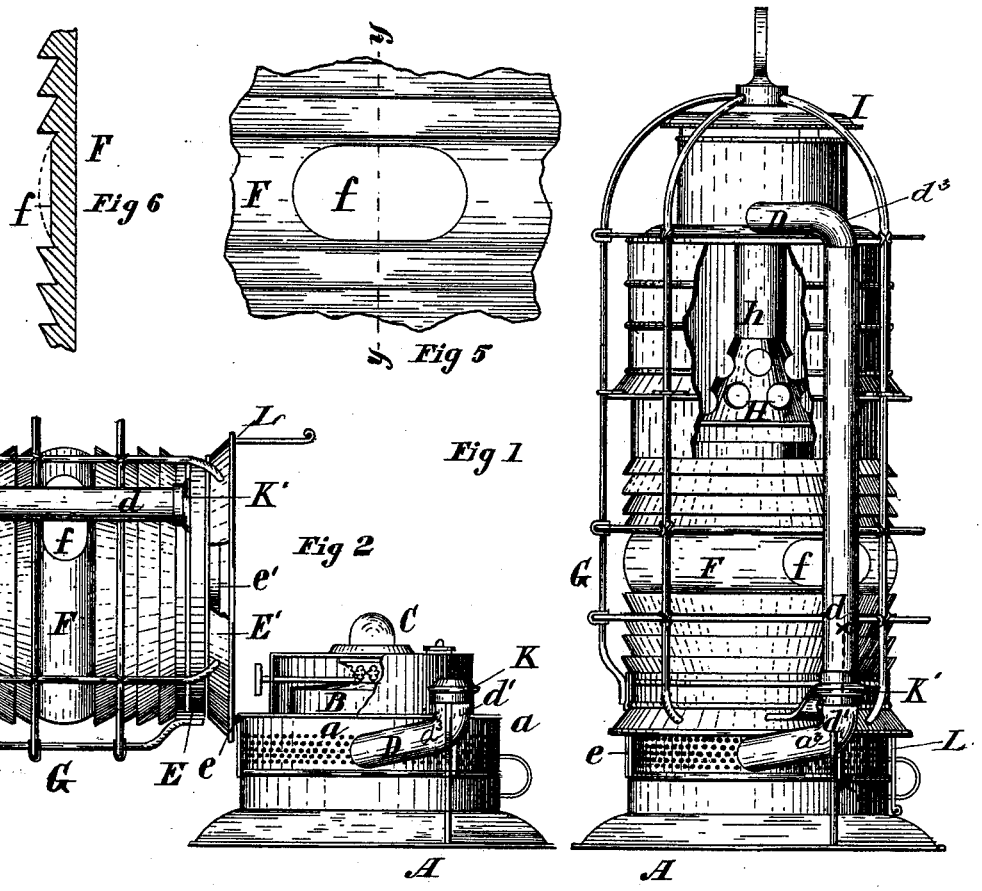
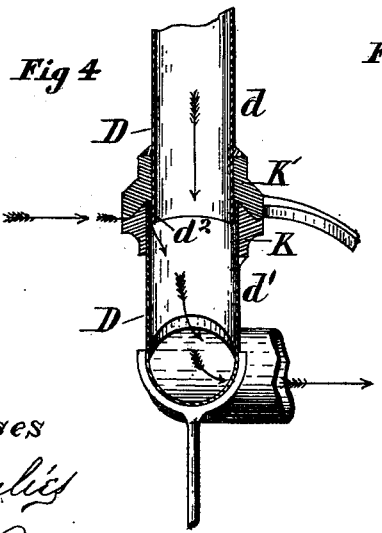
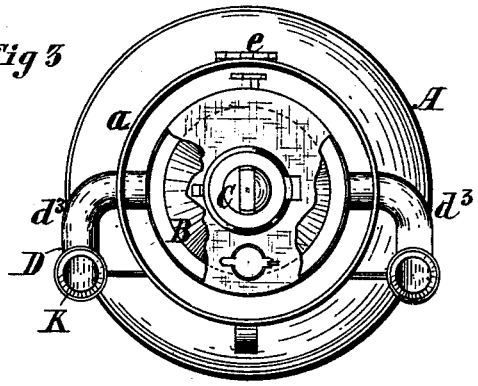
F. J. DENNIS.

Marine-Signal Lamp.

No. 221,538. Patented Nov. 11, 1879.







Witnesses

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FREDERICK J. DENNIS, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN MARINE SIGNAL-LAMPS.

Specification forming part of Letters Patent No. **221,538**, dated November 11, 1879; application filed October 17, 1878.

To all whom it may concern:

Be it known that I, FREDERICK J. DENNIS, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Marine Signal-Lamps, which is fully described in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents an elevation of a lamp embodying my improvements, a portion of the reflector and top being broken away; Fig. 2, a similar view of the same, the upper portion being turned back at its hinge and the top broken away; Fig. 3, a plan view of the bottom and oil-pot, a portion of the top of the latter being broken away; Fig. 4, a detail sectional view on an enlarged scale, taken on the line *x x*, Fig. 1; Fig. 5, a detail elevation on an enlarged scale of a portion of the reflector; and Fig. 6, a section of the same, taken on the line *y y*, Fig. 5.

The object of my invention is to adapt a marine signal-lamp to the use of hydrocarbon oils, and to this end to apply what is known in ordinary lamps and lanterns as the "tubular principle."

The invention consists in dividing the tubes, whereby they are adapted to be used with a lamp having a hinge-connection between the bottom and upper portion.

It also consists in providing a small plane surface on the exterior of the refracting-lens, through which the burner may be distinctly seen to adjust the wick.

It also consists in various special features of construction and special combinations, all of which will be hereinafter fully described, and definitely pointed out in the claims.

Signal-lamps of the class above named are exposed in the open air, and are therefore subject to very high winds. In applying the tubular principle of construction to these lamps I have found, therefore, that the ordinary construction of bottom used in lanterns having a removable oil-pot is not adapted to these lamps, for, unless the joint between the oil-pot and bottom is perfectly air-tight when exposed to high winds, a sufficient quantity of air will enter to seriously interfere with the continuous supply of air to the burner; but to make this joint air-tight would be almost impossible, and in any event very expensive. I therefore make the bottom and oil-pot in one piece, and hence am obliged to hinge the upper portion of the lamp to the bottom in order to fill the lamp and reach the wick, and in order to accomplish this I divide the tubes at about the same point.

In the drawings, A represents the bottom of the lamp, and B the oil-pot, which is rigidly secured to the bottom in any well-known way.

The upright rim or casing *a* of the bottom is perforated for some distance below the upper edge, so as to permit air to enter into the annular space between it and the oil-pot.

The oil-pot is provided with an air-chamber below the burner, in a way so well known in tubular lamps and lanterns as not to require special description here.

The burner C is supplied with air from this chamber in the usual way, and the lower ends of feeding-tubes D open into it, as usual in tubular lamps and lanterns.

That portion of the lamp above the oil-pot is hinged to the bottom by means of a band, E, which is connected to the bottom by a hinge-joint, *e*. The lower portion of this band is provided with an outwardly-projecting flange, E′, below and within which the lower edge of the band projects slightly to form a flange, *e′*, which fits inside of the casing *a*. The globe-lens F is seated in this band, and is surrounded by an ordinary guard, G. This globe is an ordinary Fresnel lens, and is plain or colored, as may be desired.

In the top of the lamp is a bell, H, like that shown in Letters Patent No. 73,012, granted to John H. Irwin January 7, 1868, which is at the lower end of a tube, *h*, with the upper end of which the upper ends of the feed-tubes D connect, as in said patent. The top of the lamp is open and surmounted by a deflecting-plate, I, which operates as an ejector.

In order to permit the hinging of the upper portion of the lamp to the bottom, as above described, the feed-tubes D are divided near the bottom of the lamp, so that one section, *d*, will be attached to the upper portion, and

another section, d', to the bottom of the lamp, the joint between the two being close-fitting, so as to prevent the entrance of air at this point. As this is very difficult to accomplish, however, I construct the joint in a peculiar manner, so as to prevent any unfavorable effects from the small quantity of air which may be forced in at these joints in very high winds. Around the upper end of the lower section is a collar, K, the face of which is inclined upward or beveled, as shown in Fig. 4 of the drawings. A similar collar, K′, is placed on the lower end of the upper section, beveled so as to fit over the collar K. The lower end of the upper sections projects slightly below the collar, so as to enter the lower sections a short distance, as shown in Fig. 4 of the drawings.

Now, in the first place, this joint is so close that very little air will enter under any circumstances; but if any is driven in between the two collars, it strikes against the projecting end d^2 of the section d, by which it is turned downward into the tube, as shown by arrows in Fig. 4, and is carried along with the regular descending current in the tubes, and hence will produce no injurious effect. If the parts of this joint were reversed, however, it is evident that the air coming in would be turned upward, thereby tending to produce an upward exhaust-current in the tubes, which would put out the light.

The sections of the tubes are securely fastened by suitable brackets to their respective divisions of the lamp. They are also bent backward at the side of the lamp, as shown at d^3 in the drawings, these bends being for the purpose of setting the tubes as far back at one side of the lamp as possible, so as to leave the lens free and unobstructed in front and as far back on the sides as possible.

In those signal-lamps in which a Fresnel lens is used the peculiar construction of the latter makes it impossible to see the burner distinctly, so as to determine whether the wick is at the proper height. To obviate this difficulty, I grind a small portion of the exterior of the lens, so as to make a small plane surface, f, at one side of the lamp, through which the light can be distinctly seen, as in an ordinary lantern.

It will be seen from this description that the lamp will operate upon the well-known tubular principle, as set forth in the above-mentioned patent and others granted to John H. Irwin, the supply of fresh air from the feeding-tubes being kept up through the perforations in the casing of the bottom.

The wick-adjuster is shown in the drawings as arranged within the lamp so as to be operated only when the top is turned back; but instead of this it may be arranged to extend down and project through the bottom of the lamp in a way that is well known, so that it may be operated without opening the lamp.

Of course the upper part must be turned back to fill the oil-pot and trim the wick, and for other like purposes, and to permit this the clasp for fastening the two parts together should be made simple and readily detachable.

An ordinary clasp, L, is shown in the drawings; but any fastening suitable for the purpose may be employed.

The two parts of the lamp may be connected in some other way than by a hinge, though the latter is preferable, for convenience, as the parts of the lamp are then never entirely disconnected.

It is evident that this improvement of dividing the feed-tubes may also be applied to other lamps and lanterns than those specially mentioned herein.

I am aware that heretofore in lamps or lanterns of the tubular style the entire top of the air-receiving chamber has, in some instances, been made removable, and the supply-tubes, being rigidly connected to this top, are also removable therewith. I do not claim this construction, and it is evident that it is not practically applicable to the particular kind of lantern herein described and shown.

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

1. In a tubular lamp or lantern, an upper section carrying the globe or chimney and the air-feeding tube or tubes, in combination with an independent lower section, hinged or otherwise detachably connected to the upper section, and containing the burner and an air-receiving chamber, having an inlet or inlets with which the feed tube or tubes of the upper section register, substantially as and for the purpose set forth.

2. In a tubular lamp or lantern, the base or bottom A, in one piece with the oil-pot, in combination with the upper or globe section hinged thereto and the divided or sectional feed-tubes D, substantially as described.

3. The joint-collars K K′, beveled as described, in combination with the lower tube-sections, d', and the upper sections, d, the lower ends of which are arranged to extend into the latter slightly when closed, substantially as described.

4. The feed-tubes D, provided with the backward bends d^3 at the top and bottom of the lamp, substantially as described.

5. In a signal-lamp, the globe Fresnel lens provided with a small plane surface, f, substantially as and for the purpose set forth.

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