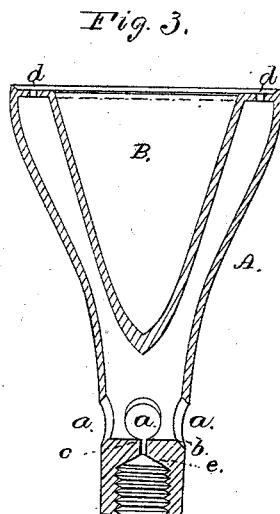
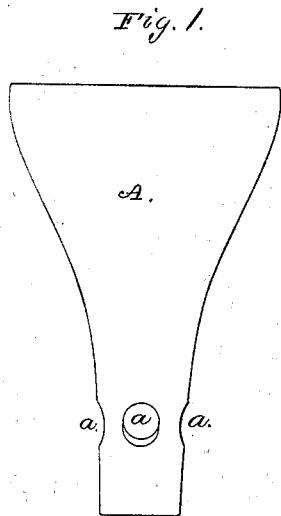
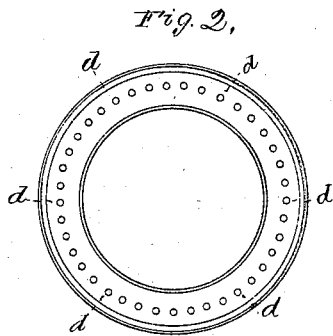


J. H. KNIGHTS.
AERO GAS-BURNER.

No. 169,711.

Patented Nov. 9, 1875.



Witnesses
Geo Gray
S. L. Hales

John H. Knights
by his attorney
F. P. Hale

UNITED STATES PATENT OFFICE

JOHN H. KNIGHTS, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO CALEB C. WALWORTH, OF SAME PLACE.

IMPROVEMENT IN AERO-GAS BURNERS.

Specification forming part of Letters Patent No. **169,711**, dated November 9, 1875; application filed April 23, 1875.

To all whom it may concern :

Be it known that I, JOHN H. KNIGHTS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Aero-Gas Burners; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

In said drawing, Figure 1 denotes a side elevation, Fig. 2 a top view, and Fig. 3 a vertical and central section, of a burner constructed in accordance with my invention.

The object of my invention is to produce a simple and effective device for the combustion of commingled currents of gas and air, so as to obtain therefrom the maximum amount of heating power. My invention, being especially designed for heating purposes, consists in the peculiar construction, combination, and arrangement of the parts, as hereinafter referred to and claimed.

In the drawing, A denotes the body or case of the burner, which is of an inverted bell shape. Within the said body is arranged a conical deflector, B, the same having its base upward and flush with the top of the part A, its apex being on a plane just above that of a series of air inlets or holes, *a a*, &c., disposed near the bottom of and transversely around the body A. *b* is a perforated diaphragm, disposed transversely of the body, and on a plane a little below the air-inlets *a a*. *e* is a small

conical chamber, disposed below the diaphragm, having a small hole, *c*, through its apex, to admit a small current of gas when the burner is attached to a gas-supply pipe or gas-main. *d d*, &c., are a series of holes disposed in the top surface of the burner, and arranged in a circle around its periphery.

By this construction and arrangement of the parts of the burner the gas, as it enters the body or chamber of the burner, is met by the larger currents of air entering the holes *d d*, and, being commingled therewith, impinges against the surface of the cone, is deflected, and passes upward around the cone, and escaping through the eduction-orifices in the top of the burner is there burned.

The burner thus constructed for the combustion of the commingled currents of gas and air has been found in practice one of great value for heating purposes, giving a blue flame of great intensity.

Having described my invention, what I claim is—

The improved aero-gas burner, consisting of the case A, the inverted cone B, the series of air inlets *a a*, the perforated diaphragm *b*, and series of eduction-orifices *d d*, the whole being constructed, combined, and arranged in manner as shown and described.

In testimony that I claim the foregoing as my own invention, I affix my signature in presence of two witnesses.

JOHN H. KNIGHTS.

Witnesses:

F. P. HALE,
F. C. HALE.