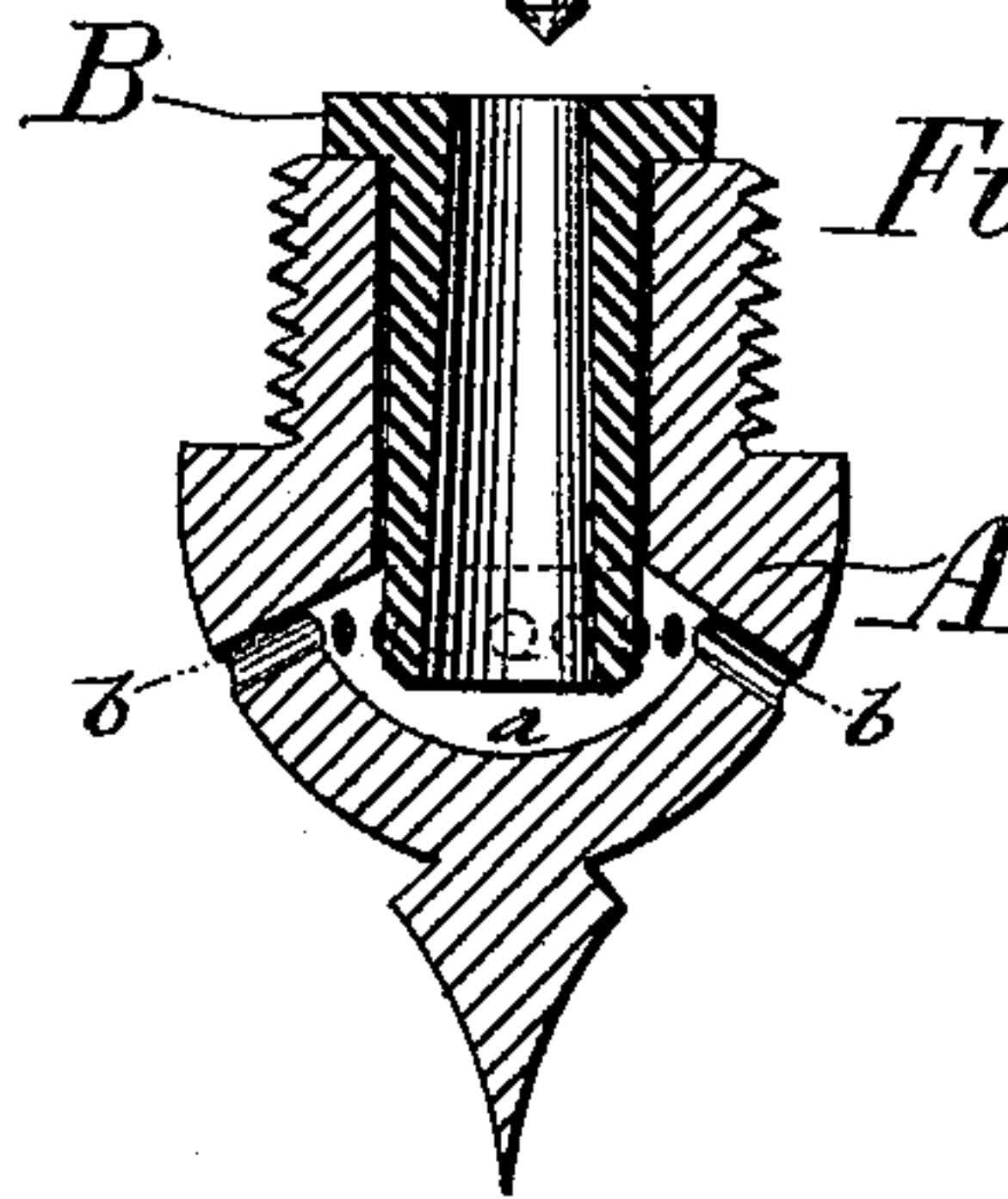


Fig: 4.



Witnesses:

*O. Sundgren
Emil Herter*

Inventor:

*David W. Sugg
by his attorneys
Brown & Hall*

UNITED STATES PATENT OFFICE.

DAVID W. SUGG, OF LONDON, ENGLAND.

INVERTED BURNER FOR GAS-LAMPS.

SPECIFICATION forming part of Letters Patent No. 479,922, dated August 2, 1892.

Application filed February 21, 1887. Serial No. 228,285. (Nomodel.) Patented in France March 28, 1885, No. 167,948; in Italy June 1, 1886, No. 20,020, and in England December 15, 1886, No. 16,467.

To all whom it may concern:

Be it known that I, DAVID WILLIAM SUGG, of Vincent Works, Vincent Street, in the city of Westminster, London, England, have invented a new and useful Improvement in Inverted Burners for Gas-Lamps, (which has been patented by me in Great Britain by Patent No. 16,467, dated December 15, 1886; in France by patent of addition, dated February 12, 1887, to original French Patent No. 167,948, dated March 28, 1885, and in Italy by patent of addition, No. 21,248, dated February 17, 1887, to original Italian Patent No. 20,020, dated June 1, 1886,) of which the following is a specification.

This invention relates to improvements in the inverted burner described and shown in specification and drawings of my United States Letters Patent No. 407,622, dated July 23, 1889. In large burners constructed as described in the said patent I have found that the jets of gas issuing from the holes in the steatite burner do not properly combine to form a perfect sheet of flame, but give it a striated or streaky appearance, and also that the flow of gas is not always evenly distributed, but sometimes passes more to one side than to the other, giving an irregularly-shaped flame, and causing the gas to smoke on that side where the greater quantity of gas issues, owing to the want of an adequate supply of oxygen on that side to produce proper combustion, two disadvantages which tend to impair to a considerable extent the efficiency of the burner and the advantages to be gained by the use of what are now known as "inverted lamps."

Now the objects of this invention are to overcome these disadvantages and, first, to insure the separate jets combining, and thereby forming a perfect sheet of flame, and, second, to provide for the even distribution of the gas on all sides of the burner.

In carrying out this invention I construct the burner substantially in the manner described in my aforesaid Letters Patent; but instead of piercing the holes radially with a slight downward inclination, as therein set forth, I form them slightly tangential with the downward inclination.

The means for distributing the gas consist

of a short tube formed with a flange at its upper end and which is inserted in the burner with its flange resting on the top. The length of the tube will be such that it will extend below the holes, so that the gas will be conveyed centrally to the bottom of the burner and will be evenly distributed on all sides.

In the accompanying drawings, Figure 1 shows my improved burner in side elevation, Fig. 2 in sectional elevation, and Fig. 3 a cross-section, on the line of the holes, and Fig. 4 a slight modification. All the figures are on an enlarged scale to more clearly show the invention.

A is the hollow head of the burner, which may be of hemispherical, semi-spheroidal, conoidal, or approximate convex form externally, as shown in Figs. 1, 2, and 4, and has provided within it a gas-chamber, the concave interior of which conforms substantially to its convex exterior. This chamber is of diameter larger than the passage by which the gas enters the burner. The holes *b b* in the said head, through which the gas issues, are in the sides of the said head and of its chamber *a*. The said holes have a downward and outward inclination, as shown in Figs. 2 and 4, and are also tangential to imaginary circles concentric to the axis of the burner, as shown in Fig. 3, so that the gas debouches laterally from the burner in tangential streams and downwardly. By this means I produce a spiral movement of the several jets which tends to unite them and to produce a sheet of flame which is flat, or nearly so, on the part close to the burner. The currents of air coming down directly onto the flames and at an angle to the jets cause a change in the direction of the jets and serve to spread them out, thus producing a perfect sheet of flame. The number of the holes will depend upon the size of the same and can only be ascertained by experiment in the manner described in my former application for a patent; but I have found that with holes of about 0.052 of an inch bore twenty-four holes will give the best results.

B is the distributor or regulator consisting of a short tube having a flange around its upper end. This tube passes through the gas-inlet opening in the top of the burner and

extends nearly to the bottom of the hollow head thereof, with its lower end some distance below the row of holes *b b*, being supported in this position by its flange resting on
5 the top of the burner. By thus carrying the gas centrally in the burner below the holes *b b*, I insure that the gas shall be evenly distributed to the latter, and thus I obtain a regular and even flame, and by constructing
10 the regulator or distributor of a short tube with a flange to rest upon the top of the burner I am enabled to easily apply it to the burner.

In Fig. 4 I have shown the distributor-tube
15 applied to a burner of the exact form shown in my former application for patent.

Having now particularly described and ascertained the nature of my said invention and

in what manner the same is to be performed, I wish it to be understood that what I desire
20 to claim, is—

An inverted burner having a head of externally-convex form and having in said head a chamber *a* of concave form of larger diameter than its inlet, said head being provided
25 with holes *b*, opening through the side walls of said chamber in a downward direction and tangentially to an imaginary circle concentric to the axis of the burner, substantially as and for the purpose herein set forth.

DAVID W. SUGG.

Witnesses:

A. S. BISHOP,

108 *Liverpool Road, N.*

WALKER J. S. MERTEN,

17 *Gracechurch Street, E. C.*