J. E. AMBROSE.

Lamp.

No. 30,381. Patented Oct. 16, 1860.

Fig. 1,

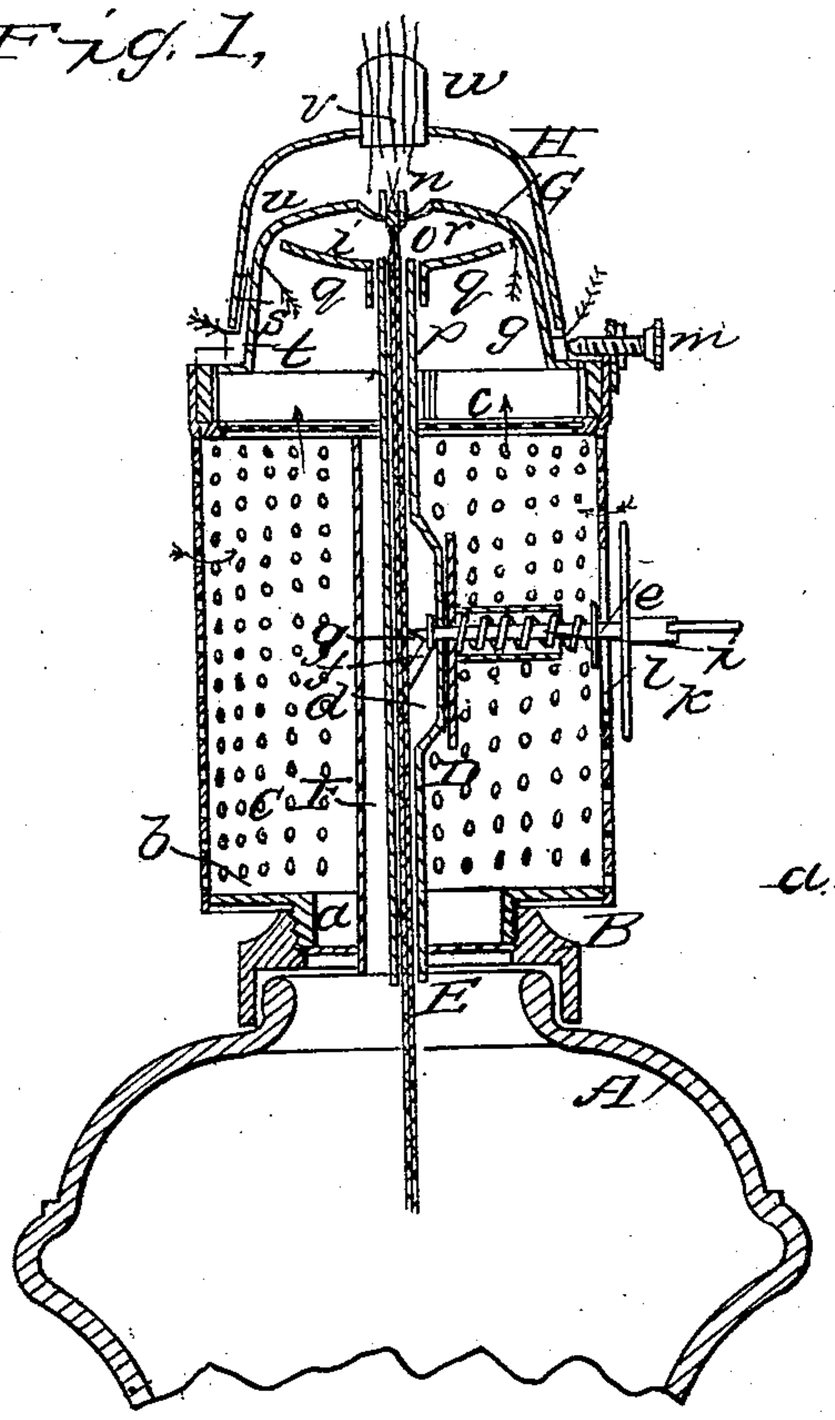

Fig. 2,

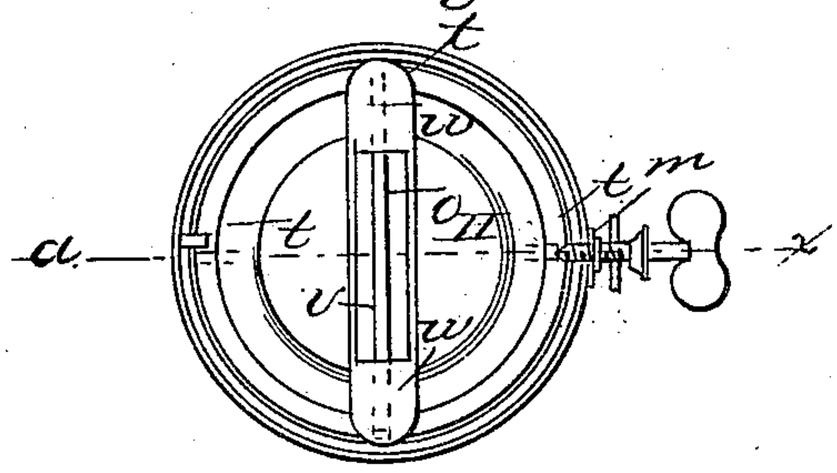

Fig. 3,

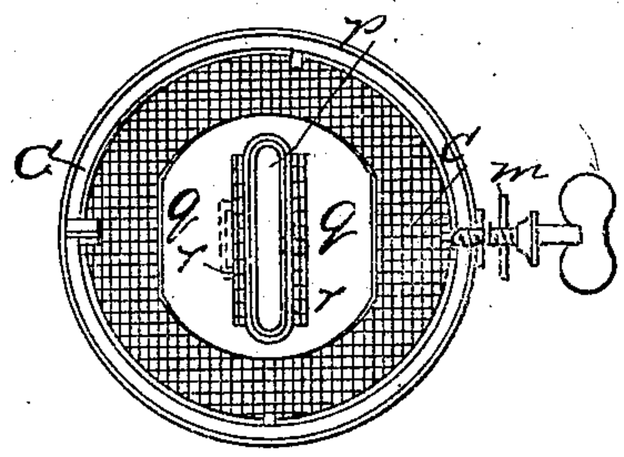

Fig. 4,

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JOSHUA E. AMBROSE, OF BATAVIA, ILLINOIS.

LAMP.

Specification forming part of Letters Patent No. 30,381, dated October 16, 1860; Reissued May 20, 1873, No. 5,412.

To all whom it may concern:

Be it known that I, J. E. AMBROSE, of Batavia, in the county of Kane and State of Illinois, have invented a new and Improved Lamp; 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, forming part of this specification, in which—

Figure 1 is a vertical central section of my invention taken in the line *x*, *x*, Fig. 2; Fig. 2, a plan or top view of the same; Fig. 3 a plan or top view of the same with the heaters detached; Fig. 4 a detached plan or top view of the wick adjusting mechanism.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to obtain a lamp which will burn without a chimney, and without danger of explosion, those hydro-carbons which are volatile and contain an excess of carbon.

The invention consists in the employment or use of a perforated cap vapor tube, wick tube, heaters, and deflecting plate arranged as hereinafter described to effect the desired end.

The invention also consists in a wick-adjusting mechanism so arranged as to admit, when operated, of the wick being elevated with certainty and when not used admitting of the wick being in a loose free state within the tube without being subjected to any pressure which would retard the free ascent of the oil in the wick.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, Fig. 1, represents the upper part of the body of a lamp provided with a socket B, at its upper end to receive the cap C, the lower end of which is provided with a screw flanch *a*, which screws into the socket B. The cap C, is of cylindrical form and may be constructed of perforated sheet metal the lower end having a plate *b*, fitted in it from which the flanch *a*, projects, and the upper end having a perforated plate *c*, fitted in it.

Within the cap or perforated cylinder C, there is secured centrally a wick tube D. This wick tube is of the usual flat form and in it the wick E, is fitted, the wick extending down into the body A, of the lamp. Adjoining the wick tube D, there is a tube F, the lower end of which communicates with the interior of the body of the lamp the upper end of said tube being covered by the perforated plate *c*.

The wick tube D, at one side, the side opposite to that where the tube F, is attached, has an enlarged space or a chamber *d*, in which the inner end of a horizontal shaft *e*, passes. This shaft *e*, has a horizontal rod *f*, fitted on it containing spurs *g*, the rod and spurs being within the chamber *d*. On the shaft *e*, there is placed loosely a metal plate *h*, said plate being at the outer side of the chamber *d*, the latter having its side slotted to admit the shaft *e*, and rod *f*. On the shaft *e*, there is placed a spiral spring *i*, the inner end of which bears against the plate *h*, the outer end bearing against a plate or step *j*, which is attached permanently to shaft *e*. The spring *i*, it will be seen has a tendency to keep the shaft *e*, shoved outward to the extent of its movement, and keep the rod *f*, and spurs *g*, within the chamber *d*, and free from the wick E. On the shaft *e*, and at the outer side of the cap C, there is secured a plate *k*. The shaft *e*, passes through a slot *l*, in the cap C.

In order to raise or lower the wick E, the shaft *e*, is pressed inward and the spurs *g*, will penetrate the wick and by raising or lowering the shaft *e*, the wick will be raised or lowered accordingly. The plate *h*, covers the slot in the side of the chamber *d*, and prevents the escape of gas or vapor from the wick tube and chamber *d*, the plate *k*, retains the rod *e*, in a horizontal position as it is raised and lowered.

On the upper end of the cap C, there is placed a copper dome-shaped heater G, which is secured in proper position by a thumb screw *m*. This heater is slotted at its upper end as shown at *n*, and at the center of the slot there is fitted a longitudinal bar *o*, the latter dividing the slot *n*, into two equal longitudinal parts.

The wick tube E, extends some distance above the perforated plate *c*, and on its upper end a collar *p*, is fitted said collar having plates *q*, projecting from it slightly inclined from a horizontal plane. Between the inner ends of the plates *q*, and the collar *p*, there are openings *r*.

On the outer side of the heater G, there are vertical ribs *s*, at the lower ends of which there are projections *t*. These projections *t*, serve as bearings for a heater H, which is

similar to G, in form. The ribs and projections *t*, admit of a space *u*, being between the two heaters and the upper end of heater H, is slotted as shown at *v*, and has a plate *w*, extending upward from each end of it and inclined at an angle of about 45°.

The tube F, admits of all vapor generated in the body A, of the lamp escaping up into the heater G, and to the flame, the perforated plate *c*, preventing the ignition of the vapor below the orifice of the tube.

The plates *q*, of the collar *p*, and the openings *r*, cause a draft to ascend directly upward to the flame and air is also deflected directly against the inner sides of the heater G, and becomes intensely heated so as to supply the flame with warm oxygen. The bar *o*, in the slot *n*, of heater G, serves to divide the flame and prevents it from ascending up through the slot *n*, before the carbon is consumed. Between the two heaters G, H, oxygen passes and becomes highly rarefied and unites with the carbon in the flame insuring perfect combustion.

The plates *w*, at the ends of the slot *v*, of heater H, serve to spread the flame and diminish its height thereby keeping the flame at the point where the heat is most intense. The flame at the slot *n*, in heater G, is merely a gas-generating flame, the illuminating flame having its base at the slot *v*, of heater H.

By this arrangement the flame is supplied with sufficient oxygen without a chimney to support proper combustion and produce a brilliant illuminating flame, and the vapor which passes up through tube F, is consumed without danger of being ignited below the orifice of said tube.

I am aware that dome shaped heaters have been previously used and also that perforated caps have been used in connection with said heaters and I do not claim said parts when separately considered; but

I do claim as new and desire to secure by Letters Patent—

1. The arrangement of the heaters G, H, with a space between them communicating directly with the external air in connection with the collar *p*, and plates *q*, *q*, fitted on the top of the wick tube E, and the perforated cap C, substantially as and for the purpose set forth.

2. In combination with the parts aforesaid, the vapor tube F, placed within the cap C, and adjoining or contiguous to the wick tube as and for the purpose specified.

3. The shaft *e*, provided with the rod *f*, and spurs *g*, which are within the chamber *d*, of the wick tube in connection with the plates *h*, *j*, *k*, and spring *i*, on said shaft all being arranged to operate as and for the purpose set forth.

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Witnesses:
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