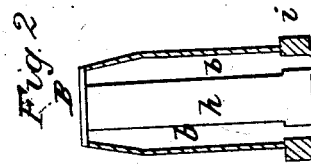
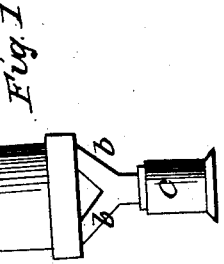
A. ARNOUX.

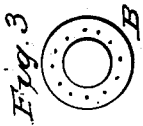
Gas Burner.

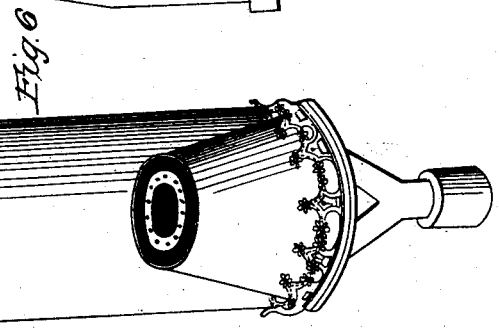
No. 764.

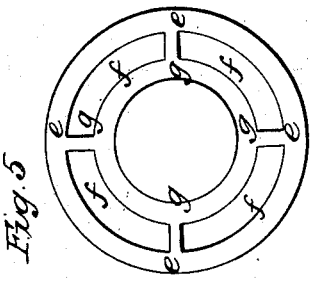
Patented June 4, 1838.

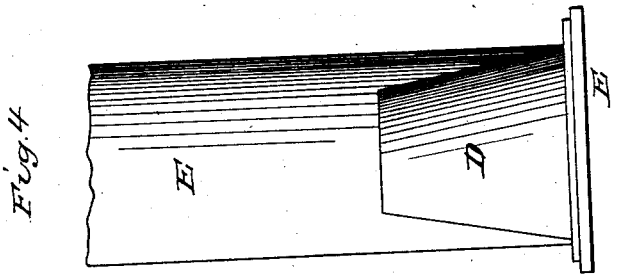












UNITED STATES PATENT OFFICE.

ANTOINE ARNOUX, OF NEW YORK, N. Y.

GAS-BURNER.

Specification of Letters Patent No. 764, dated June 4, 1838.

To all whom it may concern:

Be it known that I, ANTOINE ARNOUX, of the city of New York, in the State of New York, have invented a new and useful Improvement in Gas-Burners.

My object is to produce the greatest quantity of light from a given quantity of gas. This can be done only by its combustion at a heat so high as to consume those particles which would otherwise pass off in smoke.

The intensity of the flame of a gas light depends upon the shape and dimensions of the flame, the disposition of the burner, and the relation of the flame to the air. The shape and dimensions of the flame depend on the bore of the burner, the number of holes through which the gas escapes and their diameter and distance from each other. The heat of the flame depends upon the supply of air and the manner in which it is supplied to aid combustion.

The following is a full and exact description of my improved gas burner. I refer to the annexed drawing. I make a cylindrical socket of brass to be connected with the gas pipe of which Figure 1 is an outline, and Fig. 2 a vertical cut. It is conical at the top to correspond with the sides of the cone D Fig. 4 on Figs. 1 and 2.

C is the nut of the screw to connect with the gas pipe. It connects with the socket by the tubes *b*, *b*.

h is a conduit through the middle of the socket for the passage of a current of air within the circle of the flame.

b, *b*, *b*, are the interior of the socket and the tubes connecting with the gas pipe.

Fig. 3 is a ring of steel or other superior metal forming the top of the socket. It is perforated with holes through which the gas escapes from the interior of the socket and is then lighted. B is the upper orifice of the conduit *h*.

In Fig. 2 *i*, *i*, is a shoulder around the bottom of the socket which supports the gallery (Fig. 5). The gallery slides over the socket and rests upon the shoulders.

Fig. 5 is a horizontal cut of the gallery *g*, *g*, being a ring which rests upon the shoulder *i*, *i*. *f*, *f*, are openings through which the air passes outside of the socket, and within the cone *e*, *e*, is the gallery which supports the cone, and the chimney D is a cone of sheet brass or other metal which is attached by soldering or otherwise to the gallery *e*, *e*, and extends 1/12 of an inch above the top of the socket. E is a cylindrical glass chimney six inches high resting upon the gallery outside of the cone.

Fig. 6 is a perspective view of the whole burner. The model deposited shows all the parts combined without the glass chimney. The holes in the ring through which the gas escapes, should be, for gas from fat substances 1/50 of an inch in diameter and 12/100 of an inch distant from each other. For coal gas 1/32 of an inch in diameter and 16/100 of an inch apart.

The Figs. 1, 2, 3, 4, 5 are all of the proper full sizes for the respective parts. The burning of the gas heats the socket. This causes a draft or current of heated air to pass through the conduit *h* and another current to pass up between the cone and the socket, and by their form it is made to converge and in the proper quantity feed the flame. The length of the socket gives equability and steadiness to the supply of air. I thus produce a flame of greater length increasing the heat so as entirely to consume the smoke and to give greater purity, steadiness and brilliancy to the light with a saving of gas varying from 20 to 50 per cent. or more.

I claim as my invention—

The increasing the length of the socket and giving it the conical form at the top and the placing over it the cone.

A. ARNOUX.

Witnesses:

A. ERNETTE,

ERAS. C. BENEDICT.