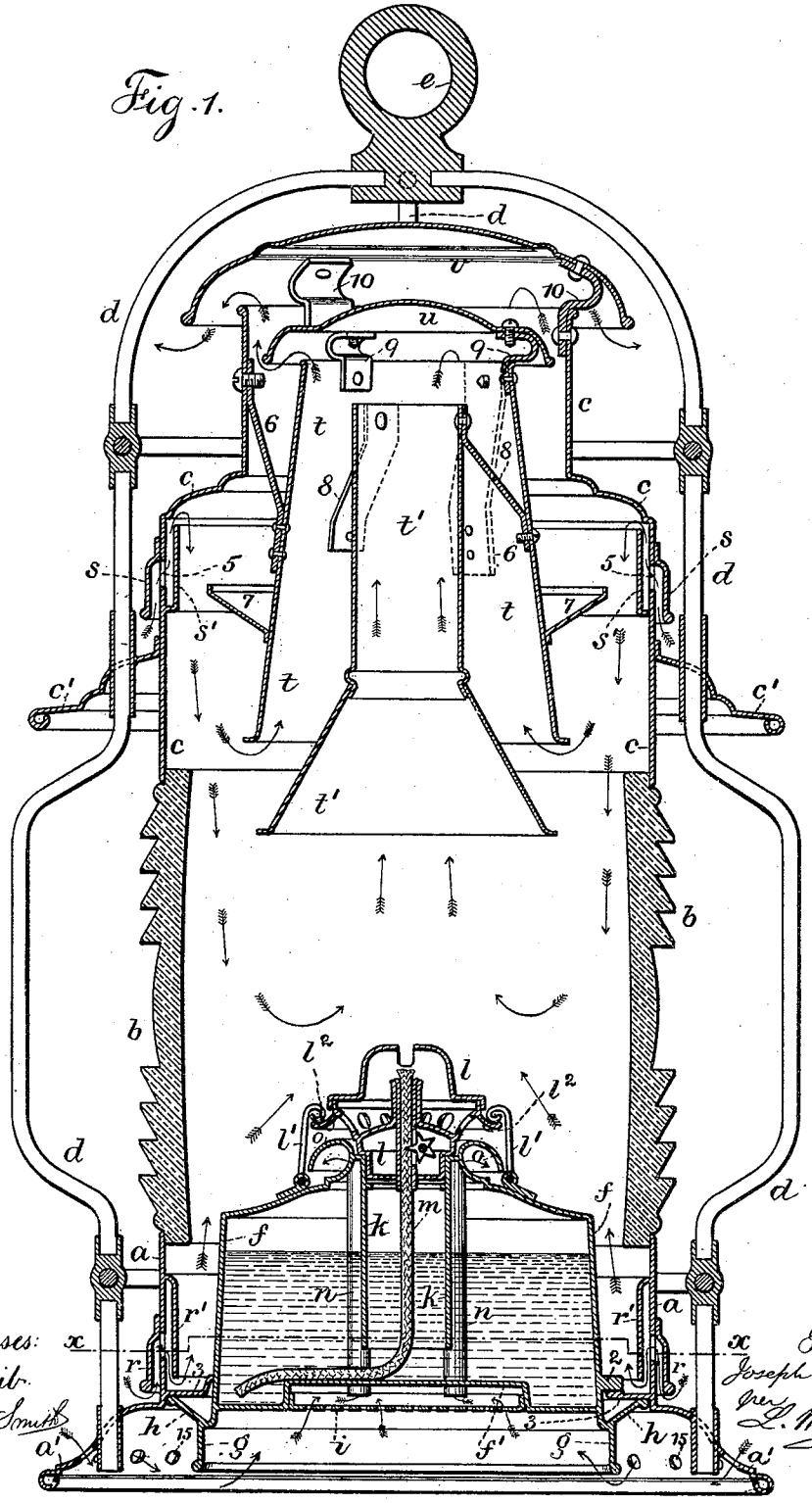
(No Model.) 2 Sheets—Sheet 1.

J. FUNCK.

LANTERN.

No. 493,495. Patented Mar. 14, 1893.

Fig. 1.



THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

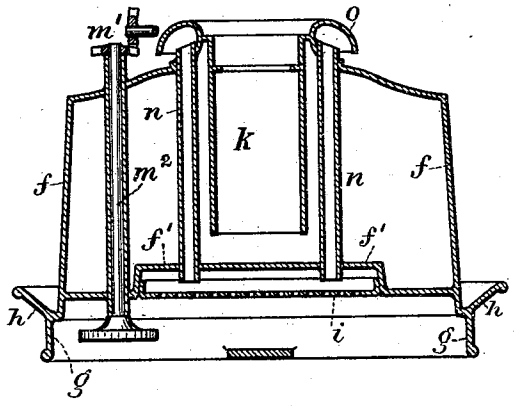
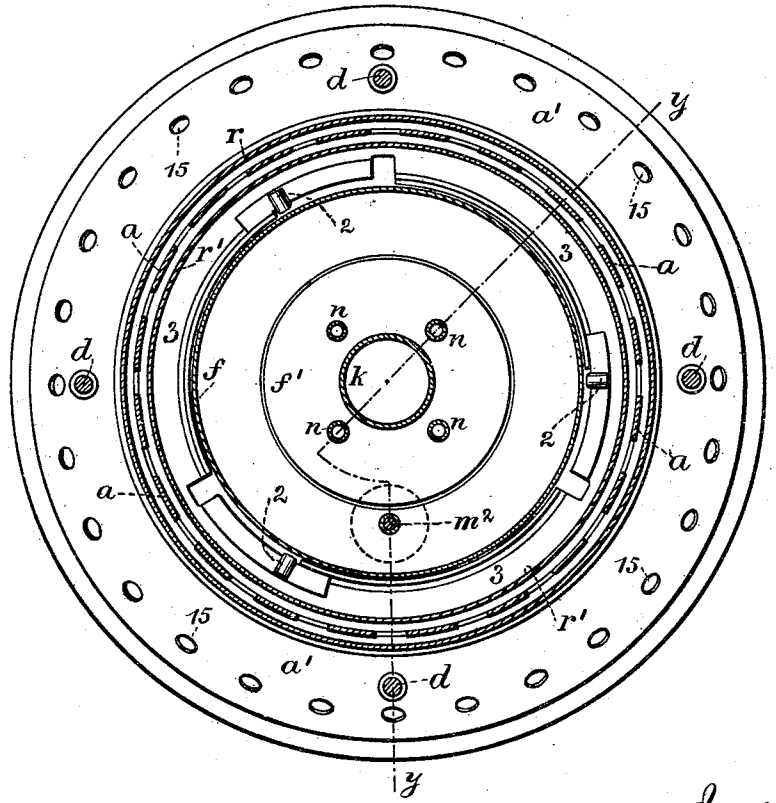


Fig. 2.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOSEPH FUNCK, OF NEW BRIGHTON, NEW YORK.

LANTERN.

SPECIFICATION forming part of Letters Patent No. 493,495, dated March 14, 1893.

Application filed March 28, 1892. Serial No. 426,666. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH FUNCK, a citizen of the United States, residing at New Brighton, in the county of Richmond and State of New York, have invented a new and useful Improvement in Lanterns, of which the following is a specification.

My invention relates especially to such lanterns as are used for marine purposes, to be placed upon piers, buoys, vessels, and in other exposed places for signals. Heretofore it has been difficult to keep such lanterns burning, especially for all night periods, because of the movement to which they are frequently subjected and because of the violence of the wind.

The object of my invention is to construct a lantern that will burn under all conditions until the oil is exhausted and not be extinguished, thus overcoming the before named objections.

In carrying out my invention I employ a removable oil fount with a central oil and wick chamber and vertically disposed air tubes passing through the oil fount air chambers and a divisional plate of perforated metal and the upper part of the fount adjacent to the burner is provided with a downwardly turned air deflector disposed over the upper ends of the vertical air tubes. The lower and upper shells of the lantern are perforated for the entrance of air the force of which at the base of the oil fount is broken by protecting outer and inner plates so disposed as to leave channels for conveying and directing the ingress of air. I also provide conical tapering tubes within the upper part of the lantern and domes or hoods for the escape of the products of combustion without risk of air blowing into the top of the lantern.

In the drawings Figure 1 is a vertical section of my improved lantern. Fig. 2 is a sectional plan at the line $x\ x$ of Fig. 1, and Fig. 3 is a vertical section at the line $y\ y$ of Fig. 2.

The main portion of my lantern is composed of the lower shell a and flaring base a', the cylindrical lens glass b, the upper shell c, deflector c' and the wire framing or cage d extending vertically and horizontally and secured to the shells, and the upper knob e. All these parts are of well known construction and do not require further description.

The removable oil fount f is made with a flaring imperforate base g and circular inclined flange h, and two or more pins 2, and the lower shell is made with a notched plate 3. The rib h comes up beneath the plate 3 into the angle formed by the junction of the shell a and plate 3 and the pins 2 pass through the notches in the plate 3 and over the plate 3 in inserting the fount f to place, a bayonet locking device being thus formed and the air excluded at the periphery of the rib h. The bottom of the oil fount is recessed at f' to form an air chamber and a perforated plate of metal i is inserted and secured therein so as to be flush with the bottom of the oil fount, and the flaring base g forms an air chamber below the plate i and the base a' of the lantern shell is perforated at 15 for the ingress of air which passes down beneath the lower edge of the base g.

The oil fount f has a central oil and wick chamber k, extending down from the upper part at the burner to near the bottom of the fount. This chamber k divides the body of oil and prevents the splashing of the oil at the junction of the burner l and fount f where oil would be likely to pass out as the result of concussion vibration or swaying. The burner l has a lower portion sitting within the chamber k and is secured in place on the fount preferably by wire clamps l' which are sprung over the flange l^2, and the wick m is operated by gear wheels m' or pinions at right angles and by a rod m^2 passing down through a tube in the oil fount and having a thumb wheel or button at the lower end beneath the fount so that the flame can be regulated without removing the fount. Air tubes n extend through the air fount outside the chamber k, their lower ends opening through the bottom f' and their upper ends through the top of the fount beneath the outwardly turned air deflector o, so that air enters the perforated base a', passes beneath the lower edge of the base g, through the perforated plate i and air tubes n and beneath the deflector o escaping beneath its lower edge and rising to the flame.

The lower shell a of the lantern is perforated circumferentially at the section line $x\ x$, and there is an outer hanging shield plate r and inner hanging shield plate r' connected to the shell a above the perforations therein

and extending below these perforations thus forming circuitous channels for the ingress of air into the lower part of the lantern. The lower edge of the plate r' must be sufficiently above the plate 3 for free ingress of air. The lower edge of the shield plate r preferably extends below the lower edge of the shield plate r' and currents of air cannot blow in to make the flame unsteady. The upper shell c of the lantern is perforated circumferentially at 5 and there is an outer shield plate s connected to the shell c above the perforations and extending below said openings, and an inner shield plate s' is connected to the shell c below the openings 5 and said shield plate extends above said openings and by this means air is admitted into the top of the lantern, but direct currents cannot blow in.

Within the top of the lantern I employ a conical or tapering tube t and a chimney t' with a flaring lower end and domes or hoods u v. The outer tube t is connected to and suspended from the shell c by arms 6 and around the tube t is a deflector 7 of inverted conoidal form and fastened to this tube t.

Within the tube t this deflector 7 prevents downward drafts of air blowing in under the dome v and compels the air entering by the openings 5 to pass down close within the shell c. The conical deflecting tube t' is connected to and suspended from the tube t by arms 8.

The dome or hood u is above the tube t and connected to it by bracket arms 9, and the dome or hood v is over the upper case or shell c and is connected to it by arms 10, there being air spaces between the domes and shell or tube respectively.

The products of combustion pass up the tube or chimney t', over the top of the tube t and around beneath the edge of the dome u, over the upper edge of the shell c, beneath the dome v and escape into the atmosphere and the wind is prevented from blowing in by the dome. The air that enters the openings 5 passes between the shield plates s s' and over the top of the plate s' and being cooler than the heated air in the center of the lantern it passes down in the direction of the arrows to commingle with the air passing to the flame. The outside of the lantern is thus kept cool and abundant air is supplied to the flame, and the flame is protected from the direct action of currents of air. There is a slight upward movement of heated air between the tubes t' and t, and the tube t acts as a shield to prevent the radiation of heat from the tube or chimney t'.

I claim as my invention—

1. In a lantern the combination with a removable oil fount and burner, of a horizontally disposed perforated plate connected to the base of the oil fount and an air chamber between the perforated plate and the bottom plate of the fount, air tubes opening into this air chamber and passing entirely through the fount, a curved or turned over deflector at the upper part of the fount and surrounding the base of the burner and beneath which the air tubes open for the passage and outward deflection of air before it passes up to the flame, substantially as specified.

2. In a lantern the combination with a perforated base a', of the oil fount, its imperforate flaring base g extending down below the perforations in the base a', the recessed bottom f', the perforated plate i, vertical air tubes n extending through the top and bottom of the oil fount, and the circumferential deflecting plate o, substantially as set forth.

3. In a lantern the combination with a perforated base a', the shell a and notched plate 3, of the removable oil fount f, its locking pin 2, the flaring base g and circular conical flange h, the edge of the flange h fitting in the angle formed by the plate 3 and shell a, whereby ingress of air between the fount and shell of the lantern is prevented, substantially as set forth.

4. In a lantern the combination with the oil fount, burner and glass b, of the base a', the lower shell a with perforations around the same, the outer and inner shield plates r r' secured to opposite surfaces of the shell a and extending over such perforations with passages between the shield plates and through the perforations for the ingress of air to the flame, substantially as specified.

5. In a lantern the combination with the oil fount and burner, of the upper shell c with perforations around the same and the shield plates s s', the tubes t t', the domes or hoods u v over the tube t and shell respectively, the brackets and arms by which the parts are connected to and supported by the shell c and the deflector 7 around the tube t, whereby the products of combustion escape by the tube t and air through the openings 5 in the shell c is allowed to pass in between the case and the tube t, and the entrance of air beneath the dome v is prevented, substantially as set forth.

Signed by me this 21st day of March, A. D. 1892.

JOSEPH FUNCK.

Witnesses:
GEO. T. PINCKNEY,
HAROLD SERRELL.