

No. 649,617.

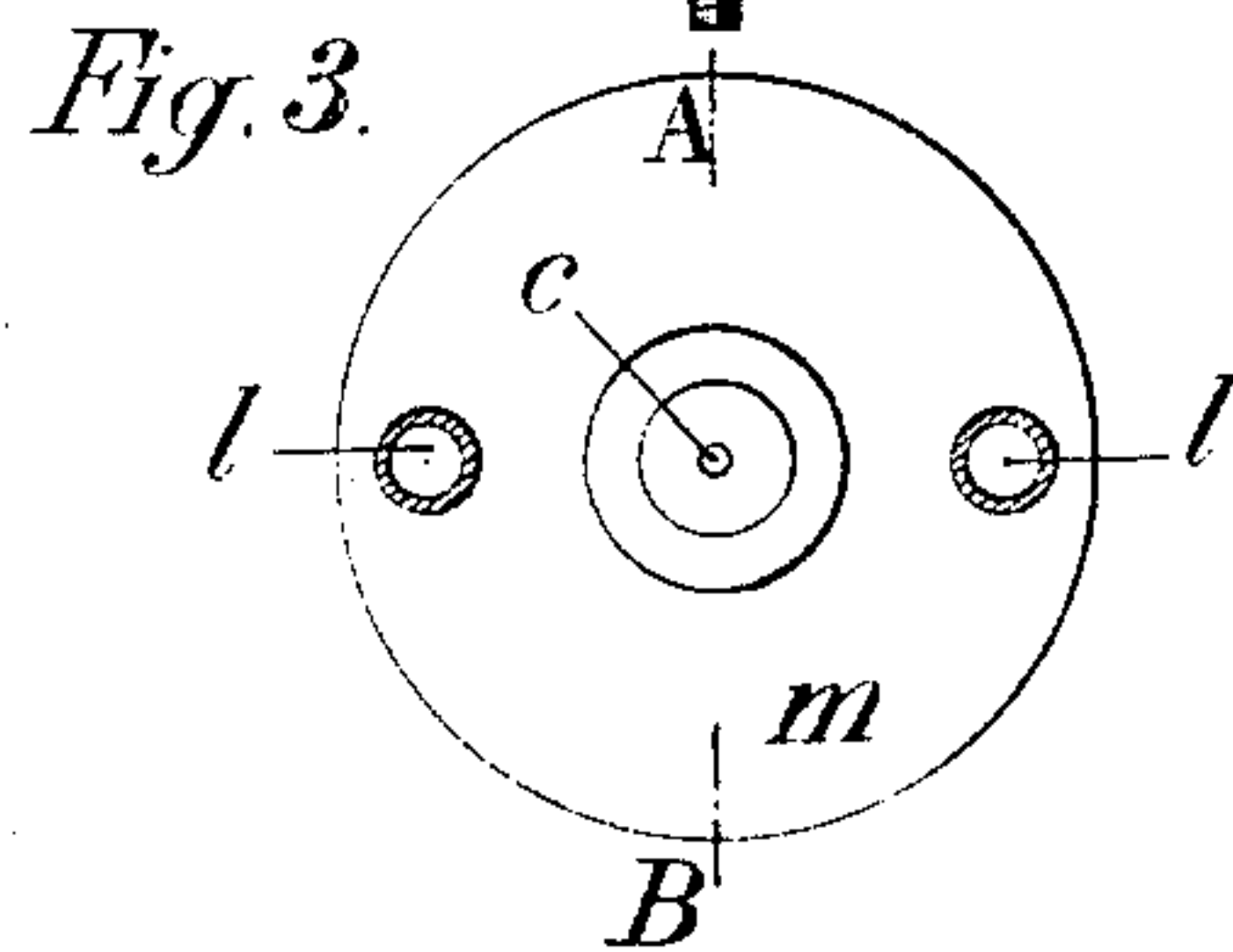
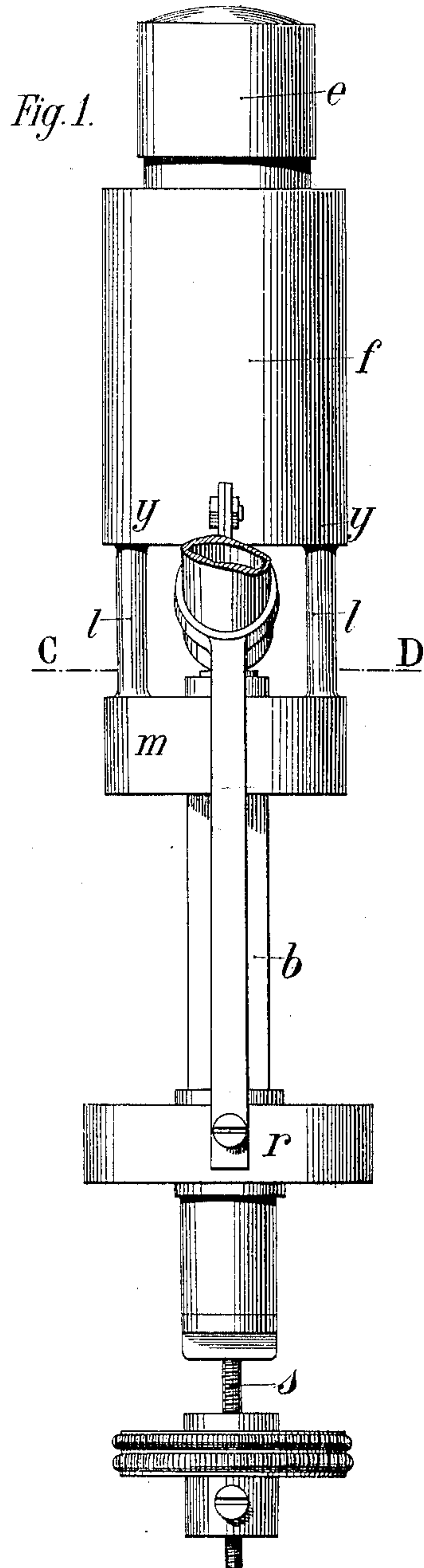
Patented May 15, 1900.

V. J. ROGER.
HYDROCARBON INCANDESCENT BURNER.

(Application filed June 10, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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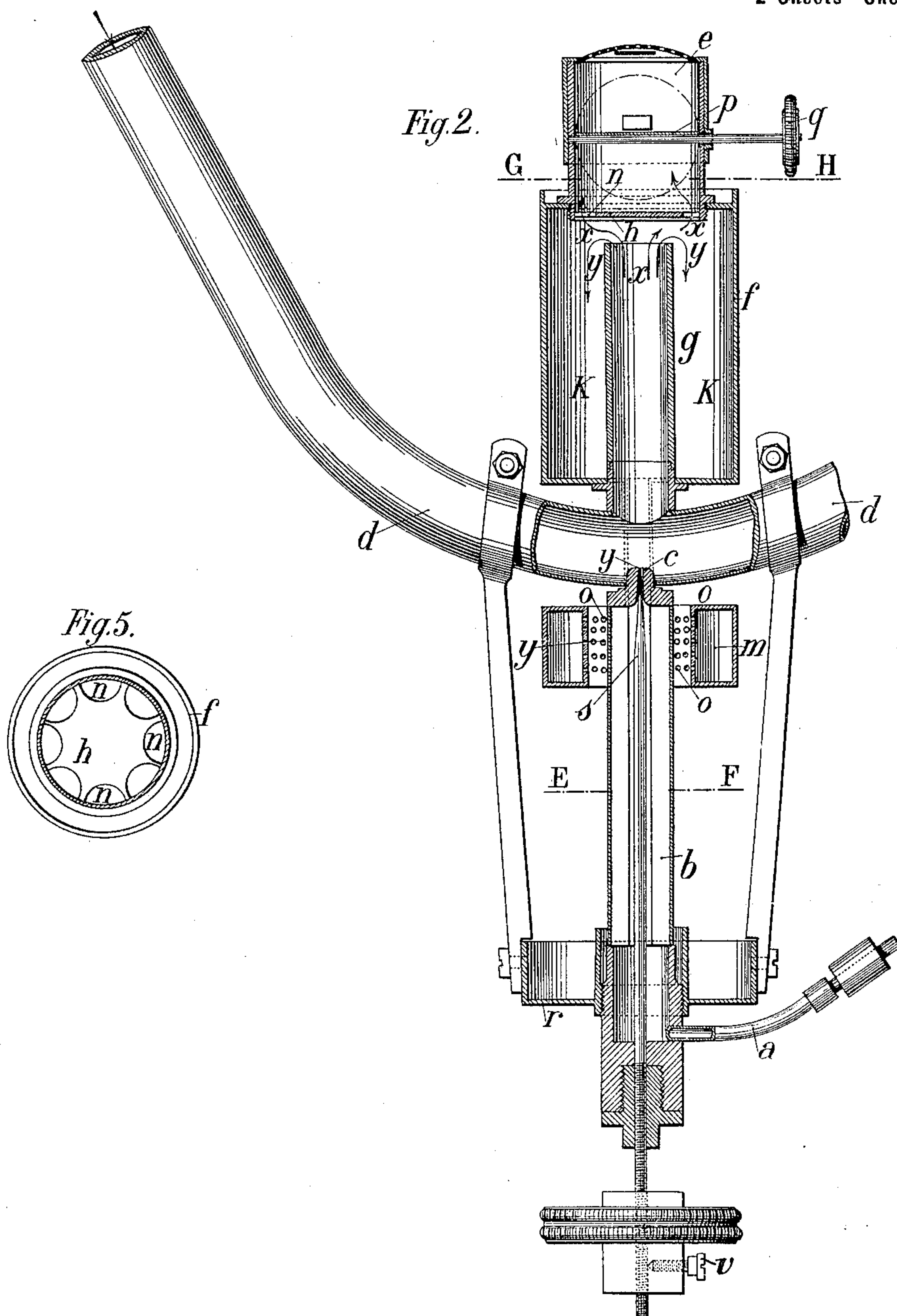
Patented May 15, 1900.

V. J. ROGER.
HYDROCARBON INCANDESCENT BURNER.

(Application filed June 16, 1899.)

(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

VICTOR JACQUES ROGER, OF PARIS, FRANCE.

HYDROCARBON INCANDESCENT BURNER.

SPECIFICATION forming part of Letters Patent No. 649,617, dated May 15, 1900.

Application filed June 16, 1899. Serial No. 720,839. (No model.)

To all whom it may concern:

Be it known that I, VICTOR JACQUES ROGER, of No. 77 Avenue de Clichy, Paris, in the Republic of France, have invented certain new and useful Improvements in Vapor-Burners for Illumination or Heating Purposes, Burning Petroleum or any other Analogous Combustible Liquid; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in vapor-burners for illumination or heating purposes, burning petroleum or any other analogous combustible liquid. These burners transform the liquid fuel in the burner itself into a combustible vapor or gas, the liquid fuel being conveyed under pressure to the burner.

I will now proceed to describe my invention in detail, reference being had to the accompanying drawings, forming part thereof, and in which—

Figure 1 is a side elevation of the burner complete. Fig. 2 is a longitudinal sectional elevation, the section being made on a central plane cutting Fig. 1 at right angles, or, in other words, on the line A B of Fig. 3. Fig. 3 is a horizontal section taken on the plane represented by the line C D of Fig. 1. Fig. 4 is a horizontal section of the vaporization-tube and regulator-needle, taken on the line E F of Fig. 2. Fig. 5 is a horizontal section taken on the plane represented by the line G H of Fig. 2, showing more particularly the plan of the baffle-plate.

Like similar burners the device comprises an inlet-conduit *a* for the combustible liquid, a tube *b* for vaporization of the liquid, inlet-conduits *d* for the external air or atmosphere, a chamber *f*, wherein the mixing of the vapor with the external atmosphere takes place and above which is fixed or situated the "burner," strictly so called, wherein the inflammable mixture is ignited, the flame being suitable, among other uses, for heating a gas-mantle to incandescence.

The present improvements have especial regard to the arrangement or construction of the mixing-chamber *f*, which is such that not only does it insure intimate mixing of the air

with the petroleum-vapor, but it also prevents all but the light vapor from reaching the burner *e*, the heavy vapors being forcibly checked or stopped and conveyed back into a lower compartment of the said chamber, forming an annular heating-burner around the vaporization-tube *b*.

As shown in the drawings, the mixing-chamber *f* is formed of two concentric tubes *f* and *g*. The inner tube *g* acts as uptake-chimney for the petroleum-vapors produced at the orifice of the nozzle *c* of the vaporizer and the air arriving by the inlet-conduits *d*. The outer tube *f* is closed at the top end by a baffle-plate *h* a little above the top of the inner tube *g*. This baffle-plate completely stops the heavier vapor, which descends, as indicated by the arrow *y*, into the annular space *k* between the two concentric tubes *f* and *g*, forming the mixing-chamber, whence it passes through conduits *l* into the chamber or box *m* beneath, which chamber is fixed or supported around the top of the vaporization-tube *b*. The inner wall of this sleeve is perforated with a number of small holes *o*, through which the petroleum-vapor escapes and at which place it is ignited. This annular box thus constitutes a heater-burner for the vaporization-tube constantly and solely fed by the heavy petroleum-vapor. The light petroleum-vapor escapes through the crown of openings *n*, formed by the cut-out pieces of the baffle-plate *h*, between the said plate *h* and the lid of the tube *f*, perfectly intermixed with air, and enters *e*—the burner proper.

In the burner *e* is fitted a disk *p*, forming a throttle valve or shutter, operated from outside by means of the spindle on which it is fixed and the thumb-button *q*. This disk valve when placed vertically gives passage to the gaseous mixture through the burner. Placed horizontally it constitutes a shutter and serves to extinguish the burner and enables, when starting, all the mixture to be retained and conveyed to the heater-burner *m*.

As usual in burners of this type, a cup *r* is supported around the lower end of the vaporization-tube *b*, spirit being burned in this cup for igniting the inflammable vapor at the start. The tube *b* is preferably of the section shown in Fig. 4—that is to say, cruciform—and the escape of the petroleum-vapor at the nozzle *c*

is preferably governed or regulated by means of an internal conical needle, such as *s*, rendered adjustable longitudinally. The means of adjustment may be, for example, such as shown in Figs. 1 and 2, wherein the back or lower end of the spindle *s* is screw-threaded and passes through a fixed nut *t*, in which it can be adjusted by means of the milled thumb-disk *u*, which latter is removably fixed to the spindle *s* by means of the set-screw *v*.

I claim—

1. In a burner for vaporized petroleum or other vaporized liquids, a mixing-chamber comprising a sleeve *f*, having at its upper part a perforated partition through which only light gases can pass, and inlet-pipe *g* leading to the center of said chamber for the mixture of air and vaporized petroleum and having

at the bottom of said sleeve *f* two tubes *l*, which conduct the heavy gases to an annular heating-burner *m* for the vaporizing-chamber.

2. In a burner for vaporized petroleum or other vaporized liquids, in combination with the mixing-chamber, an upper chamber, on which an incandescent mantle or sleeve can be arranged, and a partition *n* separating the said upper chamber from the mixing-chamber and permitting only light gases to pass and a valve *p*, *q*, in said upper chamber to extinguish the burner.

In witness whereof I have hereunto set my hand in presence of two witnesses.

VICTOR JACQUES ROGER.

Witnesses:

LOUIS GARDET,
EDWARD P. MACLEAN.