

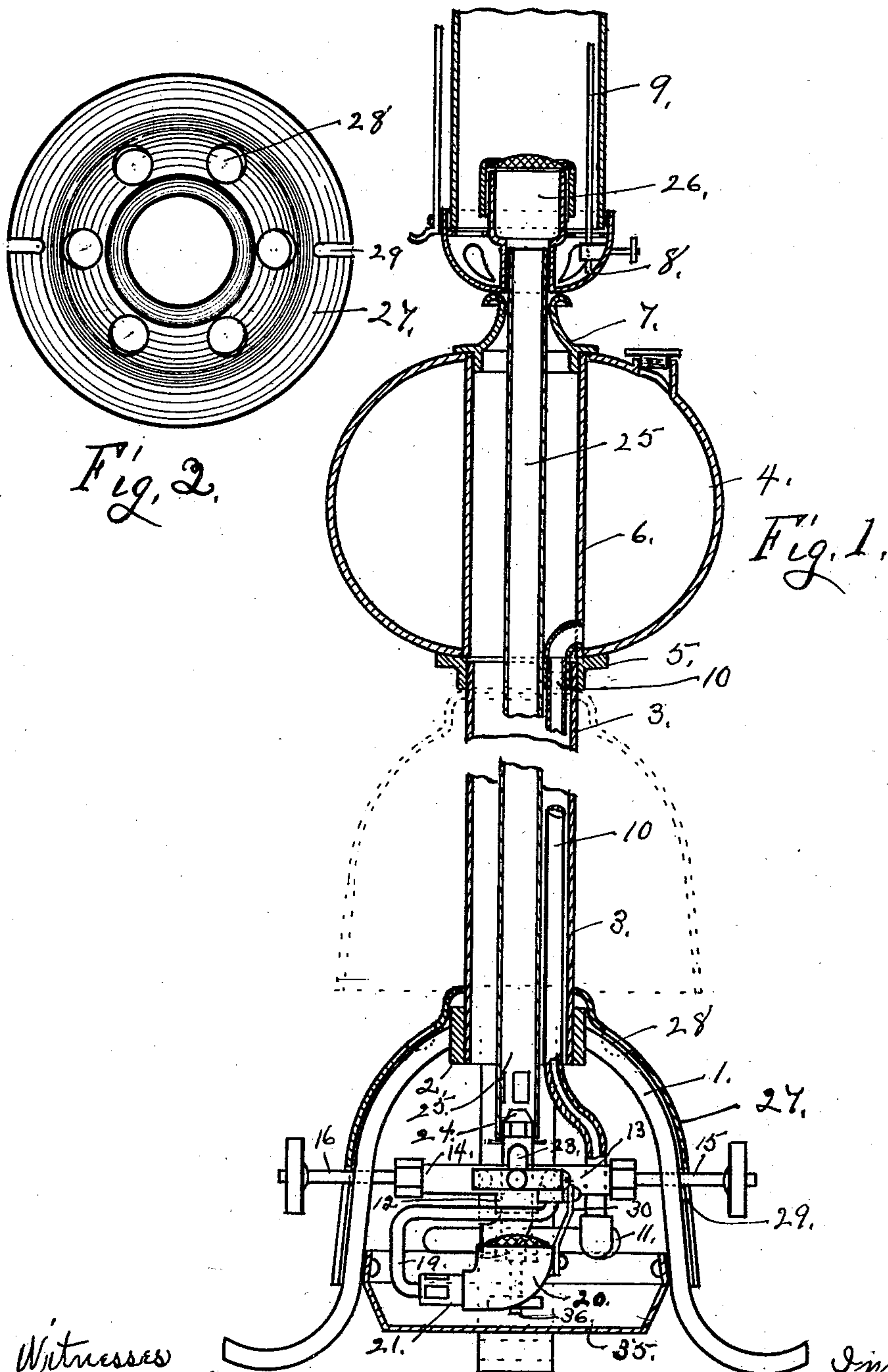
**No. 711,523.**

**Patented Oct. 21, 1902.**



**L. S. PFOUTS.**  
**INCANDESCENT LAMP.**  
(Application filed Feb. 21, 1902.)

(No Model.)

**2 Sheets—Sheet 1.**



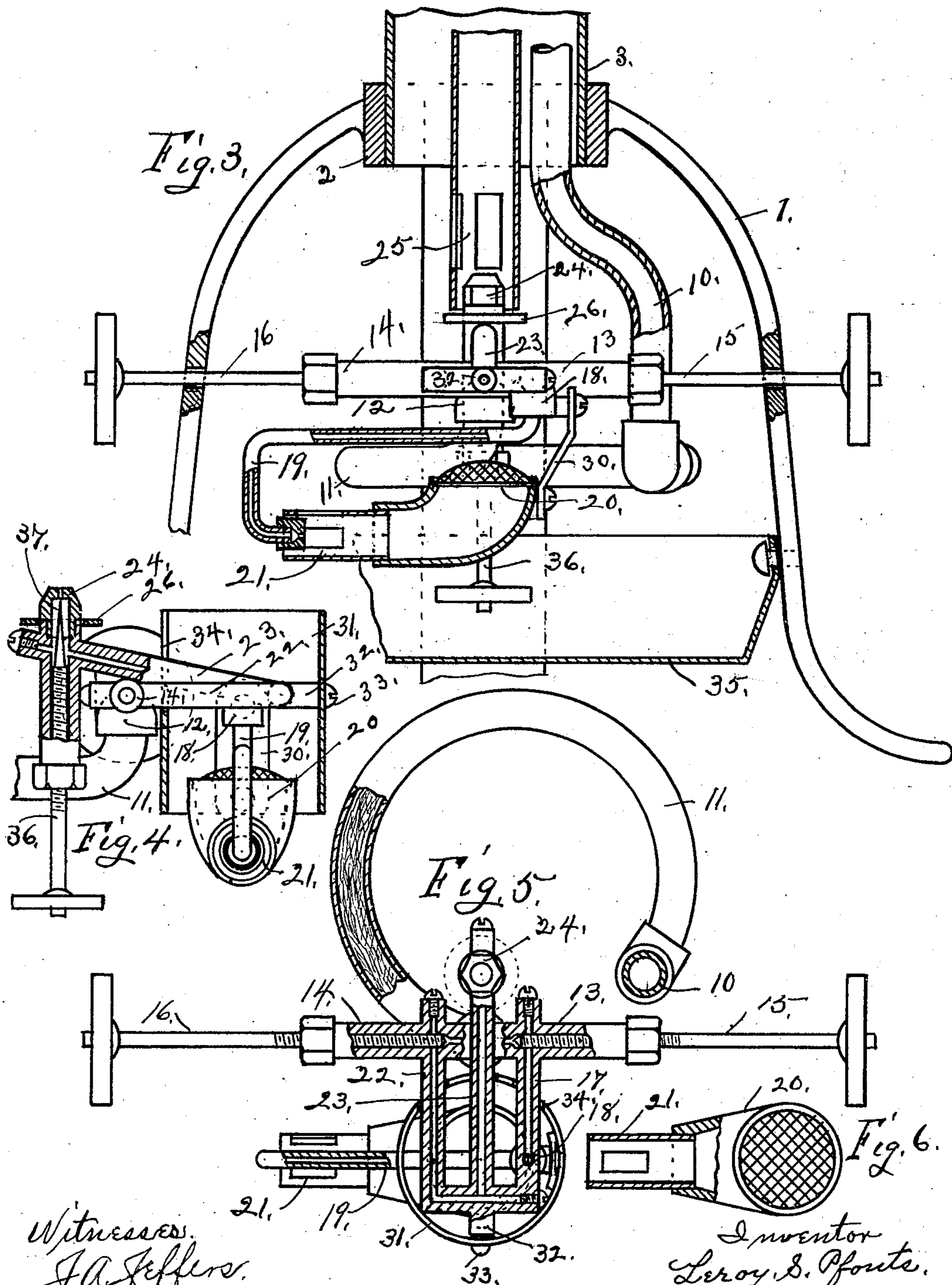
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# UNITED STATES PATENT OFFICE.

LEROY S. PFOUTS, OF CANTON, OHIO.

## INCANDESCENT LAMP.

SPECIFICATION forming part of Letters Patent No. 711,523, dated October 21, 1902.

Application filed February 21, 1902. Serial No. 95,055. (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  
5 invented certain new and useful Improvements in Incandescent Lamps; 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  
10 a part of this specification, and to the figures of reference marked thereon, in which—

Figure 1 is a vertical section showing the different parts properly connected, except the mantle is removed. Fig. 2 is a top view  
15 of the sliding shield. Fig. 3 is a side elevation of the vaporizer, showing the location of the different parts. Fig. 4 is a side view looking at the left hand of Fig. 3. Fig. 5 is a horizontal section of the vaporizer. Fig. 6 is  
20 a top view of the subburner, showing the gauze in place, also showing the mixing-tube properly located for said subburner.

The present invention has relation to incandescent lamps designed for what is known  
25 as "gasolene" or "naphtha" lamps; 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.  
30

In the accompanying drawings, 1 represents the base or standard, which in this instance consists of legs or supports which are  
35 united at their upper ends by means of the band or ring 2; but it will be understood that any form of base may be employed without departing from the nature of the invention, as the only object in this instance is to provide a support or base for the lamp proper.  
40

To the ring or band 2 is securely attached in any convenient and well-known manner the tube 3, which tube constitutes the stem.

To the top or upper end of the tube 3 is  
45 attached the font 4 by means of the reinforcing-flange 5. Through the font 4 extends the tube 6, which tube is a continuance of the tube 3, except that it is made in separate pieces or parts; but when the font  
50 is placed in proper position a continuous tube is formed extending from the ring 2 to the top of the font. To the top of the font

is attached the collar 7, which collar forms a support for the gallery 8, which gallery is of the ordinary construction and is of course  
55 formed so as to properly hold the chimney and the mantle-rod 9.

From the bottom or lower portion of the font 4 leads the feed-pipe 10, which feed-pipe is extended downward through the tube  
60 3 and is connected at its bottom or lower end to the curved filter-pipe 11, which filter-pipe is preferably located within the base of the lamp proper, as illustrated in the drawings. The object of the filter-pipe is for the purpose of steadying the flow of fuel, said filter-pipe being filled with any suitable material,  
65 such as emery or wicking, and by curving the pipe a greater length can be provided without giving an unpleasing appearance to the lamp, this being a very desirable object, inasmuch as it requires considerable  
70 length to properly filter and steady the flow of fuel.

The filter-pipe 11 extends from the feed-pipe 10 to the coupling-head 12, from which  
75 coupling-head extends the lateral arms 13 and 14, which lateral arms are preferably formed integral with the coupling-head. The lateral arm 13 is provided with the regulating-needle 15 and the arm 14 with the regulating-needle 16, said needles being of the  
80 ordinary construction used in regulating the flow of fuel and gas in naphtha or gasolene lamps. From the lateral arm 13 extends the  
85 subburner-pipe 17, which subburner-pipe is located and arranged substantially as shown in Fig. 4.

The bottom or under side of the pipe 17 is provided with the enlarged portion 18, which  
90 provides a means for properly attaching the vaporizing-tube 19, which vaporizing-tube extends over the subburner 20 and thence downward and into the mixing-tube 21 of the subburner 20.  
95

From the lateral arm 14 extends the vaporizing-pipe 22, which vaporizing-pipe consists of two members, the member 22 extending outward and the member 23 extending inward  
100 and upward and communicates with the main gas-tip 24, which main gas-tip is located at the bottom or lower end of the mixing-tube 25, which mixing-tube extends upward through the tubes 3 and 6, and to the top or upper end



of which is attached the gallery 8, which gallery is suspended by the collar 7.

The top or upper end of the mixing-tube 25 is provided with the usual burner-head 26, which is the main burner and is provided with the usual incandescent mantle.

For the purpose of providing a support for the mixing-tube 25 the plate or disk 26 is provided, which plate or disk is located upon the upward-extending portion of the vaporizing-pipe 23, the gas-tip 24 coming above said plate or disk; but it will be understood that other devices may be employed for supporting the mixing-tube without departing from the nature of my invention.

For the purpose of giving the lamp a finished and neat appearance the shield 27 is provided, which shield may be of any neat form, reference being had to properly covering the standards or legs 1, and for the purpose of providing proper ventilation apertures, such as 28, are provided, and of course slots, such as 29, are provided in the bottom or lower portion of the shield, so as to allow the regulating-needles to extend outward and beyond the shield when the shield is brought into proper position.

For the purpose of providing a means for reaching the different parts located within the base of the lamp proper the shield is slidably connected to the tube or stem 3 and may be moved upward, as illustrated in dotted lines, Fig. 1.

For the purpose of providing a proper support for the subburner 20 the bar 30 is provided, the top or upper end of which is attached to the enlarged portion 18 or its equivalents and its bottom or lower end attached to the subburner-body 20, the mixing-tube 21 being supported by means of the vaporizing-tube 19 and the burner 20. For the purpose of protecting the flame emanating from the subburner 20 and at the same time concentrating the heat to produce quicker and better vaporization the shield 31 is provided, which shield is supported in proper position by means of the arm 32 and the set-screw 33.

It will be understood that the shield 31 is to be provided with suitable slots 34, which slots are for the purpose of allowing the shield to be placed in proper position and provide room for the various vaporizing-pipes.

For the purpose of receiving any refuse substance, such as partly-burned matches, the tray 35 is provided, which tray is connected to the standards 1 or their equivalents and is located below the subburner 20 and the various vaporizing-pipes.

The operation of my lamp is as follows: When it is desired to start the lamp, the vaporizing-tube 19 is primarily heated, after which the regulating-needle 15 is opened, so as to allow fuel to find its way through the feed-pipe 10 and into the vaporizing-tube 19, when it is converted into gas, which gas is conveyed into the mixing-tube 19 and out at

the subburner 20, where it is consumed. As the subburner 20 is located directly under the vaporizing-tube 19, vaporization will be continued or produced by the flame of the subburner, at the same time heating the vaporizing-tubes 22 and 23. The regulating-needle 16 is then opened and gas finds its way through the vaporizing-tubes 22 and 23 and is conveyed to the vapor-jet nozzle 24 and into the mixing-tube 25 and thence upward through the tubes 3 and 6 to the burner-head 26, where it is consumed in the usual manner.

For the purpose of regulating the supply of gas to the main burner the regulating-needle 36 is provided, which needle is located substantially as shown in Fig. 4, and said needle is provided with the pointed tip 37, which is also used for the purpose of cleaning the aperture of the gas-tip in case it should be clogged from any cause.

The lamp above described is intended for use in connection with a mantle, and it necessarily follows that no smoke either from the main burner or the subburner can be permitted, inasmuch as it would destroy the utility of the lamp.

So far as known to me I am the first to use in connection with a subburner a gauze for separating the burning vapor and to produce a blue flame without any smoke, or, in other words, producing perfect combustion. The flame produced in this way cannot be made to smoke by any means known to me.

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

1. The combination of a font, a base, a tube-support extending upward from the base and through the font and supporting the latter, a feed-pipe leading downwardly from the font through the tube-support and terminating in a horizontal curved filter-tube, a coupling-head attached to said filter-tube and provided with extensions each of said extensions having a vaporizing-duct therethrough, and each of said ducts terminating in a vapor-jet nozzle, a main-burner tube extending upward through said tube-support and carrying a burner-gauze at its upper end, the lower end of said tube being arranged to receive the vapor from one of said jet-nozzles, and a subburner-tube arranged to receive the vapor from the other of said jet-nozzles, said subburner-tube being provided with a gauze cap forming a burner-head and arranged to heat said extensions, substantially as and for the purpose specified.

2. A combination of a font, a base, a tube-support extending upward from the base and through the font and supporting the latter, a feed-pipe leading downwardly from the font and terminating in a filter-tube, a coupling-head attached to said filter-tube and provided with extensions each of said extensions having a vaporizing-duct therethrough, and each of said ducts terminating in a va-



por-jet nozzle, a main-burner tube extending upwardly through said tube-support and carrying a burner-head at its upper end, the lower end of said tube being arranged to receive the vapor from one of said jet-nozzles and a subburner-tube arranged to receive the vapor from the other of said jet-nozzles, said subburner-tube being provided with a perforated top forming a burner-head, and arranged to heat said ex-

tensions, substantially as and for the purpose specified.

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

LEROY S. PFOUTS.

Witnesses:

J. A. JEFFERS,

F. W. BOND.