

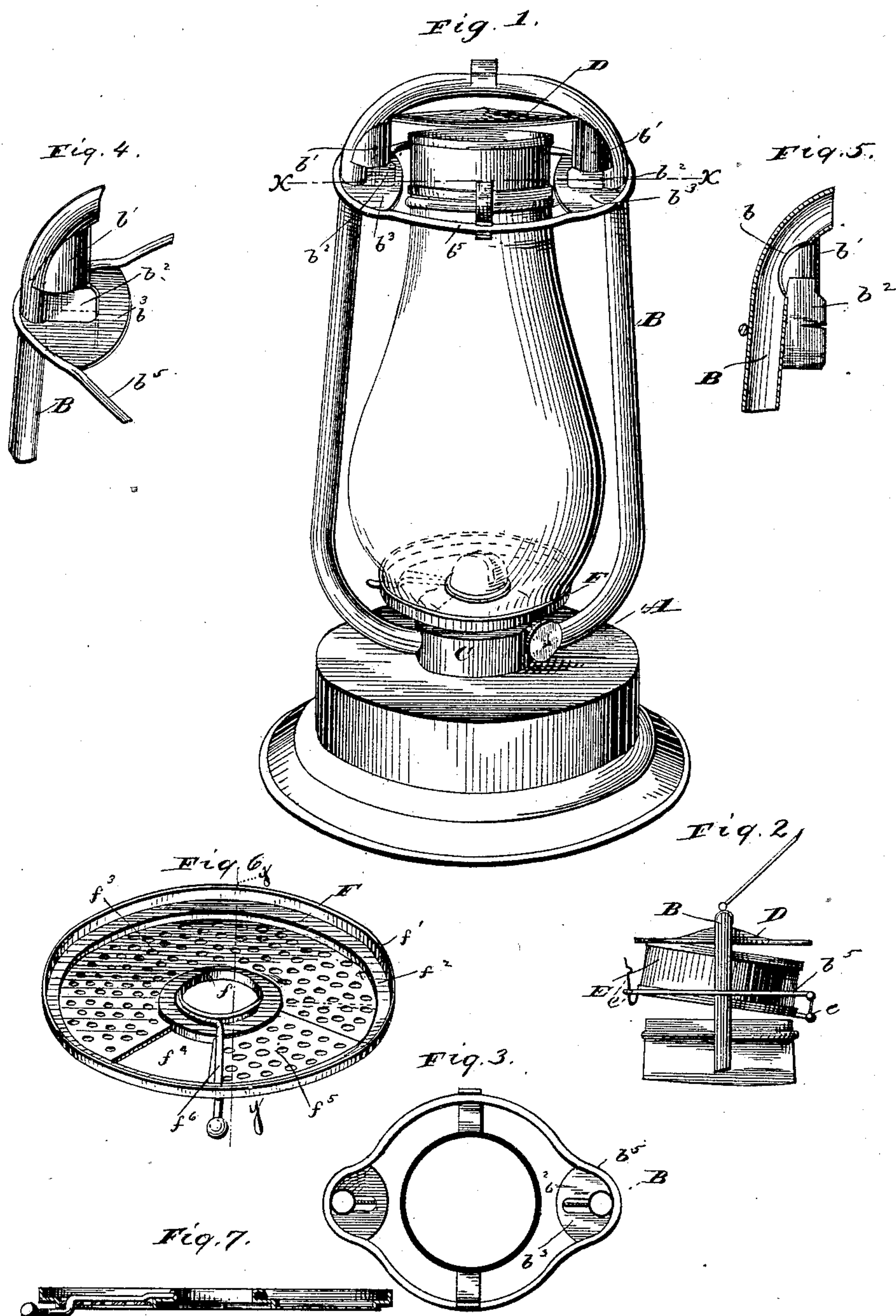
(No Model.)

W. C. WINFIELD.

TUBULAR LANTERN.

No. 353,343.

Patented Nov. 30, 1886.



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TUBULAR LANTERN.

SPECIFICATION forming part of Letters Patent No. 353,343, dated November 30, 1886.

Application filed June 10, 1886. Serial No. 204,731. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. WINFIELD, a citizen of the United States, residing at Warren, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Tubular Lanterns; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to 5 which it appertains to make and use the same.

My invention relates to improvements in tubular lanterns, and the object is, first, to provide channels and guards about the air-inlet orifice, so that a steady and even flow of 15 air through the tubes to the burner-chamber will be maintained under all conditions of weather and in all the varying movements of the lantern incident to its use; secondly, to reduce the height of the lantern; and, lastly, 20 to improve the facilities for lighting, all as hereinafter fully described.

Referring to the drawings, Figure 1 represents a plain elevation of my improved lantern. Fig. 2 is a plain elevation of the upper 25 portion of the lantern, showing the tubular collar released from its catch. Fig. 3 is a horizontal section on line $x x$, Fig. 1. Fig. 4 is an enlarged section of one side of the tube, including the inlet-orifice and its surrounding 30 mechanism. Fig. 5 is a vertical section of Fig. 4. Fig. 6 is a plan of the globe-supporting disk, and Fig. 7 a cross-section on line $y y$, through said disk.

A represents the lantern as an entirety, and 35 B the air or draft tubes. The tubes B are formed preferably of two pieces united at the top, and bent into the form shown by machinery especially adapted to that purpose, the open ends of the tube extending into the sides 40 of the burner-chamber C, where they are firmly secured. This tube, besides being the medium for supplying air to the burner, serves as a strong and durable frame for the lantern.

In lanterns employing tubes to supply air 45 to the burner-chamber, more or less difficulty has always been experienced in constructing the mechanism about the air-inlet orifice so that a constant and even flow of air would be maintained whatever the varying condition of 50 the currents or the movements of the lantern.

When the lantern is borne evenly along in a

quiet atmosphere, almost any arrangement will suffice; but when it is subjected to a driving storm, or to sudden movements by the hand, it requires the greatest nicety and precision in construction to prevent flickering, and 55 to secure that steady, constant, and undisturbed ray of light which a properly-constructed lantern should give. To accomplish this result the air-inlet orifice must be so 60 hedged about with guides and guards as to be uninfluenced by changes in the direction or force of the currents, and to avoid a vacuum or rush of air when the lantern is suddenly raised or lowered, or swung from side to side. 65 Otherwise the draft will be unsteady and the combustion imperfect, if, indeed, the light is not instantly extinguished by suction or otherwise when subjected to trial. I overcome these objections and attain the object in view 70 by providing an inlet orifice or opening, b , in the side of the tube, preferably near the top, and over and about the opening fix a cap or guard, b' . This cap or guard is soldered to the tube along its edge, and extends over and 75 below the opening, as shown more clearly in Fig. 5.

Beneath the guard b' are two plates, b^2 and b^3 , one of which is arranged vertically and the other horizontally in relation to said guard. 80 The vertical plate b^2 has a reduced end, which projects centrally into the guard b' a short distance above the lower edge of the opening b , and in about its center outside the guard has a notch or open slot traversed by the horizontal plate b^3 . This plate b^3 is arranged, say, 85 half an inch below the mouth of the guard b' , extends laterally about an inch beyond the sides of the tube, and has an angular slot, which is divided on a vertical center by the 90 plate b^2 , so as to permit the passage of air within the limits thus fixed on both sides of said plate. A wire guard, b^5 , extending around the lantern serves to support the plate b^3 at its 95 extremities. These several parts are soldered to each other and to the tube. Unobstructed communication exists between the openings b in the arch of the tube, which serves to balance and equalize the draft.

Of course it will be understood that the details of construction here described may be 100 varied without affecting the function or de-

parting from the spirit of the invention. For example, the plate b^3 might have a circular opening, instead of a slot with the plate b^2 passing centrally through it and furnishing sufficient air-passages on either side, and it is immaterial which plate is notched at the intersection outside the guard. The plate b^3 might stop at the lower edge of the opening b , probably with advantage, and other minor changes might be made; but the main features of the construction and arrangement here described should be preserved to get the desired results.

D represents a deflector or shield secured at its sides to the sides of the tube, as shown. By this method of attaching the deflector I not only obtain an air-space between the deflector and collar sufficiently large to serve the purposes of combustion in the globe, but get room beneath the deflector to raise the collar and remove the globe. This could not be done within the same limited space if the deflector were attached to the collar and moved with it, as is the usual construction in the class of lanterns. I thus secure all the functions and results common to the several elements named, and at the same time, by reason of the novel organization described, am enabled to materially reduce the height of the lantern.

E is a tubular collar, having a hinge, e , at one side secured to the wire guard b^5 , and a spring-catch, e , at the other, which likewise engages with said guard. This collar serves the purpose of an extension, as well as a stay and support for the top of the globe.

F is the globe-supporting disk, having a flanged neck, f , at the center, encircling the burner-cone, and upturned flange f' around its outside to retain the globe. Within this flange is a ledge, f^2 , upon which the globe rests, and between it and the neck the disk has a depressed perforated body, f^3 , provided with an aperture, f^4 , at one side of such size as to permit the easy introduction of a match or taper to light the lantern. A gate, f^5 , is adapted to slide around in this depression to close the aperture f^4 , and is operated by a handle-rod, f^6 , passing through the gate at one side from below and bent at its inner end

around the neck of the disk. This construction likewise might be varied somewhat and still be within the scope and purpose of my invention; but that here shown and described is preferred.

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

1. The combination, in a tubular lantern, of air-inlet openings on the inner sides of the tube, each provided with a hood or guard overhanging the opening and extending down to its lower edge, a vertical plate extending centrally up into said guard forming air-passages on either side thereof, and a horizontal plate beneath the opening in the tube, intersecting said vertical plate near its center and having openings at each side thereof, as and for the purpose set forth.

2. The combination, in a tubular lantern, of a tube having free air-passages from side to side across its top, and inlet-openings at its sides, a cap or hood overhanging said openings, a vertical plate extending centrally into said hood in front of the air-openings, and a horizontal plate below the hood and having air-passages outside the tube and along the vertical plate, substantially as set forth.

3. The combination, in a lantern, of an arched air-tube having a deflector secured thereto at its sides with a globe-collar independent of the deflector, hinged at one side to allow the removal of the globe, and a guard or band on which the collar is hinged, substantially as set forth.

4. The combination, in a lantern, of a globe-supporting disk having a flanged neck, a ledge upon which the globe rests, and a flange outside thereof to confine the globe, an open-work depressed portion between the neck and the ledge, and an aperture or door at one side in the depressed portion with a gate adapted to slide horizontally over the aperture or door, and having a handle attached to the neck of the disk, substantially as set forth.

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