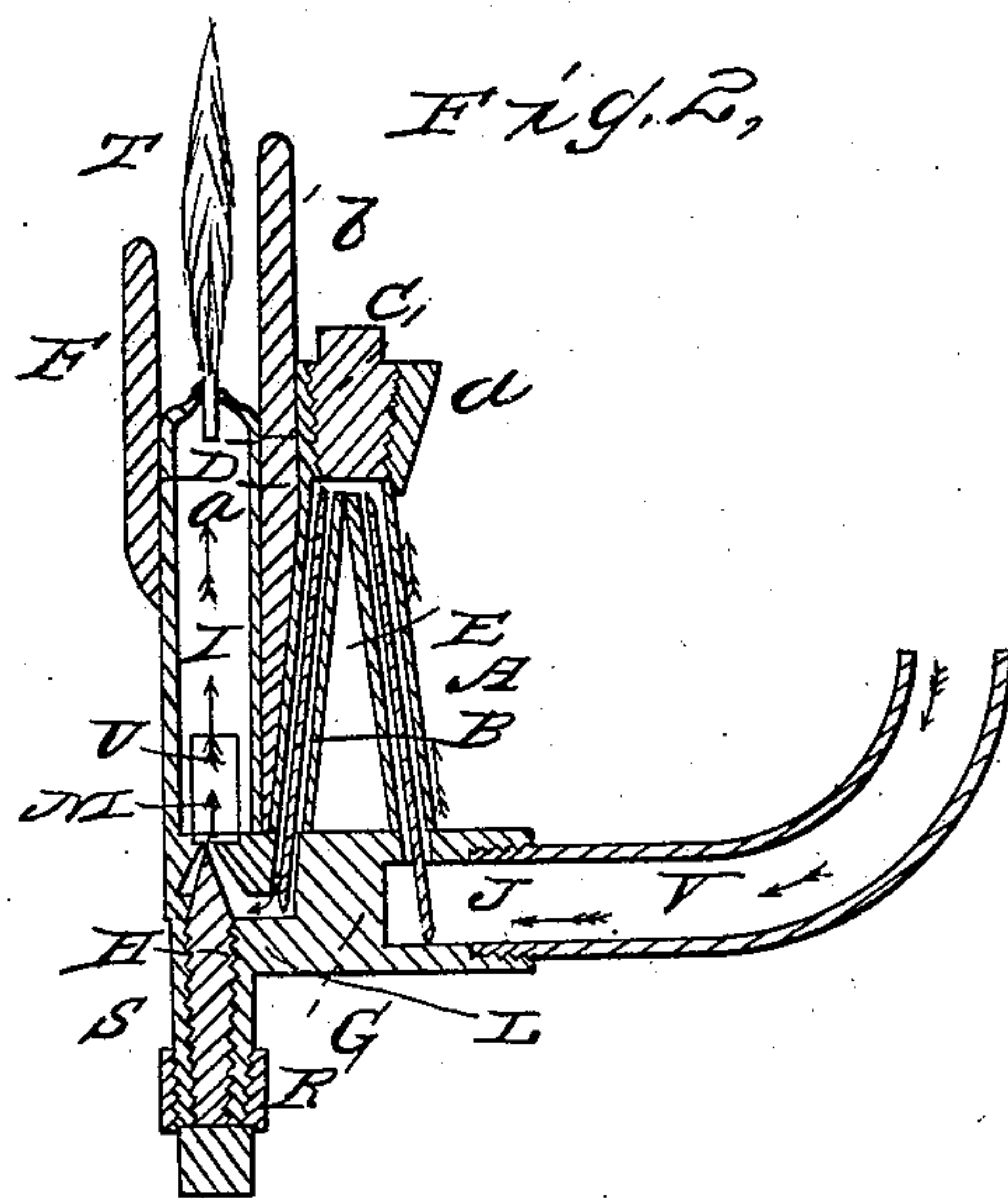
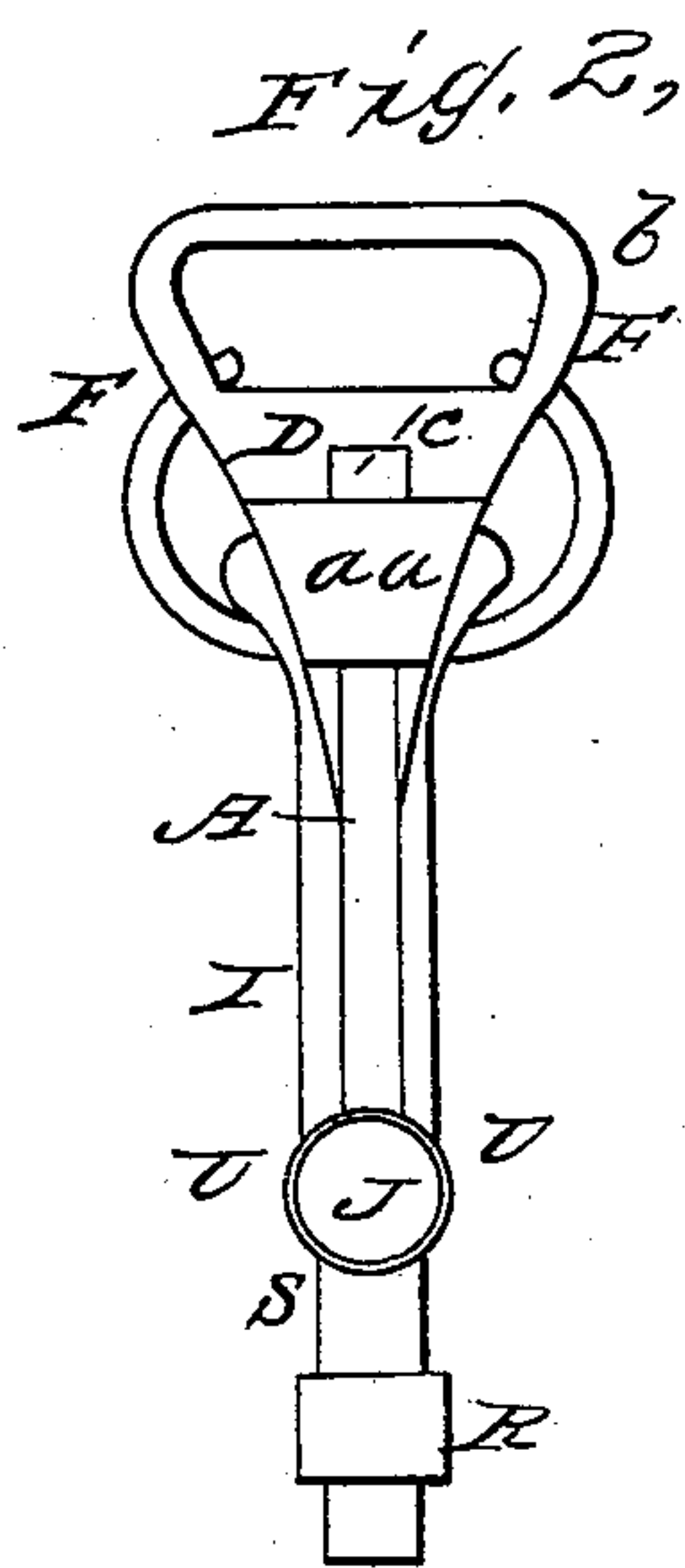


J. VAN BUNSCHOTEN.

Vapor Burner.

No. 29,421.

Patented July 31, 1860.



Witnesses;
H. Parmenter
George Chapman

Inventor;
Isaac van Bunschoten

UNITED STATES PATENT OFFICE.

ISAAC VAN BUNSCHOTEN, OF NEW YORK, N. Y.

VAPOR-LAMP.

Specification of Letters Patent No. 29,421, dated July 31, 1860.

To all whom it may concern:

Be it known that I, ISAAC VAN BUNSCHOTEN, of the city, county, and State of New York, have invented a new and useful
5 Improvement in Hydrocarbon-Vapor Burners; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of
10 this specification, in which—

Figure 1, is a vertical central section in the line x, x , of Fig. 12 of my improved burner. Fig. 2, is a rear view of the same.

Similar letters of reference in each of the
15 several figures indicate corresponding parts.

The nature of my invention consists, first, in the relative arrangement of a supply tube, inclined conducting tube, inclined return tube, a heater, a tubular burner, a regulating valve and an air passage, whereby the
20 material to be burned is kept subjected to a very great amount of heat and also supplied with sufficient oxygen to insure perfect combustion.

It consists second, in the arrangement of two inclined tubes with respect to the heater and single screw plug of the heater, whereby facilities for inserting a wire with sponge or brush or cloth on it to clean out both the
30 tubes are afforded.

It consists third, in the arrangement of a conical screw plug or valve constructed with a cylindrical screw nut, in combination with the lower end of the vapor burner, whereby
35 the liability of the burner leaking after being a short time in use is avoided.

To enable others skilled in the art, to make and use my invention, I will proceed to describe its construction and operation.

I, represents an ordinary hydro-carbon vapor burner, with air passages v, v , in its sides. This burner is mounted on a tubular elbow G, S. In the vertical portion S, of the elbow a screw plug H, with cone valve
45 M, on its end is inserted. The cone is fitted to a conical seat which leads into the burner I. The screw plug H, has a cylindrical screw nut R, on its end. This nut screws onto a thread cut on the outer circumference, at the lower end, of the vertical portion of the elbow. It will be seen that by thus constructing and applying the screw plug, a double security against leak is provided.
50 In the end of the horizontal portion G, of the elbow, the main supply-pipe V, is in-

serted, and from the top of said portion, two hollow tubes A, B, project. These tubes communicate respectively with a chamber J, at the end of the supply tube V, and with a passage L, which unites with the conical
60 valve seat, as shown. The tubes A, and B, are set inclined in opposite directions and touch one another at their upper ends. A metal heater D, b, a , closes the tops of the tubes and also joins them to the burner I, 65 as shown. The part a , of this heater has a vertical passage b , cut through, said passage being of cone form and of a size sufficient to take in the two upper ends of the tubes. A screw plug C, is fitted to this passage so
70 as to close up the same, but not cut off the communication between the tubes A, and B. The part b , of the heater is of the form of an elliptic ring and extends up behind the burner some distance above the flame orifice. 75 And the part D, is solid and fills up the space between the burner tube and the return tube B, being brazed to the same.

F, is an auxiliary heater attached to or arranged on the front of the burner, and
80 extending up above the flame orifice of the same. This heater is in the form of a ring with the exception of having a small piece cut out of it at its top. By having the heater F, in front of the flame orifice and
85 constructed with an opening at its top, it answers effectively for aiding in heating the burner or tube I, and yet does not obstruct the passage of the air to the flame—having the air pass to the flame secures perfect com-
90 bustion, and thus a bright light instead of a dark flame above the heater is always produced.

E, E, are metallic packing and heating wires placed in the tubes A, B, for the pur-
95 pose of assisting in generating the vapor and regulating the flow of the same.

By having the material which is to be generated into vapor pass from the tube V up the tube A, then down the tube B, and
100 up past the air-passages U, U, to the flame orifice of the burner, as indicated by arrows, the most perfect generation by the action of heat, and thorough commingling of oxygen with it are accomplished—for the heaters D, 105 a, b , F, heat the burner tube and the tube B, from top to bottom, and therefore the fluid or vapor is at no time not exposed to a highly heated surface. Thus heating the return tube B, and the burner tube I, 110

is I believe, a new thing in connection with vapor burners.

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

5 1. The relative arrangement of a supply tube V, inclined conducting tube A inclined return tube B, a heater D, α ; tubular burner I, regulating valve H, and air passages U, U, substantially as and for the purposes set
10 forth.

2. The arrangement of two inclined tubes A, B, with respect to the heater D α and

single screw plug C of the heater, D, α , substantially as and for the purposes set forth.

3. The arrangement of a conical screw 15 plug or valve H, constructed with a cylindrical screw nut R, in combination with the lower end of the vapor burner, substantially as and for the purposes set forth.

ISAAC VAN BUNSCHOTEN.

Witnesses:

H. PARMENTER,

GEORGE CHAPMAN.