

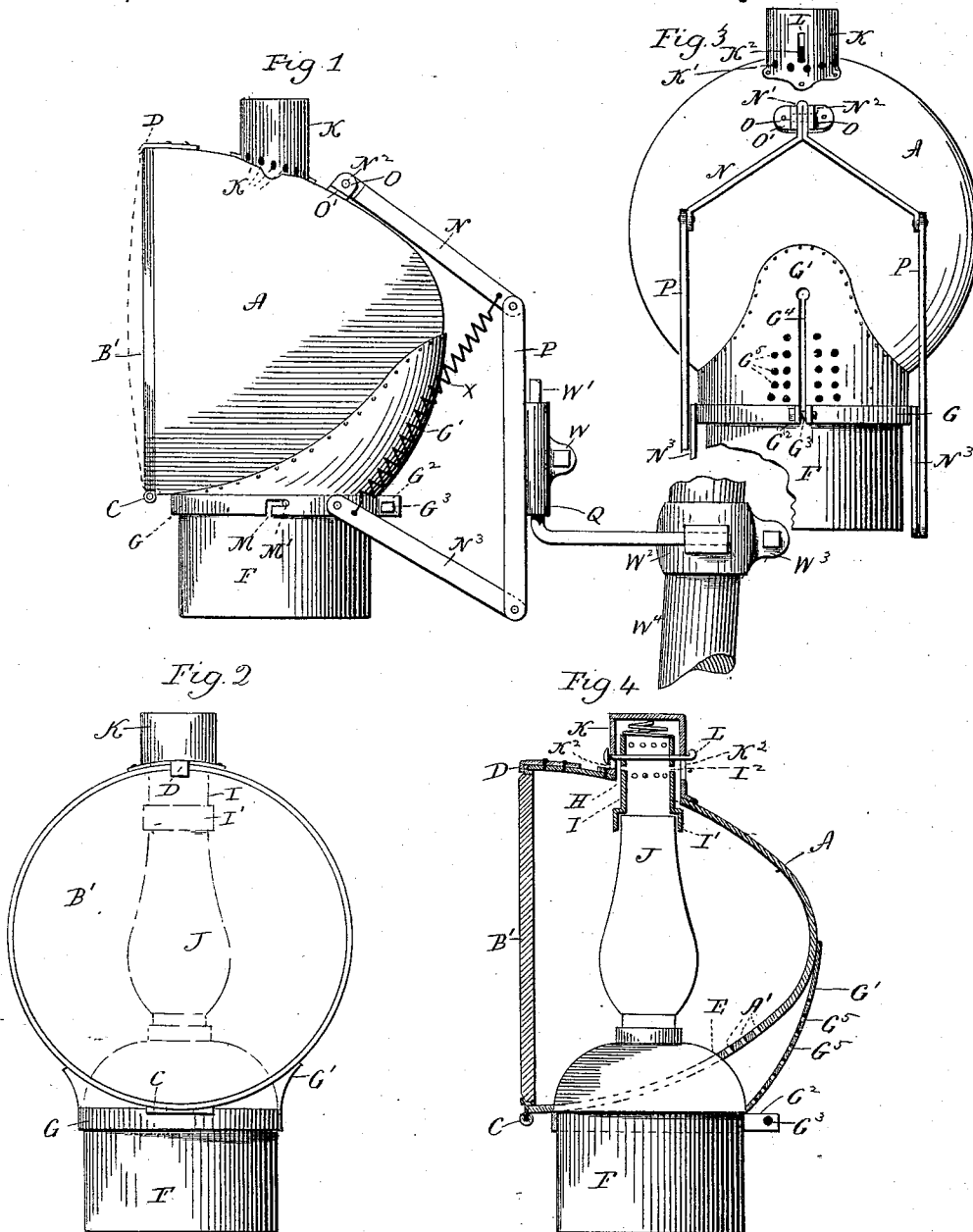
(No Model.)

2 Sheets—Sheet 1.

C. E. W. WOODWARD.  
CYCLE LAMP.

No. 478,776.

Patented July 12, 1892.



Witnesses.  
J. H. Shumway  
William D. Kellogg

Charles E. W. Woodward  
Inventor  
By Atty.  
Earle Seymour

(No Model.)

2 Sheets—Sheet 2.

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Fig. 5

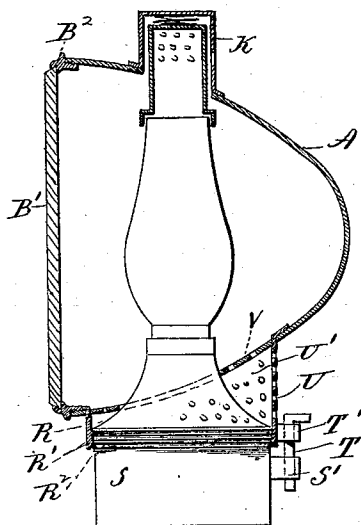


Fig. 7

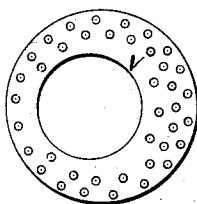


Fig. 8

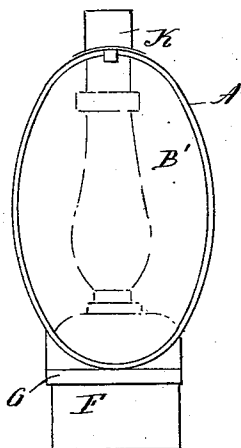
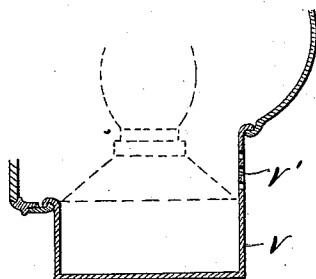


Fig. 6



Witnesses.

J. H. Shumway  
Lillian D. Kelby.

Charles E. W. Woodward  
Inventor.

By Atty.  
Earle Seymour

# UNITED STATES PATENT OFFICE.

CHARLES E. W. WOODWARD, OF CHICOPEE FALLS, MASSACHUSETTS, ASSIGNOR TO THE OVERMAN WHEEL COMPANY, OF HARTFORD, CONNECTICUT.

## CYCLE-LAMP.

SPECIFICATION forming part of Letters Patent No. 478,776, dated July 12, 1892.

Application filed April 20, 1891. Serial No. 389,641. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. W. WOODWARD, of Chicopee Falls, in the county of Hampden and State of Massachusetts, have invented a new Improvement in Cycle-Lamps; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in side elevation in one form which a lamp constructed in accordance with my invention may assume; Fig. 2, a view thereof in front elevation; Fig. 3, a view of the lamp in rear elevation; Fig. 4, a view thereof in vertical transverse section. Fig. 5 is a similar view of a modified form which my improved lamp may assume. Fig. 6 is a similar but broken view of another modified form of my improvement. Fig. 7 is a detached plan view of the perforated annular diaphragm shown in the two preceding figures. Fig. 8 is a view in front elevation, on a smaller scale than the other figures, showing a lamp having a cone of oval instead of circular cross-section.

My invention relates to an improvement in cycle-lamps, the object being to produce a simple, powerful, durable, and easily-managed lamp of few parts, and particularly to secure a large reflector without materially increasing the size of the lamp or its weight.

With these ends in view my invention consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

As herein shown, the paraboloid A is circular in cross-section and of ordinary form and construction. It may, however, have other forms in cross-section—as, for instance, as shown by Fig. 8 of the drawings, in which it is represented as being oval. It is provided with a door consisting of a circular band or ring and a disk B' of glass mounted therein, the said ring being hinged, as at C, to the forward edge of the reflector and engaged and

retained in its closed position by a spring-finger D, attached to the center of the upper edge thereof.

As shown by Fig. 1 of the drawings, the disk consists of a simple flat plate of glass, but as shown by Fig. 4 thereof it consists of a thick disk of glass having its edges beveled. If desired, however, instead of using a flat disk of glass, I may use a lens, as indicated by broken lines in Fig. 1 of the drawings, and, if preferred, I may mount the glass in a threaded ring B<sup>2</sup>, adapted to be screwed into the open end of the reflector, which is thereto appropriately threaded, as at B<sup>3</sup>, as shown by Fig. 5 of the drawings.

An opening E, formed in the lower face of the cone, is designed to receive the upper end of the lamp-fount F, which, as herein shown, is circular in transverse section and provided with a dome-like upper end; but, if desired, the upper end of the fount may be constructed to conform more nearly to the inner lines of the cone, and therefore obstruct reflection the less.

A depending fount-support forming, also, a draft-chamber is applied to the lower face of the reflector, around the opening E therein, and consists, as shown in Figs. 1 to 4, inclusive, of an open collar G and a hood G', the ends of the collar terminating in perforated lugs G<sup>2</sup>, which receive the clamping-screw G<sup>3</sup>, by means of which the collar is clamped onto the fount F after the same has been properly introduced into the opening E in the cone. The hood G', which, as herein shown, extends from the forward end of the ring G backward to a point slightly below the horizontal center of the reflector, has its upper edge attached by rivets and solder (either or both) to the outer face of the reflector and its lower edge attached to the ring, its rear end being vertically divided, as at G<sup>4</sup>, (see Fig. 3,) so that it will accommodate itself to the spring action of the collar. The rear face of this hood is perforated, as at G<sup>5</sup>, to admit air into the reflector, which is thereto perforated, as at A', as shown by Fig. 4 of the drawings. The upper face of the reflector is provided with an

opening H, located in line with the opening E before mentioned, but smaller than the same, and designed to receive a vertically-movable flue I, the lower end whereof is provided with an offsetting flange I', designed to embrace the upper end of the lamp-chimney J and hold the same in place. The upper end of this flue is provided with perforations I<sup>2</sup> and enters a cap or turret K, of larger diameter, applied to the outer face of the reflector, around the opening H before mentioned. This cap is sufficiently high to permit the flue I to move up and down in the said cap within the limits required to compensate for variations in the length of the lamp-chimney and is provided around its lower edge with a series of openings K', which co-operate with the openings I<sup>2</sup> in the flue to form an indirect draft for the lamp. A pin L, extending horizontally through the perforations in the flue I, projects at its ends through vertical slots K<sup>2</sup> K<sup>2</sup>, respectively formed in the front and rear faces of the cap K, and is provided for raising and lowering the said flue, as required. It may be retained at different heights in the said slots K<sup>2</sup> K<sup>2</sup> by friction with the walls thereof, by friction-springs, by lateral notches, or by any equivalent means, none being herein shown.

If desired, asbestos packings may be provided for the upper and lower ends of the lamp-chimney, although none are herein shown.

In addition to securing the lamp-fount in place by means of the split ring I may, if desired, employ a bayonet-joint between the lamp-fount and ring, as shown by Fig. 1 of the drawings, wherein the ring is represented as being provided with a suitable slot M and the fount with a pin M'. If desired, also, the door or glass front B may be attached on the same principle.

By reference to Fig. 4 of the drawings it will be seen that an air-space or draft-chamber is formed between the hood G, the upper surface of the lamp-fount, and the lower face of the rear end of the reflector, whereby the air-currents are broken and steadiness of burning in the lamp secured.

As shown by Fig. 5 of the drawings, the fount-support consists of a depending collar or sleeve R, made deeper at its back than at its front to compensate for the form of the reflector and having its lower end interiorly threaded, as at R', to receive corresponding threads R<sup>2</sup>, encircling the upper end of a lamp-fount S, which is furnished with a perforated lug S', receiving the lower end of a key T, supported in a corresponding lug T', projecting rearwardly from the rear face of the said collar, the said key and lug being provided for securing the fount against rotation after it has once been suitably adjusted. The collar is provided in its rear portions with perforations U, admitting air to its interior above the fount, which is contracted at its upper end to form the air-space or draft-chamber U', the

same being separated from the combustion-chamber formed by the reflector by means of a perforated diaphragm V, having an eccentric opening for the fount to pass through and bowed to conform to the curve of the lower wall of the reflector. Under this construction the air flows into the chamber U' through the perforations U in the collar R, and thence into the cone through the perforations in the diaphragm, which is, in fact, a draft-guard, breaking up the incoming air and securing a steady supply of it to the burner. If desired, other means than threads may be used to connect the lamp-fount with the depending collar—such, for instance, as lugs formed on the fount and arranged to enter grooves or slots in the collar, or screws mounted in the collar might be used to enter sockets formed in the fount, &c.

As shown by Fig. 6 of the drawings, the fount-support consists simply of a cylindrical cup V, depending below the lower face of the reflector, the lamp being set into and removed from it through the open end of the reflector by opening the door thereof. In this case air is admitted through perforations V' in the rear portion of the cup, but no diaphragm is, as shown, employed, although, if found desirable, a draft-guard might be attached to or carried by the fount.

In Fig. 5 of the drawings the upper edge of the collar R is shown as being carried inside of the cone and simply bent down thereupon, while in Fig. 6 the meeting edges of the cone and cup are interlocked.

For attaching my improved lamp to a cycle, of whatever specific construction that may be, I may employ a supporting device. As herein shown it consists of six arms arranged in three pairs. The upper pair of arms N N are respectively formed by the ends of a single flat bar bent midway of its length to form a loop N', which is perforated to receive a pin N<sup>2</sup>, mounted in the parallel lugs O O of a bracket O', secured to the reflector at a point directly back of the cap K thereon. The outer ends of the said arms diverge for pivotal attachment to the upper ends of two upright arms P P, to the lower ends whereof are pivoted the outer ends of the lower pair of arms N<sup>3</sup> N<sup>3</sup>, which have their inner ends pivoted to the ring G at opposite points thereon, the arms P P and N<sup>3</sup> N<sup>3</sup> being parallel. A cross-piece Q, attached to the upright arms P P, carries a clip W, adapted to be clamped upon the vertical arm W' of a bracket W<sup>2</sup>, attached to the framework of the vehicle by a clamp W<sup>3</sup>, of any approved construction, the framework being here represented by an upright post. The triangular frame formed by the upper arms N N is efficient in resisting lateral strain, while the rectangular frame formed by the arms P P and N<sup>3</sup> N<sup>3</sup> resists twisting strain in horizontal planes. Two spiral springs X X, arranged diagonally and connecting the corresponding arms of the two pairs of arms N N and N<sup>3</sup> N<sup>3</sup>, are provided for

normally holding the same in about the positions in which they are represented by Fig. 1 of the drawings and to permit them to yield and to absorb the force of the shocks which would otherwise be transmitted from the vehicle to the lamp. I, however, do not limit myself to any particular form of supporting device, although that herein shown will answer the purpose.

A lamp constructed as described has the advantage of a very large reflector, and is at the same time of simple and light construction, easily attended to, the door being large and the space within the reflector giving ample room for attention to the lamp proper. The reflector, with its cap and fount-support, virtually forms the lamp-body.

In view of the modifications suggested I would have it understood that I do not limit myself to the exact construction herein 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. I am aware, however, that a horizontally-arranged cone having an opening in its upper face covered by a turret and an opening in its lower face surrounded by a depending fount-support is not new, and do not, therefore, claim such a construction, broadly.

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

1. In a cycle-lamp, the combination, with a parabolic cone arranged horizontally and constructed with fount and air openings in its lower face, of a perforated hood applied to said face of the cone, inclosing the said fount and air openings, forming a draft-chamber vertically split at its rear end and provided at its lower edge with a split ring to embrace and hold the fount, substantially as described.

2. In a cycle-lamp, the combination, with a parabolic cone arranged horizontally and constructed with turret and fount openings, respectively formed in its upper and lower faces, of a perforated cap or turret applied over the said turret-opening, a perforated draft-flue extending into said turret, made enough smaller than the same to form a small air space between them, and provided at its lower end, which projects into the cone, with an offsetting flange to receive and hold the upper

end of the chimney, and a spring located in the cap to press the flue downward upon the chimney, substantially as described.

3. In a cycle-lamp, the combination, with a parabolic cone arranged horizontally and constructed with turret and fount openings, respectively formed in its upper and lower faces, of a cap or turret applied over the said turret-opening, a vertically-movable perforated draft-flue extending at its upper end into the turret and having its lower end, which projects into the cone, furnished with an offsetting flange to adapt it to receive and support the upper end of the chimney, a spring located within the turret for depressing the said flue, a depending fount-support applied over the said fount-opening and forming a draft-chamber, and a glass closing the open end of the cone, substantially as described.

4. In a cycle-lamp, the combination, with a parabolic cone arranged horizontally and constructed with turret and fount openings, respectively formed in its upper and lower faces, of a turret applied over the said turret-opening, a fount-support consisting of a perforated hood inclosing the said fount and air openings, forming a draft-chamber and having a split collar attached to its lower edge for clasp ing upon the fount, and a glass closing the front of the cone, substantially as described.

5. The combination, with the body of a cycle-lamp, of a pair of diverging arms pivoted at their meeting points to the upper portion of the said body, a pair of parallel upright arms pivoted to the outer ends of the said diverging arms, a pair of parallel arms having their outer ends pivoted to the lower ends of said upright arms and their inner ends pivotally connected with the lower portion of the said body at a point thereon above the lower ends of the said upright arms, a clip attached to the said upright arms, and springs for controlling the action of the said arms, substantially as described.

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

CHARLES E. W. WOODWARD.

Witnesses:

LUTHER WHITE,  
W. S. L. HAWKINS.