R. NUTTING.

LANTERN.

No. 169,916. Patented Nov. 16, 1875.

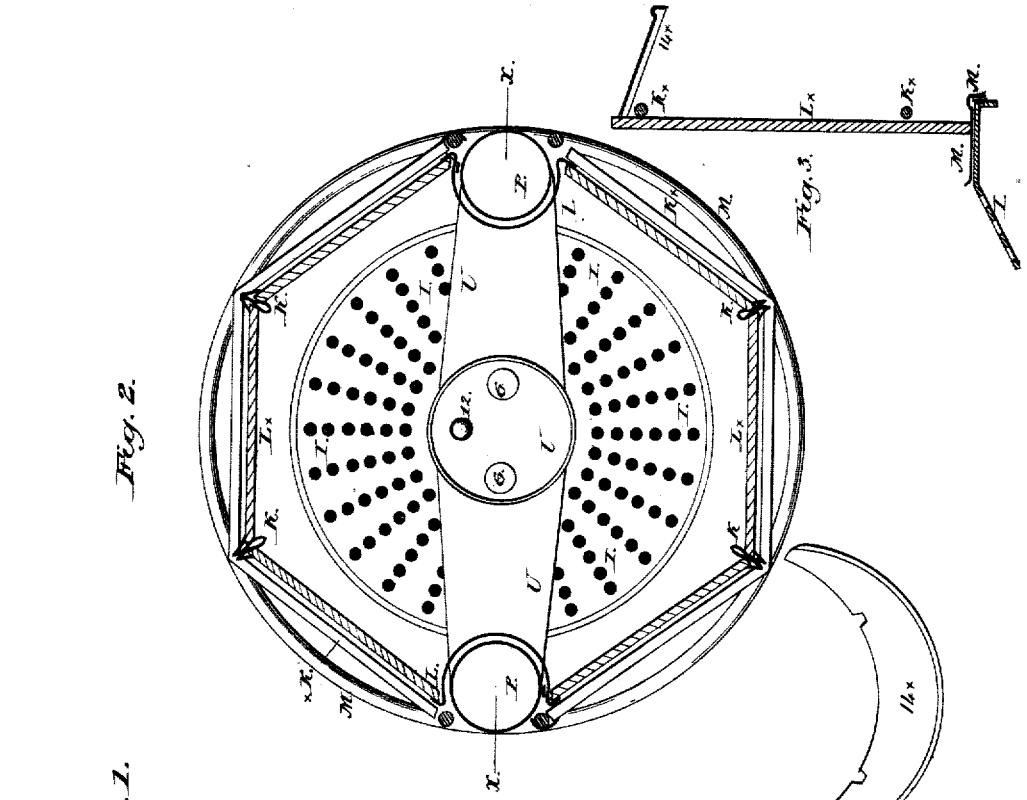

Fig. 3.

Fig. 2.

Fig. 1.

Attest:

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RUFUS NUTTING, OF WHEATON, ILLINOIS.

IMPROVEMENT IN LANTERNS.

Specification forming part of Letters Patent No. **169,916**, dated November 16, 1875; application filed April 8, 1875.

To all whom it may concern:

Be it known that I, RUFUS NUTTING, of Wheaton, Du Page county, Illinois, have invented an Improvement in Lanterns, of which the following is a specification:

The object of my invention is a lantern for coal-oil and candles operating equal to the best, cheaper, more transportable, and adapted to more uses; and relates to a fount detachable for house use, and other parts above and below the protector, detachable, to pack within it for transportation. Air is admitted through orifices covered by automatic dampers below and orifices in the bottom, near the flame, and, being warmed, rises into a vertical chamber over the flame. A part escapes at the top, and the rest descends through condensing-passages to the flame. A concave canopy, open top, and automatic cowl, to secure ventilation and draft, and a spring connected with the handle to prevent jerks upon the flame.

Figure 1 is a transverse view, as if divided vertically in the center, between the doors, from *x* to *x* in Fig. 2, which is a vertical view of a horizontal transverse section from *x* to *x* in Fig. 1; Fig. 5, sectional view of the bottom of the door and part of protector-bottom.

The pedestal B, made of wire, as shown, for close packing, is in two sections, detachably united, and held to the fount by the screw C, attached to the fount-bottom, which is also to connect the fount with my oil-can stand, (Patent No. 152,002,) for the convenience of students and others who wish to use one fount for both lamp and lantern, the pedestal and protector being removed for such use. The brace-chamber H stiffens the connection of the protector with the fount, and, being perforated, and having attached to it dampers H_x, operating like my Patent No. 148,842, but poised by the inside half, serves for a wind-break to guard the flame, and is detachable when the fount is used separately. The protector-bottom I is concave for increased stiffness, and perforated to admit air to the flame, and to its center is attached a screw, I_x, to detachably connect it with the burner, that the burner and fount may be otherwise used when candles are used in the protector, which resembles my Patent No. 148,842; but instead of the two central vertical strips T and S is the single strip K, swaged to the form of T and S, but much firmer and cheaper made, and attached to the guards k_x, hinged to the studs P. The strips L are the same as one-half of the strips K, except being laterally extended and curved to deflect air leaking in between them and the door-studs from the flame, and the heat of the flame from the tubes P, which also answer for studs, to which the doors are hung. A semicircular plate, M, is attached to the lower end of strips K and L, for the panels L_x to rest on and for a wind-break, the bead in its edge breaking the wind going between it and the panels, (which may be of plane or curved glass or mica,) and also between it and the protector-bottom, as shown at Fig. 5. The canopy O, for concentrating the noxious gases hot from the outside of the flame, and other air, to the chamber V, is connected to the bottom I by the studs P, and to it is detachably connected the chamber V, bisected by tube 3, whose under side is open within it, whence the central and coolest part of the ascending air, with the pure air from the orifices in the bottom I, passes into and through the tube 3, passages S and P, and chamber U, attached to the bottom I, to the flame, while the outer part, too hot to readily descend, having little flame food, and constantly tending to the highest point, chiefly escapes through the cowl W, passing by the closed sides of the square tube 3 within the chamber V. The passages S are detachable, for packing and cheapness, and of paper, or other like non-conducting material, instead of metal, to increase the gravity of the descending air within them by cooling, and for lightness and less cost. To secure constant draft in strong winds is the cowl W, having the parallel wings Y attached to the horizontal plate X, turning upon the pivot Z in the bracket 2, attached to the chamber V, and poised by the weight 1, or any more desirable way. The spring 2 around the chamber V holds the weight of the lantern upon the handle 4, to prevent sudden jerks from balking the flame, and the joints 5 allow the handle to be folded for packing, being detachable with the chamber V, held to the canopy O by the pin O_x or a screw.

My device differs essentially in operation

from my Patent 148,842, and other closed-top lanterns, in that they require a wide open space at the top of the protector for the entire hot gases from the outside of the flame to escape, the central and cooler part going around to the flame the second time, which open space, unless provided with regulators, admits strong winds to injure the flame, while in this lantern these gases can escape through the open top, protected by the cowl, through which no winds can enter, and the protector can extend so near to the canopy that winds do not affect the flame.

While this lantern operates well with ordinary flat-wick burners, it is especially designed for my "no-chimney" divided-flame burner, with flame-coverts, and having a screw attached to its upper side for ready connection for burning coal-oils, and, with the wick-tubes shortened, sperm or lard oil, or candles, by having a candle-socket provided with a burner-screw, leaving the automatic fount free for domestic use. A spring-catch optionally connects the burner and fount.

A globe or chimney may be used instead of the flame glass protector, if preferred.

For a cheaper lantern, yet superior to ordinary coal-oil lanterns, the tubes 3, passages S, chamber U, and dampers H_x may be omitted, and the chamber V made smaller and shorter.

I claim as my invention—

1. The lantern-pedestal B, in sections, detachably joined together, in combination with the fount, substantially as and for the objects described.

2. The detachable brace-chamber H, in combination with a lantern-fount and protector-bottom, as described.

3. The automatic dampers H_x, in combination with the brace-chamber H, substantially as described.

4. The perforated concave bottom I, in combination with the perforated chamber H and a burner, substantially as described.

5. The swaged vertical strips K, in combination with the beaded plate M and the guards K_x, hinged to the studs P, substantially as described and shown.

6. The curved strips L, in combination with the guards K_x and studs P, substantially as described.

7. The beaded plate M, attached to the strips K and L, in combination with the panels L_x and bottom I, substantially as described.

8. The chambers U, in combination with the perforated concave bottom I and a burner, substantially as described.

9. The canopy O, in combination with the studs P and bottom I, substantially as described.

10. The canopy O, attached to the studs P, in combination with the detachable chamber V, bisected by and attached to the square tube 3, as and for the purposes described.

11. The chamber V, in combination with the canopy O and cowl W, substantially as described.

12. The chamber V, in combination with the canopy O and bracket Q.

13. The tube 3, bisecting and attached within the open-top chamber V, as and for the purposes described, in combination with the canopy O, substantially as described.

14. The chamber V, in combination with the bracket Q and cowl W, substantially as described.

15. The pin O_x, in combination with the chamber V and canopy O, for the purposes described.

16. The cowl W, constructed, poised, and combined with a lantern-top, substantially as and for the purposes described.

17. The square tube 3, bisecting and attached within the open-top chamber V, as and for the purposes described, in combination with the passages S, substantially as described.

18. The passages S, detachably combined with the square tube 3, bisecting and attached within the chamber V, and with the canopy O attached to the studs P, substantially as described.

19. A passage for cooling and conducting heated air from above the flame of a lantern or lamp down toward the flame, made of paper, for the purposes described.

20. The vertical spring 2, in combination with the chamber V and detachable handle 4, as and for the purpose described.

21. The vertical spring 2, detachable, in combination with the chamber V and handle 4, substantially as described and shown.

22. The handle 4, adjustable to conform to the contraction and expansion of the spring 2, in combination with the chamber V, substantially as described.

RUFUS NUTTING.

Witnesses:
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