

(No Model.)

H. DELMAS-AZÉMA.

GAS BURNER.

No. 386,113.

Patented July 17, 1888.

Fig. 2

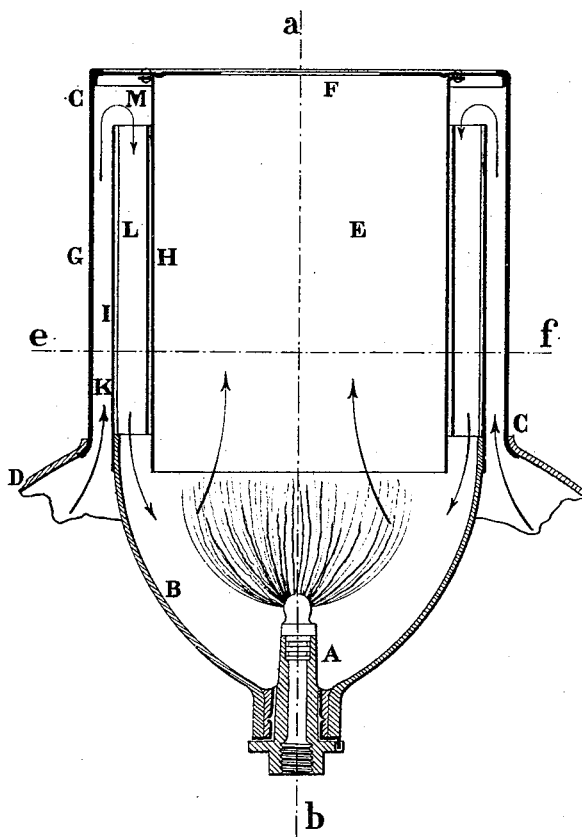


Fig. 1

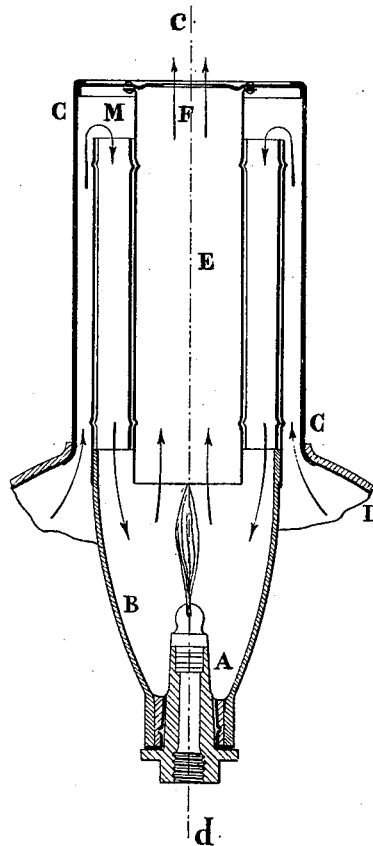
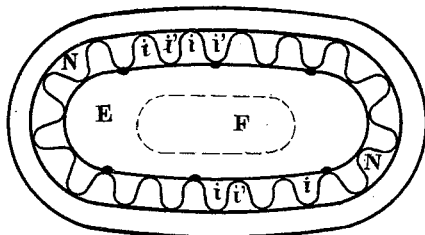


Fig. 3



Witnesses:  
James F. Duhamel  
Matter S. Dodge.

Henri Delmas-Azéma,  
Inventor,

by Rodger Son.  
his Attys.

# UNITED STATES PATENT OFFICE.

HENRI DELMAS-AZÉMA, OF ST. QUENTIN, FRANCE.

## GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 386,113, dated July 17, 1888.

Application filed September 9, 1886. Serial No. 213,129. (No model.) Patented in France October 8, 1883, No. 157,899, and May 30, 1885, No. 169,262; in Belgium April 26, 1884, No. 64,967; in England May 3, 1884, No. 7,188; in Germany May 6, 1884, No. 32,681; in Italy November 30, 1884, No. 17,484; in Austria-Hungary March 1, 1885, No. 39,134 and No. 10,754, and in Spain March 6, 1885, No. 6,634.

*To all whom it may concern:*

Be it known that I, HENRI DELMAS-AZÉMA, of St. Quentin, in the Republic of France, have invented certain new and useful Improvements in Gas-Burners, (for which I have received Letters Patent in France, dated October 8, 1883, No. 157,899, and May 30, 1885, No. 169,262; in Germany, dated May 6, 1884, No. 32,681; in Belgium, dated April 26, 1884, No. 64,967; in England, dated May 3, 1884, No. 7,188; in Italy, dated November 30, 1884, No. 17,484; in Austria-Hungary, dated March 1, 1885, No. 39,134 and No. 10,754, and in Spain, dated March 6, 1885, No. 6,634,) of which the following is a specification.

The object of my invention is to effect complete and economic combustion of any gas by burning it in a "butterfly" burner, with heated air flowing down on the flame from above and under very low pressure.

Figure 1 is a section of a burner of my system along the line *a b*; Fig. 2, a section along *c d*, and Fig. 3 a section along *e f*.

A is a gas-burner of the usual construction, the soapstone cap of which has a slit at its top.

B is an oblong glass globe exactly fitted with its socket, and by means of plaster to the foot of the burner A. The flat flame of the butterfly burner has the direction of the greater axis of the globe B. One of the two larger sides of this globe is platinized or silver-plated so as to serve as a lateral reflector, if desired.

C is a cover fixed to the upper part of the globe B. It has an oblong shape corresponding to that of the globe B. This cover, made of thin sheet metal, serves to heat the incoming air, and to distribute and blow it against the flame. At the same time it serves as chimney to convey the gases of combustion to the outside. The combustion is carried on at very low pressure. A screen or reflector, D, is attached to the lower part of the cover C.

E is the central chimney, where the gases are formed, and from which they escape through the mouth F after imparting some of their heat to the metallic walls.

G H are respectively the outlet and inlet casing, of an oblong shape, concentric with the

globe B, forming, in combination with the intermediate casing, I, two chambers or compartments. One of the compartments, K, being free and open allows the fresh outside air to rise to the chamber M. The other, L, is furnished with the corrugated metal sheet N, pressing against the wall I and dividing the compartment into a series of alternating channels, *i i' i''*. The air, already somewhat heated, is in a regular manner divided and conveyed by these channels to the flame at a very high temperature.

The casing H is riveted to the horizontal portion of the casing G, and is secured to the corrugated sheet N by means of rivets, as in Fig. 3, or by means of indentations, as shown in Fig. 1, and as the casing I is secured to the sheet N in a similar manner it will be seen that the cap, comprising the connected casings G H I, is removable bodily from the globe B. When in position, the globe fits within the lower end of casing I, the corrugated sheet N resting at its lower edge upon the upper edge of the globe, as shown in Figs. 1 and 2. At its lower edge the casing G is provided with a lateral rim or flange, which is adapted to support the reflector D, the latter slipping freely over the cover. By this construction the cover, with the reflector, may be removed from the globe, and the reflector also removed from the cover when desired.

As the whole cover C is of thin sheet metal, and the air-current, first ascending and then descending, forms a kind of siphon, this air carries along with it a sufficient amount of heat, so as not to allow of any local concentration of heat that might injure the globe or change its shape.

The apparatus may be applied to any combustible gas whatever. It may also be adapted to round globes and covers.

I am aware of the patent to Kraussé, No. 310,209, and I make no claim to anything therein shown and described. While the same general principle is the same in both, I believe that my burner possesses advantages over that just referred to in that it produces a steadier flame, insures more perfect combustion, and effects a material saving of the gas. Neither

do I wish to be understood as claiming, broadly,  
a detachable reflector or a removable cap; but

What I do claim is—

In combination with burner A and elliptical  
5 globe B, the three vertical casings G H I, con-  
nected with but separated from one another  
to form the concentric chambers K and L, con-  
nected at their upper ends by a chamber, M,  
cover C, connecting the casings G H, and pro-  
10 vided with a central discharge, F, and a plate,

N, corrugated vertically and placed within the  
chamber L.

In testimony whereof I have signed this  
specification in the presence of two subscrib-  
ing witnesses.

HENRI DELMAS-AZÉMA.

Witnesses:

G. DUPONT,

B. WAULT.