(No Model.)

2 Sheets—Sheet 1.

T. PARISH.

LANTERN.

No. 362,776. Patented May 10, 1887.

Fig. 1.

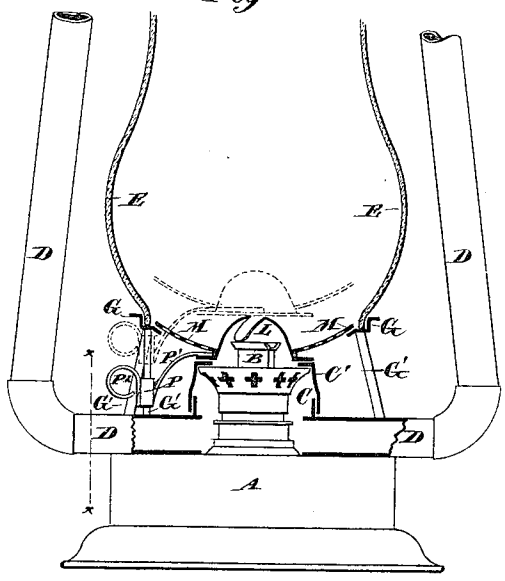


Fig. 2.

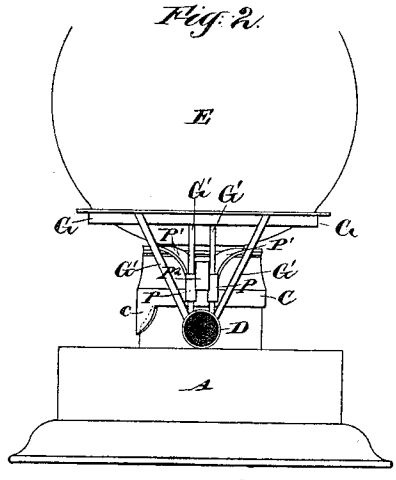
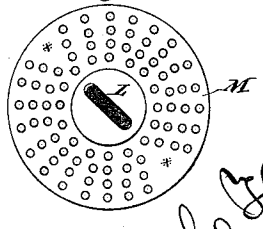


Fig. 3.



Witnesses:
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F. A. Richmond

Inventor:
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by his attorney
Thomas Dyer Stetson

(No Model.) 2 Sheets—Sheet 2.

T. PARISH.

LANTERN.

No. 362,776. Patented May 10, 1887.

Fig. 4.

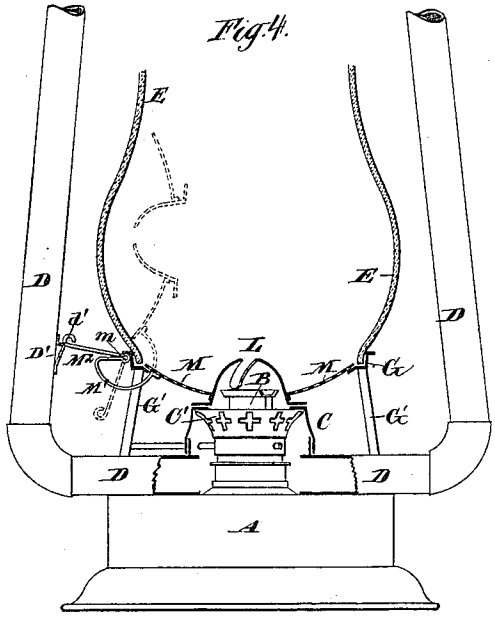


Fig. 5.

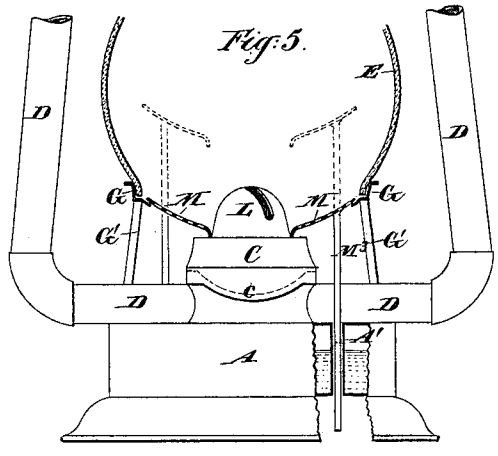
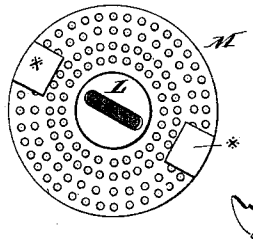


Fig. 6.



Witnesses:
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F. A. Boyle

Inventor:
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by his attorney
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UNITED STATES PATENT OFFICE.

THOMAS PARISH, OF NEWARK, NEW JERSEY.

LANTERN.

SPECIFICATION forming part of Letters Patent No. 362,776, dated May 10, 1887.

Application filed February 19, 1886. Serial No. 192,538. (No model.)

To all whom it may concern:

Be it known that I, THOMAS PARISH, of Newark, in the county of Essex and State of New Jersey, have invented a certain new and useful Improvement in Lanterns, of which the following is a specification.

The lantern is intended for kerosene, and may have the ordinary slotted dome-shaped burner, technically termed the "cone." The invention relates to provisions for obtaining access to the wick for lighting, &c. It is important to provide facilities for thrusting in a lighted match to reach the wick.

I have in my experiments used what is known as the "tubular lantern," a construction having two tubes which conduct a current of air downward exterior to the globe of the lantern. One of those tubes serves to support a part of the mechanism; but other means might be provided.

My improved lantern, in common with many others, has a foraminous plate, which may be either plane or more or less dished, covering the annular space between the burner and the base of the globe. The air from the exterior has free access to the space under this plate and rises into the globe to supply the flame, restrained by the small amount of area offered by the holes in the plate. Air is admitted through other passages into the interior of the cone at a higher pressure, and such air acting in the ordinary manner within the cone makes a vigorous draft, and a large and bright flame is produced through the slot. I have devised an arrangement by which the foraminous plate is lifted without necessitating any movement of the globe. Such lifting allows sufficient access to the wick-tube, and is simpler and safer than any means before known to me.

In what I esteem the most complete form of the invention, the plate is lifted and lowered bodily without turning. Another mode of operation is by turning it on a hinge, so that when raised it stands on its edge on one side of the interior of the globe. This allows the thrusting of a finger and thumb up into the interior of the globe from any side, except that on which the hinge is located. When this hinged construction is adopted, I provide a spring-catch, which, after lighting is effected and the plate is brought down horizontally again, tends to hold it firmly in the proper closed position.

The accompanying drawings form a part of this specification, and represent what I consider the best means of carrying out the invention.

Figure 1 is a central vertical section, the strong lines showing the plate down in the position to allow the lantern to be used, and the dotted lines showing the plate up in the position to allow the lantern to be lighted. Fig. 2 is a vertical section on the line $x\,x$ in Fig. 1, showing the plate down. Fig. 3 is a plan view of the plate detached. Fig. 4 is a central vertical section showing a modification. Fig. 5 is a corresponding section showing another modification. Fig. 6 is a plan view showing another method of constructing the plate.

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

A is the body of the lamp; B, the ordinary wick-tube and wick; C, the ordinary air-tight case a little exterior to the wick-tube, and C′ a perforated shield having larger perforations than the foraminous plate, to be described farther on, so that it offers less resistance to the air. This shield performs its ordinary function of distributing the air evenly as it flows upward in the casing C. The tubes D D supply air to the interior of the cone.

E is the globe, and G a ring adapted to receive and support the base of the globe. The ring G is stiffly supported at a proper height above the body A of the lamp by rigid braces G′ G′. These should be so located that there will be ample access to the cone to allow lighting when the horizontal plate is lifted.

M is the horizontal plate perforated finely over a large portion of its surface. It carries in the center a dome or cone, L. This horizontal foraminous plate is of somewhat less diameter than the interior of the base of the globe E.

Referring to Figs. 1, 2, and 3, two of the braces G′ are upright and serve quadruple functions—first, as braces to support the ring G and its connections, and strongly connect these parts of the structure; second, as means for retaining the plate M and allowing it to be raised and lowered; third, as means for engaging short sleeves, and thereby holding the plate

firmly up or down, and, fourth, as means for preventing the plate from turning laterally. P P are sleeves fitting easily on these upright and parallel braces. P′ P′ are arms soldered or otherwise firmly attached to the sleeves P, and to a downward extension from the plate M. An arm, P^2, extends outward beyond P and serves as a handle to operate by.

To light the lantern the plate M is lifted by the handle P^2, the sleeves P sliding up and guiding the parts. While the plate M and the connected cone L are elevated ready access is obtained to the wick, and it may be lighted by introducing a match in the obvious manner. Then the handle P^2 and its connections are again depressed, and the plate M is restored to its position for use, serving as a finely-perforated horizontal screen across the base of the globe, letting the air up to supply the flame under a slight restraint, to which the air rising in the interior of the cone is not subject, and thus insuring a strong and brilliant flame.

The sleeves P are so short that when the device is pushed down with some force by the attendant operating through the ring or handle P^2, so as to urge the sleeves P down to the fullest extent to which they can well be depressed, the resistance offered by the contact of the foraminous plate M and its attachments, with their seat or seats, exerts a leverage on the short sleeves P, which causes them to bind and to hold the parts firmly down. When it is desired to raise the parts, the attendant by lifting on the handle P^2 relieves it, and the whole slides up bodily. The shortness of the sleeves P here performs another function in allowing the slight gravity of the plate M and its attachments, including the cone L, to bind the parts in the elevated position. They will remain there suspended until the attendant again presses down on the handle.

Ordinarily when the parts are new the sleeves P will fit tightly enough on the braces G′ to hold with some force independent of the action described as due to the shortness of the sleeves; but as the parts wear and become loose such force becomes unreliable. The binding action due to the skewed position of the short sleeves when they are pressed forcibly down, and to the skewed position in the opposite direction due to the gravity when they are required to suspend the parts in the elevated position, is a force which does not diminish with wear. So long as the parts are capable of working at all, this mode of locking the plate down and of holding it up will serve reliably.

By the employment of the two parallel braces G′ and the two short sleeves P, mounted thereon and rigidly attached to the plate M by the arm P′, and operated by the handle P^2, I render available the action above described, and also support the plate M against being laterally swung out of place when in its elevated position. The guidance due to the two braces insures that it rises and sinks in the correct position. The elasticity of the arm P′ allows the parts to adapt themselves to any imperfection of the workmanship, and insures that when the handle P^2 is pressed down the plate M makes a tight bearing on the ring G at the base of the globe.

In the modification shown in Fig. 4 the plate is connected by a bent strip of metal, M′, to an axis or hinge, *m*, carried on the fixed ring G. A portion, *, near each end of the slot in the cone is tight, or without perforations.

An arm, M^2, serves as a lever to be operated by the attendant, by which to control the position of the plate M. On depressing this lever M^2 the plate M may be elevated into the position shown in dotted lines. D′ is a spring, soldered or otherwise attached to one of tubes D, and provided with a projection, *d′*, which presses against the end of the arm M^2, and by holding the latter up presses the plate M down firmly upon its seat when the lantern is in use.

With either form of the mechanism the globe may be equipped with any ordinary or suitable provisions (not represented) for allowing its removal when necessary for cleaning or repairs.

My invention allows access to the wick for examination and lighting without necessitating the removal or any change of the condition of the globe.

When the lantern is in use, the plate M bears down gently but sufficiently on the fixed ring G, forming an approximately-tight joint all around. When it is desired to obtain access to the wick, the arm M^2 is depressed, and the entire plate M, with the cone L, is raised. In this condition the match is easily applied to light the wick, after which the plate M is again depressed, and the lantern is properly conditioned for successful working for any required period.

My lantern may be shaken and handled in all respects in the ordinary manner.

Further modifications may be made without departing from the principle or sacrificing the advantages of the invention. It is not necessary that the cone L be attached to the plate M and lifted with it. Substantially the same effect may be attained by making the cone a part of the stationary work below and providing the plate M with a sufficient hole to receive the cone, and to fit approximately thereto. Fig. 5 shows in section such a construction. This may be preferred in some cases where a lantern is to be lighted in the open air. The wick will be somewhat better protected from wind at the period of lighting than in the form first set forth. In this modification, Fig. 5, the plate M is guided by stout wires M^3, which play through tubes A′, provided in the body or oil-cup A of the lantern. To light this lantern the plate M is lifted by the direct application of the fingers or otherwise, and so soon as the lighting is properly effected it descends by gravity, aided or not by force applied to the wires M^3.

Various other forms may be used successfully. I believe that any ordinary form of burner may be used.

The width of the fixed ring G may be varied. It is important that the plate M be smaller than the interior of the globe at the bottom, so that it may readily be raised within the latter. It is convenient to allow this plate M to rest on the inner edge of the fixed ring G; but this is not essential. It is sufficient that an approximately-tight joint is made when the lantern has been lighted and is adjusted for use. It is essential to some degree of success that the portions * * be made non-foraminous; but the whole surface between the cone L and the periphery may be uniformly punctured, and the lantern will serve, but not so well.

The spring-catch D′ *d*′ may be dispensed with. I prefer the whole, as shown.

To facilitate the introduction and removal of the burner, I cut down the rim of the casing C on one side, as indicated at *c* in Fig. 2. I make the upper and removable portion of the casing correspondingly deeper on that side to cover that point.

The unperforated portions * * of the plate M may be produced by soldering sufficiently-large pieces of unperforated sheet metal in the right position on the upper or under face of an evenly-perforated plate. Fig. 6 shows the plate M so made.

I have shown the invention as applied in each instance to a tubular lantern, and esteem such eminently adapted for its use, but do not confine the invention thereto. A mechanical blower or other means may be employed, instead of bringing down a current from above, to give the desired increase of pressure within the cone L over that exterior to and above it to adapt the lantern to burn volatile fluids.

It is not necessary to the enjoyment of some portions of the advantages of the invention that there be two braces, G′ G′, and two short sleeves, P P, adapted to slide up and down on each and to bind and hold the parts in the elevated or in the depressed position. Two are better, but one will serve. The handles P^2 P^2 may obviously be dispensed with. I prefer the whole, as shown in Figs. 1, 2, and 3.

I claim as my invention—

1. The combination, with the lamp-body A, globe E, and fixed bottom ring, G, for the latter, of the movable perforated plate M, lying above said ring and adapted to be raised within the globe, all arranged for joint operation, as herein specified.

2. The combination, with a lantern, of a fixed ring, G, a brace, G′, serving as a guide for the foraminous plate M, and a short sleeve, P, attached to said plate and embracing said guide, arranged to perform the double functions of guiding the movement and of holding the plate at the end of its movement, substantially as herein specified.

3. The lamp-body A, globe E, ring G, and foraminous plate M, in combination with each other, and with two parallel braces, G′ G′, two short sleeves, P P, and connections, as P′ P′, arranged to perform the triple functions of guiding the vertical movement, locking the plate up or down, and preventing the plate from swinging laterally, all substantially as herein specified.

In testimony whereof I have hereunto set my hand at New York city, New York, this 2d day of February, 1886, in the presence of two subscribing witnesses.

THOS. PARISH.

Witnesses:
F. A. BOYLE,
MANIERRE ELLISON.