

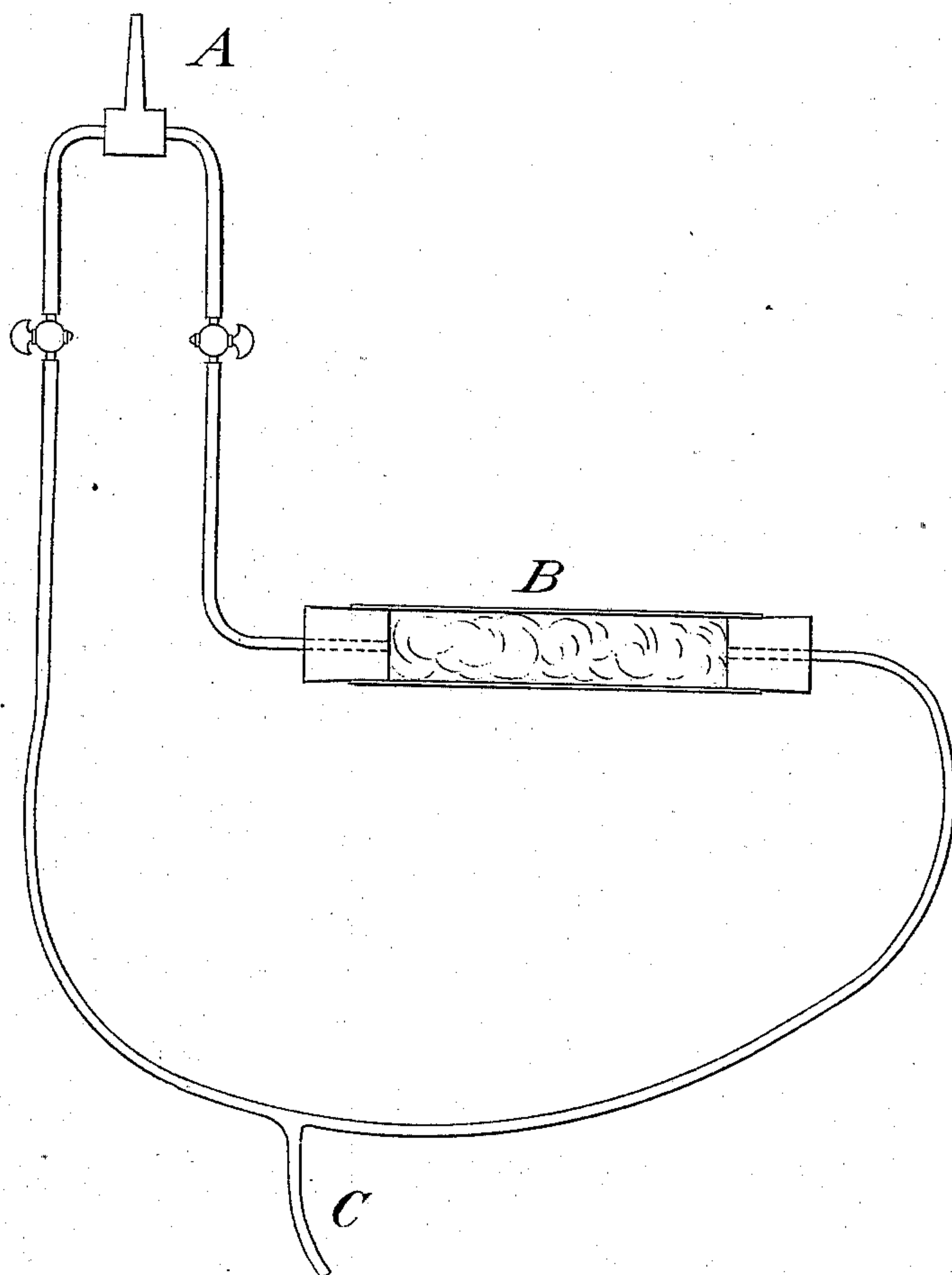
(No Model.)

F. E. IVES.

MEANS FOR PRODUCING THE OXYHYDROGEN BLOW PIPE FLAME.

No. 261,852.

Patented Aug. 1, 1882.



Witness

*Edwin A. Mayer*

*George W. Crook*

Inventor

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# UNITED STATES PATENT OFFICE.

FREDERIC E. IVES, OF PHILADELPHIA, PENNSYLVANIA.

MEANS FOR PRODUCING THE OXYHYDROGEN BLOW-PIPE FLAME.

SPECIFICATION forming part of Letters Patent No. 261,852, dated August 1, 1882.

Application filed March 25, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERIC E. IVES, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented an  
5 Improvement in the Means for Producing the Oxyhydrogen Blow-Pipe Flame, of which the following is a specification.

The object of my invention is to supply the hydrogen element in the oxyhydrogen blow-  
10 pipe flame without the use of the troublesome and expensive hydrogen-generators, gas-bags, gasometers, cylinders, vaporizers, and other apparatus commonly employed for the purpose; and this object I attain in the following  
15 manner:

A portion of the oxygen gas required to produce the blow-pipe flame, and which may be supplied either direct from the retort or from a gas-bag, gasometer, or cylinder in the usual  
20 manner, I cause to pass through a tube or chamber containing a supply of ether or other suitable volatile inflammable liquid, in order that it may become wholly or partly saturated with the vapor. Instead of passing the gas in  
25 bubbles through the volatile inflammable liquid, I force it through a tube or chamber which has a filling of cotton or other suitable porous material saturated with the liquid. The object of this arrangement is, first, to prevent  
30 any unsteadiness of the flame, and, second, to prevent any spilling of the liquid into the tubes in case the hydrocarbon-chamber is upset. The oxygen should be forced through or against a sufficient quantity of the cotton filling to in-  
35 sure a proper degree of saturation with the vapor. This may be done in various ways. The simplest way is to employ a metal tube about twelve inches-long and one or two inches in

diameter, connected as shown in the figure. With this arrangement a proper degree of satu- 40 ration is insured until the ether is almost exhausted, provided that the filling is neither packed too loose nor too tight. From the chamber containing the inflammable liquid or vapor the mixture of gas and vapor is conducted 45 to the blow-pipe, where it may be ignited, and the volume of flame regulated by stop-cock in the usual manner. In order to bring the flame to a focus, more oxygen gas which is not saturated with the inflammable vapor may be ad- 50 mitted to the blow-pipe in the usual manner.

Any of the well-known forms of oxyhydrogen blow-pipe may be used, and the flame may be employed either as a simple reduction-flame or in the production of the lime-light. 55

In the drawing, A represents the blow-pipe, B the chamber for inflammable liquid, and C the oxygen-supply tube.

I claim—

1. The combination, in oxyhydrogen blow- 60 pipe apparatus, of a chamber containing a filling of cotton or other porous material with an oxygen-supply tube, all substantially as and for the purpose specified.

2. The means for producing the oxyhydrogen 65 blow-pipe flame, consisting of a chamber containing a porous filling which is saturated with a volatile liquid hydrocarbon, and an oxygen-supply, all substantially as described.

In testimony whereof I have signed my name 70 to this specification in the presence of two subscribing witnesses.

FREDERIC E. IVES.

Witnesses:

GEORGE W. CROSSCUP,  
EDWIN N. MAYER.