

No. 618,239.

Patented Jan. 24, 1899.

H. E. SHAFFER.  
ACETYLENE GAS BURNER.

(Application filed July 18, 1898.)

(No Model.)

FIG. 1.

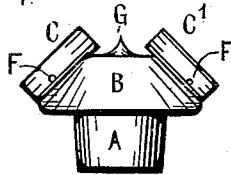


FIG. 2.

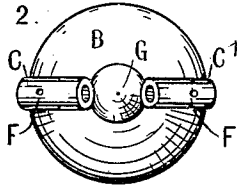
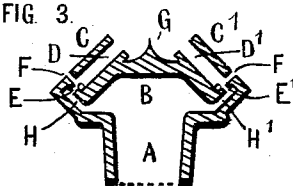


FIG. 3.



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# UNITED STATES PATENT OFFICE.

HENRY E. SHAFFER, OF ROCHESTER, NEW YORK.

## ACETYLENE-GAS BURNER.

SPECIFICATION forming part of Letters Patent No. 618,289, dated January 24, 1899.

Application filed July 18, 1898. Serial No. 686,204. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY E. SHAFFER, a citizen of the United States, residing at Rochester, New York, have invented an Improved Acetylene-Gas Burner, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to certain improvements in the construction of double-jet acetylene-gas burners, which improvements are fully described and illustrated in the following specification and the accompanying drawings, the novel features thereof being specified in the claims annexed to the said specification.

In the accompanying drawings, representing a double-jet burner containing my present improvements, Figure 1 is an elevation. Fig. 2 is a top view. Fig. 3 is a central vertical section.

My improved double-jet gas-burner consists, essentially, of the central hollow stem A, the conical body or reservoir B, and the inclined opposing jet-tubes C C'. The whole burner is preferably formed in a single piece of any suitable material, such as lava, although the lower part or the whole of the body, with the stem, may be made of metal cemented to the tubes. The jet-tubes are inclined toward each other, as shown, at an angle, preferably, of about forty-five degrees. Each jet-tube is provided with a passage D D', into which the gas escapes through the small orifices E E', while a limited amount of air enters the passage through the holes F, of which there are preferably three in each jet-tube. H H' are passages communicating between the interior of the body and the discharge-orifices E E'. The upper surface of the body is conical, cut off, or truncated at the top between the jet-tubes, so as to allow a free supply of air to the flame. A conoidal projection G, arising between the tubes from the flat top of the cone, may be used to direct the air to the base of the flame. The streams of gas emerging from the jet-tubes mix with more air and coalesce to form a flat or truncated flame, with its base slightly above the point G, if used. The conical shape of the body, its flat top, and the conical projection G permit an abundant supply of air to the flame and insure complete combustion, and

consequently a very white flame, with the greatest production of light.

An additional advantage of my improved burner is that it is entirely free from any tendency to clogging or deposit, as I have demonstrated by use over a long period of time.

The tubes C C' are preferably fixed to the burner-body to protect them in handling and transportation; but their connection with the body is made along a narrow line, as shown, to expose them as fully as practicable to the air, it being important in acetylene burners to prevent overheating. The burner is further protected from the heat of the flame by the situation of the air-inlets in these tubes and by the non-conducting cushion of gas in the upper part of the reservoir E. The roof of this reservoir has preferably a considerable extent, and the wall is made comparatively thin, all to obviate the accumulation of heat, which has an important relation to the formation of gas-carbon, which is avoided by my improvement, as stated.

I claim—

1. In a double-jet gas-burner, the combination with the body or gas-reservoir having the form of a truncated cone with a central projection, of the two inclined perforated jet-tubes and suitable gas-passages, substantially as described.

2. In a double-jet gas-burner, the combination with the hollow body or reservoir shaped like a truncated cone at its upper portion of the two opposing inclined jet-tubes located outside of the cone upon its inclined surfaces, suitable air-mixing devices in each of the jet-tubes and suitable gas-supply passages, substantially as and for the purposes set forth.

3. The combination with the hollow conical body or reservoir, of the inclined jet-tubes C C', located outside of the cone upon its inclined surfaces, the passages D D' in the tubes, the gas-orifices E E', supply-passages H H', and air-openings F F', substantially as described.

4. In a double-jet gas-burner, the combination with a hollow body or reservoir shaped like a truncated cone at its upper portion, of the two opposing inclined perforated jet-tubes located above and outside of said cone, arranged to discharge the gas in converging

streams meeting in the open air outside of and above said truncated cone, and suitable gas-supply passages, substantially as described.

5 In a double-jet gas-burner, the combination with the body having a gas-reservoir, of the two opposing inclined jet-tubes situated outside of the body upon its inclined surface, suitable air and gas mixing openings in each of the jet-tubes and a suitable gas-supply pas-

sage, whereby the tubes in an acetylene-gas burner are kept cool and air and gas thoroughly mixed, substantially as and for the purposes set forth.

HENRY E. SHAFFER.

Witnesses:

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