

H. H. SNYDER.
ACETYLENE BLOWPIPE.
APPLICATION FILED JUNE 5, 1907.

912,500.

Patented Feb. 16, 1909.

Fig. 1.

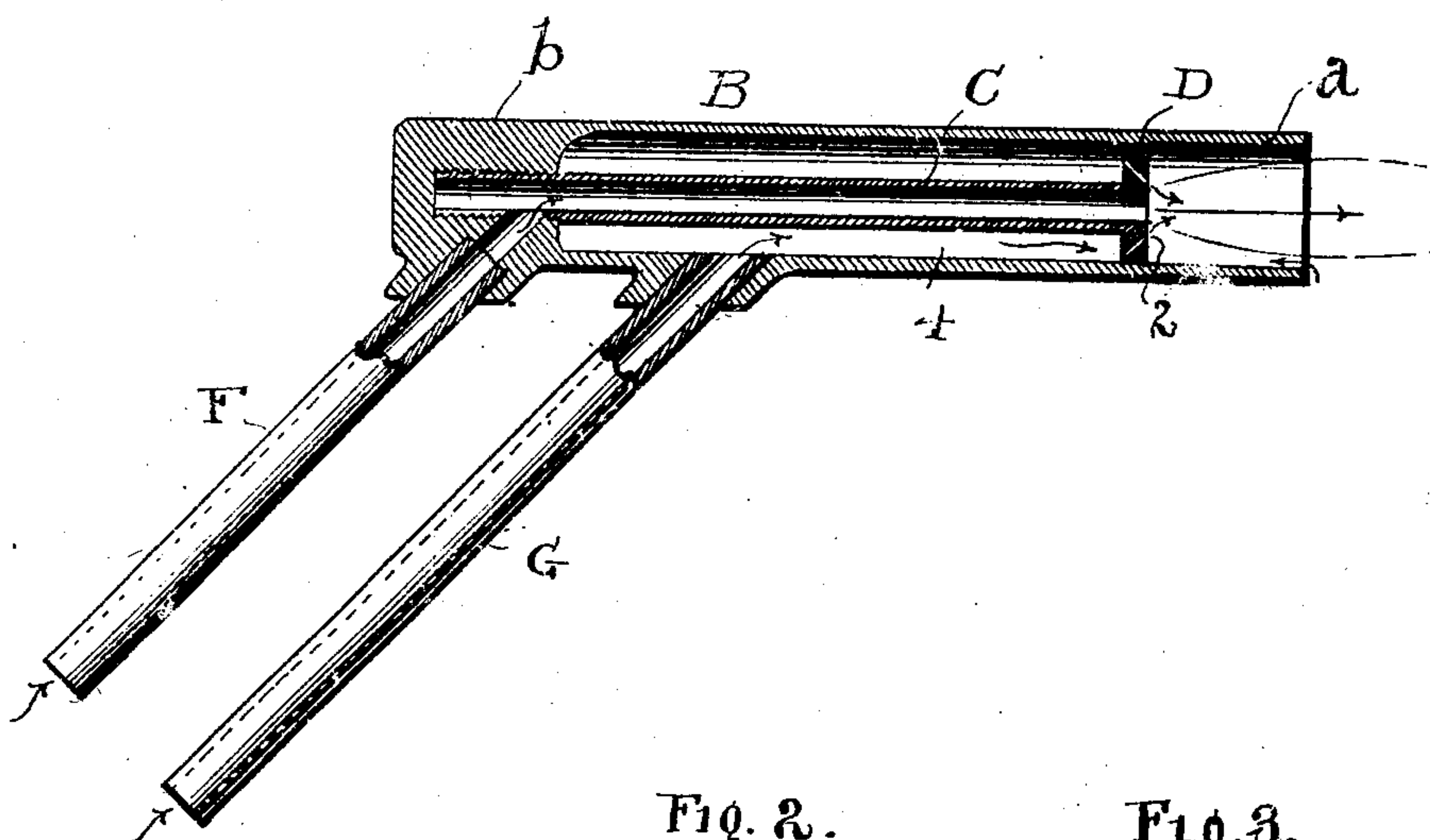


Fig. 2.

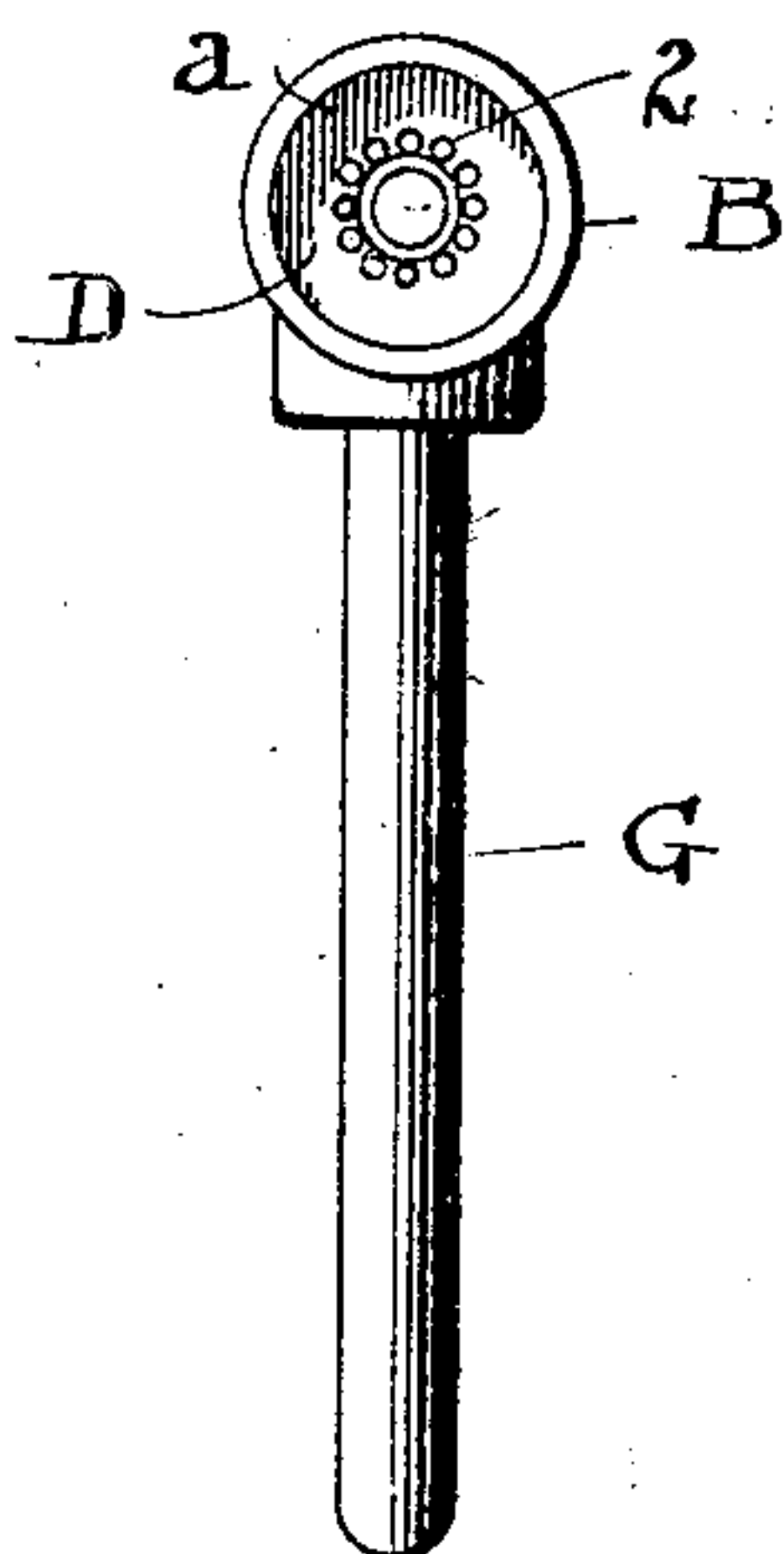
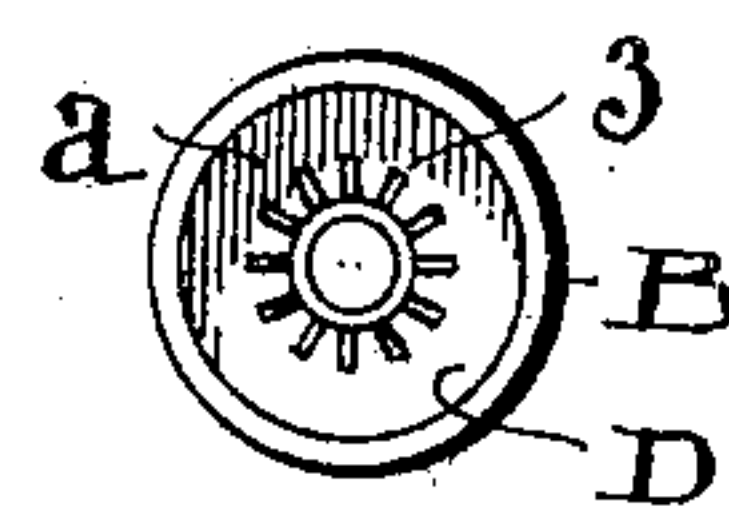


Fig. 3.



WITNESSES:
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UNITED STATES PATENT OFFICE.

HOWARD H. SNYDER, OF CLEVELAND, OHIO.

ACETYLENE-BLOWPIPE.

No. 912,500.

Specification of Letters Patent.

Patented Feb. 16, 1909.

Application filed June 5, 1907. Serial No. 377,319.

To all whom it may concern:

Be it known that I, HOWARD H. SNYDER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Acetylene-Blowpipes, and do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention has reference to acetylene blow pipes, and is an improvement more especially upon the style of blow pipe made and invented by John Harris, of Cleveland, Ohio, and patented May 14, 1907, No. 853,634. The said patent comprises a body member of tubular form and differential bore, the smaller diameter of which is provided with a duct for mixing the acetylene and air and from which they issue as a mixture into a cup detachably secured to the nozzle end of said body. The said patented construction has been found to be entirely practical and acceptable so far as I know and believe, but has appeared to me to be more elaborate and expensive than is really necessary to obtain good and effective service, and for this reason I have sought to produce a device which is materially simplified in form and of fewer parts as well as being materially reduced in expense of manufacture, all as plainly shown in the accompanying drawings and particularly pointed out in the claims.

Figure 1 represents a longitudinal sectional elevation of the invention, and Fig. 2 is a front elevation thereof. Fig. 3 is a front end elevation of the body of the pipe showing a modified form of perforations or openings in the diaphragm for the passage of the acetylene from the chamber or space within.

As thus shown the device comprises a cylindrical body B preferably of the same cross section from end to end internally and externally and provided with a more or less solid and closed rear end b, into the center of which I screw conducting pipe C for the supply of air and which terminates and is fixed at its opposite or outer end centrally in diaphragm D. Said diaphragm is located inward from the end or extremity of tube B one-fifth to one-sixth its length, or at such distance as to provide a flange sustaining chamber a of suitable proportions just with-

out the nozzle proper of the blower. Said nozzle, so called, may be regarded as fixed by diaphragm D, through which the air and acetylene alike issue and commingle as they emerge outside the same, the acetylene issuing through perforations 2, Fig. 2, or slits or slots 3, Fig. 3, as either style is used, and the air is under artificial pressure up to this point, the pipe F having connection with the rear end of pipe or duct C, and pipe G for the acetylene discharging into annular space 4 about said pipe. It will be observed that as to these parts and the place and manner of mixing the elements, there is material difference in the construction of the blower as compared with said patent. In the patent the air and acetylene are mixed in an internal mixing duct, from which the mixture passes into the cup on the nozzle of the blower, but in the present construction the air passes through a duct of its own provided by pipes F and C and the acetylene enters through pipe G and the annular space 4 about pipe C in the body of the blower and flows thence through the finely divided jet orifices 2 or 3 as above described. The said orifices may incline more or less toward the center, as in Fig. 1, or they may have a direct discharge into the flame chamber, both constructions giving good results.

The primary, but not exclusive function of the said chamber at the nozzle of the blower is to preserve a constant flame therein during operation. Otherwise the projection of the flame under the usual pressure from within the blower would create such measure of atmospheric suction from about the sides at the mouth of the blower that it would die out or be extinguished at said mouth and the operation of the blower would be defeated. Any measure of vacuum created by the issuing gases and the projected tongue of flame out beyond said chamber is supplied by air that creeps in from about the front edge of the flame chamber, but does not interfere with the retention of the flame therein. However, be this as it may, I have demonstrated that a certain percentage of air and gas is trapped in chamber a which constantly maintains the working flame regardless of the high pressures used in devices of this kind.

What I claim is:—

1. A blow-pipe for air and acetylene comprising a cylindrical body having a diaphragm wall dividing said body between its ends into

a gas chamber and a flame chamber respectively, and an air tube centrally through said gas chamber having a discharge opening centrally within the diaphragm wall, and
5 said wall having sealed engagement with said cylindrical body and provided with gas orifices closely surrounding said air discharge opening and relatively near the axial center of said body and adapted to converge the flow of gas and air for ignition
10 and maintenance of flame centrally within the body from the diaphragm wall outward.

2. A blow-pipe having air and acetylene connections and comprising a tubular body
15 having a diaphragm D engaged at its circumferential edge with said body and located inward from the end thereof to provide a sealed gas chamber, a flame chamber in the

respective ends thereof, and a central air tube C within said body having a central discharge opening at said diaphragm, said
20 diaphragm having a series of fine gas orifices surrounding the said air opening and relatively in close proximity thereto for converging the gas centrally within the flame
25 chamber of the body at the end thereof and apart from the surrounding wall, and said air tube being spaced apart from the body to provide a gas chamber.

In testimony whereof I sign this specification in the presence of two witnesses. 30

HOWARD H. SNYDER.

Witnesses:

E. M. FISHER.

R. B. MOSER.