

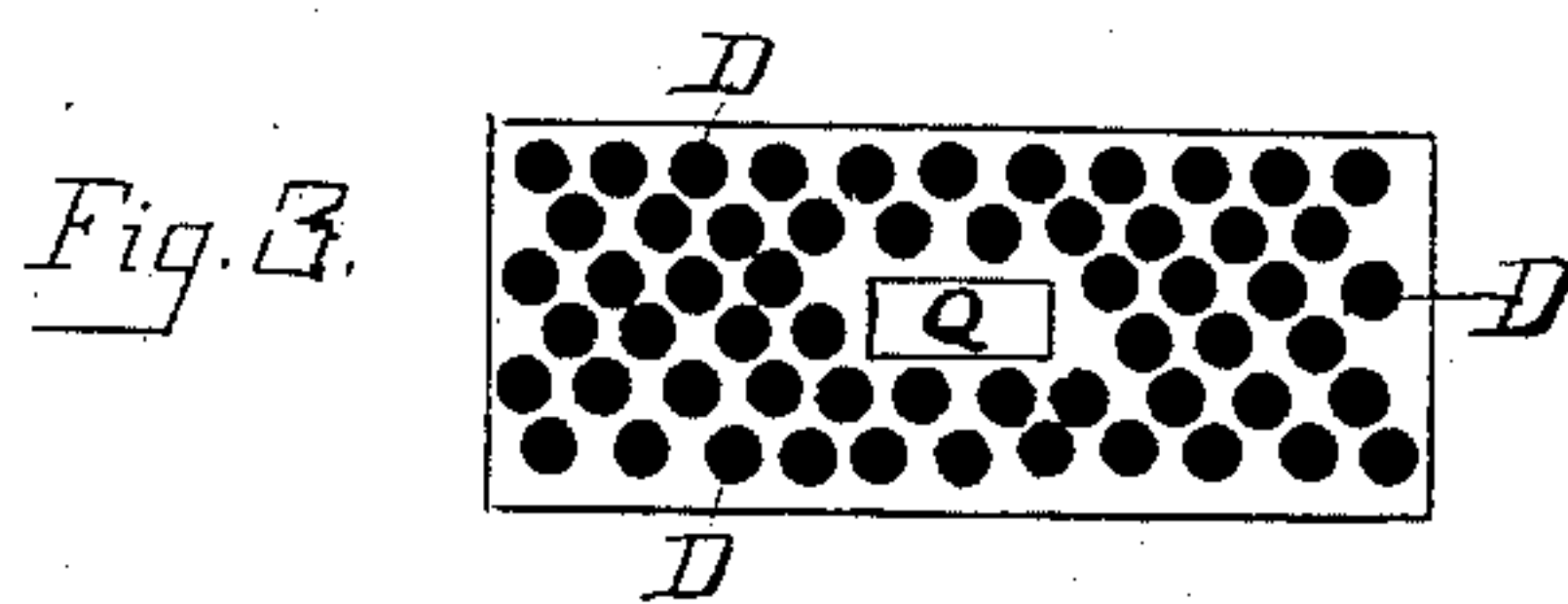
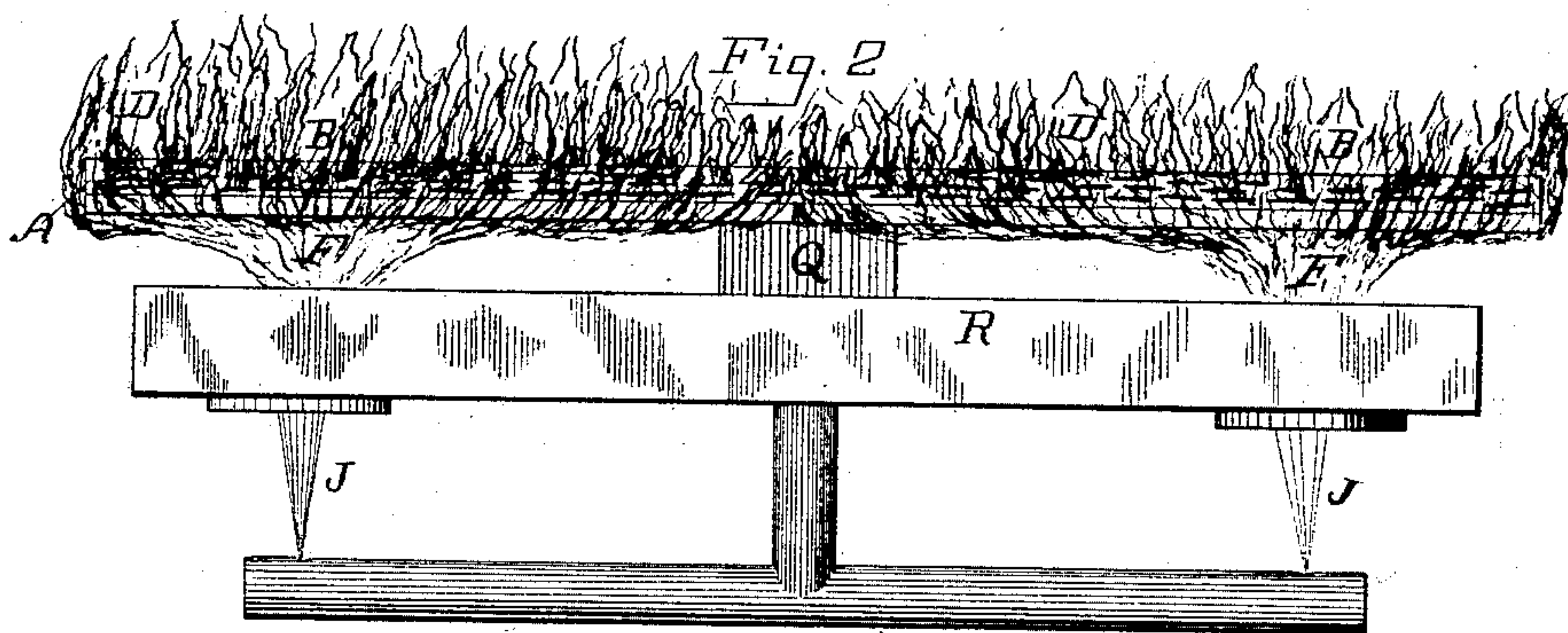
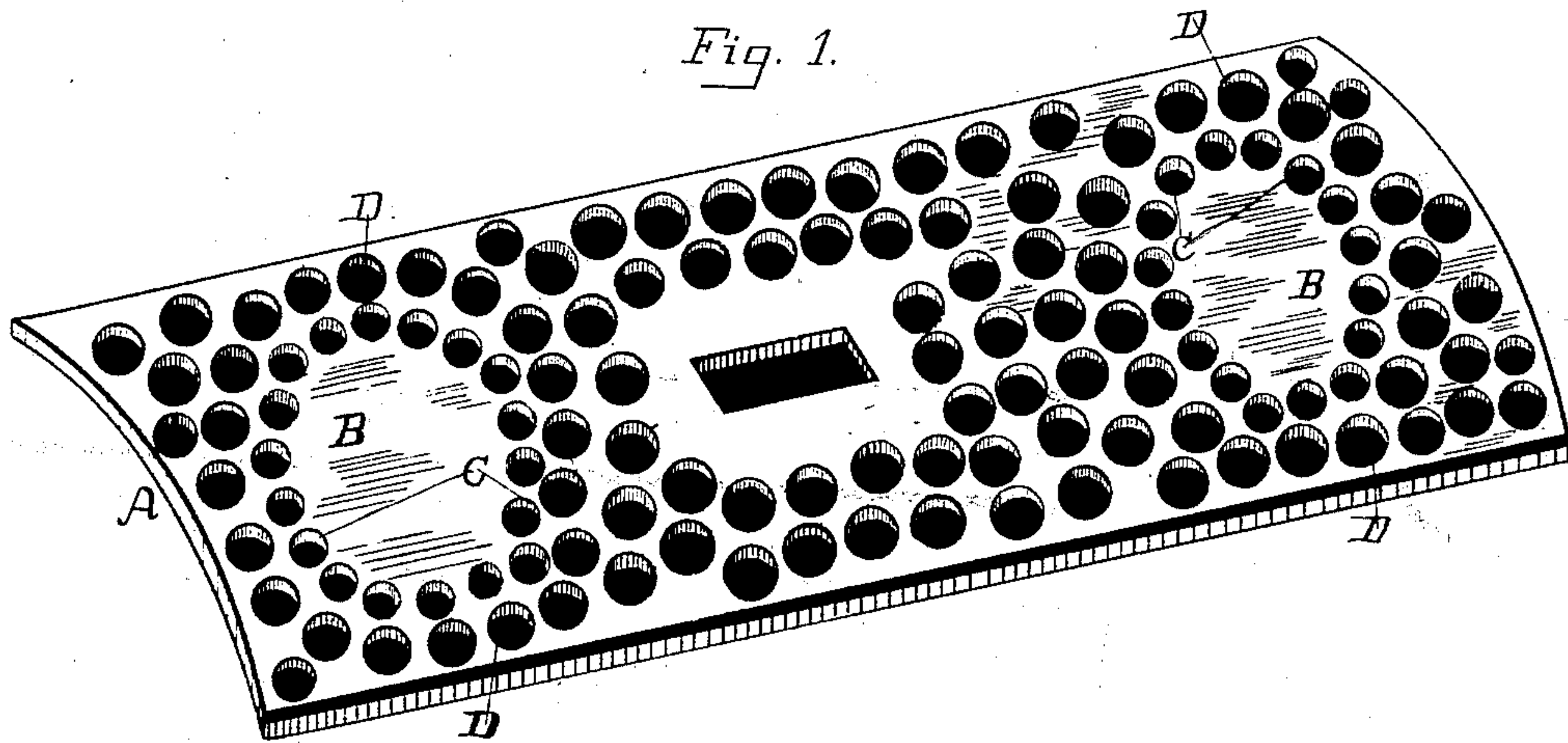
(No Model.)

E. A. EDWARDS.

FLAME DEFLECTOR FOR VAPOR BURNERS.

No. 314,923.

Patented Mar. 31, 1885.



Witnesses.

Wm. J. Finley  
P. W. Dooner

Inventor.

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per  
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his attys.



# UNITED STATES PATENT OFFICE.

EVAN A. EDWARDS, OF LOS ANGELES, CALIFORNIA.

## FLAME-DEFLECTOR FOR VAPOR-BURNERS.

SPECIFICATION forming part of Letters Patent No. 314,923, dated March 31, 1885.

Application filed December 23, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, EVAN A. EDWARDS, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Improvement in Flame-Deflectors for Oil-Burners, of which the following is a specification.

My invention relates to the plates placed above the jets of flame in oil-burners for the purpose of breaking up and distributing the flame and mingling it thoroughly with the atmosphere.

The object of my invention is to cause a more equal distribution of the flame of the burner and to secure the effect produced by a bed of coals. This I accomplish by means of the device described herein, and illustrated in the accompanying drawings.

Figure 1 is a view of my improved deflector. Fig. 2 is a view of a burner provided with my invention as it appears in operation. Fig. 3 is a plan view of my improved deflector perforated throughout with holes of a uniform diameter.

A is a plate of metal suitable for deflecting flame. B B are non-perforated portions of the deflector, against which the jets of flame strike.

C represents the perforations closest to the portions of the deflector against which the jets strike.

D represents the perforations farthest removed from the jets. F is the flame; J, the gas-jet. R is the retort, and Q the support which sustains the deflector.

Flame-deflectors have heretofore been constructed in which a single row of perforations have been provided around the edge of the deflector, leaving the greater part of the deflector solid or unperforated. When such deflectors are large, so as to spread the flame over a large space, the solid or unperforated portion is correspondingly large, and the space above such portion does not receive the direct force of the blaze. If the size of the deflector is diminished, the surface over which the blaze is distributed is also diminished. I remedy these defects by con-

structing a large deflector and perforating it throughout, except at those points against which the gas-jets strike. By this means the flame is broken up and equally distributed over a large surface, and the heat resulting therefrom produces much the same effect as that caused by a bed of coals.

If the perforations are uniform in size, as shown in Fig. 3, the force of the jet causes the flame and unignited gas to pass up through those perforations nearest the jet with greater rapidity than through those more remote, thus producing a greater body of flame at those parts of the deflector. To remedy this difficulty, I make the perforations near the jet smaller than those more remote therefrom. By this means the flame is more equally distributed, and an almost uniform heat is secured above the entire deflector. To further aid in causing the flame to be forced upward through the perforations in uniform jets, I make the under side of the deflector concave, as shown in Fig. 1. By this means the flame is made to pass downward slightly in reaching the sides of the deflector, and is therefore made to force itself up through the perforations near the edge of the deflector in greater volume than it otherwise would.

It is not absolutely necessary that the portion directly above the jet be solid, as shown in Fig. 1, but it may be perforated, as in Fig. 3, the solid portions of the plate between the perforations serving to scatter the vapor and flame and mingle the air therewith.

The perforations above the jets in such case should be smaller than those that do not receive the direct force of the jet, in order to secure the best results; but desirable results may be secured by perforating the entire plate with holes of a uniform size, as shown in Fig. 3. The best form of construction, though, is that shown in Fig. 1.

Having thus described my invention, what I claim is—

1. A flame-deflector for an oil-burner, consisting of a plate mounted above the jets of the burner and having the portions against which the flames or jets are projected solid, and having perforations through such plate

around the solid portions thereof, substantially as set forth, those perforations nearest the solid portions thereof being smaller than those farther away.

- 5 2. A flame-deflector for a vapor-burner, concave upon its under face, and perforated, substantially as set forth, with holes of different diameters, those near the portion of the

deflector against which the jet strikes being smaller than those more remote therefrom, for the purpose set forth.

E. A. EDWARDS.

Witnesses:

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