J. D. AVERELL.

Oxy-hydrocarbon Gas-Burners.

No. 143,555. Patented Oct. 14, 1873.

Fig 1

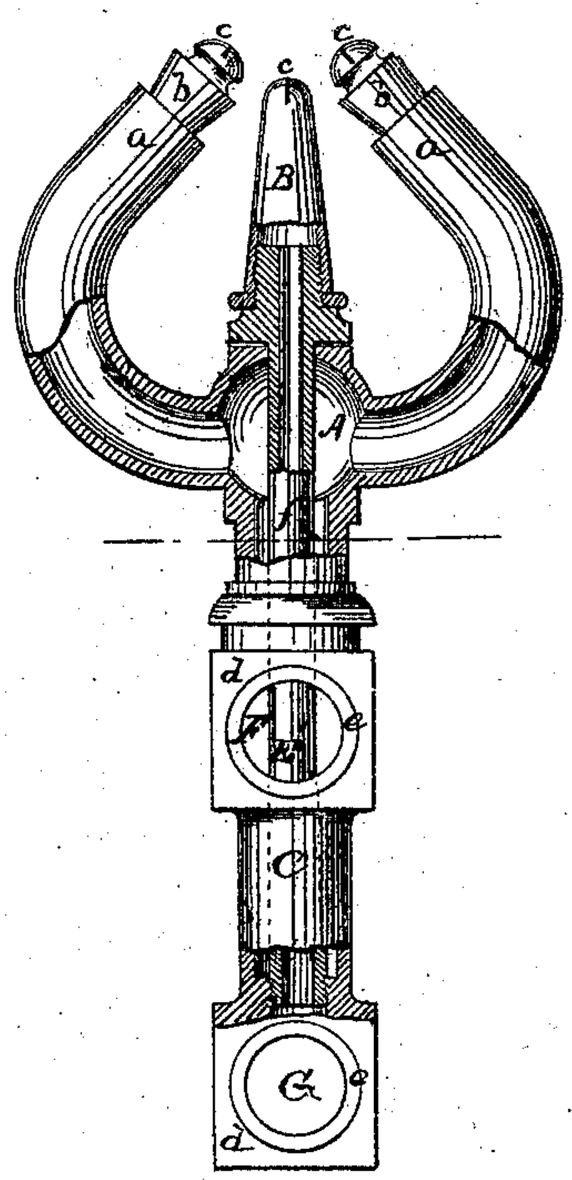
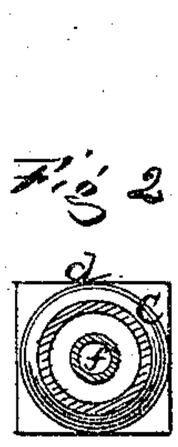


Fig 2



Witnesses.

H. L. Mattenberg

W. L. Lovell

Inventor.

John. D. Averell

per Thompson

Atty

UNITED STATES PATENT OFFICE.

JOHN D. AVERELL, OF NEW YORK, ASSIGNOR OF PART OF HIS RIGHT TO S. A. JOYCE, OF BROOKLYN, N. Y.

IMPROVEMENT IN OXYHYDROCARBON-GAS BURNERS.

Specification forming part of Letters Patent No. **143,555**, dated October 14, 1873; application filed December 18, 1872.

To all whom it may concern:

Be it known that I, JOHN D. AVERELL, of the city, county, and State of New York, have invented a new and Improved Oxyhydrocarbon-Gas Burner; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, making a part of this specification.

This invention is in the nature of an improvement in burners designed for burning oxyhydrocarbon gas; and the invention consists in combining two burners through which pass streams of hydrocarbon gas with a third burner between the two just mentioned, through which passes a stream of oxygen gas, in such manner as to produce a flat, steady, and highly luminous flame, the hydrocarbon-burners being inclined toward each other at about the angle shown in the drawing, for the purpose of effecting more perfect combustion and producing a flat flame.

In the accompanying sheet of drawings, Figure 1 represents a side view of my burner, partly in section; and Fig. 2, a cross-section of the same.

Similar letters of reference indicate like parts in the several figures..

A is a hollow sphere, to which are secured branch pipes *a a*, having fitted to their upper ends two burners, *b b*. Secured to the sphere A, and extending up between the branches *a a*, is a third burner, B. To the under side of the sphere A is secured a stem, C, with a channel, *f*, formed therein, opening into said sphere. Into the stem C are formed two bosses, *d d*, with openings F and G therein, and with projections or lips *e e*, into which pipes are screwed, opening into the interior of the stem C. Passing through said stem is a small tube, E, the upper end of which is tightly screwed into the base of the burner B, and the lower end of which is screwed and tightly fits into the lower part of the channel *f*, which passes through the stem C.

My burner being constructed substantially as above described, its operation is as follows: A pipe conveying hydrocarbon gas is screwed into the opening F, and a similar pipe conveying oxygen gas is screwed into the opening G. The hydrocarbon gas ascends, through the channel *f*, into the burners *b b*, and out through the slits or openings therein, and the oxygen gas ascends through the tube E into the burner B, finding exit through the slit or opening *c* therein, in a thin, flat stream.

The hydrocarbon and oxygen gases, at or near their point of exit through the burners, where they are lighted, commingle, and burn with a broad, flat, steady, and highly luminous flame.

It is evident, from the inclined position of the burners *b b*, that the streams of hydrocarbon gas, as they issue from their burners, meet directly over the stream of oxygen gas as it issues from the burner B, thus insuring their commingling.

What I claim as new, and desire to secure by Letters Patent, is—

The combination, in an oxyhydrocarbon-gas burner, of the sphere A, hydrocarbon pipes and burners *a b*, and oxygen-burner B, said pipes and burners being so arranged with relation to each other as to produce a flat flame, as described.

JOHN D. AVERELL.

Witnesses:
H. L. WATTENBERG,
G. M. PLYMPTON.