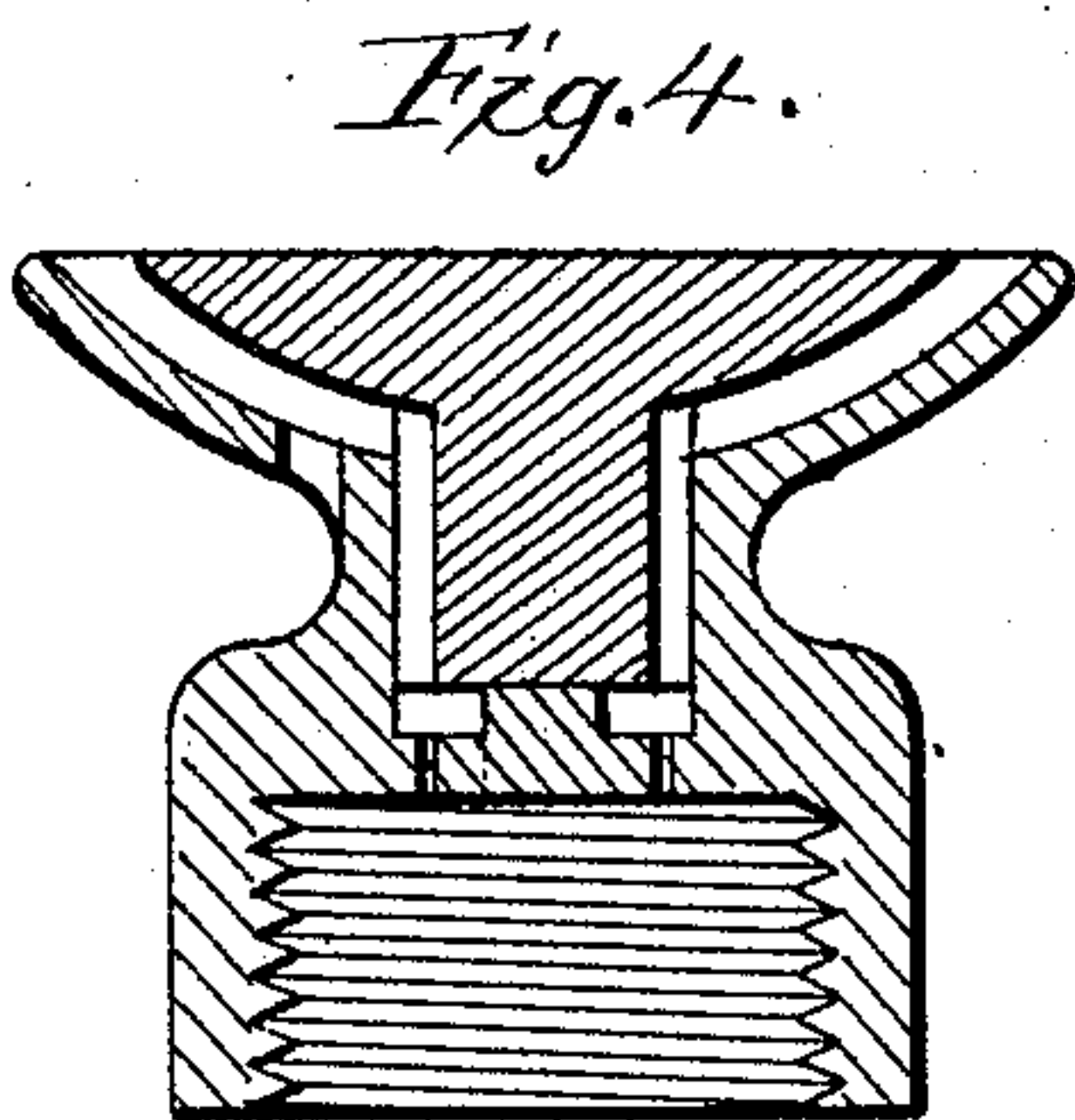
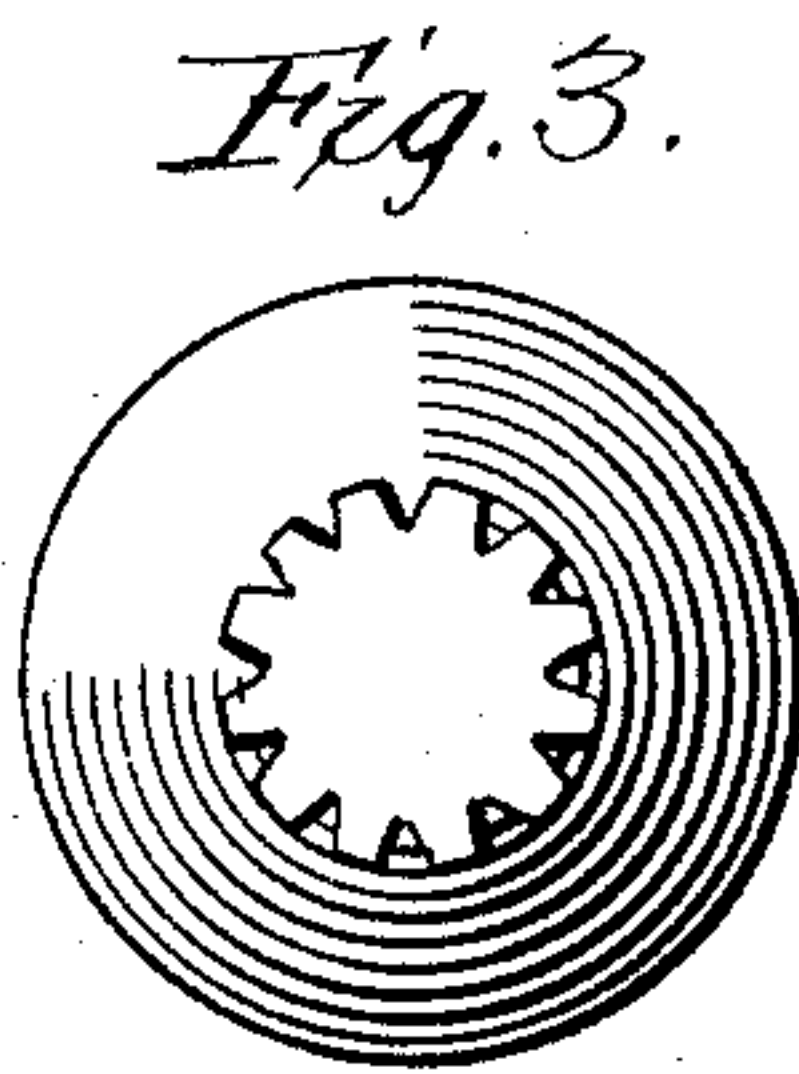
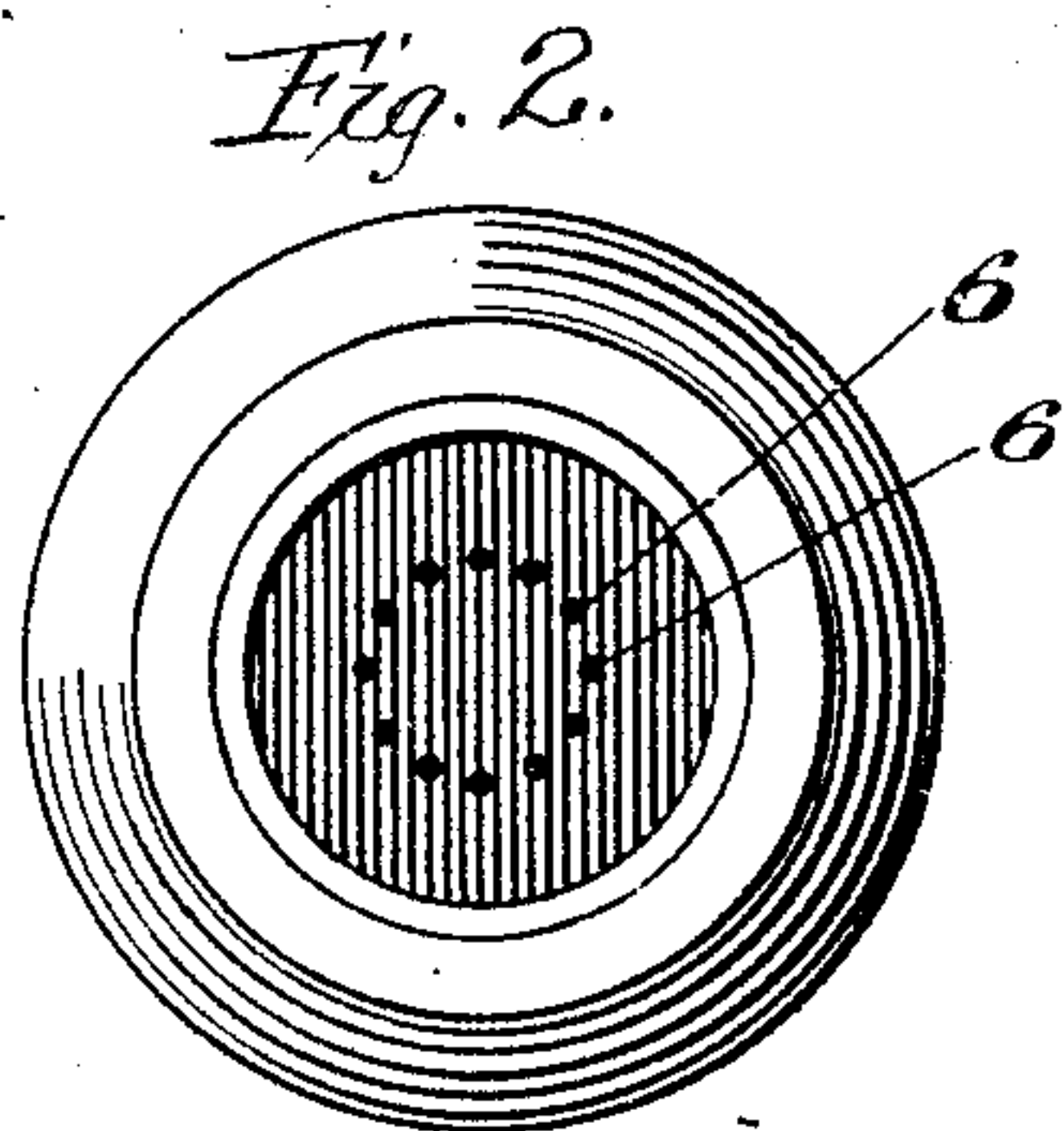
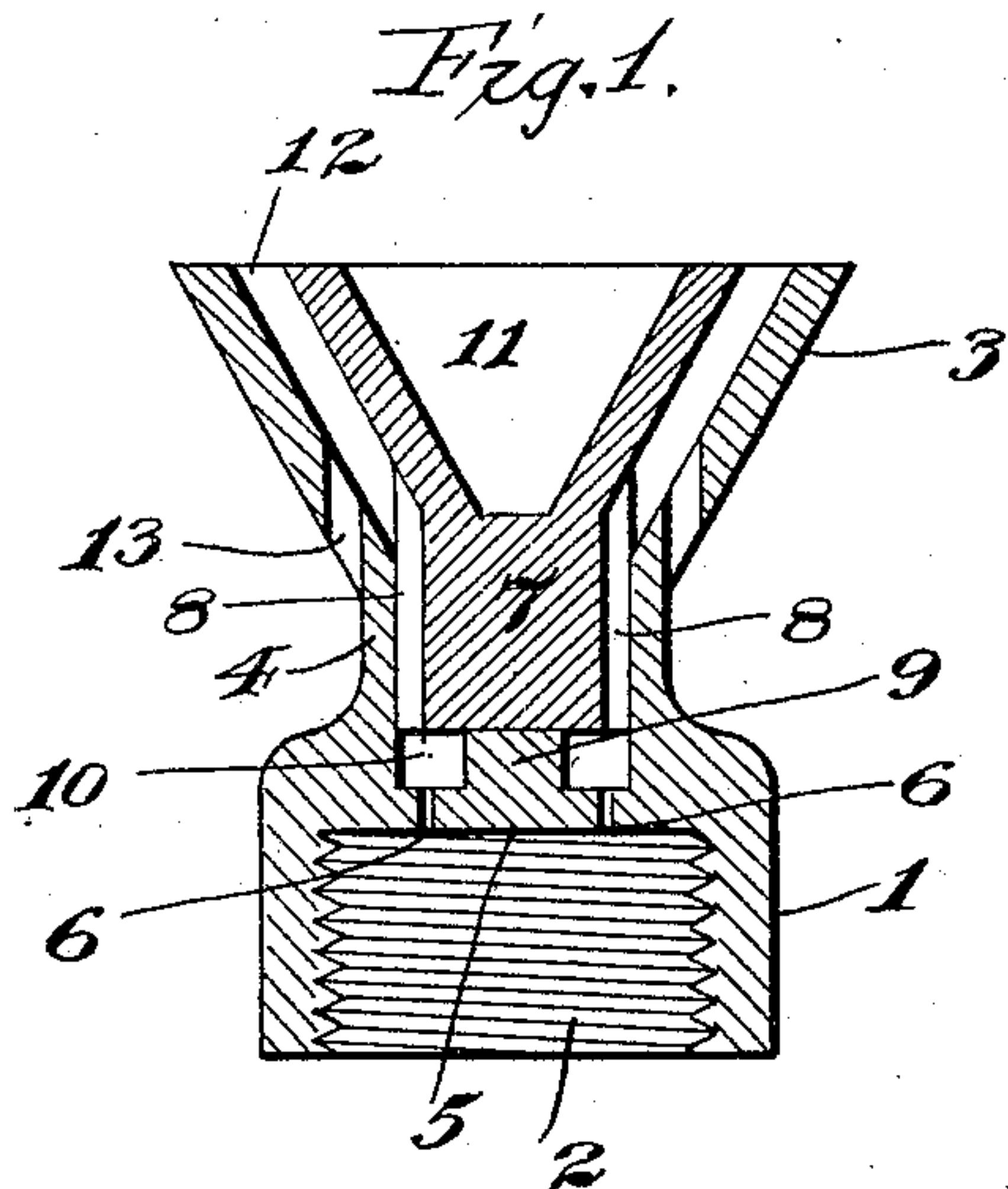


No. 788,235.

PATENTED APR. 25, 1905.

F. M. ASHLEY.  
GAS BURNER.  
APPLICATION FILED MAY 25, 1899.



WITNESSES:  
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*Glenn Cooper*

INVENTOR  
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# UNITED STATES PATENT OFFICE.

FRANK M. ASHLEY, OF NEW YORK, N. Y.

## GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 788,235, dated April 25, 1905.

Application filed May 25, 1899. Serial No. 718,241.

*To all whom it may concern:*

Be it known that I, FRANK M. ASHLEY, a citizen of the United States, residing at New York city, in the county of Kings and State of New York, have invented certain new and useful Improvements in Gas-Burners, of which the following is a full, clear, and exact specification.

This invention relates to gas-burners, and has particular reference to burners used for the consumption of acetylene gas or other gases rich in hydrocarbon for heating purposes.

The invention comprehends various improvements, which will be referred to in the accompanying specification and pointed out in the appended claims.

In the drawings, in which I have illustrated forms which the invention may take in practice, Figure 1 is a sectional view of a burner constructed in accordance with my invention. Figs. 2 and 3 are respectively bottom views of the burner shown in Fig. 1 and the plug of said burner, and Fig. 4 is a sectional view of a modified form of burner.

Referring more particularly to the drawings, 1 represents a base portion adapted to be connected by a screw-thread 2 or other suitable means with a source of gas-supply. The base portion 1 is provided with a flaring annular rim or flange 3, thereby forming a bell-shaped end for the burner. Between the bell-shaped flange 3 and the screw-thread 2 is a contracted neck 4, in which is formed a diaphragm 5, supporting the gas-supply from the outlet; but the screw-thread 2 is a partition-wall 5, the latter having a plurality of passages 6 6 cut therethrough. A core 7, having a plurality of longitudinal passages 8 8, is fitted in the neck 4 upon a projection 9, carried by the partition 5, thereby forming an annular expansion-chamber 10 between the passages 6 6 and the passages 8 8. The core 7 is also provided with a conical or flaring head 11 of substantially the same shape as the interior of the bell-shaped portion 3, whereby an annular mixing-chamber 12 will be formed between the conical head and the flange 3. In the flange 3 at intervals, near the base thereof, are formed a plurality of passages 13 13,

leading from the atmosphere into the passage 12.

In the operation of the device the gas from the source of supply passes through the contracted passages 6 6 under considerable pressure and enters the expansion-chamber 10, where, being relieved of its pressure, it expands and in its expanded state passes upward through the passages 8 8 into the mixing-passage 12, where it draws in air from the surrounding atmosphere through the passages 13 13 and becomes mixed with said air. The mixture of gas and air passes upward through the passage 12 and is burned at the end of the burner.

It is obvious that the burner above described may be modified in various respects without departing from the scope or spirit of the invention, and I therefore do not limit myself to the precise construction here shown and described.

Having thus described my invention, I declare that what I claim as new, and desire to protect by Letters Patent, is—

1. In a gas-burner, the combination of a base having an outwardly-flaring flange and communicating with the source of gas-supply, a mixing-chamber in said base, a diaphragm between said mixing-chamber and said source of gas-supply, an expansion-chamber in said body portion, a plurality of passages between said expansion-chamber and said source of gas-supply, and a core having an outwardly-expanded head, said head and said flange forming an annular mixing-chamber therebetween, and a plurality of passages between said expansion-chamber and said mixing-chamber, substantially as described.

2. In a gas-burner, the combination of a base having a bell-shaped flange and adapted to be connected with the source of gas-supply, a diaphragm between said bell-shaped flange and said source of gas-supply, an expansion-chamber in said base, a plurality of passages between said chamber and said source of gas-supply, and a core having a conical head and a plurality of passages, said core being adapted to be inserted in said base, whereby an annular passage will be formed between said conical head and said bell-shaped flange and said



passages will lead from said expansion-chamber to said annular passage, substantially as described.

3. In a gas-burner, the combination of a base 5 having a bell-shaped flange and a contracted neck, a source of gas-supply with which said base is adapted to be connected, an expansion-chamber in said contracted neck, a plurality of contracted passages between said source 10 of gas-supply and said expansion-chamber, a core adapted to be inserted in said base and having a conical head whereby an annular passage will be formed between said head and said base, a plurality of passages between said 15 expansion-chamber and said annular passage, and a plurality of openings from the atmosphere to said annular chamber, substantially as described.

4. In a gas-burner, a body portion having an 20 annular expansion-chamber in its base, communication between a gas-supply and said expansion-chamber, an annular mixing-chamber above the expansion-chamber, communication between said mixing and expansion 25 chambers and direct communication between said mixing-chamber and the atmosphere, substantially as described.

5. In a gas-burner, the combination of a body portion comprising a spreading flange, a gas-

inlet opening, and a dividing-diaphragm hav- 30 ing openings therein, and a core mounted in said base within said flange, said core being of less diameter than said flange whereby an annular mixing-chamber is formed between said core and said flange, openings through 35 said flange, and a communication from the gas-supply to the mixing-chamber formed between said core and base, substantially as described.

6. In a gas-burner, the combination of a body 40 portion comprising a spreading flange, a gas-inlet opening and a dividing-diaphragm having openings therein, and a core frictionally mounted in said base within said flange, said 45 core being of less diameter than said flange whereby an annular mixing-chamber is formed between said core and said flange, openings through said flange, and passages, the sides of which are formed by the body portion and 50 the core, between the gas-inlet openings and the mixing-chamber, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK M. ASHLEY.

Witnesses:

PHILIP H. BUCKLER,  
ALEX FERGUSON.