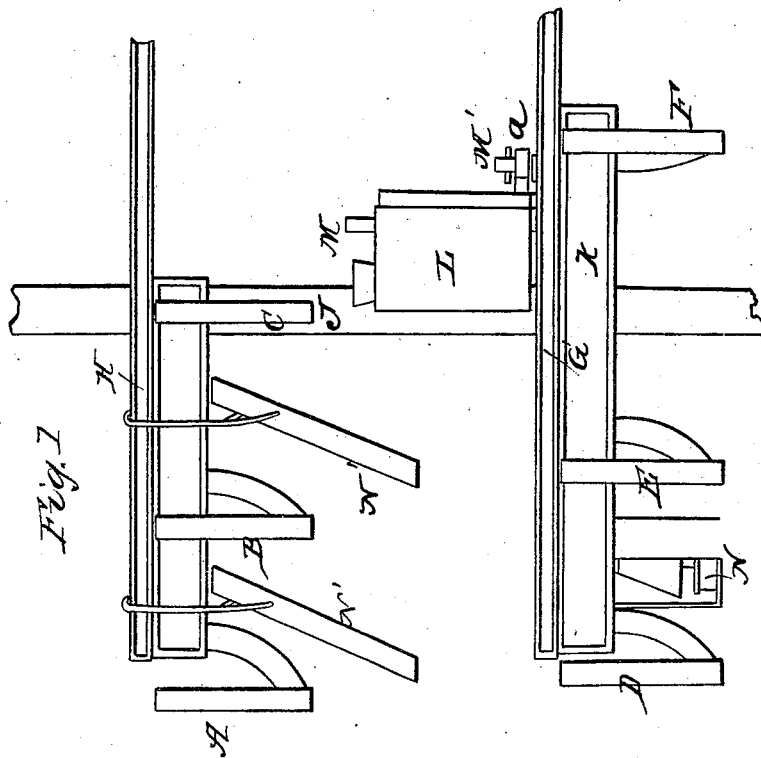
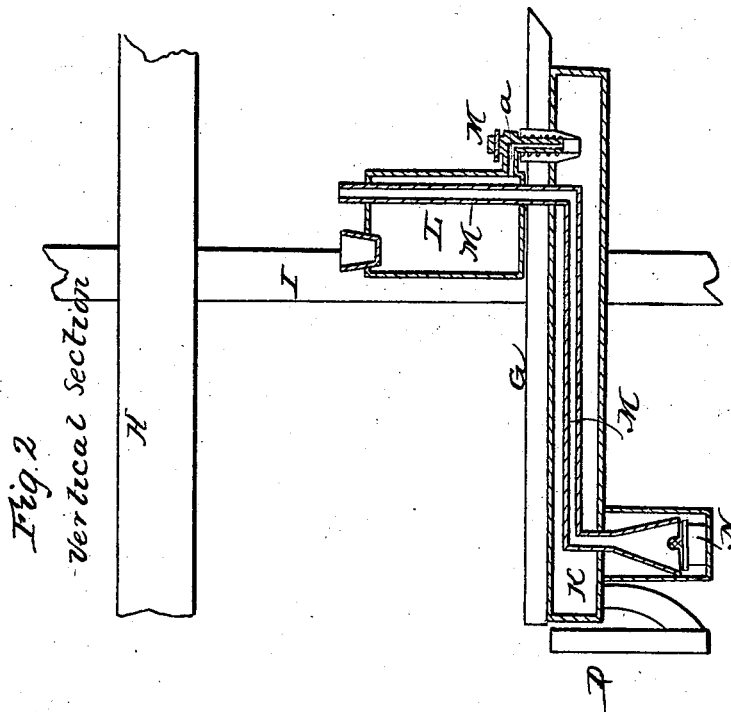


C. WHEELER.

Lamp.

No. 4,454.

Patented April 11, 1846.



# UNITED STATES PATENT OFFICE.

CHARLES WHEELER, OF ROCKPORT, MASSACHUSETTS.

## LIGHT-HOUSE LAMP.

Specification of Letters Patent No. 4,454, dated April 11, 1846.

To all whom it may concern:

Be it known that I, CHARLES WHEELER, of Thatchers Island Light-House, near Rockport, in the State of Massachusetts, have invented certain new and useful Improvements in Lamps or Apparatus for Light-Houses, and that the following description of the same, taken in connection with the accompanying drawings thereof, constitute my specification.

Figure 1, of the drawings above mentioned represents a front elevation of a series of lights as arranged in a light-house. Fig. 2, is a vertical section taken through one of the lamp fountains and reservoir under the same.

A, B, C, D, E, F, Fig. 1 denote a series of burners supported by two circular horizontal rims or stands, G, H, one of which is placed at a suitable height above the other; and both are sustained in position by a central and vertical spindle or shaft I, or other convenient means. The oil reservoir K of the lower burners consists of a somewhat curved and oblong vessel, placed directly under the circular rim G, to which it is fastened, the feeding tubes of the lower burners entering into the said reservoir. On the upper side of the lower circular rim G, and over each oil reservoir thereof, a cylindrical or other proper shaped vessel or fountain L, is placed; the same being connected with the oil reservoir by means of a stop cock M', which has a tube *a*, fitted upon its nose or adjutage by means of a screw, or any other suitable contrivance which will permit of its elevation and depression; the object of the same being to raise, or depress, the discharging orifice or adjutage of the stop cock; so as to regulate the level of the surface of the oil in the reservoir, with respect to the burning surface or part of the wick upon which the flame acts. As the oil generally used in lighthouses varies in quality, thereby increasing or decreasing more or less the capillary attraction of the wick, or, its power to elevate the requisite quantity of the combustible fluid to the flame, it becomes necessary, that the altitude of the surface of the oil in the reservoir K, should be capable of adjustment to the burning part of the wick. As the reservoir K, is an air tight or closed vessel, the oil in the auxiliary fountain flows down through the connecting stop cock and fills the reservoir up to the level of the bottom of the discharg-

ing tube of the stop cock. As the oil is consumed more will flow down from the fountain to supply its place. The reservoir K, and fountain L, have a long tube M, See Fig. 2 extending through them. Its lower end opens by a tunnel shaped mouth over a small lamp N, suitably supported underneath one extremity of the oil reservoir. The upper end of the tube passes out of the top of the fountain, and either opens directly into the atmosphere, or it is carried up underneath the bottom of one of the upper reservoirs and terminates at a short distance therefrom. The heat from the auxiliary lamp passing into the horizontal and vertical tube M, is thereby communicated to the oil in the reservoir and fountain, and thus keeps the same in a sufficiently fluid and heated state during the winter. Each of the upper oil reservoirs and fountains, may be similarly provided with a tube and lamp, if deemed necessary; but as this will seldom be required, in lieu thereof, the chimney of each of the lower burners may terminate at top in a metallic tube N', whose upper end shall abut or nearly abut against the underside of the upper oil reservoir; or, such a tube may be simply suspended near the chimney and under the reservoir. The heat escaping from the glass chimney will be conveyed by the said tube directly against the underside of the oil reservoir, and will thus warm the oil therein. Each of the fountains L, has a glass tube or gage suitably affixed to its side; the bottom of the tube opening into the lower part of the fountain. A suitable series of proper graduations upon the tube will suffice to exhibit the exact amount of oil consumed during any given time. By warming the oil in the above manner I am enabled to dispense with stoves or heaters in the lanterns of a light house. As it is well known they are very expensive on account of the quantity of fuel required to be consumed to prevent the formation and freezing upon the glass windows of condensed vapors that greatly obstruct the light from the lantern. Besides the stoves produce more or less dust, or ashes, which accumulate upon the parabolic mirrors and lighting apparatus to such an extent as to require constant attention of the light keeper to remove the same.

In order to prevent in winter the formation and accumulation on the glasses and windows of frozen condensed vapors, it be-

comes necessary that the temperature of the interior of the lantern should be the same as that of the external atmosphere. But as in order to prevent congelation of the oil a  
5 stove or heating apparatus has been found necessary to the lantern, the great evil above mentioned derived from condensed vapors is attendant thereon. As the oil itself in  
10 my improved apparatus is warmed by the lamp, no stove becomes requisite, and therefore, a small opening in the lantern to admit the free communication of the interior and external air, will keep the temperature within, the same as without the lantern.

I do not claim merely the use of an auxiliary lamp for keeping the oil fluid in cold weather, but

I claim—

The arrangement of said lamp and its heating tubes in combination with the above  
20 described apparatus or system of light house lamps, substantially in the manner and for the purpose set forth in the foregoing specification.

CHARLES WHEELER.

Witnesses:

L. S. WILLIAMS,  
R. ROSTAND.