

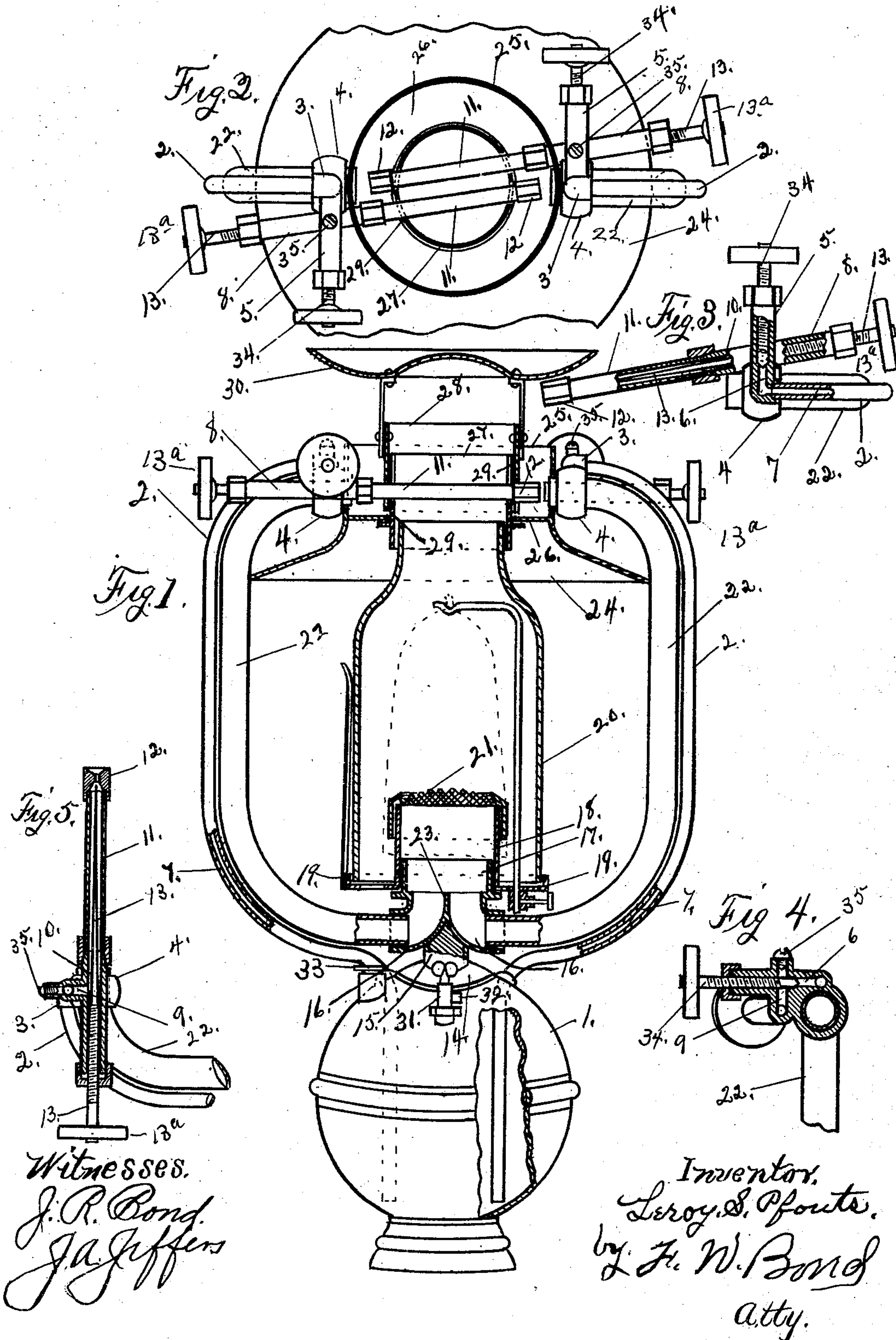
No. 711,522.

Patented Oct. 21, 1902.

L. S. PFOUTS.  
INCANDESCENT VAPOR BURNER.

(Application filed Jan. 11, 1902.)

(No Model.)





# UNITED STATES PATENT OFFICE.

LEROY S. PFOUTS, OF CANTON, OHIO.

## INCANDESCENT VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 711,522, dated October 21, 1902.

Application filed January 11, 1902. Serial No. 89,304. (No model.)

*To all whom it may concern:*

Be it known that I, LEROY S. PFOUTS, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Incandescent 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 annexed drawings, making a part of this specification, and to the figures of reference marked thereon, in which—

Figure 1 is a side elevation showing parts in section. Fig. 2 is a top view showing the parts properly assembled and illustrating a portion of the hood broken away. Fig. 3 is a horizontal sectional view showing the ventilating-tube and the supply-pipe and illustrating the different passages. Fig. 4 is a transverse section of the mixing-tube and a sectional view of the shut-off valve. Fig. 5 is a longitudinal section of the vaporizing-tubes and their clean-out needle, also showing portions of the feed-pipe and the mixing-tube.

The present invention has relation to incandescent vapor-burners; and it consists in the different parts and combination of parts hereinafter described, and particularly pointed out in the claims.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, 1 represents the tank, which in this instance is located below the burners and the different parts belonging thereto; but it will be understood that the tank may be located above the burners and gravity employed instead of air-pressure.

To the tank 1 are connected the supply-pipes 2, and when the tank is located below the burners of course said supply-pipes should be extended some distance into the tank; but when the tank is located above the burners then in that event the supply-pipes are not to extend into the tank, but are connected to the bottom, these modifications being simply the work of a mechanic and have no reference to the present invention. The supply-pipes extend upward in the positions illustrated in Fig. 1 and are connected at

their top or upper ends to the flanges 3, which flanges are formed integral with the collars 4. From the flanges 3, and the collars 4 extend the arms 5, which arms are each provided with the passages 6, which passages communicate with the passages 7, formed in the supply-pipe 2.

Directly below the arms 5 are located the arms 8, said arms 5 and 8 being cast integral with each other, and the passages 9 each connect the passages 6 with the passages 10, said passages 10 being formed in the arms 8 and will extend through the vaporizing-tubes 11, said vaporizing-tubes being attached to the inner ends of the arms 8 in any convenient and well-known manner.

The vaporizing-tubes 11 are provided with the usual gas-tips 12. Each of the vaporizing-tubes 11 is provided with the clean-out needles 13, which clean-out needles may also be used as shut-off needles or valves. To the top of the tank 1, which top may consist of the separate brazed piece 14, is securely attached in any convenient and well-known manner or formed integral therewith the post 15, to which post are attached the elbows 16; but, if desired, the post 15 and the elbows 16 may be formed integral with each other, as well as the head 17. From the short head 17 extends the cylinder 18, which cylinder is provided at its bottom or lower end with the flange 19, which flange is of the ordinary construction and is of course for the purpose of supporting the chimney 20.

The top or upper end of the cylinder 18 is provided with the gauze disk 21, which is held in place in the usual manner.

To the bottom or lower ends of the elbow 6 are connected the mixing-tubes 22, which mixing-tubes are located and arranged substantially as shown, and their intake ends are located a short distance away from their respective gas-tips 12, the distance being sufficient to allow the proper admixture of air with the gas, which gas and air is conveyed through the mixing-tubes to the elbows 16 and thence to the burners.

For the purpose of preventing any opposing pressure as between the two mixing-tubes 22 the partition 23 is provided, which in this instance is the inner joined portions of the elbows 16; but it will be understood



that the object above specified can be carried out with any kind of a partition that divides the bottom or lower portions of the mixing-tubes 22.

5 The bottom or lower portion of the hood 24 may be of the form shown in the drawings, or it may be differently formed, as the particular form of the lower portion of the hood has no reference to the operation of the  
10 burner proper. The upper part of the hood is provided with the annular flange 25, the bottom or lower portion of which annular flange is provided with the partition 26, which partition extends inward a short distance and  
15 is provided with a central opening to receive the tube 27, which tube 27 is extended upward above the tops of the vaporizing-tubes 11.

To the tube 27 is connected the upper tube 28, said tubes 28 and 27 being telescoped together and are held in proper relative position by frictional contact with each other.  
20 It will be understood that in order to properly telescope the tubes 27 and 28 and at the same time allow for the room taken up by the vaporizing-tubes 11 slots or cut-out portions 29 must be provided. To the top or upper end of the tube 28 is connected the head-deflector 30, said head-deflector being of the usual construction and forms no particular  
25 part of the present invention.

For the purpose of providing a means for producing an atmospheric pressure an ordinary inlet air-valve 31 is provided, which valve is provided with the usual connecting-  
30 nozzle 32.

It will be understood that the tank is to be provided with a filling-aperture and should be properly closed by means of the usual cap 33.

40 The band 25 is provided with suitable apertures through which the ends of the mixing-tubes are passed, as illustrated in Fig. 1.

It will be understood that by providing the band 25 the same will act as a shield against any air-currents, and at the same time a chamber is formed between the band 25 and the  
45 tubes 27 and 28, by which arrangement the air is heated to a certain extent, thereby heating the air at the point where it is mixed with the gas, this object being very desirable in aiding  
50 combustion, as the heated air mixes much more readily with the vapor than cold air.

It will be understood that the arms 5 should be provided with the ordinary cut-off valves 34. It will be understood that the outer ends  
55 of the passages 9 should be closed by means of the screw or cap 35, inasmuch as said passages cannot be drilled, except from the outside, and of course must be closed.

It will be understood that by my peculiar construction I am enabled to generate from 60 a single font a sufficient quantity of gas to supply a large burner or to supply a number of smaller burners, by which arrangement I am enabled to produce a much more brilliant light than is done in the ordinary way. 65

The needles 13 are provided with screw-threaded portions and the outer ends thereof provided with knobs 13<sup>a</sup>, which knobs are for the purpose of imparting rotary motion to the  
70 needle or clean-out and at the same time giving to said needle a reciprocating movement.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a tank, supply-pipes 75 leading therefrom and communicating with lateral arms having passages, said passages leading to vaporizing-tubes, and the vaporizing-tubes extended in opposite directions over the main burner, mixing-tubes provided 80 with open upper ends and the open upper ends located upon opposite sides of the main burner in a horizontal plane above the main burner and the vaporizing-pipes extended downward and communicating with a single 85 chamber located directly below the main burner and a guide-shield or partition located below the single chamber of the main burner, substantially as and for the purpose specified. 90

2. The combination of a tank, feed-pipes leading therefrom and vaporizing-pipes provided with tips, said vaporizing-pipes located above the burner, telescopic tubes located above the main burner, and the vaporizing- 95 pipes extended diametrically through the telescopic tubes and side by side, and each of the vaporizing-pipes provided with gas-tips located upon the outside of the telescopic tubes, a hood provided with an annular 100 flange, said flange provided with a partition, and the gas-tips of the vaporizing-pipes located between the flange and the telescopic tubes, mixing-tubes provided with open ends communicating with the chamber between 105 the telescopic tubes and the hood-flange and a main-burner chamber having connected thereto the mixing-tubes, substantially as and for the purpose specified.

In testimony that I claim the above I have 110 hereunto subscribed my name in the presence of two witnesses.

LEROY S. PFOUTS.

Witnesses:

J. A. JEFFERS,  
F. W. BOND.