No. 679,245. Patented July 23, 1901.

V. H. SLINACK.

HYDROCARBON BURNER.

(Application filed Apr. 30, 1900.)

(No Model.) 2 Sheets—Sheet 1.

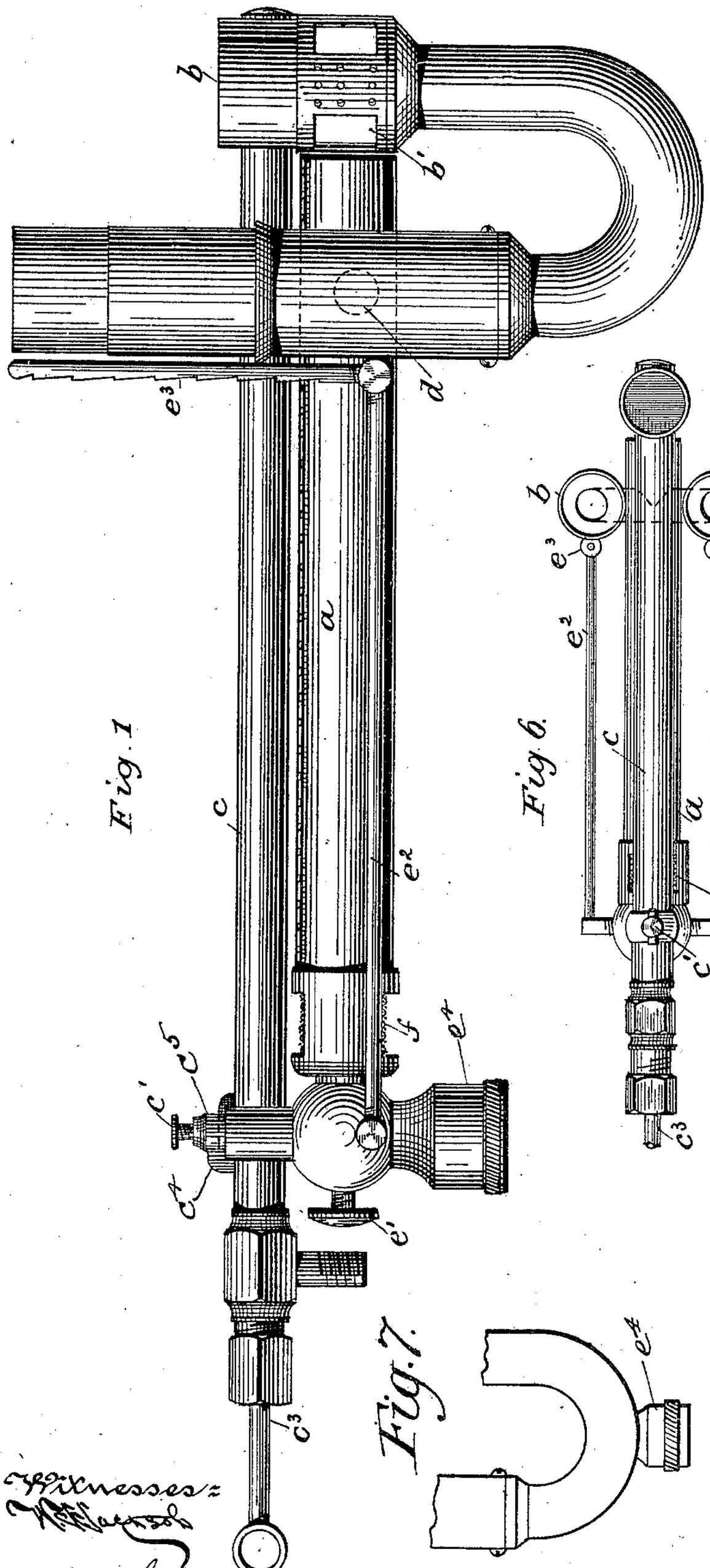

Fig. 1

Fig. 6.

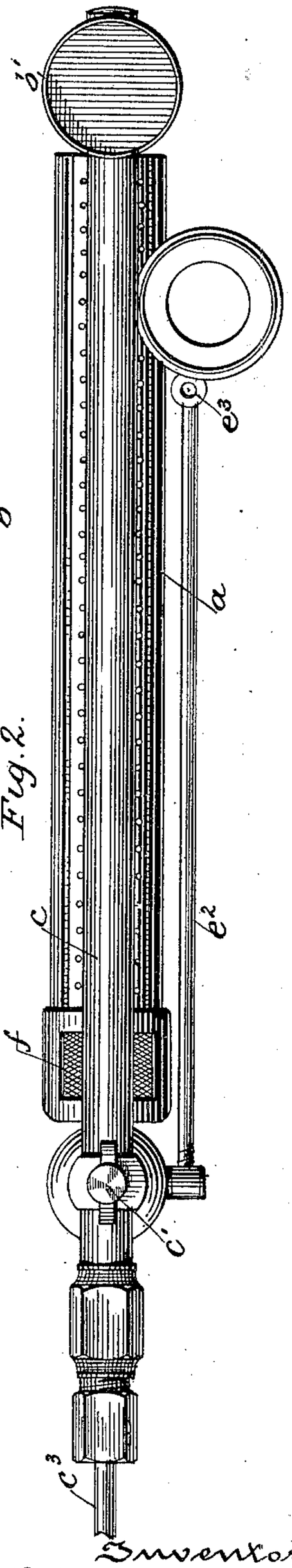

Fig. 2.

Fig. 7.

Witnesses:
[illegible]
A. W. Gilligan

Inventor:
Victor S. Slinack.
By
Augustus S. Stoughton
Attorneys.

No. 679,245.

Patented July 23, 1901.

V. H. SLINACK.

HYDROCARBON BURNER.

(Application filed Apr. 30, 1900.)

(No Model.)

2 Sheets—Sheet 2.

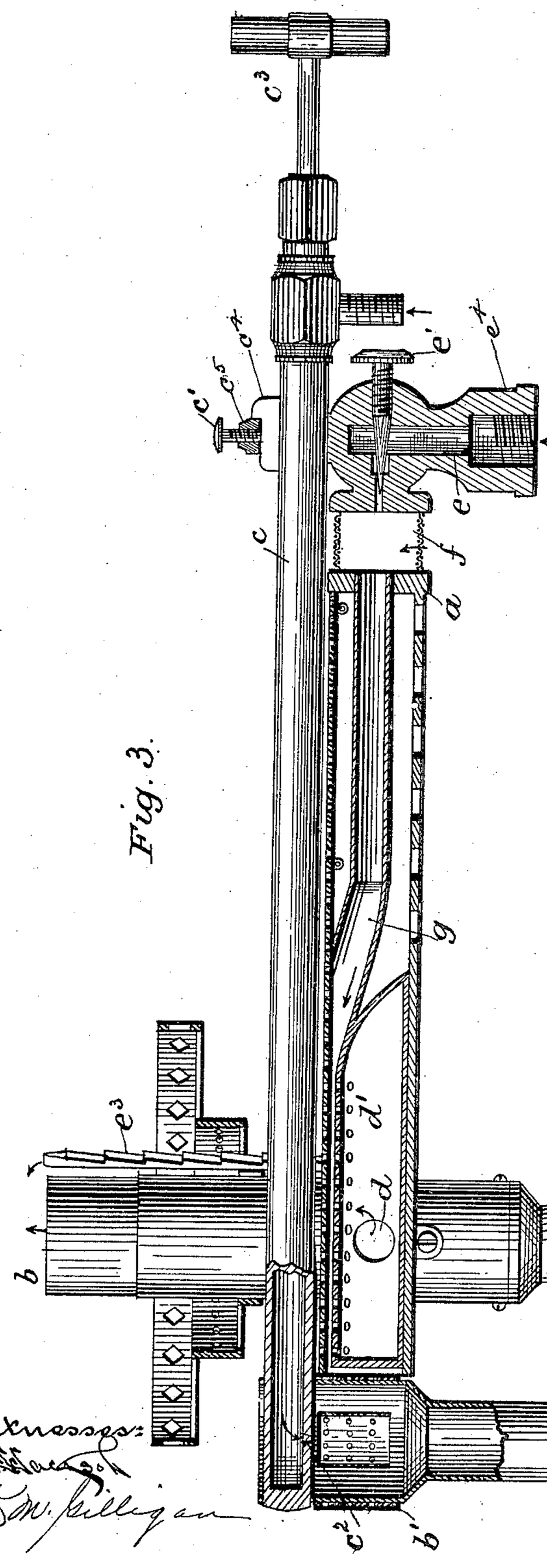

Fig. 3.

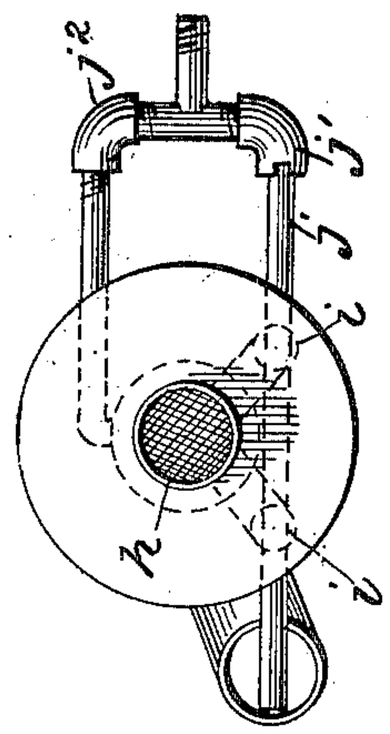

Fig. 4.

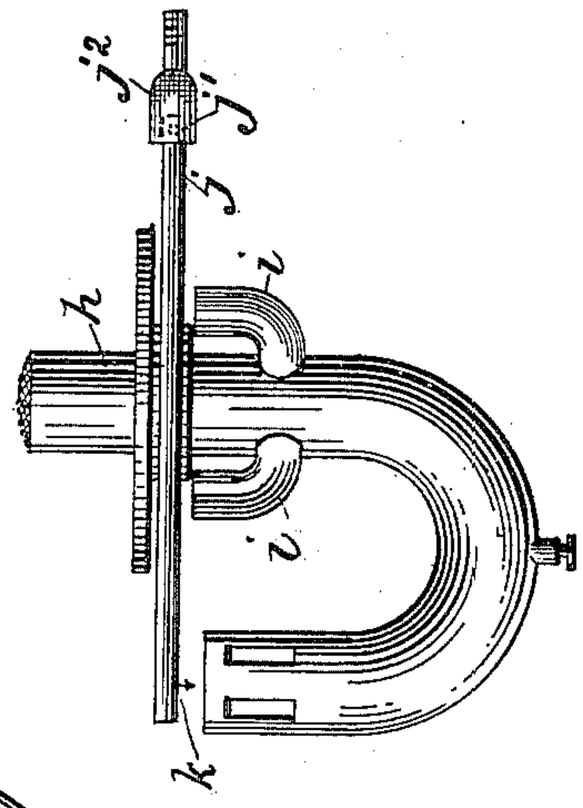

Fig. 5

Witnesses:

Inventor.
Victor H. Slinack.

By

Cornelius B. Stoughton

Attorney.

UNITED STATES PATENT OFFICE.

VICTOR H. SLINACK, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE PENNSYLVANIA GLOBE GAS LIGHT COMPANY, OF SAME PLACE.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 679,245, dated July 23, 1901.

Application filed April 30, 1900. Serial No. 14,895. (No model.)

To all whom it may concern:

Be it known that I, VICTOR H. SLINACK, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Hydrocarbon-Burner, of which the following is a specification.

It is one object of this invention to provide a burner suitable for use in hydrocarbon and other incandescent lighting, and especially adapted for use in dwellings, stores, and other places, and which shall present an attractive appearance and prove efficient in operation; and a further object is to provide for cleaning the vaporizer without endangering the mantle.

To these and other ends the invention consists of the improvements hereinafter described and claimed.

The nature, characteristic features, and scope of the invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, and in which—

Figure 1 is a side elevational view of a burner embodying features of my invention. Fig. 2 is a plan view of the same. Fig. 3 is a view, partly in central section, of the burner looking from the opposite side of that shown in Fig. 1. Figs. 4 and 5 are respectively a plan and side elevational view of a modification of my invention. Fig. 6 is a plan view illustrating a modification in which more than one burner-tip is employed, and Fig. 7 is a detail view showing a modified form of support for the vapor-burner.

In dwellings, stores, and other indoor places where hydrocarbon incandescent lighting is desirable it is not always convenient to suspend a hydrocarbon or other burner such as is now in general use, because they are large and cumbersome. To overcome these disadvantageous features, I may make use in this invention of an ordinary gas connection as a support, to which I attach the part or arm a, which carries a vapor-burner b, by the means shown in Figs. 1 and 7. As shown in Fig. 3, the arm a carries a tubular portion e^4, internally threaded and adapted to be secured to an ordinary gas-fixture, and the gas would escape through said tubular portion to the arm a. The arrangement shown in Fig. 7 differs from that shown in Figs. 1 and 3 in that the described tubular portion e^4 is placed at the opposite end of the hydrocarbon-burner and is secured to the vapor-burner. In this instance a separate gas connection would be led from the pipe of the gas-fixture to the gas-inlet e of Fig. 3. Removably attached to the arm a is a long vaporizer c, having a projection or stop c^4, adapted to abut upon a yoke c^5, which limits the movement of and positions the vaporizer and its discharge-orifice in relation to the vapor-burner. This yoke c^5 may form part of or otherwise be secured to the arm a and is provided with a set-screw c', which holds the vaporizer in position. This vaporizer is provided with the ordinary regulating-valve c^3 and an oil-inlet, which is adapted to be connected with a supply of oil. It is also provided at its other end with a discharge-orifice c^2 for the vaporized oil, which is discharged into and commingles with the atmospheric air in the mixing-tube of vapor-burner b, where part of the vapor ascends to the mantle and part escapes through the opening d and enters the elongated subburner d', from which it burns in subjets located along a considerable portion of the vaporizer, as is illustrated in Fig. 3, so as to heat the contents progressively. As shown, the elongated subburner is contained within the arm a. Also contained in said arm is a Bunsen burner comprising a gas-inlet e and its complemental needle-valve e', air-inlets f, and a Bunsen tube g, all of which are used to start the operation of the burner. Leading from the gas-inlet e is a by-pass tube e^2, terminating in a climbing lighter e^3. The arm a is provided along its top with a single wide slot having a foraminous cover or shield and is provided at its bottom with openings which serve for the escape of foreign matter and also let out air so to avoid drafts that might tend to extinguish the subburners. Gauzes or other foraminous shields may be provided, as shown, for covering the slot and air-inlets. To afford access for cleaning the vapor outlet or discharge orifice c^2, openings may be provided in the mixing-tube, which in such case is equipped with a rotatable cap b', having openings to correspond with the first-

mentioned openings and also having foraminous parts for covering the same.

The mode of operation of the device illustrated especially in Figs. 1 to 3 is as follows: The valve c^3 in the vaporizer is opened and fluid fuel permitted to pass into the vaporizer, and the gas is permitted to flow through the inlet e and regulated by the needle-valve e', is commingled with atmospheric air at f, and passes through the Bunsen tube g, where it is ignited and ignites the gas in the climbing lighter e^3. The fluid fuel in the vaporizer now becomes vaporized and is discharged from the discharge-orifice c^2 into the mixing-tube of the vapor-burner b, where it commingles with atmospheric air and a part of it escapes to the mantle, where it is ignited by the climbing lighter, and a part of it issues from the opening d into the elongated subburner d', from which it escapes in small jets, and becoming ignited by the gas burns as a row of subjets in close proximity with and along the vaporizer, and thus continues the operation of the burner, whereupon the gas can be turned off and the oil is progressively heated by the row of subjets. Upon the vaporizer becoming clogged it is merely necessary to loosen the set-screw c' and remove the vaporizer and insert either it after cleaning or a new one without disturbing either the fragile mantle or any other part of the burner, which is an advantageous feature.

In the modification shown in Figs. 4 and 5 I have dispensed with the use of gas and use only the fluid fuel. In said figures, h is the vapor-burner, and the subjet-passages branch from it and extend along the removable vaporizer j, so as to heat the oil progressively, as above described. The vaporizer j is locked by a bayonet-joint j' to the arm j^2. The operation of the described modification of the burner is as follows: Fluid fuel being admitted into the vaporizer, a torch is applied beneath it, which vaporizes the fluid fuel and permits it to escape through the discharge-orifice k into the mixing-tube of the vapor-burner h, where it is commingled with atmospheric air, and part of it escapes through the subjets i, and being ignited by the torch burns beneath and along the vaporizer to heat the oil progressively, and part of the vapor escapes to the mantle, where it is also ignited.

In Fig. 6 there are shown two burners branching from the mixing-tube and straddling the arm.

It will be obvious to those skilled in the art to which the invention appertains that modifications may be made in details without departing from the spirit thereof. Hence I do not limit myself to the precise construction and arrangement of parts hereinabove set forth, and illustrated in the drawings; but,

Having thus described the nature and objects of the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A burner comprising an arm adapted for attachment to a suitable support, a vapor-burner attached to said arm, a cylindrical vaporizer having a straight passage through it and having a discharge-orifice near one end of its curved wall and detachably connected with the arm, means for detachably locking and positioning said vaporizer, and an elongated subburner located in the arm and in close proximity with the discharge-orifice of the vaporizer for progressively heating the contents of the vaporizer to point of discharge, and a branch connection from the mixing-tube of the burner for supplying the elongated subburner, substantially as described.

2. A burner comprising an arm arranged for attachment to a gas-supply pipe, a vapor-burner carried by said arm, a removable vaporizer communicating with the vapor-burner, a Bunsen tube contained in the arm, a by-pass climbing-lighter tube leading to the vapor-burner, attachments for supplying gas to said Bunsen tube and by-pass tube, and subjets located along the arm and in proximity with the vaporizer and fed from the vapor-burner, substantially as described.

3. In a hydrocarbon-burner the combination of a vaporizer having a passage through it, an arm arranged for attachment to a gas-supply pipe and extending along and in proximity with the vaporizer and having a slot in its top and openings in its bottom, a foraminous cover for the slot, an elongated subburner and a Bunsen burner arranged within the arm and beneath the cover and attachments for supplying gas from the supply-pipe, substantially as described.

4. In a hydrocarbon-burner the combination of a vapor-burner having a mixing-tube, a removable vaporizer having a straight passage through it and arranged to discharge into said tube, an arm adapted for attachment to a suitable support extending parallel with and supporting the vaporizer and also supporting the vapor-burner, and a subburner within the arm and a branch connection from the mixing-tube to the subburner, substantially as described.

5. In a hydrocarbon-burner the combination of a vaporizer, a mixing-tube communicating therewith and provided with openings for cleaning the vaporizer-outlet, a rotatable cap mounted on the mixing-tube and provided with openings and with foraminous parts for covering and uncovering the first-mentioned openings, an arm supporting the vaporizer and equipped internally with a Bunsen burner and externally with a foraminous cover for the Bunsen air-inlets, substantially as described.

In testimony whereof I have hereunto signed my name.

VICTOR H. SLINACK.

Witnesses:
W. J. JACKSON,
K. M. GILLIGAN.