No. 624,169. Patented May 2, 1899.

# L. M. BULLIER.

## BURNER FOR ACETYLENE GAS.

(Application filed Dec. 29, 1897.)

(No Model.)

FIG. 1.

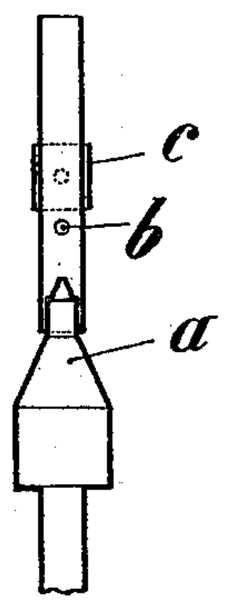



FIG. 2.

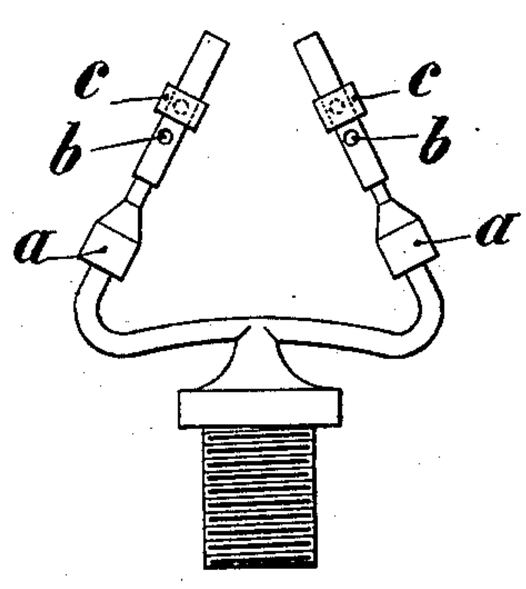
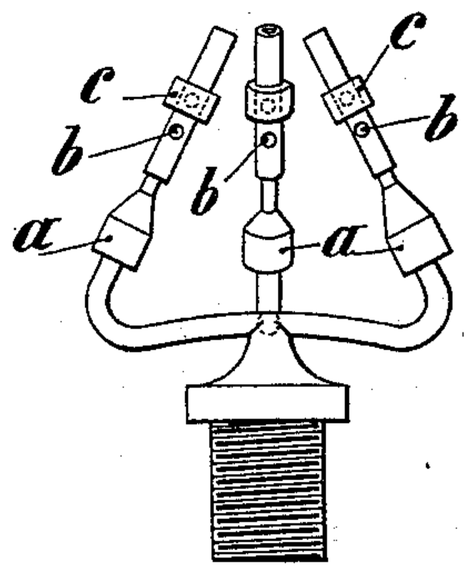



FIG. 3.




Witnesses
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# UNITED STATES PATENT OFFICE.

LOUIS MICHEL BULLIER, OF PARIS, FRANCE.

## BURNER FOR ACETYLENE GAS.

SPECIFICATION forming part of Letters Patent No. 624,169, dated May 2, 1899.

Application filed December 29, 1897. Serial No. 664,385. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS MICHEL BULLIER, of the city of Paris, France, have invented a new and Improved Burner for Lighting by Acetylene Gas and other Highly-Carbureted Gases, (for which I have obtained Letters Patent in France for fifteen years, dated April 20, 1895, No. 246,768, and in Belgium for fifteen years, dated April 20, 1895, No. 115,161,) of which the following is a full, clear, and exact description.

My invention has for its object to produce a new and improved lighting-burner in which inlet gas-ducts are combined with air-sucking ducts in order to obtain a thorough combustion of acetylene and generally of any highly-carbureted gases used for lighting purposes.

In order to make my said invention clearly understood, I will proceed to describe the same with reference to the annexed drawings, in which—

Figure 1 shows an enlarged sectional elevation of a burner made according to my invention. Fig. 2 shows in elevation a burner which is not liable to be choked by a deposit of carbon, which often occurs in acetylene burners; and Fig. 3 is a modified form of a burner of the same character.

In Fig. 1 I have shown an element of my burner in which gas is admitted through a duct *a*. Into this duct an air-inlet *b* opens, so that air is sucked into the burner by the current of gas and ejected from the burner commingled with gas. The mixture of air and gas is thus obtained within the burner, passes to the outlet of the burner, and may be easily lighted, and the thorough combustion of acetylene and other gases is so obtained, while the lighting power of the flame is increased.

In order to avoid an objectionable deposit of carbon, I preferably construct my improved burners as shown in Figs. 2 and 3. According to this improvement two or more burners are placed at an angle to each other so that the flames meet and become flattened one against the other, so that the resulting flame is somewhat similar to the flame of a Manchester burner. By these means the lighting part of the flame is placed far from the ducts of the burner on account of the excess of air introduced by the lateral air-passages. This excess of air insures a thorough combustion of the gas in the space between the orifices of the burners and the meeting of the flames; but as the flames burn blue at the outlet of the burners all deposit of carbon is avoided.

Any number of small air-inlets *b* may be used—as, for instance, as shown dotted in Figs. 2 and 3—and a sleeve *c*, sliding on the tube of the burner, may be placed so as to close one or more of the holes *b* and to regulate the admission of air. Moreover, this sleeve prevents the possibility of the mixture of air and gas being lighted through the air-holes.

In the modified form of burner shown in Fig. 3 the apparatus comprises three burners slanting toward each other, as above specified; but any number of slanting burners may be used in that manner.

It will be easily understood that I do not limit myself to the form of burner shown, but that other forms may be used without departing from the spirit of my invention.

I wish also to specify that the shape and size of the different parts of my burners may be varied and that any convenient materials may be used for the construction of the same.

What I claim, and desire to secure by Letters Patent, is—

In an apparatus for burning acetylene, the combination of a plurality of burners, each comprising an air-passage, a gas-passage so arranged with respect to the air-passage as to produce a suction of air therethrough, with means for commingling the air and gas within the burner and for passing the elements thus commingled to the burning-point of the burner, the said burners being set to deliver their commingled streams of air and gas to a common burning-point, where they will meet, substantially as described.

The foregoing specification of my new and improved burner for lighting by acetylene gas and other highly-carbureted gases signed by me this 17th day of December, 1897.

LOUIS MICHEL BULLIER.

Witnesses:

EDWARD P. MACLEAN,

MAURICE HENRI PIGNET.