J. A. COWLES.
Lantern.

No. 207,716. Patented Sept. 3, 1878.

FIG. I.

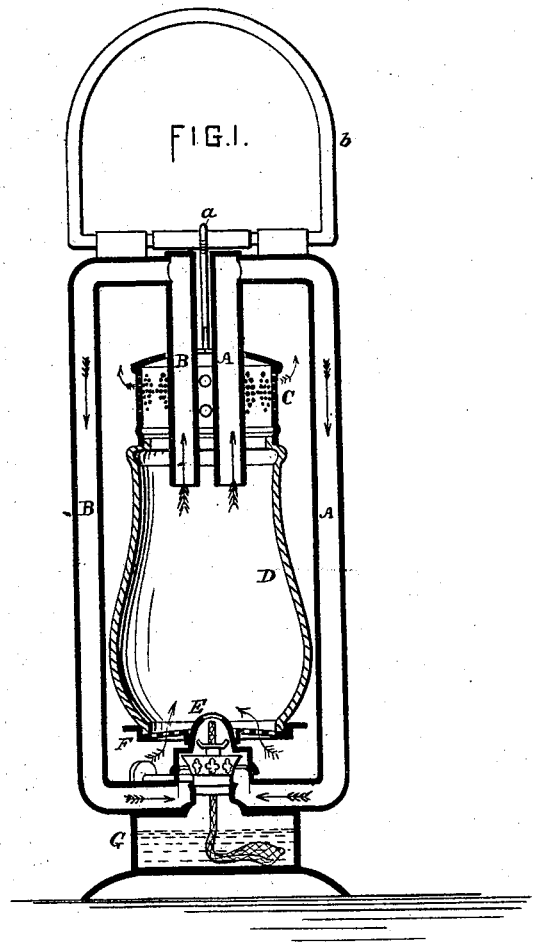
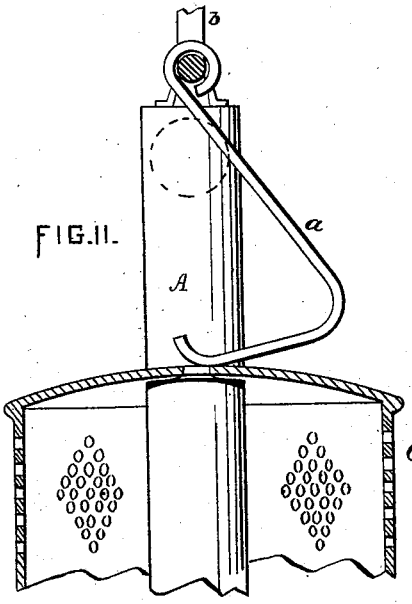


FIG. II.



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UNITED STATES PATENT OFFICE.

JAMES A. COWLES, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN LANTERNS.

Specification forming part of Letters Patent No. **207,716**, dated September 3, 1878; application filed June 25, 1878.

To all whom it may concern:

Be it known that I, JAMES A. COWLES, of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Lanterns, of which this is the specification:

The nature and object of this invention is to construct a lantern having a pipe or pipes leading from above the flame around and down to the burner, dispensing with the ordinary bell or funnel located at the upper end of the pipes, and used for the purpose of conducting and guiding the ascending air into pipes, having found by actual experiment that a better result can be obtained without the bell or funnel than with it.

Figure 1 is a vertical sectional view. Fig. 2 is a side view of the top.

G is the oil-pot, placed upon the ordinary base. At top of the oil-pot is the burner, and surrounding the burner is an air-chamber. The burner is shown at E. The cap of the burner embraces the air-reservoir. A B are pipes leading from the air-reservoir around the burner up to a proper distance above the globe, thence turn toward each other horizontally until they are within the upper end of the globe, when they descend parallel to each other to a proper distance within the upper end of the globe.

F is a perforated diaphragm, located upon the burner, with the outer circular edge turned upward. Upon this diaphragm is located the globe D. C is the cap at the top of the globe. Through this cap the upper ends of the pipes A B descend. This cap has perforations or openings at the side. It may also have perforations at the top, provided they are not so large as to allow a descending current of air sufficiently strong to extinguish the flame.

a, Fig. 2, is a key, which holds in position the cap C. It has a fixed yielding point at either the bail *b* or the pipes above the cap, and the other end swings around against the cap C and holds it in position on the globe, and it also holds the globe in position. At the upper end of the wick-tube is placed a protecting-plate, to prevent the air striking the flame at its base.

The operation of my invention is as follows: The wick is lighted, when the ascending current of heated air enters the ends of the pipe located above the flame, and, having a propelling force, drives the air already within the pipes into the reservoir around the burner, whence it is impinged on to the flame. This forced current of air is aided in its course through the pipes by the combustion at the wick-tube, and also by the cooling of the air in the lower portion of the pipes. Fresh air enters also the globe through the perforated diaphragm F, outside of the burner. Sufficient air enters the globe through the perforated diaphragm F to purify the air entering the ends of the pipes above the flame, so as to make it flame-sustaining.

The cap C is employed to hold in position the globe, and also to prevent a descending current of air. The top of this cap C can be made flat. This cap C contributes in no manner or form to the quantity of air entering the ends of the pipes A B above the flame. A flame of equal brightness can be produced by removing the cap and leaving the top of the globe open. The ends of the pipes above the flame are located within the globe and below its upper end. The object of this is to prevent the ascending air at the instant it enters the pipes from lateral influences. Any construction that will prevent this lateral influence at this instant of time will answer the purpose.

There being no disturbance or lateral influences upon the ascending current of air at the instant it enters the pipes A B above the flame, any position the lantern may be placed in while in use does not diminish or cause the flame to retreat within the cap of the burner, nor is the flame extinguished when the lantern is used in violent winds.

I am aware that lamps and lanterns have been used having pipes leading from a point over the flame around, down to, and connected with, the burner. All of them have at the end of the pipes or pipe over the flame an inverted funnel or a bell, and from this inverted funnel or bell leads the pipe or pipes. This is found in the French patent of P. Tespaz, 1826, Orry, Nerry, and De Corneillie, May 4, 1827, and also in other French patents; also in the English patent granted to John Braithwaite in 1847, and also in other English patents. It is found in patents granted by the United

States, viz., No. 63,480, April 2, 1867; in patents numbered 65,230, 73,012, 89,770, 86,549, granted at various times to John H. Irwin. In all these patents the ends of the pipes over the flame terminate in inverted funnels or bells.

I expressly disclaim any and all matters and things described and claimed in any patents above mentioned. I firmly believe that the method herein described of constructing and arranging the pipes is novel, and works on a different principle from any methods heretofore employed.

I claim—

1. In a lantern, the pipes A B, constructed and arranged substantially as shown and described.

2. The combination of the pipes A B, burner, and globe, substantially as shown and described.

3. The combination of the pipes A B, globe, and perforated diaphragm F, substantially as shown and described.

4. The combination of the pipes A B, burner, diaphragm F, and globe, substantially as shown and described.

5. The combination and arrangement of the key *a* with the bail or pipes and cap C, substantially as and for the purpose shown and described.

JAMES A. COWLES.

Witnesses:
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