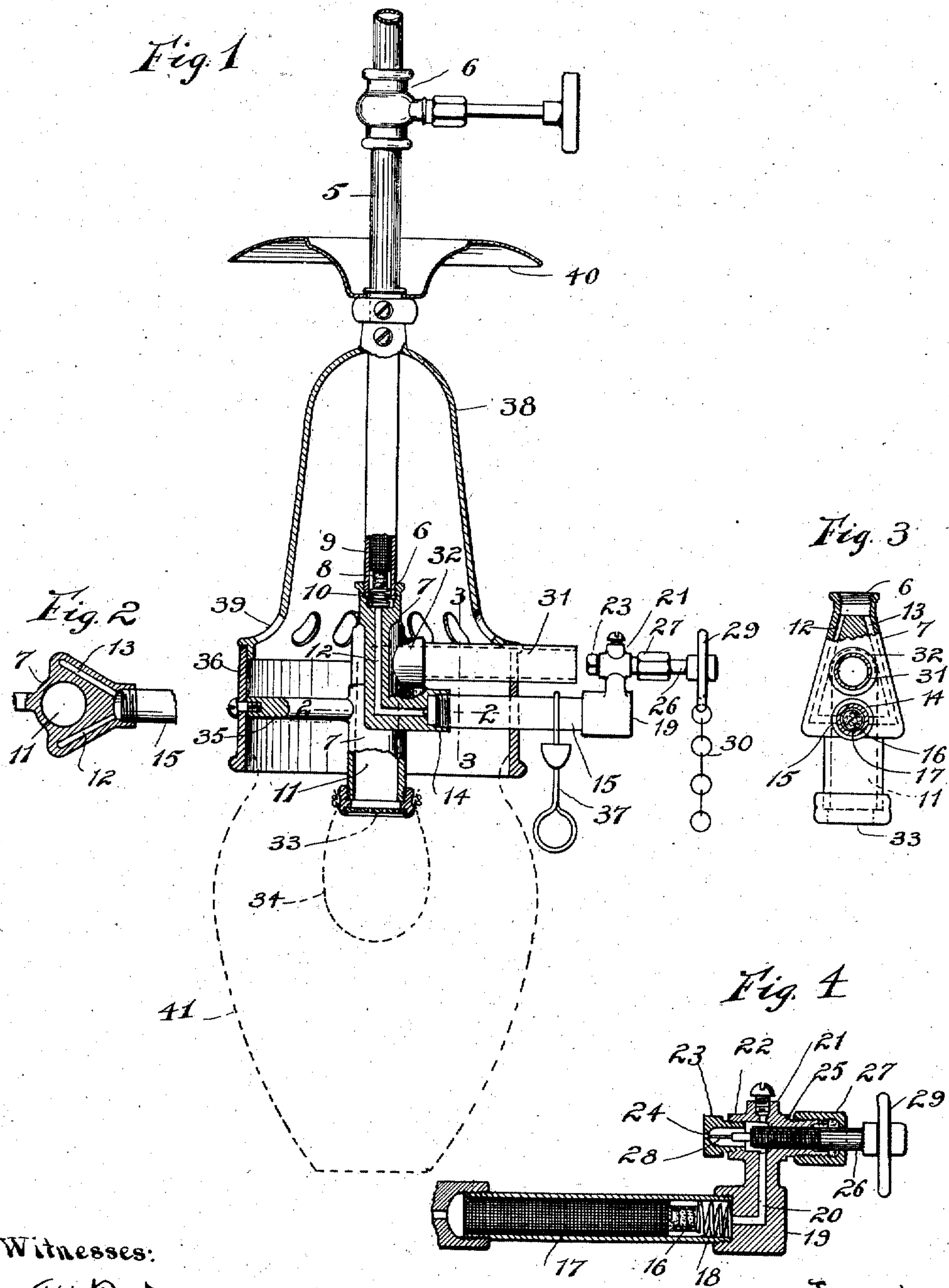


O. A. ARNESON.  
LAMP.  
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985,318.

Patented Feb. 28, 1911.



Witnesses:

*Al. F. Ostermeyer*  
*A. N. Minard.*

Inventor,

*Oscar A. Arneson,*  
*By Glenn Noble*  
*Att'y*



# UNITED STATES PATENT OFFICE.

OSCAR A. ARNESON, OF CHICAGO, ILLINOIS, ASSIGNOR TO YALE MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS.

## LAMP.

985,318.

Specification of Letters Patent.

Patented Feb. 28, 1911.

Application filed December 17, 1909. Serial No. 533,689.

### *To all whom it may concern:*

Be it known that I, OSCAR A. ARNESON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Lamps, of which the following is a specification.

This invention relates particularly to gasolene or hydrocarbon lamps, and embodies such improvements in the details of construction and general arrangement of parts of such lamps as will appear from the following description and from the accompanying drawings, in which—

Figure 1 is a side view of a hydrocarbon lamp embodying this invention, parts being broken away to illustrate the interior construction; Fig. 2 is a sectional detail taken on the line 2—2 of Fig. 1; Fig. 3 is a sectional detail taken on the line 3—3 of Fig. 1; and Fig. 4 is an enlarged sectional detail of the generator and controlling valve.

As shown in these drawings, 5 indicates a pipe leading from any convenient source of gasolene or other hydrocarbon supply, to the lamp. This pipe has a controlling or shut-off valve 6 therein for regulating or cutting off the supply of fuel to the lamp proper. The lower end of the pipe 5 is threaded or screwed in the upper end 6 of the main lamp casting or member 7, and the portion of the pipe between the valve 6 and this casting is preferably filled with suitable means for straining the fuel passing therethrough to the lamp. This strainer preferably consists of an inner core 8 of asbestos wicking, which is surrounded by wire gauze 9, this gauze and wicking being held up from the end 6 of the burner member 7 by means of a coiled spring or wire 10. The upper portion of the lamp member 7 is somewhat in the form of an inverted V in side elevation, as shown in Fig. 3, and is also of similar form in the lower portion thereof, as seen in the plan view of Fig. 2. This peculiar form of the member permits a large central opening 11, which extends from the bottom of the member nearly to the top thereof and also permits holes or passageways 12 and 13 to be drilled or formed in the sides thereof, these passageways leading from the end 6 to a lateral projection 14 adjacent to the bottom of the lamp and furnishing communication from the pipe 5 to the generator 15. This gen-

erator is also provided with an inner wick 16 of asbestos or other suitable material and an outer or intermediate wrapping of wire gauze 17, the gauze and wick being held away from the exit end by means of a coiled wire or spring 18.

At the outer end of the generator tube 15 is a casting or fitting 19 having a hole or passageway 20 leading therethrough up to the controlling valve 21. This valve is of peculiar novel construction, and is intended for cutting off the gas supply so that the light will burn either brightly or dimly but not for shutting off the gas entirely. Its construction is best shown in Fig. 4, where it will be noted that the inner projection 22 of the valve body 21 is provided with a nipple 23 having a very small central opening 24 therethrough. The opposite end or projection 25 of the valve body is threaded to receive a valve stem 26 and is also provided with a packing device 27. At the forward inner end of the valve stem 26 is a fine wire 28 which is adapted to pass into or through the hole 24 but which does not entirely close said hole. At the outer end of the valve stem 26, I provide means for turning the stem, such for instance as a lever 29 having chains 30 at the end thereof arranged in the well known manner. This valve is so proportioned that when the valve stem 26 is turned in one direction, the nipple or wire 28 will pass into or through the opening 24, thereby partially closing said opening and only allowing a comparatively small amount of gas to pass therethrough. When the stem is turned in the opposite direction, the wire or nipple is drawn away from the hole 24, leaving the orifice free for the passage of gas. This nipple in passing into and out of the hole will tend to clean the same and prevent carbon from forming therein, which would otherwise be liable to close such orifice. The outlet 24 from this regulating valve is directed so that the jet therefrom will pass into the outer open end of a mixing pipe 31 which has its inner end screwed or fastened into the lateral projection 32 on the side of the fitting or member 7, the opening through the pipe or tube 31 leading directly into the central opening 11 which passes downwardly through the fitting 7. At the bottom of this fitting or member 7 is the burner 33 and mantle 34 which are arranged in a well



known manner, the mantle preferably being tied in position as indicated in Fig. 1. The generator tube 15 and a lateral support 35 projecting from the opposite end of the central member 7, carry the ring 36 forming the lower part of the outer casing for the lamp. This ring only extends partially out on the generating tube 15, thereby leaving a sufficient portion of this tube extending beyond the sides of the lamp to enable the swab 37 to be hung outside of the lamp casing. This swab is for the purpose of burning alcohol under the generator tube for heating the tube when the lamp is started, and this arrangement whereby the swab may be hung outside of the lamp casing without moving or displacing any portions of the lamp is one of considerable importance, and provides one of the desirable features of this invention. The lamp casing is completed by means of the dome or top 38, which rests on the ring 36 and which is provided near its base with a plurality of holes 39 to permit the egress of the gases of combustion. Above the cover or top 38, I also prefer to place a shield 40, which adds to the appearance of the lamp and also prevents the valve 6 from becoming heated. At the bottom of the ring 36 is preferably secured a globe 41 of any desirable shape.

The operation of the lamp will be readily understood from the above description and drawings. When the lamp is first started, the swab 37, saturated with alcohol, is hung on the generator tube 15 and lighted, thereby causing the generator tube to become sufficiently heated to convert the gasolene or other fluid into gas. The valve 6 is then opened, which permits the fuel to pass down through the pipe 5 and through the side holes or passage ways 12 and 13 into the generator 15, where it becomes heated and passes in the form of gas through the hole 20 in the fitting 19, up and through the valve 21, the latter being preferably opened to its fullest extent. The jet, which passes out through the aperture 24 into the open end of the mixer tube 31, carries in a sufficient amount of air for combustion, the air and gas then passing through this tube and down through the central opening 11 to the burner 33 at the lower end of the central fitting 7, where it is lighted, causing incandescence of the mantle 34. As soon as the initial generation occurs, the swab 37 may be removed, when the heat of the burner, acting directly on the lower end of the fitting 7, and particularly on the side projections containing the holes 12 and 13, and acting upon the inner end of the generator 15, cause a sufficient generation of the liquid fuel for the further continued operation of the lamp.

On account of having the double passage-way from the feed pipe 5 to the generator

tube 15, there is little likelihood of there being any sufficient stoppage of the fuel supply to interfere with the operation of the lamp. Furthermore, on account of the peculiar arrangement, whereby the fuel is led down close to the burner and the generating tube is arranged below the mixing tube, a constant and successful generation of gas is assured and the mixed gas and air will also be partially heated before passing to the burner. This peculiar arrangement of the generator will provide sufficient generation, even though the supply of gas is cut off so that there is only a dim light burning, the valve 21 being used for dimming the light in the manner heretofore described.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a lamp of the character set forth, the combination of a vertically arranged supply pipe, a strainer in the lower end of said pipe, a burner fitting secured to the lower end of said pipe, passageways in the sides of said fitting, leading from the lower end of said pipe to a lateral projection on said fitting, a generator secured in said lateral projection and receiving its supply through said passageways, a valve at the end of said generator for regulating the flow of gas from said generator into the mixing tube, and a mixing tube arranged above said generator and having its upper end adapted to receive the jet from said valve, the inner end of said tube being secured in a projection on said fitting, said fitting being provided with a central opening making connection with said mixing tube and adapted to conduct the mixed gases downwardly to the burner.

2. In a gasolene or hydrocarbon lamp, the combination of a supply pipe, means arranged within said pipe for straining the liquid fuel, a casting or fitting secured to the lower end of said pipe, said fitting having vertical and horizontal ribs at the sides thereof containing holes leading from said pipe to a horizontal projection at the lower end of said fitting, said fitting being also provided with a central, vertical opening terminating in a horizontal projection or connection arranged above said last-named projection; a casing surrounding the lower end of said pipe and said fitting, a generator connecting with the lower projection on said fitting and extending out through said casing, a mixing tube secured in the second-named projection and also extending out through said casing, the opening through said tube leading to the central opening in said fitting, and a regulating valve at the end of the generator arranged to direct the gas into the open end of the mixer tube to control the flow of gas thereto.

3. In a gasolene or hydrocarbon lamp, the combination of a main burner member hav-



ing a central passage way leading from the  
bottom to a lateral projection adjacent to  
the top thereof and having one or more holes  
along its sides leading from a vertical top  
5 connection to a horizontal connection adja-  
cent to the bottom thereof, a supply pipe  
leading upwardly from said top connection,  
a valve in said supply pipe, a generator lead-  
ing from the lowermost horizontal connec-  
10 tion, an upwardly extending fitting at the  
end of said generator, a valve in said fitting  
having an inwardly directed orifice, a wire  
on the valve stem adapted to enter said ori-

fice but not to fill the same, a mixing tube  
secured in the uppermost horizontal connec- 15  
tion and having its open end opposite said  
orifice, a ring supported on said main fitting,  
a cap or dome resting on said ring and hav-  
ing its upper end engaging with said supply  
pipe and having an outlet apertures therein, 20  
and a shield secured to said pipe above the  
dome and beneath the first-mentioned valve.

OSCAR A. ARNESON.

Witnesses:

A. W. FENSTEMAKER,

H. H. MINARD.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,  
Washington, D. C."

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