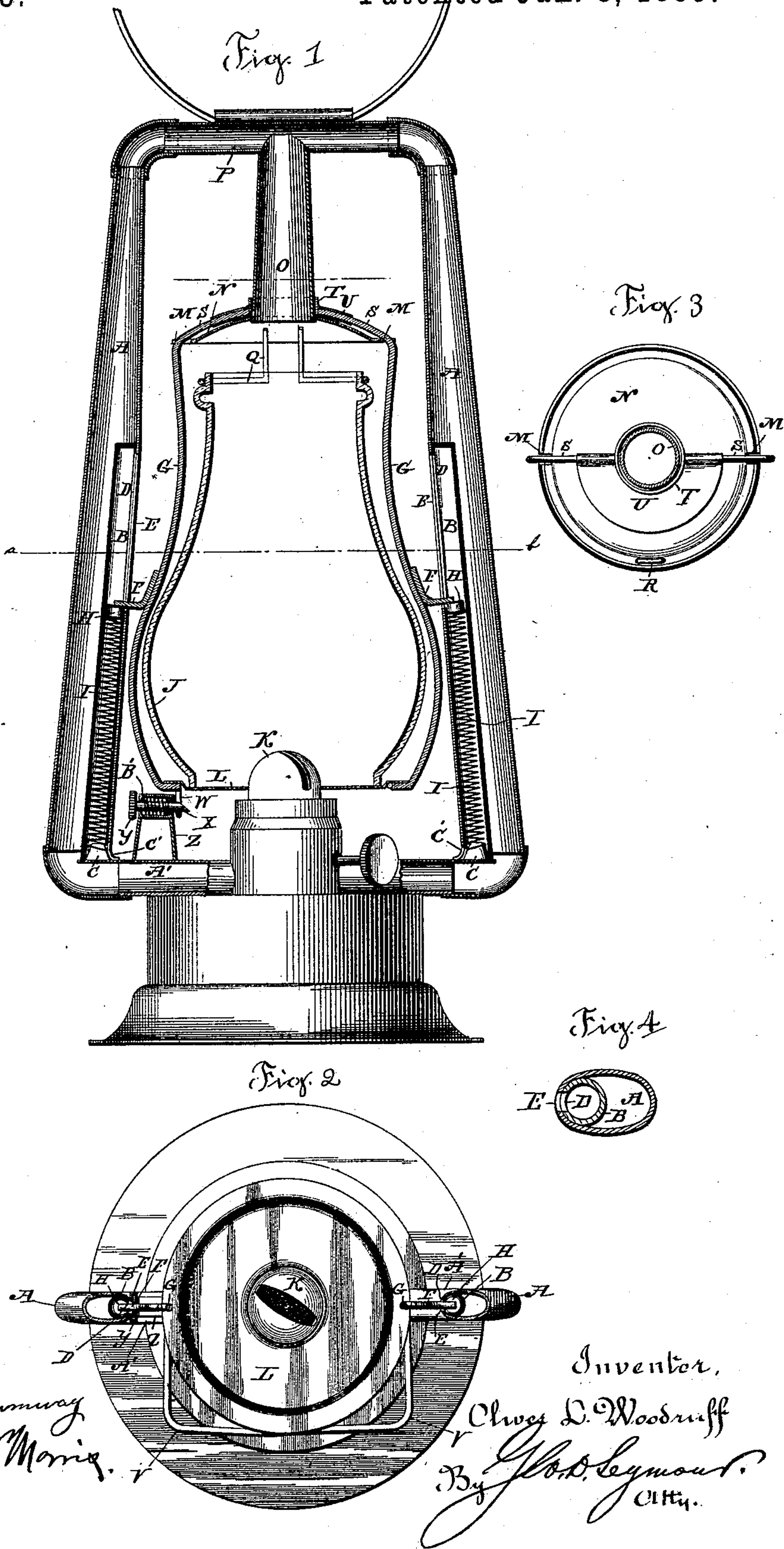


(No Model.)

O. D. WOODRUFF.
TUBULAR LANTERN.

No. 395,863.

Patented Jan. 8, 1889.



Witnesses:

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TUBULAR LANTERN.

SPECIFICATION forming part of Letters Patent No. 395,863, dated January 8, 1889.

Application filed December 27, 1887. Serial No. 259,118. (No model.)

To all whom it may concern:

Be it known that I, OLIVER D. WOODRUFF, residing at Southington, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Tubular Lanterns; and I do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improvement in that class of portable or hand lanterns in which provision is made for automatically lifting the globe and the globe-carrier by means of springs for facilitating the lighting of the lantern and for purposes of general attention to it, the object of the present invention being to provide an improved lantern of the type specified which shall be simple, compact, and cheap of construction, present an ornamental appearance, enable the globe to be released for lifting and restored to place with great facility and without danger of burning the hand or fingers, and locate the lifting devices so as to prevent them from injury under ordinary usage of the lantern, which will present much of the appearance of the well-known tubular lantern of trade.

With these ends in view my invention consists in a tubular lantern in which springs for lifting the globe are located entirely within the main draft-tubes.

My invention further consists of a tubular lantern having certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of my improved lantern, partly in vertical central section and partly in elevation. Fig. 2 is a view thereof in transverse section taken on the line *a b* of Fig. 1 and looking downward. Fig. 3 is a detached view, in plan, of the globe-cap, the collar and the wires forming the top of the globe-carrier, and the curved plate secured to said wires and making a secondary provision for restoring the globe to its normal position; and Fig. 4 is an enlarged detached view, in transverse section, showing one of the draft-tubes and its spring-receiving tube.

As herein shown, the main draft-tubes A A

are each tapered longitudinally and enlarged and elongated transversely. Small circular spring-receiving tubes B B, located in virtually upright positions in the inner portions of the respective tubes A A, which entirely enclose them, are sealed at their upper and their lower ends, so as to be entirely cut off from communication with the said tubes A A, which therefore remain unimpaired for discharging their primary function of affording draft for the lantern.

One way of sealing the lower ends of the tubes B B is illustrated by Fig. 1 of the drawings, which shows a small cone, C, located at the inner edge of the lower end of each of the tubes A A, the lower ends of the tubes B B being set over the said cones, and so sealed from communication with the said main draft-tubes.

The inner faces of the upper ends of the tubes B B are provided each with a vertical slot, D, aligned with a similar slot, E, formed in each of the tubes A A. Slightly-upturned arms F F, respectively secured to and projecting outward from the wires G G of the globe-carrier, enter the respective tubes B B through the said slots. The inner ends of these arms are connected with caps H H, secured to the upper ends of spiral springs I I, respectively located in the lower ends of the tubes B B, and normally contracted and exerting a constant tendency to automatically lift the globe J above the burner K of the lantern. It will be noted that in the depressed position of the globe and globe-carrier, as shown by Fig. 1 of the drawings, these arms F F do not extend across and meet the outer walls of the tubes B B, this construction being adopted to compensate for the inward inclination of the tubes. The said globe-carrier is provided at its lower end with a centrally-perforated disk, L, adapted to set over the burner K, supporting the lower end of the globe J and attached to the lower ends of the wires G G of the globe-carrier. The upper ends of the said wires G G respectively pass through slots M M, formed in the opposite edges of a cap, N, centrally perforated, so as to slide freely up and down on the vertical draft-tube O, which depends centrally from the upper draft-tube, P, into the upper end

of the globe. To the lower face of this cap is connected the wire spring Q, embracing the flanged upper end of the globe and provided with a finger-loop, R, by means of which the spring is lifted for removing and replacing the globe. The upper ends of the said wires G G, after passing through the slots M M in the cap N, are bent inward, as at S S, and terminate in a collar, T, located above the cap and encircling and sliding freely up and down on the tube O aforesaid. This collar is independent of the said cap, which is lifted only through the globe, and therefore only when the same is in place.

A curved plate, U, connected with the bent portions S S of the wires G, is provided for depressing the globe. This, however, will chiefly be done by means of two finger-pieces, V V, (see Fig. 2,) formed of wire and secured to the perforated disk L and projecting horizontally therefrom. If desired, these finger-pieces may consist of extensions of the lower ends of the wires G G. The globe is maintained in its normally-depressed position by a catch engaging with the lower portion of the globe-carrier.

As herein represented, the perforated disk L is provided near one edge with a depending wire loop, W, which is engaged with a beveled bolt, X, provided at its outer end with a knurled button, Y, and horizontally mounted in a standard, Z, located upon the upper face of the horizontal lower draft-tube, A'. A spring, B', inclosed within the upper end of the said standard and encircling the beveled bolt X, is arranged to exert a constant tendency to throw such bolt inward toward the lamp-burner K. The tubes B B are provided at their extreme lower ends each with an opening, C', for the escape of any water or moisture which may enter them through their vertical slots D D.

Under the construction described the globe will be normally maintained in its depressed position and against the lifting power of the springs I I by the engagement of the depending loop W by the beveled bolt X. When access to the burner is desired for lighting the lantern or for any other purpose, the knurled button of the bolt is seized by the fingers and the bolt disengaged from the loop referred to. This done, the spiral springs I I will immediately operate to lift the globe and the globe-carrier, and hold them both in their elevated positions. Then when it is desired to restore the globe to its normal position it and its carrier are drawn down by the finger-pieces V V until the loop W is automatically re-engaged with the beveled spring-actuated bolt, which it retires for this re-engagement by first engaging and pushing against its beveled face. Ordinarily the globe will be restored to its normal position by these finger-pieces V V; but as it may be sometimes more convenient to depress the globe from the top of the lantern the curved plate U is provided thereto. It is to be noted that by locating the catch below

the flame it always remain cool, and there is no danger of burning the fingers in operating it, which must always exist when it is located above the flame, and particularly when it is arranged in connection with the vertical central draft-tube, as has heretofore been done.

By locating the spiral springs I I entirely within the main draft-tubes A A they are completely protected and the lantern is left unencumbered with expensive and unsightly attachments. Moreover, the short arms F F, playing in the vertical slots D D, guide the globe and the carrier in their vertical movement. By making the main draft-tubes tapering a symmetrical effect is secured with abundant draft-space.

By making the globe-carrier to move independently of the globe-cap I am enabled to make both the cap and carrier very light and compact and secure a construction at once substantial and elegant. The cap not being relied upon to give stability to the carrier is made of light stock, of simple form, and only large enough to fulfill its function as a cap for the globe. The described construction is also very flexible and avoids the binding of the cap upon the tube, securing a very free and prompt action of the carrier. The cap being made very small, the side wires of the carrier are connected with the central draft-tube with a reduction of leverage over old constructions, whereby steadiness of operation and stability are secured.

I am aware that it is old to locate a catch at the lower end of a lantern. I do not, therefore, broadly claim that construction, but only the particular combination herein presented.

The feature herein shown of a carrier made to move independently of the globe-cap is also shown in my application, serially numbered 261,612, of January 23, 1888, in which, however, it is not broadly claimed, but only in the particular combination therein presented.

It is obvious that in carrying out my invention some changes from the construction herein represented may be made. I would therefore have it understood that I do not limit myself to the exact construction shown and described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a tubular lantern, the combination, with the main draft-tubes thereof, of a globe and globe-carrier, and springs located entirely within the said tubes and connected with the globe-carrier for automatically lifting the globe, substantially as set forth.

2. In a tubular lantern, the combination, with the main draft-tubes thereof, of a globe and globe-carrier, a sealed spring-receiving tube located entirely within each of the said main tubes, and connection between such

springs and the globe-carrier, whereby the globe is automatically lifted, substantially as set forth.

3. In a tubular lantern, the combination, with main draft-tubes tapered at their upper ends, of a globe and globe-carrier, a spring-receiving tube located entirely within each of the tapered main tubes, and connection between such springs and the globe-carrier, whereby the globe is automatically lifted, substantially as set forth.

4. In a tubular lantern, the combination, with the main draft-tubes thereof, of the globe and the globe-carrier, a spring located entirely within each of the said tubes, and two short arms respectively projecting from the opposite sides of the carrier and connected with the said springs, substantially as set forth.

5. In a tubular lantern, the combination, with the main draft-tubes thereof, of a globe and globe-carrier, a spring-receiving tube located entirely within each of the main tubes and sealed from communication therewith, a spring located in each of the said spring-receiving tubes, which are slotted at their upper ends, and a short arm projecting from each side of the globe-carrier and connected with the spring in the adjacent spring-receiving tube, substantially as set forth.

6. In a tubular lantern, the combination, with main draft-tubes of oval transverse section, of a globe and globe-carrier, a spring-receiving tube located entirely within each of the main draft-tubes, and a spring located in each of the spring-receiving tubes and connected with the globe-carrier, substantially as set forth.

7. In a tubular lantern, the combination, with a central draft-tube and a globe-cap arranged to slide vertically thereupon, of a globe, a globe-carrier adapted to have vertical movement independent of the said cap, and a

plate carried by the upper end of the carrier and located above the cap, substantially as set forth.

8. In a tubular lantern, the combination, with a central draft-tube and a globe-cap arranged to slide thereupon, of a globe, a globe-carrier constructed to have vertical movement independent of the said cap, and a catch arranged to engage with the lower end of the carrier which is adapted thereto, substantially as set forth.

9. In a tubular lantern, the combination, with a globe, of a globe-cap and a globe-carrier adapted to have vertical movement independent of the globe-cap, substantially as set forth.

10. In a tubular lantern, the combination, with a central draft-tube and a globe-cap arranged to slide vertically thereupon, of a globe, an automatically-lifted globe-carrier arranged to slide vertically independent of the globe-cap and extending above the same, and finger-pieces located at the lower end of the globe-carrier, substantially as set forth.

11. In a tubular lantern, the combination, with a central draft-tube and a globe-cap located thereon, of a globe and a globe-carrier adapted to embrace the said tube at a point above the cap and to slide up and down thereupon independent of such cap, substantially as set forth.

12. In a tubular lantern, the combination, with a central draft-tube and a vertically-movable globe-cap, of a globe-carrier arranged to move vertically independent of the said cap, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

OLIVER D. WOODRUFF.

Witnesses:

M. S. SEELEY,

C. L. SWAN, Jr.