

R. E. BETZ.
LIGHTING SYSTEM.
APPLICATION FILED MAY 24, 1911.

1,009,888.

Patented Nov. 28, 1911.

2 SHEETS—SHEET 1.

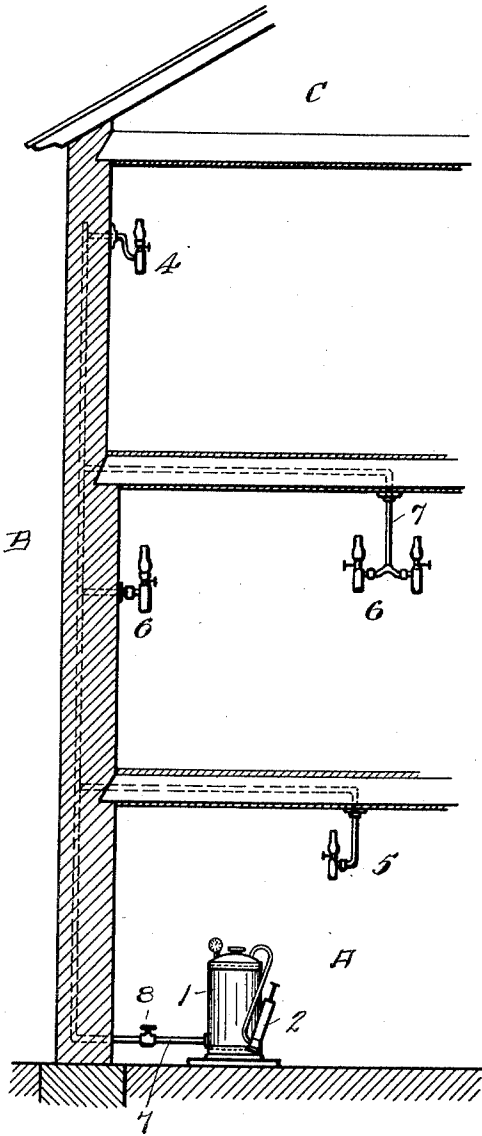


Fig. 1

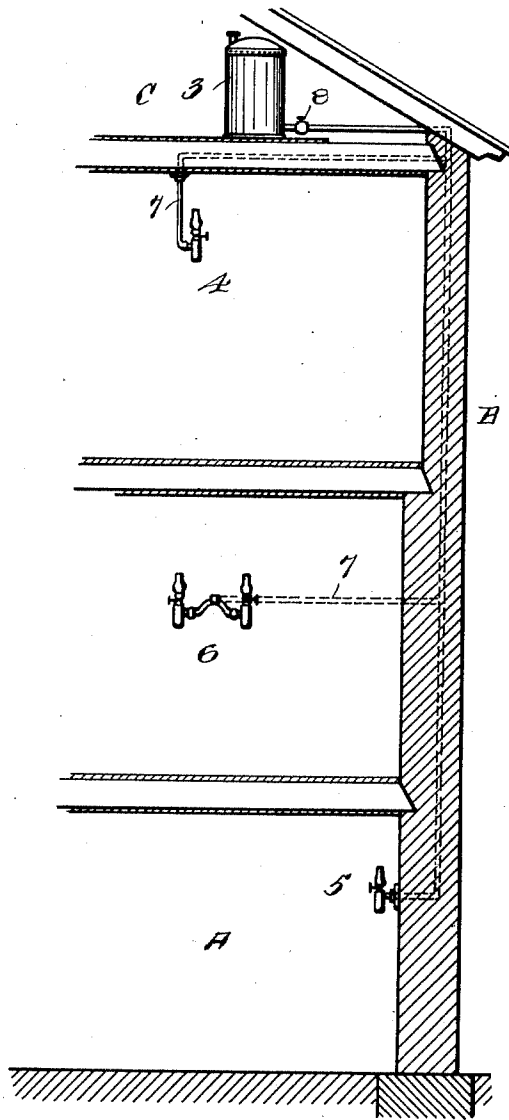


Fig. 2

WITNESSES:

Clarence M. Shigley
H. G. Hamely.

INVENTOR.

ROY EMERSON BETZ

BY

Thomas Hamely
ATTORNEY

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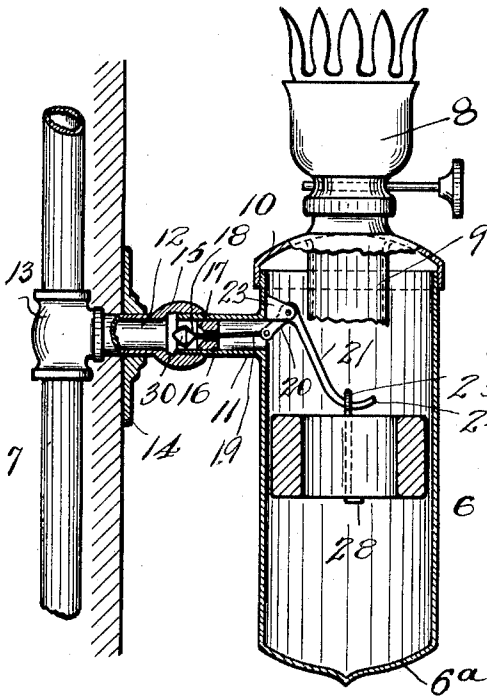


Fig. 3

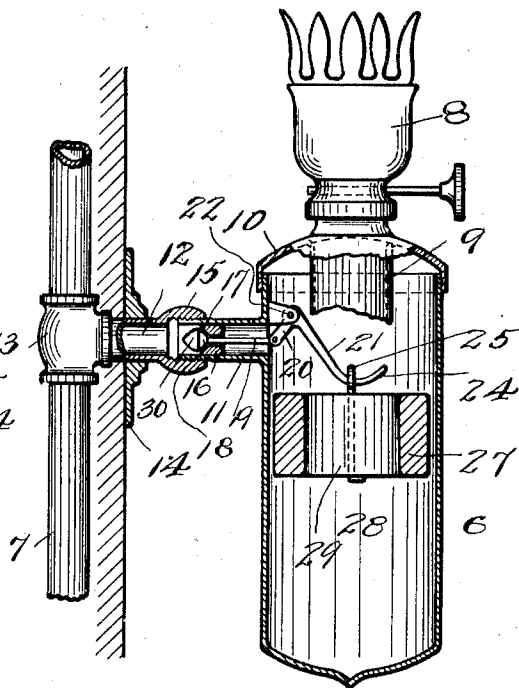


Fig. 4

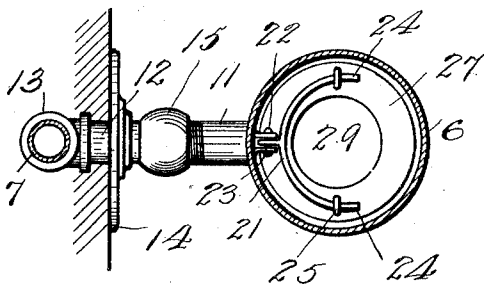


Fig. 5

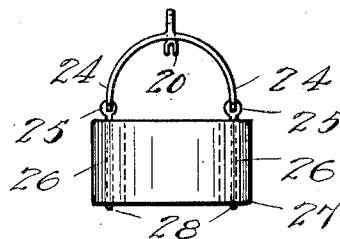


Fig. 6

WITNESSES:

Clarence M. Shigley
W. G. Harney.

INVENTOR.

ROY EMERSON BETZ

BY

Wm. G. Harney
ATTORNEY.

UNITED STATES PATENT OFFICE.

ROY E. BETZ, OF COLUMBUS, OHIO.

LIGHTING SYSTEM.

1,009,888.

Specification of Letters Patent. Patented Nov. 28, 1911.

Application filed May 24, 1911. Serial No. 629,218.

To all whom it may concern:

Be it known that I, ROY E. BETZ, a citizen of the United States, residing at 318 South Fourth street, Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Lighting Systems, of which the following is a specification.

The present invention relates to improvements in lighting systems, preferably employing a liquid illuminant as kerosene.

The object of the invention is the provision of means for illuminating dwellings, or other buildings, by means of a series of lamps, which are supplied through suitable pipes, from a central reservoir containing kerosene or other liquid illuminant.

The lighting system herein disclosed, when constructed and arranged according to my invention, is comparatively cheap in first cost, and inexpensive in maintenance, but provides an efficient means for performing the functions desired. The utility of the valve illustrated herein is not limited to the automatic feeding of lamps embodied in this lighting system, and it will be understood that the valve is capable of adaptation for other uses, such as with carbureters for engines, etc.

The invention consists essentially in a series of lamps connected through suitable piping with a central source of supply, and independent, automatic, means for regulating and maintaining a continuous and proper supply of kerosene to each lamp. And the invention further consists in certain novel features of construction and combinations and arrangements of parts as hereinafter set forth.

In the accompanying drawings I have illustrated two examples of the physical installation of the system, one showing the kerosene fed under fluid pressure, and the other showing the kerosene fed by gravity. These figures and the remaining figures of drawing exemplify the invention according to the best modes I have so far devised for the practical application of the principles.

Figure 1 shows a lighting system according to my invention, the kerosene being supplied under fluid pressure. Fig. 2 is a diagrammatic view similar to Fig. 1, but with the fuel supply fed by gravity. Fig. 3 is a vertical sectional view of one of the lamps of the lighting system, showing the inlet regulating valve open. Fig. 4 is a

similar view to Fig. 3 showing the admission regulating valve closed. Fig. 5 is a transverse sectional view of the lamp showing the float and lever of the automatic regulating valve, and Fig. 6 is a side elevation of the float and connections.

I have previously, and will hereinafter, refer to the illuminating agent as kerosene, but it will be understood that other agents may be utilized, if circumstances warrant.

As before stated I have illustrated in Figs. 1 and 2, two means of supplying liquid fuel. In Fig. 1 the reservoir 1 is accompanied by an air pump 2 by means of which the contained kerosene may be put under pressure. In this instance the source of supply is located in the basement A of the dwelling B. When the gravity feeding system is installed, as in Fig. 2, the source of supply as tank 3, is located in the attic C, above the highest light 4, whereas, in Fig. 1, the reservoir 1 is located below the lowest light 5. The location of the reservoir 1, while convenient, is not essential, however, to the feed of kerosene. Other lamps, in addition to 4 and 5, as double bracket lamps 6, are supplied from either of the reservoirs, through supply pipes 7, a cock 8 being interposed in the piping to open or close the supply.

As will be seen in Figs. 1 and 2 the piping 7 is carried throughout the dwelling as desired, in accordance with the system used, and the piping feeds kerosene to the lamps of the entire system.

Referring to the remaining figures of the drawing, the construction and operation of the lamps will be described. Assuming the lamp illustrated in these figures to be lamp 6, a description of this lamp will suffice for all the others. The lamp is equipped with a standard burner 8 employing a round wick which is incased within the tube 9. This tube is suspended within the lamp 6, by means of the screw cap 10 which serves as a closure for the front 6^a. The lamp is connected with the feed pipe 7 by integral threaded extension 11 and the short length pipe 12, the latter being screwed to the T 13 of the feed pipe 7 and provided with a wall plate 14. The free end of the pipe 12 is fashioned with an enlarged head 15, interiorly threaded for the reception of the extension 11. Within the extension 11 is secured the perforated block 16, formed with a valve seat 17, at its side remote from

the lamp. A complementary valve 18 is adapted to fit within this seat, and its stem 19 extends through the perforated block, and is pivoted, within the font 6^a, to the short arm 20 of the lever 21. The lever 21 is fulcrumed at 22, between the ears 23, and extends downwardly within the lamp 6. To adapt the described valve for this style of lamp, the lever 21 is forked, and its divergent ends 24 are passed through eyes 25 formed at the upper ends of the rods or bars 26, which are passed through the material of the buoyant float 27, and bent upwardly as at 28 for rigid attachment. Float 28 is formed with a central orifice or opening 29, to accommodate the tube 9 in which is incased the wick of the lamp. The float is of sufficient weight to overcome the pressure against the valve head 30 of the valve 18, in order that as the oil is consumed in the lamp, the float will fall and open the valve to admit additional fuel.

The operation of the lamp and its regulating means is evident. Assuming the parts to be in position shown in Fig. 3 with the lamp 6 empty: The kerosene flows into the font through the valve seat, under pressure, until the liquid raises the buoyant float. The rising float through its connection with the curved diverging arms of the lever actuates the valve until the desired quantity of kerosene has flowed into the lamp, whereupon the valve is closed, and the supply from the feed pipe is cut off. As kerosene is consumed in the lamp, the float falls, actuating the lever, which opens the valve for admission of kerosene to the lamp, thus regulating and maintaining a continuous supply in the lamp.

From the above description taken in con-

nection with the drawing it is evident that I have provided a lighting system which fulfils the conditions set forth as the purpose of my invention.

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

1. The combination of a lamp font having an integral tubular extension, a fuel feed pipe connected to said extension, a perforated block within said extension forming a valve seat, a valve adapted to fit said seat, a lever fulcrumed in the lamp with its short arm connected to said valve, diverging rods forming the longer arm of the lever and formed with curved ends, a float within the lamp, and rods passed through said float formed with eyes suspended upon the curved ends of the lever.

2. The combination of a lamp font having an integral tubular extension, a fuel feed pipe connected to said extension, a perforated block within the extension forming a valve seat, a valve adapted to fit said seat and its stem passed through the block, a two arm lever fulcrumed in the lamp with its short arm connected to said stem and its longer arm comprising two diverging rods with upwardly curved ends, a float having an open center, rods passed through the material of the float and secured thereto, and eyes formed at the upper ends of the rods for suspending the float upon the curved ends of the lever.

In testimony whereof I affix my signature in presence of two witnesses.

ROY E. BETZ.

Witnesses:

C. M. SHIGLEY,
C. F. JONES.