

UNITED STATES PATENT OFFICE.

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LANTERN.

SPECIFICATION forming part of Letters Patent No. 529,794, dated November 27, 1894.

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To all whom it may concern:

Be it known that we, DAVID JACKSON and JOHN OSTERLOH, of the city, county, and State of New York, have invented a new and Improved Lantern, of which the following is a full, clear, and exact description.

The invention relates to lanterns such as are used on cycles and other vehicles, and its object is to provide a new and improved cycle lantern, which is simple and durable in construction, arranged to insure proper combustion and a steady, good light, and adapted for burning ordinary mineral oil as well as the more expensive oils and illuminants now generally used in lanterns of this class.

The invention consists of a lantern body carrying a detachable fount at its lower end, the said fount being provided with a burner, and forming with the bottom of the lantern body an air chamber connected with an upwardly-extending channel, leading to the upper end of a downwardly-extending second channel, into the lower end of which open air inlet apertures are arranged in the sides and rear of the lantern body.

The invention also consists of certain parts and details, and combinations of the same, as will be hereinafter described, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of the improvement on the line 1—1 of Fig. 3. Fig. 2 is a cross section of the same on the line 2—2 of Fig. 1. Fig. 3 is a sectional plan view of the same on the line 3—3 of Fig. 1; and Fig. 4 is an inverted plan view of the cap for the lantern.

The improved lantern is provided with a lantern body A, preferably in the form of a four-sided truncated pyramid, as plainly shown in the drawings, the said body being provided in its front A', with an opening adapted to be closed by the bull's-eye C held in the front door B hinged to the body of the front A', as plainly shown in Fig. 3. From the door B extends a reflector hood D over the bull's-eye C, so as to throw the light in the proper direction. In the sides of the body A are arranged red or other colored lenses E

serving for danger signals. In the bottom A² of the body A is formed an opening A³, through which extends the burner F, of any approved construction and held on a fount G fitted with its upper edge into the lower end of the body A, the fount being securely held in place by springs H arranged in the sides of the fount and engaging the sides of the body A. See Fig. 2. By pressing the springs the fount can be readily detached from the body for filling the fount or for other purposes.

The burner F is provided with the usual wick rod F', extending through one side of the body A to be under the control of the operator on the outside of the lantern, to regulate the flame by raising or lowering the wick. The fount G forms the base for the truncated pyramidal lantern body A, and is of sufficient size to contain a large quantity of oil or other illuminant, filled into the fount by unscrewing the burner F at the time the fount is detached from the body, or by means of a "filler" provided with a suitable screw cap.

The bottom A² of the body A is a suitable distance above the top of the fount G so as to form an air chamber J between the said bottom A² and the top of the fount, and into this air chamber leads the lower end of a channel J' arranged in the rear of the partition A⁴ attached to the sides A⁵ and A⁶ of the body A. The channel J' extends between the partition A⁴ and a second vertically-disposed partition A⁷, likewise attached to the sides A⁵ and A⁶, but terminating a suitable distance below the upper end of the body A, as plainly shown in Fig. 1. Between this partition A⁷ and the back A⁹ of the lantern body is formed a second channel J², which connects at its upper end with the said channel J' owing to the partition A⁷ being less in height than the lantern body A. Into the lower end of the channel J² open the air inlet apertures J³, formed in the back A⁹ and the sides A⁵ and A⁶ of the lantern body. A bottom A⁸ closes the lower end of the channel J², the said bottom extending between the partition A⁷, the back A⁹ and the sides A⁵ and A⁶. See Fig. 3. The lower end of the partition A⁴ extends a short distance below the bottom A² of the lantern body A, while the bottom A⁸ extends to the top edge of the fount G, as will be readily understood by reference to Fig. 1.

The top of the lantern body is closed by a cap I, hinged to one of the sides of the body A and adapted to be fastened in place at its free end by a suitable catch, as plainly shown in Fig. 2. The cap I is provided in its bottom with an opening I² and with a partial bottom I', which latter closes the upper end of the space formed by the upper ends of the channels J' and J², while the opening in the said cap I is within the front of the body A to carry off the products of combustion, the same passing through the open top of the cap I, under a hood I³ supported on brackets I⁴ from the top of the said cap, as plainly shown in Figs. 1 and 2. The cap I when opened, gives convenient access to the interior of the body to clean the same and to remove and insert the reflector.

Now, it will be seen that when the several parts are in the position shown in Fig. 1, and the wick on the burner F is lighted, then the outside air can pass through the aperture J³ into the lower end of the channel J², and up the same between the partition A' and the back A⁹ of the body, the air finally passing from the upper end of the channel J² into the upper end of the channel J', and then down the latter to finally pass at the lower end of the channel into the air chamber J, and then through the opening A³ to the burner F to supply the latter with the necessary air for combustion. The products of combustion arising from the flame pass up in the body A into the cap I, and through the open top of the same under the hood I³ to the outside. As the partial bottom I' of the cap I separates the upper ends of the channels J', J², from the interior of the cap, no products of combustion are mixed with the incoming air passing through the channels, so that pure air is admitted to the air chamber and consequently proper combustion takes place.

It will be seen that the circulation of air through the channels J² and J' serves to keep the lantern body cool, thus avoiding radiation of a large amount of heat from the lantern body, as is so frequently the case in lanterns as now constructed. A reflector K is removably secured to the inside of the partition A⁴ opposite the bull's-eye C, but the reflector may be omitted as the curved partition will then serve as a reflector.

On the back A⁹ of the lantern body is arranged a fastening device L for attaching the lantern to the cycle, this fastening device being provided with a toggle frame having its back L' mounted to swing on a pivot N attached to a projection O fastened on the outside of the back A⁹ of the lantern body. Toggle levers L² connect the back L' of the frame with the front L³ supporting a clamping device P for attachment to the lantern supporting bar of the cycle. A spring L⁴ connects the front L³ with one of the toggle levers L², so as to insure a yielding action of the fastening device to prevent undue jar to the lan-

tern at the time the cycle passes over rough roads and any obstructions in the roadbed.

It will be seen that the air passing through the inlet apertures J³ and channels J², J', to the air chamber J, is not heated to any great extent and consequently contains a large amount of oxygen to insure proper combustion. The cap I is provided with a comparatively large opening I² in its bottom to permit a ready escape of the products of combustion so as to avoid undue heating of the lantern body.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. In a lantern, the combination with a body provided with an apertured bottom and having its sides extending down below the said bottom, of a fount secured in the lower open end of the body and provided with a burner projecting through the aperture of the bottom, the top of the fount and the bottom of the body forming an air chamber, substantially as described.

2. In a lantern, the combination with a body provided with an apertured bottom and having its sides extending below the bottom, of a fount secured in the lower open end of the body and provided with a burner projecting through the aperture of the bottom, the space between the top of the fount and bottom of the body forming an air chamber, and an air channel in the rear of the body and leading from the lower part of the body to within a short distance of the top and down to the said air chamber, the said channel communicating with the outer air, substantially as described.

3. In a lantern, the combination with a body provided with openings in the lower portion of the rear side and with an apertured bottom, the sides of the body projecting below the bottom, of a fount secured in the lower open end of the body and forming with the bottom thereof a chamber and two vertically disposed partitions arranged in the rear portion of the body, one of the partitions extending from the top of the body down to the bottom and the other partition extending from below the bottom up between the first named partition and the body and terminating short of the top of the said body, the said partitions forming an air channel leading to the said chamber, substantially as described.

4. A lantern, comprising a body having two transverse partitions, and an apertured bottom arranged between part of the sides, the front and the innermost partition, the said bottom being located a suitable distance above the lower ends of the sides and ends of the body, a fount adapted to be attached to the said body below the bottom thereof, to form with the latter an air chamber connecting with the innermost channel formed by the said partitions and the back of the lantern body, the said channel connecting at its up-

per end with a second channel into which open air inlet apertures formed in the back and sides of the lantern body, and a cap held on the upper end of the said lantern body, and formed with an opening leading to the interior of the body and having a partial bottom forming the top for the space at the upper ends of the channels, substantially as shown and described.

- 10 5. A lantern, comprising a body having two transverse partitions, and an apertured bottom arranged between part of the sides, the front and the innermost partition, the said bottom being located a suitable distance
15 above the lower ends of the sides and ends of the body, a fount adapted to be attached to the said body below the bottom thereof, to form with the latter an air chamber connecting

with the innermost channel formed by the said partitions and the back of the lantern body, the said channel connecting at its upper end with a second channel into which open air inlet apertures formed in the back and sides of the lantern body, a cap held on the upper end of the said lantern body and formed with an opening leading to the interior of the body, and having a partial bottom forming the top for the space at the upper ends of the channels, and a hood supported above the top of the said cap, substantially as shown and described.

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Witnesses:

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