L. HENKLE.
Lantern.

No. 226,852. Patented April 27, 1880.

Fig. 4.

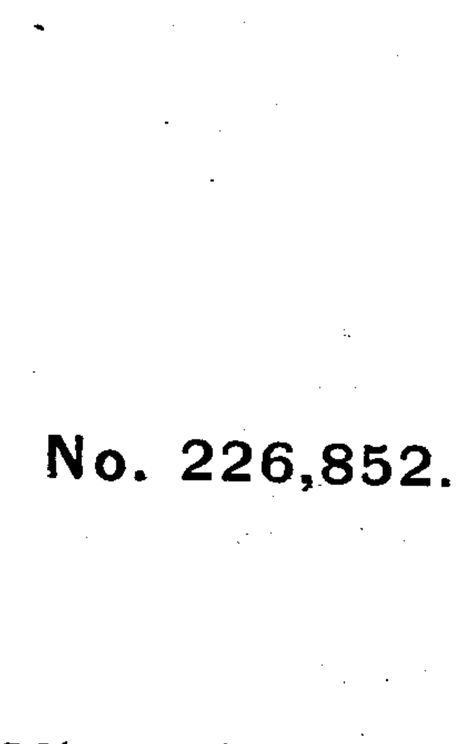


Fig. 1.

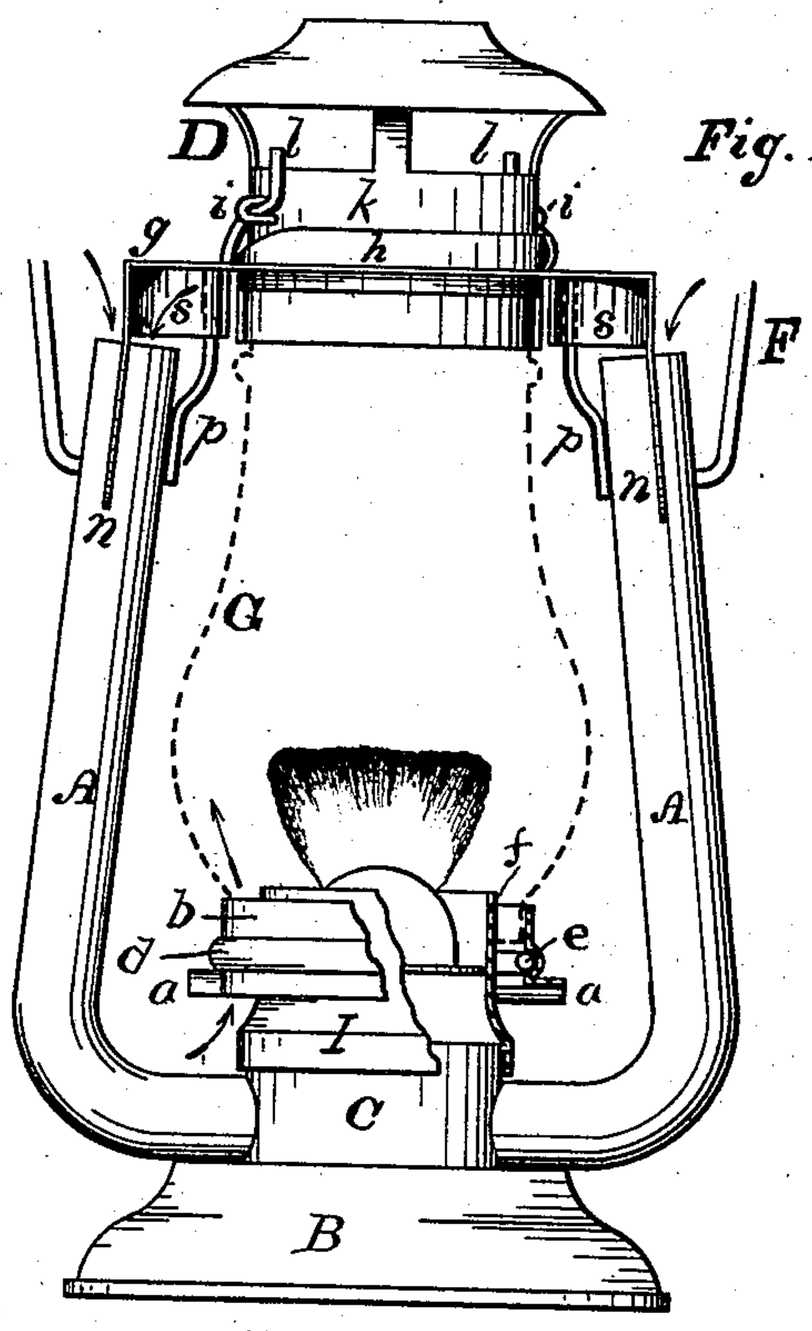


Fig. 2.

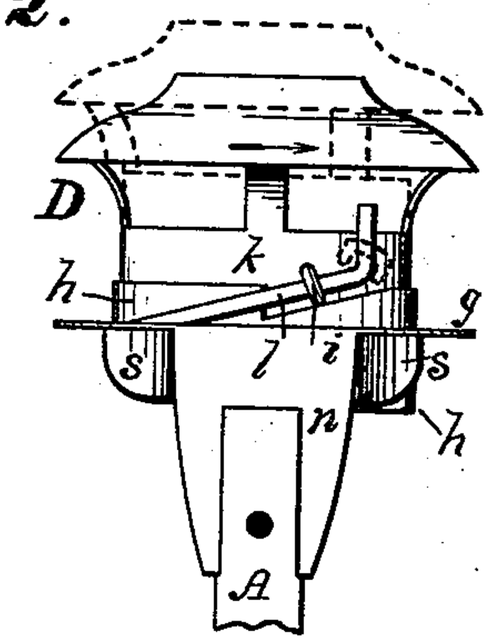


Fig. 3.

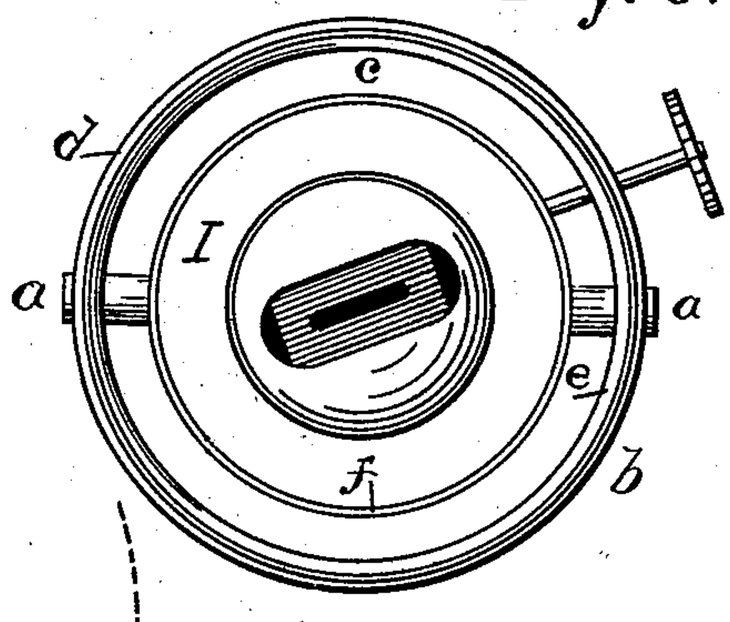
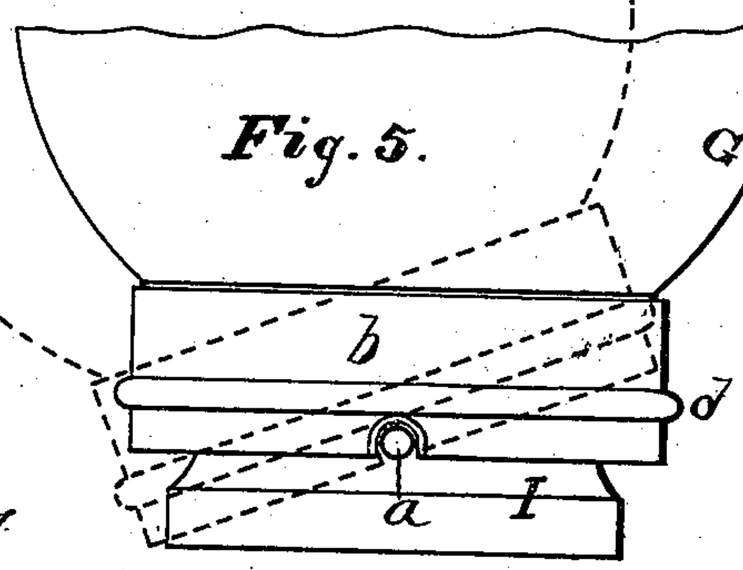


Fig. 5.



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UNITED STATES PATENT OFFICE.

LEONARD HENKLE, OF ROCHESTER, NEW YORK.

LANTERN.

SPECIFICATION forming part of Letters Patent No. 226,852, dated April 27, 1880.

Application filed February 6, 1880.

To all whom it may concern:

Be it known that I, LEONARD HENKLE, of Rochester, in the county of Monroe and State of New York, have invented new and useful Improvements in Lanterns, which improvements are fully set forth in the following specification and accompanying drawings.

The object of my invention is to produce a tilting globe-support to facilitate the replacing or removal of the globe; to provide an annular air-passage at the base of the globe, by means of which to keep the globe cool; to secure and operate the dome by means of spiral inclines and loops of novel construction, and to protect the mouths of the air-supply tubes by new means.

The invention consists, first, in a metallic band surrounding the cone, inclosing an annular space between the two, said band constituting a support for the globe resting upon trunnions extending out from the cone; secondly, in spiral wires oppositely inclined placed on opposite sides of the dome, and connected therewith by loops projecting from the said dome, by means of which the dome is raised or depressed as it is turned one way or the other; and, thirdly, in guards of novel form placed at the mouths of the air-supply tubes, all hereinafter fully described.

In the drawings, Figure 1 is a side elevation of the lantern: Fig. 2, a side elevation of the top portion of the lantern, the view taken at right angles to that of Fig. 1; Fig. 3, a plan of the globe-support and cone; Fig. 4, plan, reduced size, of the horizontal plate over the air-supply tube, partially broken away to uncover parts beneath; and Fig. 5, a side elevation of the globe-support and adjacent parts, viewed as in Fig. 2.

A in the drawings are the tubes for supplying air to the flame; B, the oil-reservoir; C, the chamber beneath the cone; G, the globe, and F the bail, all ordinary parts of similar lanterns. *b* is a band of sheet metal, which receives within its upper edge the bottom of the globe and constitutes a rest or support for the same, said band or globe-support resting upon trunnions *a* projecting horizontally out from the opposite sides of the lower part of the cone, and being in the vertical plane of the tubes A.

The globe-support *b* is larger in diameter than the cone, and, placed concentrically with the latter, forms an annular space, *c*, within which to receive the bottom edge of the globe, and up through which to admit currents of air to the interior of the globe to cut off heat from the flame and keep said globe cool.

The globe-support, being larger than the cone in diameter and resting upon trunnions, is capable of being tilted, as shown in dotted position in Fig. 5, to more conveniently receive the bottom of the globe when the same is being placed within the lantern, or to more freely release the globe when being removed.

The globe-support is formed with a bead, *d*, projecting outward, within which bead, and on the inner side of the globe-support, is fitted and secured a wire ring, *e*, extending completely around, which very much stiffens and strengthens said globe-base and keeps it circular and in shape.

I form the cone-piece or cone I with a band, *f*, reaching upward nearly to the apex of the cone, it being as shown in Fig. 1, but an upward extension of the circular side of the cone above the inward offset of the same. This band forms a guard for the flame, protecting it from blasts of air directed upward through the annular opening *c*, which blasts, on account of said guard, can only, if at all, affect the uppermost part of the flame, which would be harmless, as it is well understood that to extinguish the flame by a transverse current of air the same must be directed across the wick or the lowermost part of the flame. This is effectually prevented by the guard *f*.

The tubes A are surmounted by a horizontal plate, *g*, which has a large central opening to receive a short vertical tube or band, *h*, fixed in said plate and reaching below the same to a plane about even with the tops of said tubes. Said tube *h* has a belt cut from its lower edge about one-half way around, as shown, for the purpose of allowing the top end of the globe to be carried into place. Within the tube *h* is telescoped another tube or band, *k*, which constitutes the lower part of the dome D of the lantern.

l l are two spirally-curved wires secured to the plate *g*, partaking of the curve of the tube *k* as they rise above the plate *g*, and having

their ends turned vertically upward, said wires being near to and parallel with the convex sides of the tube *k* and on opposite sides of the same, as shown. *i i* are short inclined wire staples or loops secured to opposite sides of the tube *k*, through which the spiral wires *l l* respectively pass.

It will be understood from the construction of the parts that were the dome rotated in the direction indicated by the arrow in Fig. 2 it would be raised, and if rotated in the opposite direction it would be depressed. By being raised and exposing the opening in the lower edge of the tube *h*, above mentioned, the top end of the globe may be swung in or out, as the case may be, the globe-support *b* rocking upon its trunnions *a*, as above described.

The dome may be entirely removed from the lantern by rotating it until the loops *i i* reach the vertical parts of the wires *l l* and then raising it directly off.

The tapering ends *n* of the plate *g* are bent vertically downward and bifurcated to receive the upper ends of the tubes A A, said plate covering about two-thirds of the end of each tube, as shown in Fig. 4. Beneath the plate, and partly over the ends of the tubes, respectively, are two curved wing-plates, *s s*, secured to said plate *g*, and reaching thence downward to or near the tops of the said tubes. These wing-plates, in common with the plate *g* and its down-turned ends *n n*, act as shields for the respective mouths of the tubes A A by preventing horizontal currents of air from passing across the same with sufficient violence to extinguish the flame by producing an upward draft through the said tubes. I find by experiment that to effectually prevent these upward drafts the said currents of air must not only be broken immediately over the ends of the tubes, but also at some distance laterally around the same. I therefore make the shields *n n* broader than the tubes, as shown in Fig. 2, and widely extend the wing-plates *s s*, so that their outer extremities shall outreach laterally the sides of said shields *n n*, to catch and direct down the tubes a limited quantity of air. By means of this arrangement of the parts the mouths of the tubes are simultaneously protected and sufficiently supplied with air.

If the wind blows horizontally across the mouths of the tubes in a direction directly toward or from the observer, viewing the lantern as appearing in Fig. 1, the upward draft upon the air contained in the tubes caused by so much of said wind as passes across those portions of the tubes uncovered by the plate *g*, or outside of the shields *n n*, will be fed or compensated for by air passing into the mouths of the tubes inside of said shields *n n* and darting under the edges of the same and upward on the outside thereof, thus preventing an upward current in the tubes productive of harm. If the wind impinges squarely against the outer face of either of the shields *n*, (see Fig, 2,) its force at the mouth of the tube assailed will be broken by said shield, and the exposed ends of the wings *s s* will catch a portion of the onward-moving air and cause it to whirl or eddy within the shield and over the mouth of the tube, down which it may readily flow to supply the flame. If the wind comes from any other horizontal direction, it will be arrested at the mouths of the tubes by means of the peculiar construction and arrangement of the parts *g*, *n*, and *s*, and permitted to flow downward in said tubes at a moderate rate; or if it descend directly downward, or if the lantern be suddenly jerked upward, the plate *g* covering so large a proportion of the tubes will prevent any undue blast down through the same.

I employ stiffening ties or braces *p p* to better secure the tubes A A to the plate *g*, these ties being fastened to the respective tubes and said plate.

I claim as my invention—

1. The cone-piece I, provided with trunnions *a a* and a band or globe-support, *b*, the latter resting upon said trunnions and capable of being tilted thereon, substantially as set forth.

2. A band, *h*, formed substantially as shown and described, and the within fitting band or tube *k*, in combination with spirals *l l*, loops *i i*, and plate *g*, substantially as and for the purpose set forth.

3. In combination with the tubes A A and horizontal plate *g*, the shields *n n* for said tubes, formed to extend laterally from the sides of the same, and the laterally-extended curved shields *s s*, substantially as described.

LEONARD HENKLE.

Witnesses:

E. B. WHITMORE,

M. D. PHILLIPS.