

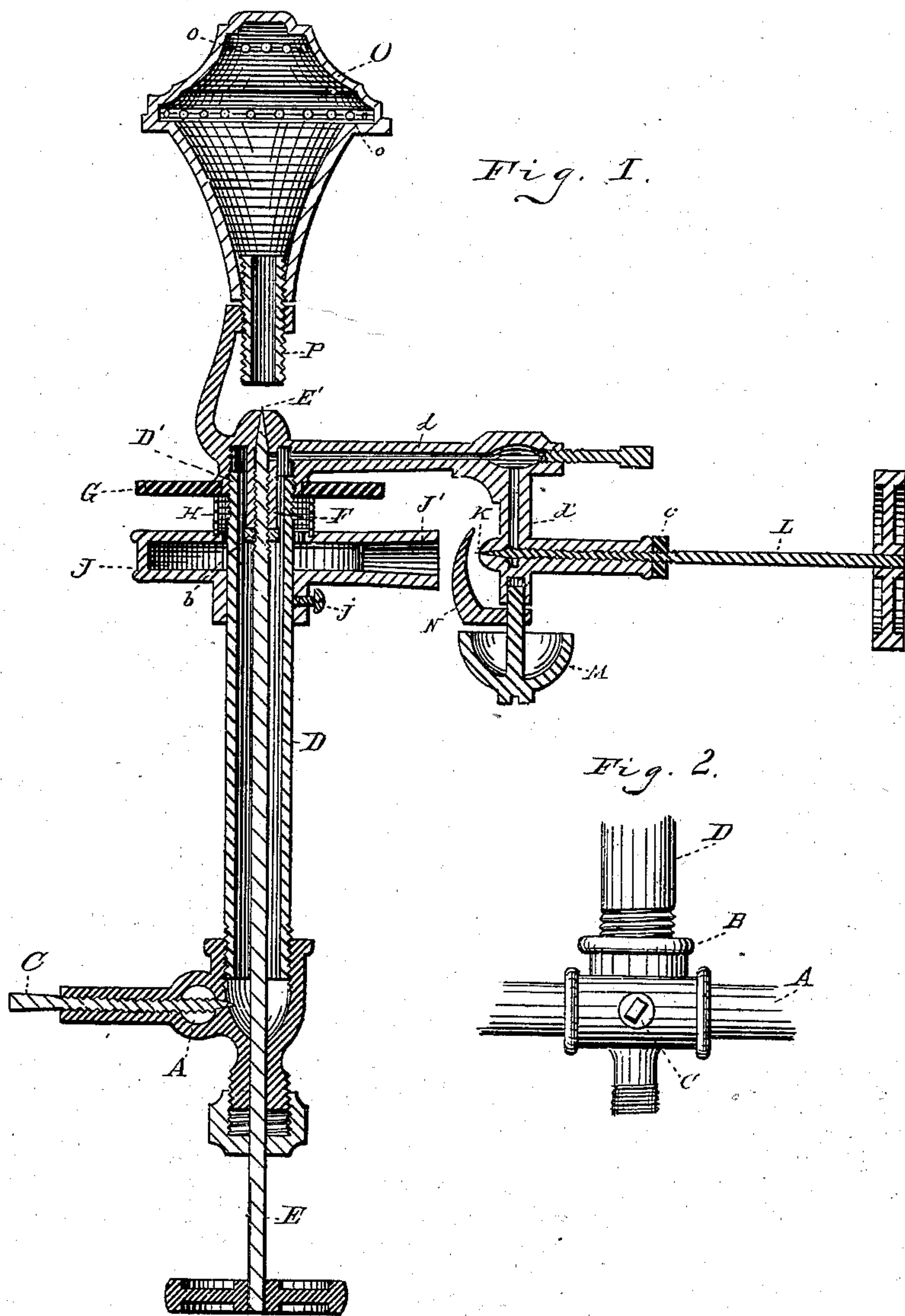
(No Model.)

J. WHITTINGHAM & F. A. LYMAN.

VAPOR BURNER.

No. 255,553.

Patented Mar. 28, 1882.



WITNESSES

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# UNITED STATES PATENT OFFICE.

JOSEPH WHITTINGHAM AND FORDYCE A. LYMAN, OF CLEVELAND, OHIO.

## VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 255,553, dated March 23, 1882.

Application filed January 3, 1882. (No model.)

*To all whom it may concern:*

Be it known that we, JOSEPH WHITTINGHAM and FORDYCE A. LYMAN, of Cleveland, in the county of Cuyahoga and State of Ohio, have  
5 invented certain new and useful Improvements in Vapor-Burners; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable  
10 others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to vapor-burners; and it consists in parts and combination of parts  
15 that hereinafter will be described and claimed more fully.

In the drawings, Figure 1 is a vertical sectional view of a burner constructed according to our invention. Fig. 2 is a view in detail of  
20 a portion of the supply-pipe with the gas-pipe T-joint, by means of which it is connected with the burner.

In the said drawings, A represents the inlet-pipe for the passage of the hydrocarbon to the  
25 burner.

B is a T-joint, attached to the lower portion of the burner proper, through which the gasoline passes to the burner. This T-joint is provided with a needle check-valve, C, by means  
30 of which the supply of the gasoline from the supply-pipe A to the burner may be readily and positively regulated.

D is a vertical tube adapted to contain the screw-shaft E, and also permit the free passage  
35 of gasoline from the supply-pipe A to the vaporizing-chamber D', which is a part of the pipe D. The screw-shaft E is provided with a jam-nut, b, which is set at any desired position, so as to prevent the point E' of the  
40 screw-shaft from enlarging the orifice through which it passes. This jam-nut is adapted to rest against a dependent tube, F, extending from the jet-orifice at E' to any convenient point within the tube D.

45 G is a heater-plate, which is preferably made of separate material and adapted to surround the vaporizing-chamber D'. Beneath this heater-plate is a perforated metal cylinder, H, surrounding the vaporizing-chamber D' and  
50 resting upon the commingling-chamber J.

J is the commingling-chamber, into which

the vapor passes from the orifice K through the tube J'. This commingling-chamber surrounds the tube D and is adapted to be adjusted upon this tube. It is held in position  
55 by means of the set-screw j.

L is a screw-shaft, provided with a jam-nut, c, which controls by means of its needle-point the jet-orifice K.

M is a drip-cup adapted to hold and burn  
60 gasoline for supplying initial heat for starting the burner.

N is a swinging guard, which may be moved in front of the jet-orifice K and force the gasoline into the cup M before the burner is lighted,  
65 and subsequently can be moved out of the way, permitting the free passage of the vaporized gasoline through the tube J' into the commingling-chamber J.

O is a supplemental commingling-chamber,  
70 provided with orifices o, through which the vapor passes and is ignited. This supplemental commingling-chamber is provided with a tube, P, situated directly opposite the orifice at E'. This tube P is provided with a thread cut upon  
75 its outer surface, by means of which the commingling-chamber O may be adjusted.

Having thus described the construction of our burner, its operation is as follows: The supply-pipe A being filled with gasoline, a  
80 sufficient portion is permitted to pass into the tube D to supply the burner. This supply is readily regulated by means of the check-valve C. This tube D being filled, the tubes leading to the jet-orifice K, and indicated by the letters d and d', are also filled with gasoline. The screw-shaft L is turned sufficiently to open the jet-orifice K to permit the passage of the gasoline, which, by the guard N, is forced into the drip-cup M. When a sufficient quantity has  
85 been permitted to pass, the gasoline in the drip-cup M is ignited, the jet-orifice K being closed. After a sufficient time has elapsed to permit the vaporization of the gasoline in the tube d' the jet-orifice K is again opened, guard N  
90 swung out of the way, when the vapor passes into the commingling-chamber J through the tube J', this tube J' being of sufficient size to permit the passage of air with the vapor into the commingling-chamber J. The vapor passes  
100 through openings on the upper side of the chamber J into the chamber formed by the



perforated metal H. Passing through the perforations of this chamber, it is ignited and flame is impinged against the heater-plate G, which, becoming sufficiently heated, vaporizes the gasoline in the vaporizing-chamber D', situated, as above stated, at the upper portion of the chamber or tube D.

When it is desired to use the burner for heating or cooking purposes, after the plate has become sufficiently hot, the valve E is opened and the vapor is permitted to pass through the orifice into the short tube P, and from thence to the supplemental commingling-chamber O. With the vapor passing into the chamber O a sufficient amount of air is carried, which is thoroughly mingled with the vapor in the chamber O, from which it passes through the orifices o and is lighted.

When it is desired to shut off the supply of heat from the main burner or commingling-chamber O valve E is closed, while the valve K may be left open and the burner O ready at a moment's notice by simply opening the valve E.

What we claim is—

1. In a vapor-burner, the combination, with the vaporizing-chamber and tube D, for conducting the gasoline thereto, of a T-joint secured to the lower end of the tube and having a stuffing-box secured to its lower end, through which passes the screw-shaft of a needle-valve, said T-joint being connected with the supply-pipe, and a valve for governing the flow of

gasoline from the supply-pipe to the tube D, substantially as set forth.

2. In a vapor-burner, the combination of a needle-valve with a screw-shaft and a jam-nut and a depending tube arranged within the upper end of the tube that supports said screw-shaft, said jam-nut being adapted to rest against the depending tube when the valve is closed to prevent the enlargement of the jet-orifice, substantially as set forth.

3. In a vapor-burner, the combination, with the tube D, of the adjustable commingling-chambers O and J, the latter surrounding and being supported upon said tube, substantially as set forth.

4. In a vapor-burner, the combination, with the tube supporting the screw-shaft which controls the needle-valve, of the commingling-chamber supported upon said tube, a heater-plate also supported therein, and a perforated chamber interposed between said commingling-chamber and heater-plate, whereby flame from the perforated chamber will impinge upon said plate, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOSEPH WHITTINGHAM.  
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Witnesses:

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