

No. 662,165.

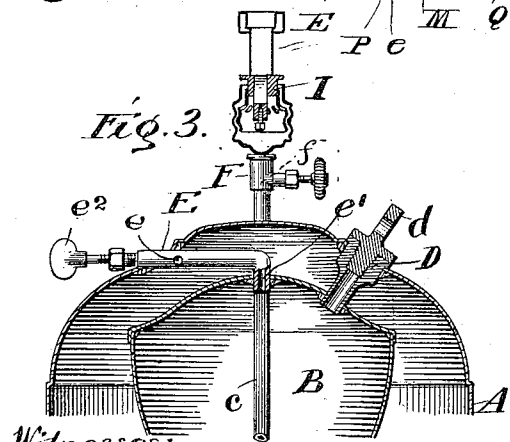
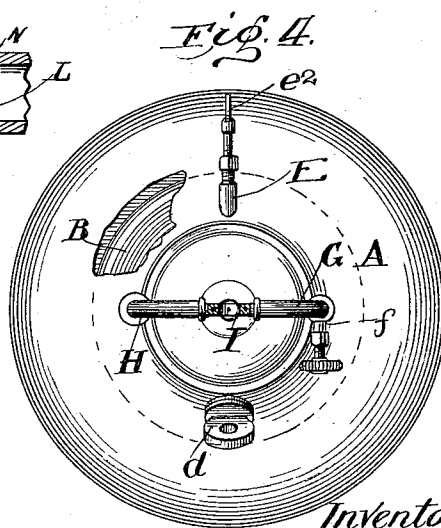
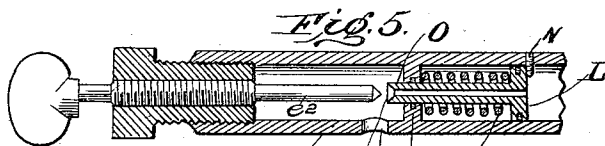
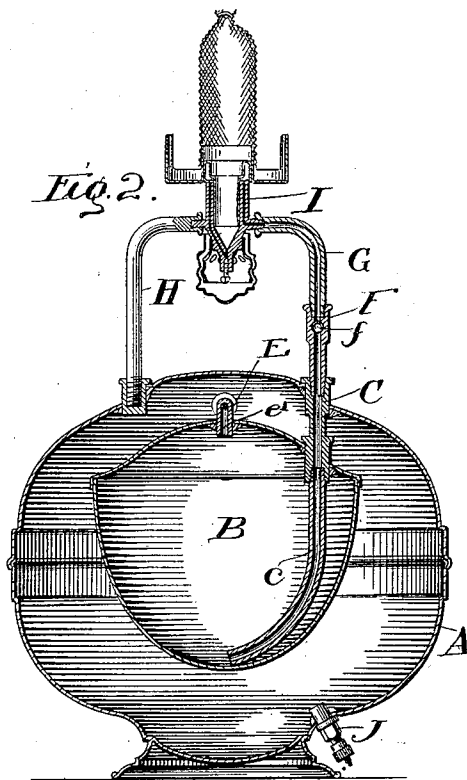
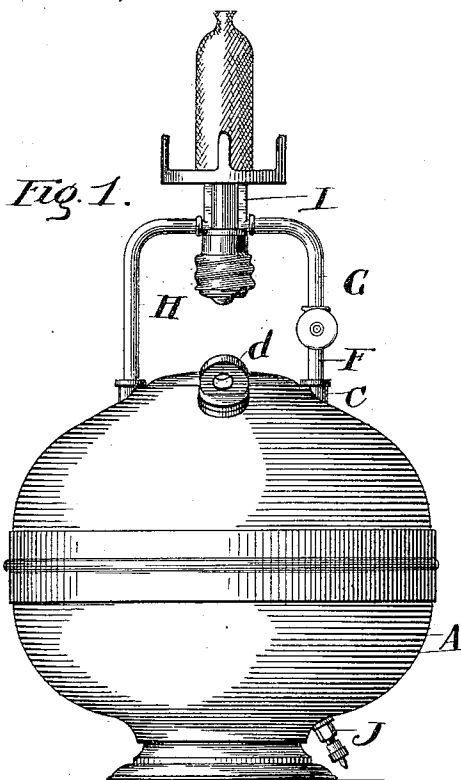
Patented Nov. 20, 1900.

M. & V. B. CAHILL.

LAMP.

(Application filed July 1, 1899.)

(No Model.)



Witnesses:

Chas O Sherry
S. Bliss.

Inventors:
Mortimer Cahill,
Volney B. Cahill,
by Miles Greene & Pitner
Attys.

UNITED STATES PATENT OFFICE.

MORTIMER CAHILL AND VOLNEY B. CAHILL, OF CHICAGO, ILLINOIS.

LAMP.

SPECIFICATION forming part of Letters Patent No. 662,165, dated November 20, 1900.

Application filed July 1, 1899. Serial No. 722,534. (No model.)

To all whom it may concern:

Be it known that we, MORTIMER CAHILL and VOLNEY B. CAHILL, citizens of the United States of America, 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.

Our invention relates to certain improvements in lamps, pertaining especially to the fount of a lamp, in which the fuel is fed to the lamp under slight pressure furnished by compressed air.

Some of the objects of the invention are to insulate the fuel from the heat of the lamp and to provide means for maintaining an even pressure upon the fuel regardless of the amount of the latter in the fluid-reservoir.

The invention is illustrated in the drawings presented herewith, of which—

Figure 1 is a side elevation of a complete lamp. Fig. 2 is a central diametrical section; Fig. 3, a similar section at right angles to Fig. 2; Fig. 4, a plan of the lamp with the burner cut in horizontal section; and Fig. 5 is an axial section of a certain pipe, seen at E, Fig. 3.

In the drawings, A is a compressed-air reservoir provided with a valve J to permit forcing air into the same, and B is a relatively small fuel-receptacle centrally located within the reservoir and intended to contain gasolene or the like fuel. The receptacle B is suspended in the reservoir by means of pipes C D E, each passing through and fixed to the walls of both vessels and each serving a purpose beyond fixing the two vessels relatively. The pipe C has an extension c leading to the bottom of the receptacle and has also an upward extension F containing a valve f and itself having an extension G, which, in connection with a symmetrically formed and located rod H, supports a burner I. The pipe D is provided with a closure d and affords a passage through which fuel may be introduced into the fuel-receptacle B. The pipe E terminates at e' within the receptacle B and also communicates at e with the reservoir A, and it contains a pressure-regulating device adjustable by means of a screw e² and commonly known in many arts as a "reducing" or "limiting" valve. The construction of this device is clearly shown in Fig. 5, where

L designates a piston sliding in the pipe between a partition M and a stop N and having its rod O extended through the partition and terminating in the compartment with which the opening e' is found, in an end provided with a recess P to receive the corresponding end of the thumb-screw e². From this recess a passage leads axially entirely through the rod and piston, and a light spring Q reacts against the partition and tends to hold the piston against the stop, and thus to keep the end of the rod out of contact with the thumb-screw. It is thought that the operation of the device and its adequacy are too well known to require discussion.

In the operation of the devices the fuel-receptacle is filled, the valve f is closed, and enough air is forced into the reservoir to insure a supply ample to fill the fuel-receptacle by expansion without too great reduction of its own pressure. Air passes from the reservoir through the aperture e and into the receptacle B until the pressure in the latter is sufficient to close the limiting-valve, and when the valve f is opened this pressure forces fuel from the lowest part of the receptacle through the pipe c and its connections up to the burner. As the fuel is used the pressure upon it of course tends to decrease, but the limiting-valve acts automatically to admit more air, and thus the pressure is kept practically constant until the fuel is exhausted.

The flame may be regulated either by means of the valve f or the thumb-screw controlling the action of the limiting-valve.

What we claim is—

1. In a lamp, the combination with a compressed-air reservoir, of a burner without the reservoir, a closed fuel-receptacle located centrally in the air-space within the reservoir and provided with a passage opening into the latter, and a tube leading from the interior of the receptacle to said burner, substantially as set forth.

2. In a lamp, the combination with a compressed-air reservoir, of a smaller closed fuel-receptacle located within said reservoir and at some distance from all its walls and having a passage leading through its own wall into said reservoir, a limiting-valve in said passage, a filling-tube leading into said receptacle from without the reservoir, and a

delivery-tube leading from the lower portion of the receptacle to a point without the reservoir.

3. In a lamp, the combination with a compressed-air reservoir, of a relatively small closed fuel-receptacle centrally located within the same and having a passage leading through its wall into said reservoir, a limiting-valve in said passage, means for adjusting said valve from without the reservoir, a filling-tube leading from without the reservoir into said receptacle, and a fuel-delivery tube leading from the receptacle to a point without the reservoir.

4. In a lamp, the combination with a compressed-air reservoir, of a smaller closed fuel-receptacle within the latter and at some distance from all its walls, and provided with an opening into the reservoir, a limiting-valve controlling said opening, and filling and delivery tubes leading from without the reservoir

to the interior of said receptacle and fixed to the walls of both, whereby the inner vessel is held at some distance from the walls of the outer one.

In witness whereof I, the said MORTIMER CAHILL, have hereunto set my hand at Springfield, in the county of Hampden and State of Massachusetts, this 26th day of June, A. D. 1899.

MORTIMER CAHILL.

Witnesses:

THEODORE F. DWIGHT,
GEORGE E. INGRAHAM.

In witness whereof I, the said VOLNEY B. CAHILL, have hereunto set my hand at Chicago, in the county of Cook and State of Illinois, this 28th day of June, A. D. 1899.

VOLNEY B. CAHILL.

Witnesses:

CHAS. O. SHERVEY,
S. BLISS.