

A. W. WILKINSON.
Oxy-Hydrogen Burners.

No. 123,536.

Patented Feb. 6, 1872.

Fig: 1.

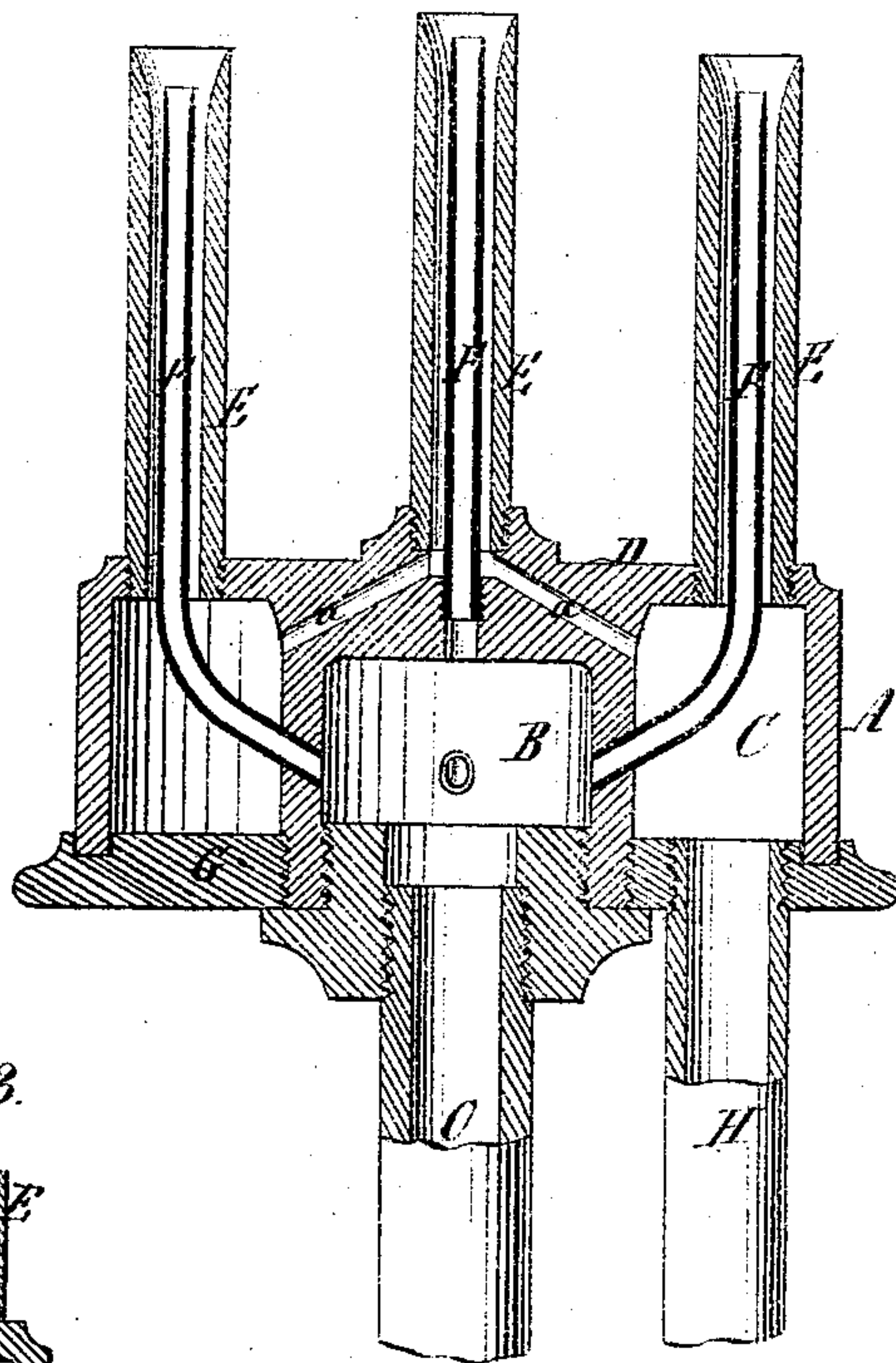


Fig: 3.

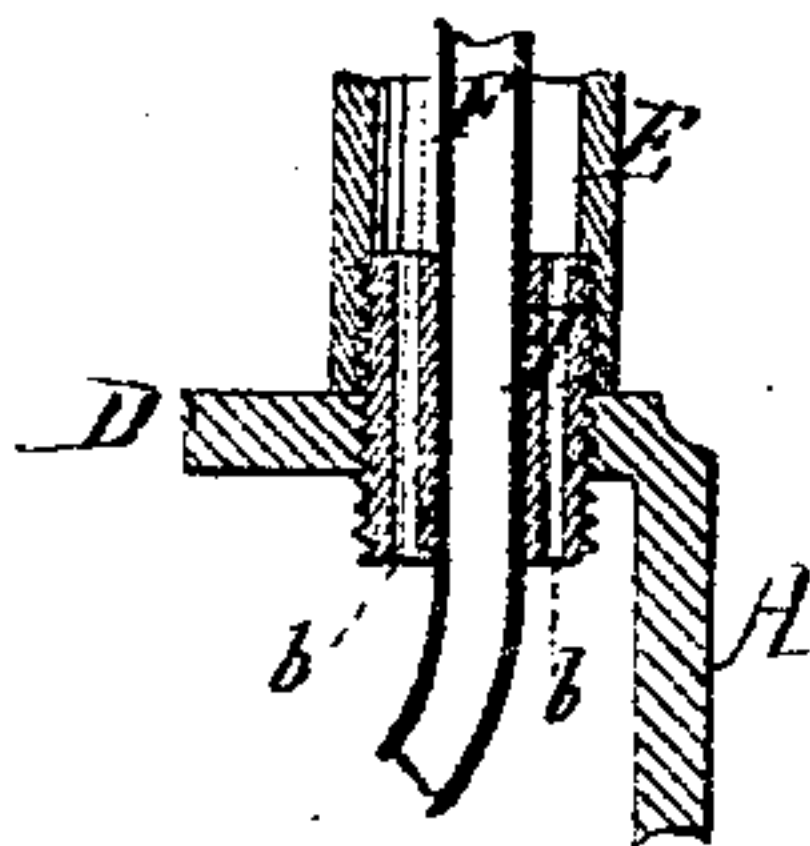


Fig: 2.

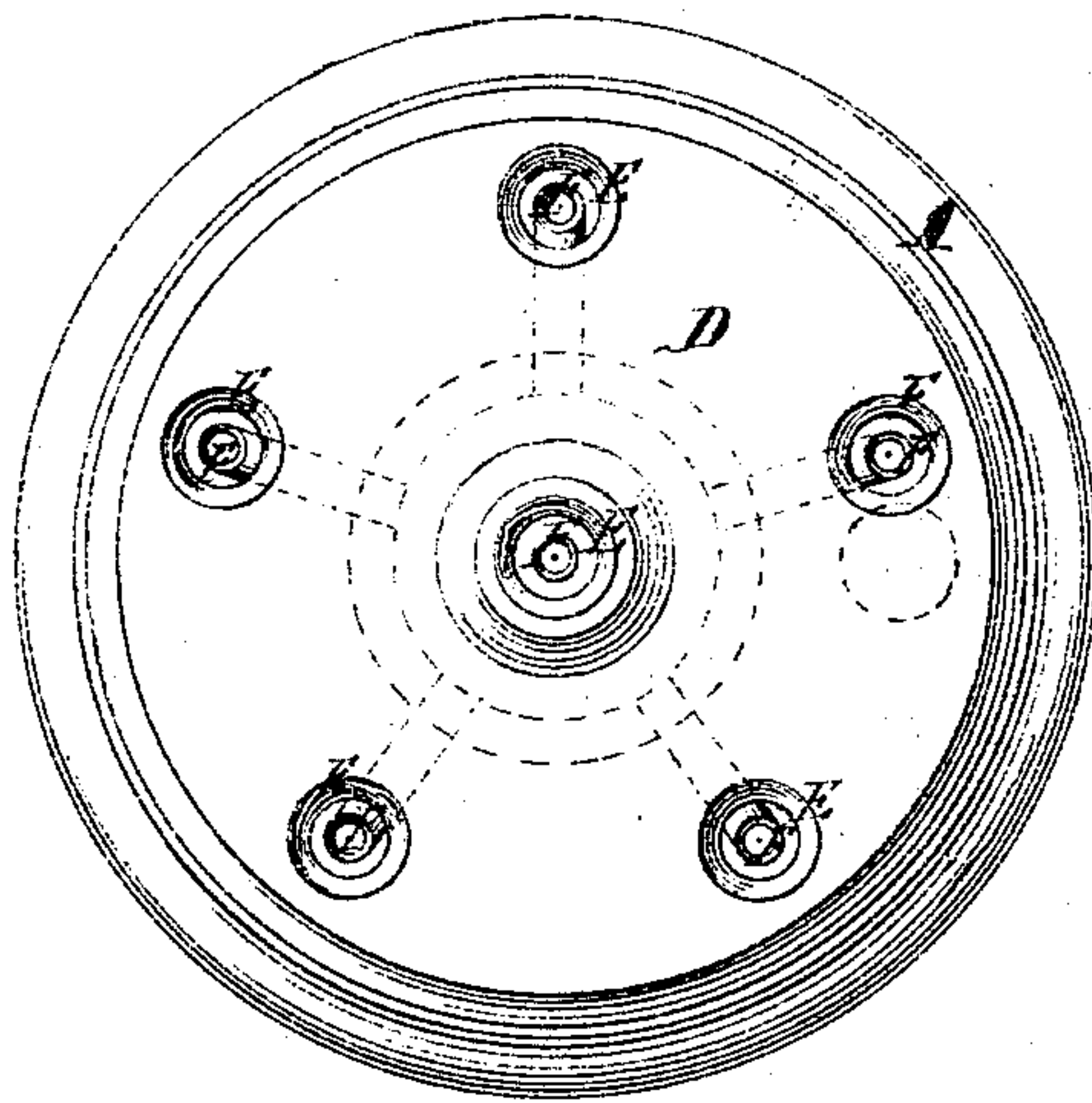
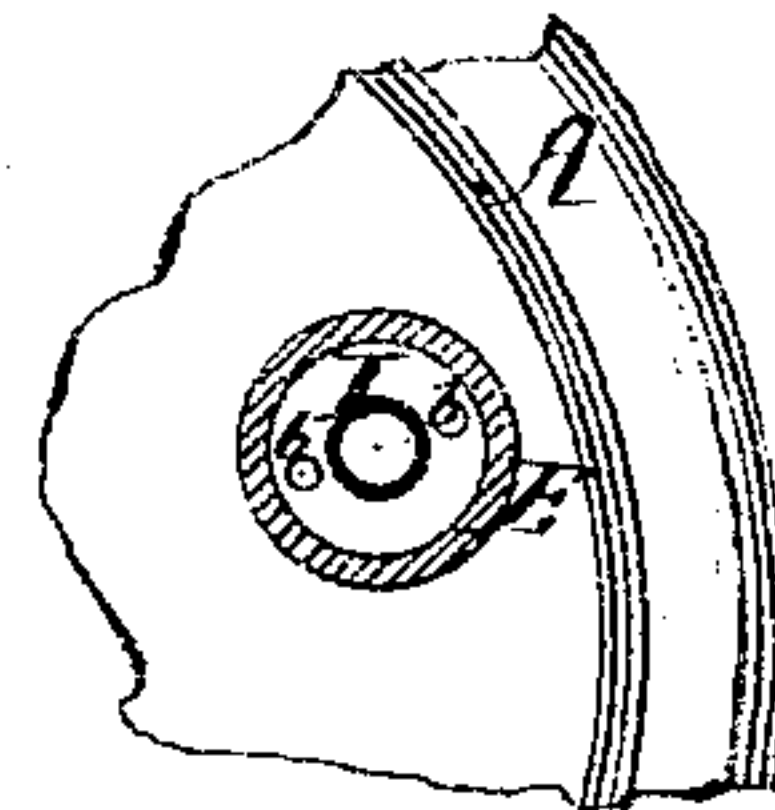


Fig: 4.



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IMPROVEMENT IN COMPOUND OXYHYDROGEN BURNERS.

Specification forming part of Letters Patent No. 123,536, dated February 6, 1872.

To whom it may concern:

Be it known that I, ASA W. WILKINSON, of the city, county, and State of New York, have invented a new and useful Improvement in Compound Oxyhydrogen Burners; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a vertical central section of my burner. Fig. 2 is a plan or top view of the same. Fig. 3 shows a section, and Fig. 4 a plan of my regulating-nipple.

Similar letters indicate corresponding parts.

This invention relates to an oxyhydrogen burner which contains a series or group of jets, each jet being composed of an external tube communicating with a common hydrogen-chamber, and of an internal oxygen-tube communicating with a common oxygen-chamber in such a manner that the gases admitted to these chambers are conducted to all the jets and brought in contact at the points of combustion, the oxygen being carried up through the centers of the hydrogen-tubes, so that the same will come in intimate contact with the hydrogen and complete combustion will be effected.

In the drawing, the letter A designates a burner, the body of which is provided with two chambers, B C, one of which is situated inside of the other, as shown in Fig. 1 of the drawing; or, if desired, said chambers may be arranged in any desired relation to each other. The chamber B communicates, by means of a pipe, O, with a generator or reservoir containing oxygen, and the chamber C communicates, by a pipe, H, with a generator or reservoir containing hydrogen, or carbureted hydrogen, or any other combustible gas. From the top D of the two chambers B C rise a series of jets, each of which consists of an external tube, E, and an internal tube, F. The external tubes E of all the jets are in direct communication with the hydrogen-chamber C, while the inner tubes F of said jets communicate with the oxy-

gen-chamber B. If the jets and chambers are arranged as shown in the drawing, the communication between the external tube of the central jet and the hydrogen-chamber C is effected by two channels, *a a*, provided in the body of the burner, as shown in Fig. 1. The chambers B C are closed at the bottom by a common plate, G, into which the pipes O and H are screwed. By removing this plate convenient access can be had to said chambers for the purpose of cleaning. The tubes E are screwed into the top D, so that they can be readily removed. If the pipes H and O are opened the combustible gas admitted through the pipe H passes through the hydrogen-chamber into the external tubes of the several jets while the oxygen admitted through the pipe O passes through the oxygen-chamber into the internal tubes of all the jets, and, as the two gases issue from their tubes, they are intimately mixed at the point of combustion and a complete combustion of the hydrogen or other combustible gas is effected.

By this arrangement an oxyhydrogen burner is obtained which is free from all danger of an explosion, and which produces a very large flame that can be used with great advantage for heating purposes. If desired, however, the jets E F may be made to radiate from the circumference of the chamber C, and in this case the body A would form the center of a chandelier or gas-fixture.

With the several jets of my burner I combine regulating-nipples I, (see Figs. 3 and 4,) which screw into the top plate D of the chambers B C, and on which the tubes E are screwed. These nipples are perforated with one central hole for the tubes F, which communicate with the oxygen-chamber, and each of the nipples is also perforated with one or more lateral holes, *b b*, which lead into the hydrogen-chamber. The object of this arrangement is to obtain a uniform supply of hydrogen to all the jets. If the holes *b b* are all of the same size the jet nearest to the hydrogen supply-pipe H will naturally receive more hydrogen than the jets further from said pipe; but by regulating the size or number of the

holes *b b* in the nipples according to their distance from the hydrogen-pipe *H*, the hydrogen-gas is equally distributed to all the jets.

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

A compound burner, consisting of two chambers, *B*, *C*, and provided with a series of compound jets, *E F*, the external tubes *E* in each

jet communicating with the chambers *C*, and the internal tubes *F* with the chamber *B*, substantially in the manner as and for the purpose herein shown and described.

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