S. S. LEE.

Lamp.

No. 2,570. Patented April 21, 1842.

Fig. 2.

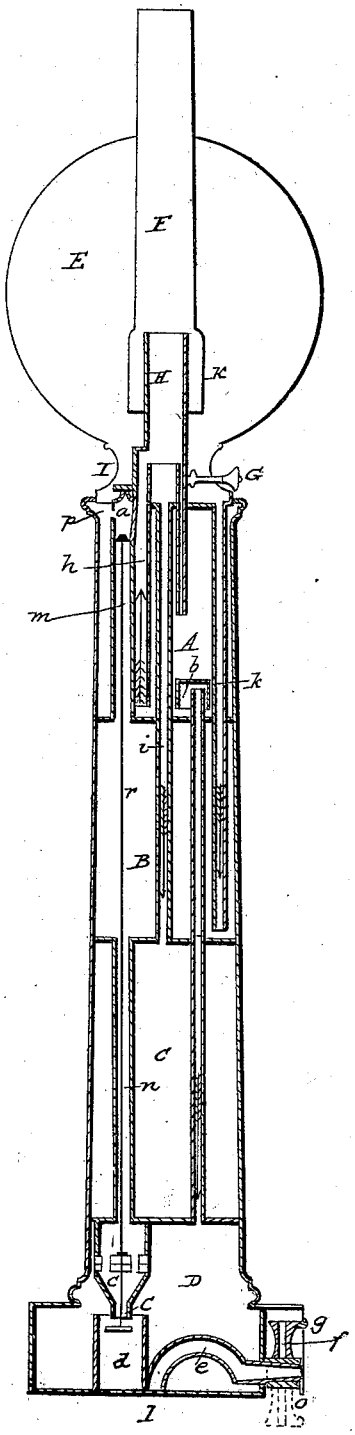
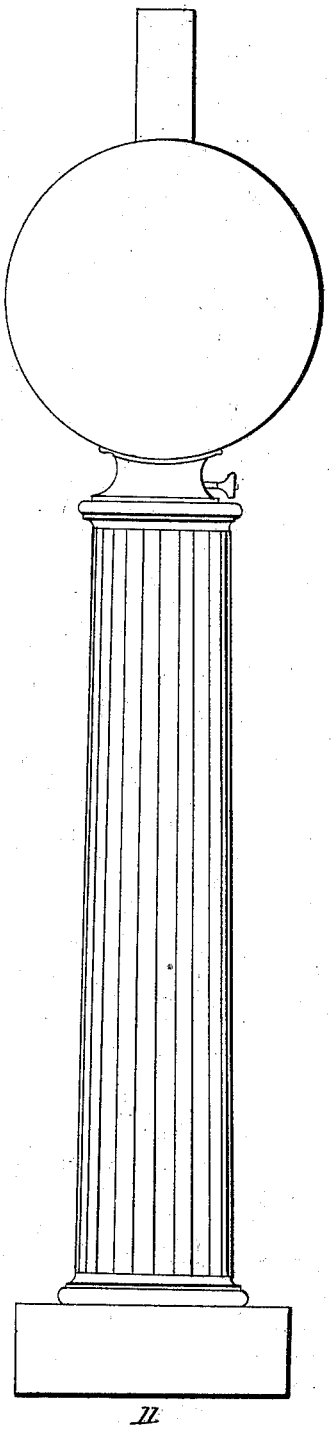


Fig. 1



UNITED STATES PATENT OFFICE.

STEPHEN S. LEE, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN THE HYDRO PNEUMATIC LAMP.

Specification forming part of Letters Patent No. **2,570**, dated April 21, 1842.

To all whom it may concern:

Be it known that I, STEPHEN S. LEE, of the city and county of Providence, State of Rhode Island and Providence Plantations, have invented a new and improved mode of clearing the lower air-chamber of oil in the hydro-pneumatic lamp, to be called "Lee's Improved Hydrostatic Lamp;" and I do declare that the following is a full and exact description of the same, reference being had to the annexed drawings of the same, making part of this specification, of which—

Figure 1 is an elevation. Fig. 2 is a vertical section.

The nature of my invention consists in providing a method of emptying the air-chamber D by a siphon-faucet or any other discharging apparatus without inverting the lamp, as has always been necessary in using lamps constructed on this principle.

To enable others skilled in the art to use my invention I will proceed to describe its construction and operation.

I make a siphon or faucet (or some aperture) similar to that shown in the drawings at *e* and *f*, by which the air-chamber D is emptied of oil by turning faucet F to the dotted lines *o*.

I will now specify all the parts and their operations.

A is a chamber which contains the oil for consumption; B, the chamber containing the oil for producing equilibrium.

C is a waste-chamber for the waste oil; D, an air-chamber.

a is a plug which closes the pipe *m*, said pipe *m* having a lateral aperture at *p*, by which chamber A is filled by the oil flowing through said aperture when chamber B is filled.

m is a pipe which leads down through chamber A, and by which chamber B is filled.

n is a pipe connecting chambers B and D, and empties into socket *d* through the valve *c*.

i is a pipe leading from the outer top of chamber A into chamber C.

k is an air-pipe leading from the outer top of chamber A nearly to the bottom of chamber B.

l is a pipe leading from chamber D up into chamber A and covered by the hood *b*. The hood *b* is a piece of pipe double the diameter of the pipe *l* it covers. It is three-fourths of an inch long, covered at top, and extends to within one-fourth of an inch of the bottom of chamber A. It is like an inverted thimble and placed over the top of the pipe *l*, which, being filled with air, prevents the oil from running into chamber D through pipe *l*.

e is a siphon, which empties chamber D by the faucet *f*, which forms the long arm of the siphon when turned down, as represented by the dotted lines *o*.

g is a knob or small handle by which to turn the faucet *f*.

h is a pipe leading from the bottom of chamber A and joins the wick-socket H. By this pipe the oil is carried up through the aperture *s* into the wick-socket H and supplies the flame.

G is a knob, by the turning of which the wick is raised or lowered.

F is a glass chimney resting on gallery K.

E is a glass shade resting on gallery I.

I is a gallery, which is formed in the following manner: A piece of cylindrical pipe is made to fit the wick-socket H, another piece of pipe sufficiently large to fit the glass chimney is attached, and the two are attached together, the smaller within the larger, by three thin arms of tin or brass, so as to obstruct the passage of the air between the two as little as possible.

The operation: Remove shade E, chimney F, and the gallery I; take out the plug *a*, which movement of taking out the plug closes the pipe *n* by valve *c*, (or by a spiral spring in the socket *d*,) by wire *r*; pour the oil moderately into pipe *m* until it rises and flows out at the lateral aperture *p*, near the top of it, which operation fills chambers A and B, and also pipe *n* as far as the valve *c*. Then replace the plug, which simultaneously opens valve *c*, and the oil flows down from chamber B and fills the socket *d*, which flows over into chamber D and expels a portion of air, which ascends through pipe *l* and hood *b* into chamber A, which drives a supply of oil up pipe *h* through aperture *s* to the summit of the wick-socket H, which is continually and uniformly resupplied by a like quantity descending from chamber B, through valve *c*, and overflowing socket *d* into chamber D, and expelling a portion of air into chamber A, as before described,

the pressure of which upon the oil in that chamber causes a supply to rise to the wick in socket H, and continues the supply until chamber A is exhausted, during which time the oil in chamber B has descended through valve *c* into chamber D, and the lamp goes out; but the lamp may be extinguished in the usual manner before chamber A is exhausted and again relighted, and it will burn until chamber A is exhausted. Now, to refill the lamp, the funnel *f* must be turned down by the knob *g* to the dotted line *o*, thus making the long arm of the siphon *e*, which empties chamber D, and it again becomes the air-chamber, replace the funnel, remove the glasses, and proceed as at first.

What I claim as my invention, and desire to secure by Letters Patent, is—

The application of the siphon or faucet, or other means substantially the same, to draw the oil from chamber D, and avoid the disagreeable and inconvenient necessity of inverting the lamp every time it is filled.

STEPHEN S. LEE.

Witnesses:
E. J. MALLETT,
A. H. OKIE.