

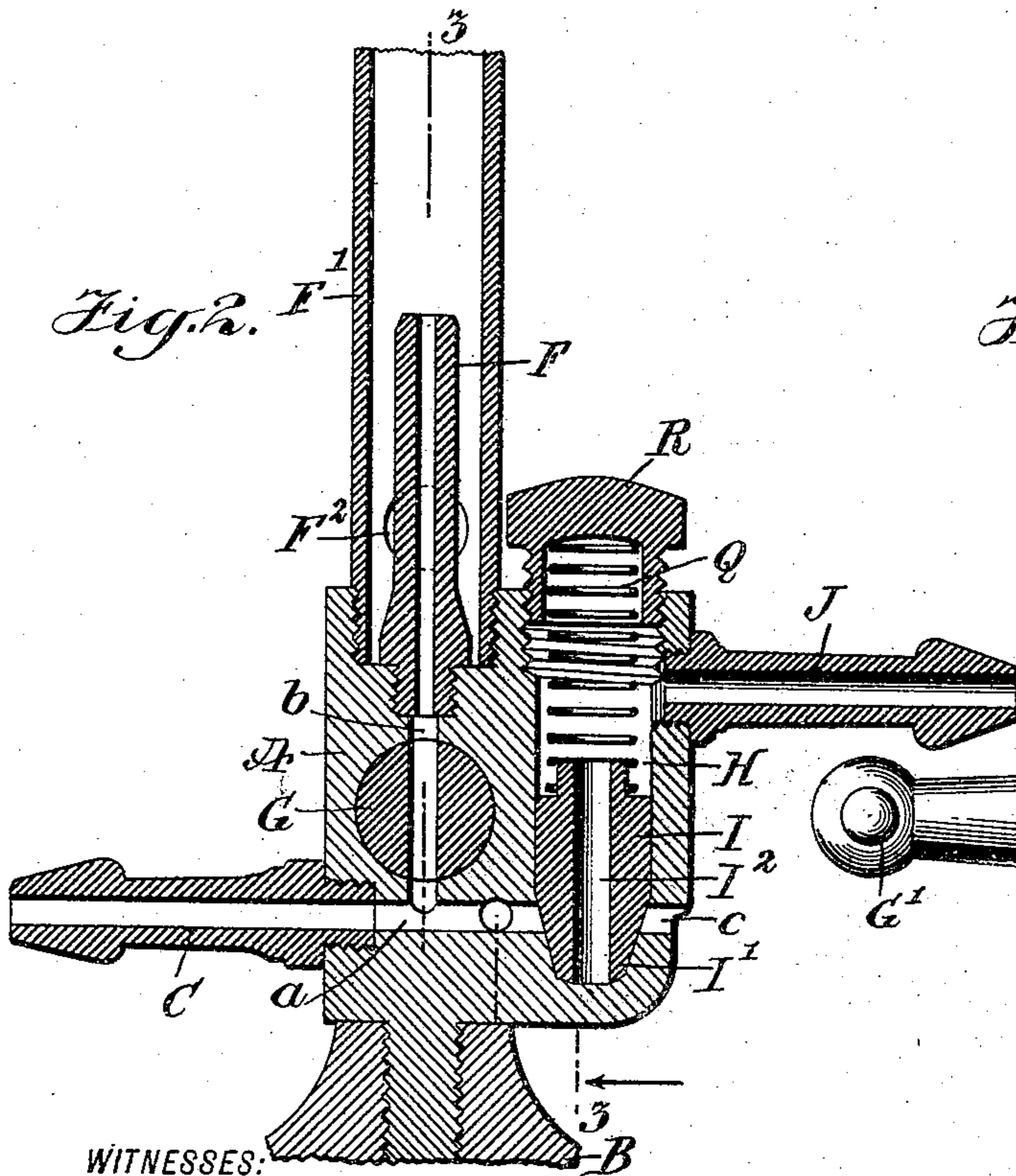
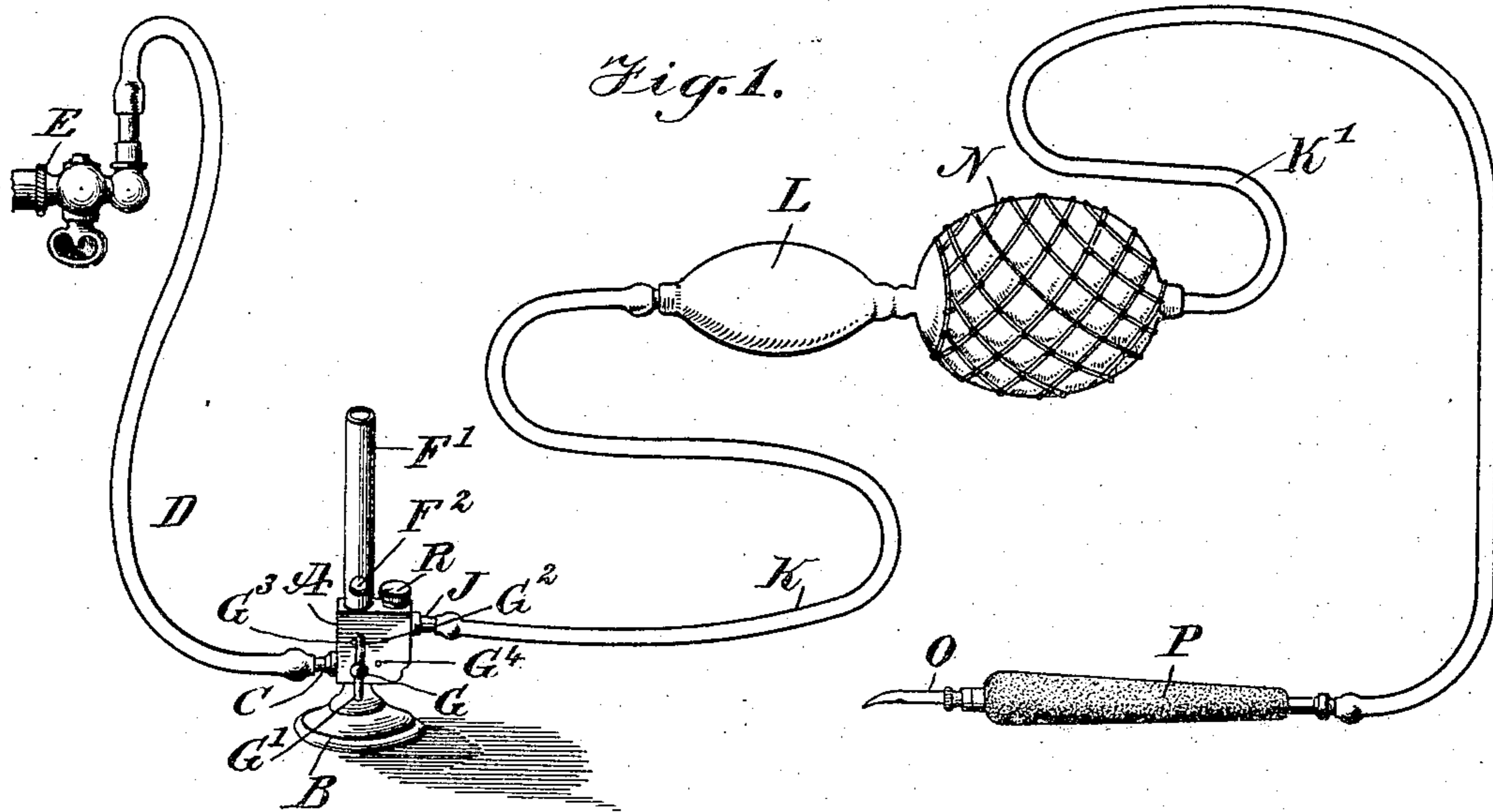
No. 767,231.

PATENTED AUG. 9, 1904.

J. P. MÜLLER.
BURNER AND MIXER FOR CAUTERY.

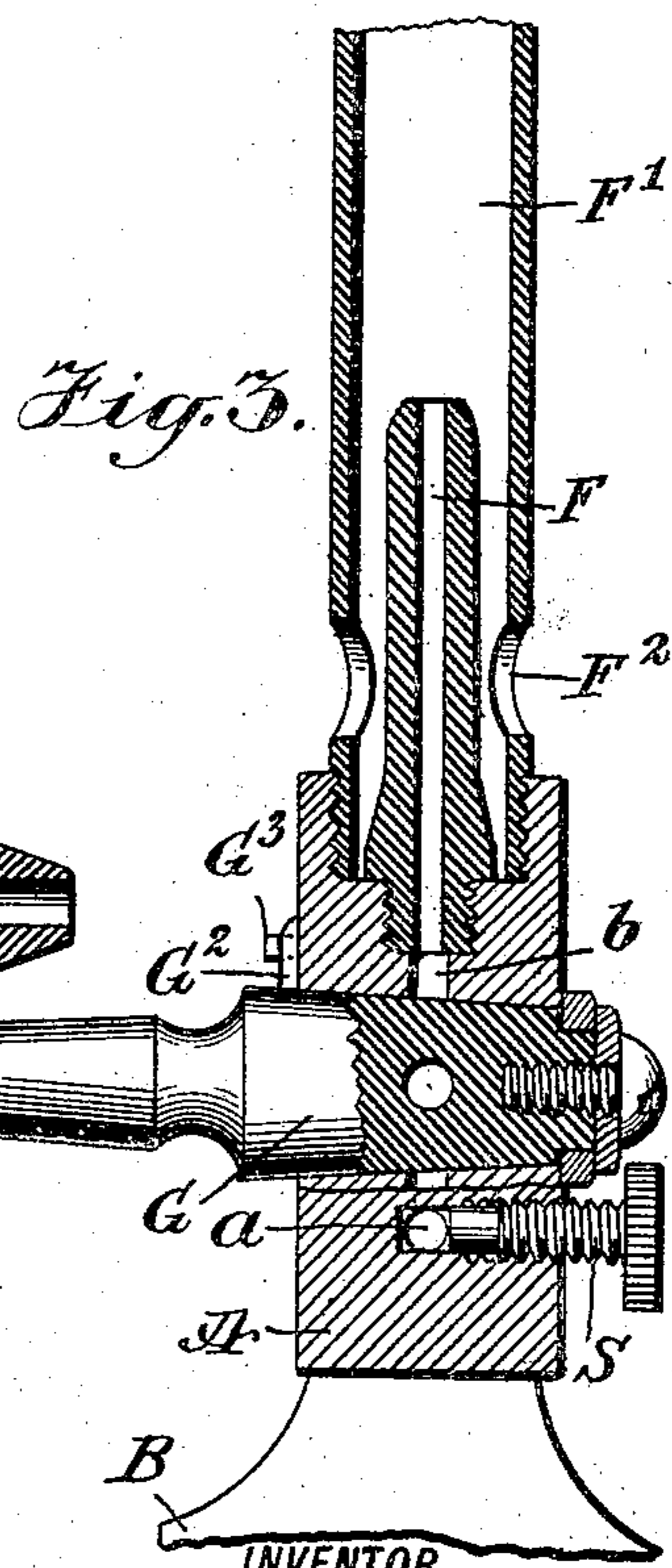
APPLICATION FILED JUNE 3, 1904.

NO MODEL.



WITNESSES:

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BY

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UNITED STATES PATENT OFFICE.

JOHN P. MÜLLER, OF NEW YORK, N. Y.

BURNER AND MIXER FOR CAUTERY.

SPECIFICATION forming part of Letters Patent No. 767,231, dated August 9, 1904.

Application filed June 3, 1904. Serial No. 210,977. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. MÜLLER, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Burner and Mixer for Cautery, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved burner and mixer for cautery and arranged to provide a burner for the initial exterior heating of the cauterizing-tool and a mixing-chamber having the same source of gas-supply as the burner and arranged to permit minute regulation of the amount of gas and air required to furnish a proper mixture to be burned in the cauterizing-tool.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the improvement. Fig. 2 is an enlarged sectional side elevation of the improvement, and Fig. 3 is a cross-section of the same on the line 3 3 of Fig. 2.

A suitably-constructed casing A is mounted on a stand B and is provided with a port *a*, connected with a nipple C, engaged by one end of a flexible tube D, connected at its other end with a gas-jet or other suitable source of gas-supply E, as plainly indicated in Fig. 1. From the port *a* extends upwardly a port *b*, leading to a Bunsen burner, comprising the nozzle F and a tube F', inclosing the said nozzle and having air-inlets F² near the lower end, as plainly indicated in the drawings. The amount of gas passing through the Bunsen burner by way of the port *a* and the port *b* is regulated by a suitable valve-plug G, extending into the port *b* and provided at its outer end with a handle G' under the control of the operator for turning the valve-plug G to allow more or less gas to pass from the port *a* through the port *b* into the Bunsen burner. On the

valve-plug G is secured an arm G², adapted to abut against the stop-pins G³ G⁴, held on the casing A, to indicate the position of the valve-plug G—that is, when the arm G² abuts against the stop-pin G³ then the port *b* is completely open and when the handle G' is turned and the arm G² abuts against the stop-pin G⁴ then the gas is completely shut off from the Bunsen burner.

The port *a* leads to the lower end of a valve-chamber H, containing a valve I, having its lower end I' made conical and normally seated on a correspondingly-shaped seat in the bottom of the chamber H. The port *a* leads to the conical portion of the seat, and a port *c* connected with the atmospheric air also leads to the said conical seat directly opposite the port *a*. Through the center of the valve I extends an opening I², so that when the valve I is lifted off its seat then gas from the port *a* and air from the port *c* can pass into the conical portion of the valve-seat and then to the opening I² and through the same to pass into the upper end of the valve-chamber H. The upper end of the valve-chamber H is provided with a nipple J, connected with one end of a flexible tube K, leading to a pressure-bulb L of the usual construction and discharging into a pressure-reservoir N, connected by a flexible tube K' with the cauterizing-tool O, having a suitable handle P to permit the user to conveniently manipulate the cauterizing-tool. The valve I is normally held to its seat by its own weight and by the pressure of a spring Q pressing with its lower end on the top of the valve I and engaged at its upper end by a screw-cap R, screwing in the upper end of the valve-chamber H. Now by the operator turning the screw-cap R either inward or outward the tension of the spring Q can be increased or diminished to hold the valve I with more or less force on its seat.

In order to regulate the amount of gas passing through the port *a* into the conical portion of the valve-seat for the valve I, a regulating device is provided in the form of a screw screwing transversely in the casing A into the port *a* to allow more or less gas to flow through the port *a* into the conical seat.

The screw S is located between the valve-seat and the port *b*, so that the screw S does not influence in the least the flow of gas from the port *a* to the port *b* and to the Bunsen burner.

5 The operation is as follows: When the several parts are in the positions illustrated in Figs. 1 and 2 and the gas is turned on from the gas-supply E, the valve G opened, and the Bunsen burner is lighted, then the cauterizing-tool O by being held in the flame of the
10 Bunsen burner becomes readily heated to the desired degree. When this has been done, then the operator can close the valve-plug G and alternately press and release the bulb L, so as to create a vacuum in the upper portion
15 of the valve-chamber H to lift the valve I off its seat, whereby gas can now pass from the port *a* and air from the port *c* into the lower end of the chamber H to cause the mixture
20 of the gas and air, the mixture passing up through the opening I² into the upper end of the valve-chamber H and from the latter by way of the nipple J and tube K into the bulb L, from which the mixture of gas and
25 air is forced into the reservoir N and through the pipe or tube K' into the tool O, in which the gas is now burned by coming in contact with the highly-heated tool O.

From the foregoing it will be seen that the
30 supply of gas to the Bunsen burner for the preliminary heating of the cauterizing-tool O is not in the least interfered with by the mixing apparatus for furnishing the combustible mixture of gas and air for the interior of the
35 cauterizing-tool to keep the latter at the proper heat during use. By having the valve-plug G arranged as described the supply of gas to the Bunsen burner can be shut off as soon as the preliminary heating of the cauterizing-
40 tool O has been accomplished. It will also be seen by having the regulating device S in the port *a* any desired amount of gas can be mixed with the air to produce a proper inflammable mixture to insure the uniform heat-
45 ing of the cauterizing-tool O, and by adjusting the screw-cap R the valve I is held with more or less force to its seat, according to the pressure in the gas-supply.

Having thus described my invention, I claim
50 as new and desire to secure by Letters Patent—

1. A burner and mixer for cautery, provided with a valve-chamber having an outlet and connected with a gas-supply and an air-supply below the outlet and having a central
55 opening, a valve in the said chamber normally closing the connection with the gas-supply and the air-supply, a cauterizing-tool, a flexible connection between the tool and the said outlet, and a pressure-bulb in the said
60 flexible connection to create a suction in the said valve-chamber to lift the valve off its seat to connect the gas-supply and the air-supply with the central opening in the valve.

2. A burner and mixer for cautery, provided with a valve-chamber having an outlet 65 and connected with a gas-supply and an air-supply below the outlet and having a central opening, a valve in the said chamber normally closing the connection with the gas-supply and the air-supply, a cauterizing-tool, 70 a flexible connection between the tool and the said outlet, a pressure-bulb in the said flexible connection to create a suction in the said valve-chamber to lift the valve off its seat to connect the gas-supply and the air- 75 supply with the central opening in the valve, a spring pressing the said valve for holding it to its seat, and a regulating means for the said spring for regulating the tension thereof.

3. A burner and mixer for cautery, pro- 80 vided with a valve-chamber having an outlet and connected with a gas-supply and an air-supply below the outlet and having a central opening, a valve in the said chamber normally closing the connection with the gas- 85 supply and the air-supply, a cauterizing-tool, a flexible connection between the tool and the said outlet, a pressure-bulb in the said flexible connection to create a suction in the said valve-chamber to lift the valve off its seat for 90 connecting the gas-supply and the air-supply with the central opening in the valve, and a regulating device for the gas-supply for controlling the amount of gas passing to the valve- 95 chamber.

4. A burner and mixer, comprising a casing provided with a gas-port for connection at one end with a gas-supply and leading to a valve-chamber formed in the casing, and provided with an air-port, a burner having a 100 valved connection with the said port, a valve in the said valve-chamber and normally closing the said ports, and a suction device connected with the said valve-chamber for lifting the valve off its seat for allowing gas and 105 air to pass to the suction device.

5. A burner and mixer, comprising a casing provided with a gas-port for connection at one end with a gas-supply and leading to a valve-chamber formed in the casing, and pro- 110 vided with an air-port, a burner having a valved connection with said port, a valve in the said valve-chamber and normally closing the said ports, a suction device connected with the said valve-chamber for lifting the valve 115 off its seat for allowing gas and air to pass to the suction device, and a regulating device in the gas-port between the valve-chamber and the connection with the burner.

In testimony whereof I have signed my name 120 to this specification in the presence of two subscribing witnesses.

JOHN P. MÜLLER.

Witnesses:

THEO. G. HOSTER,
EVERARD BOLTON MARSHALL.