

No. 646,114.

Patented Mar. 27, 1900.

A. F. VETTER.  
PORTABLE ELECTRIC LAMP.

(Application filed Oct. 11, 1899.)

(No Model.)

Fig. 1.

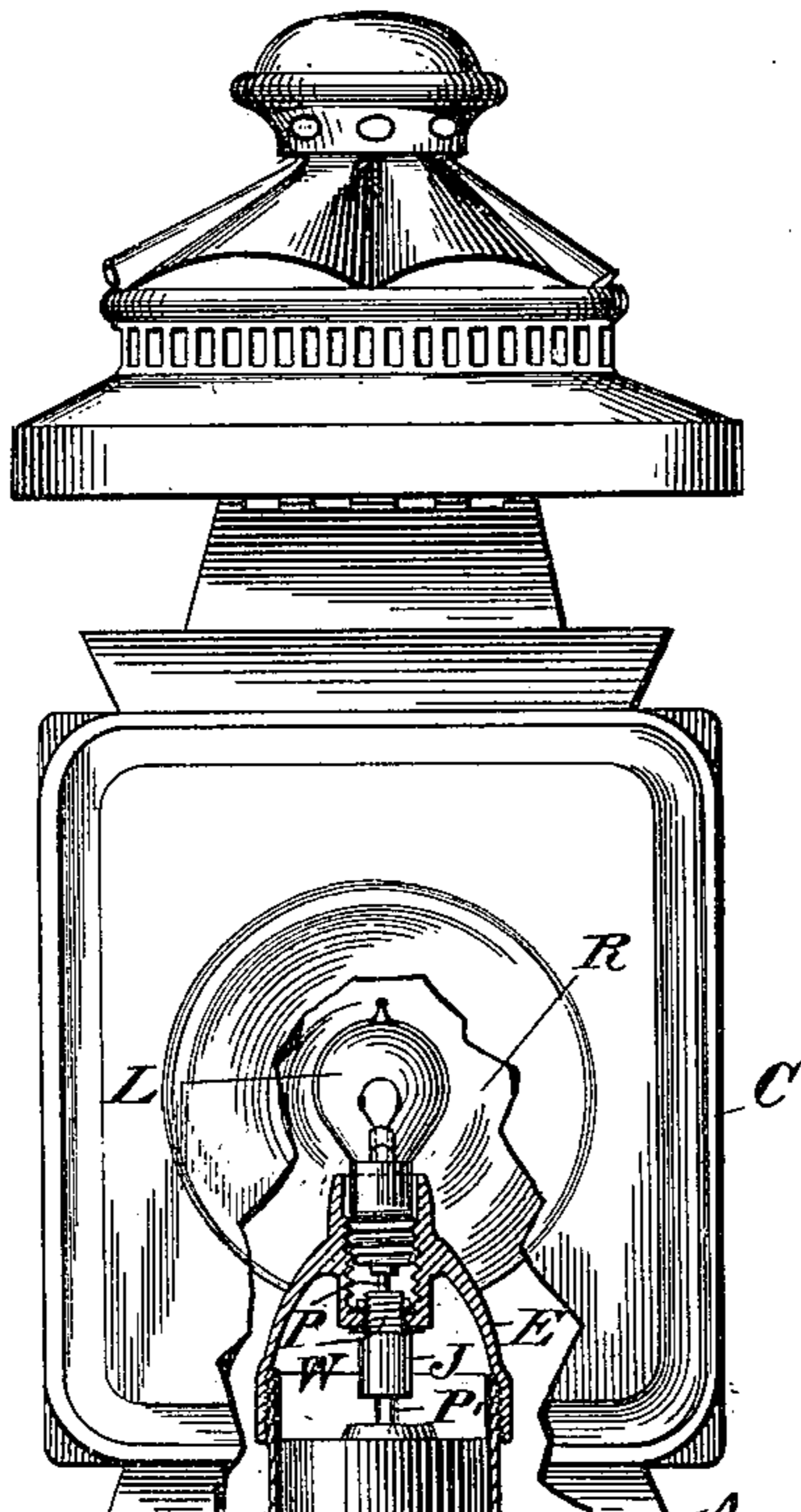


Fig. 2.

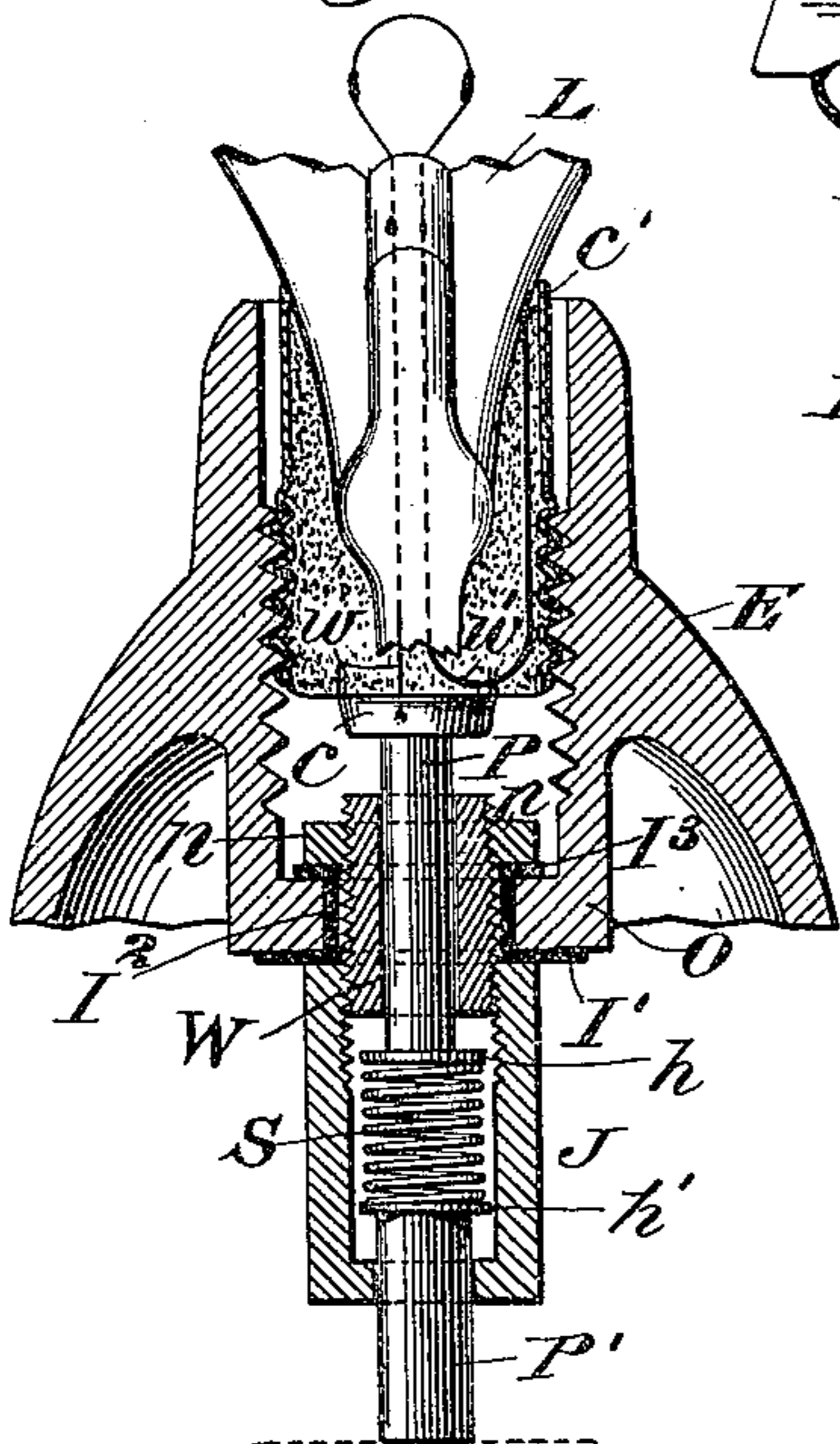


Fig. 3.

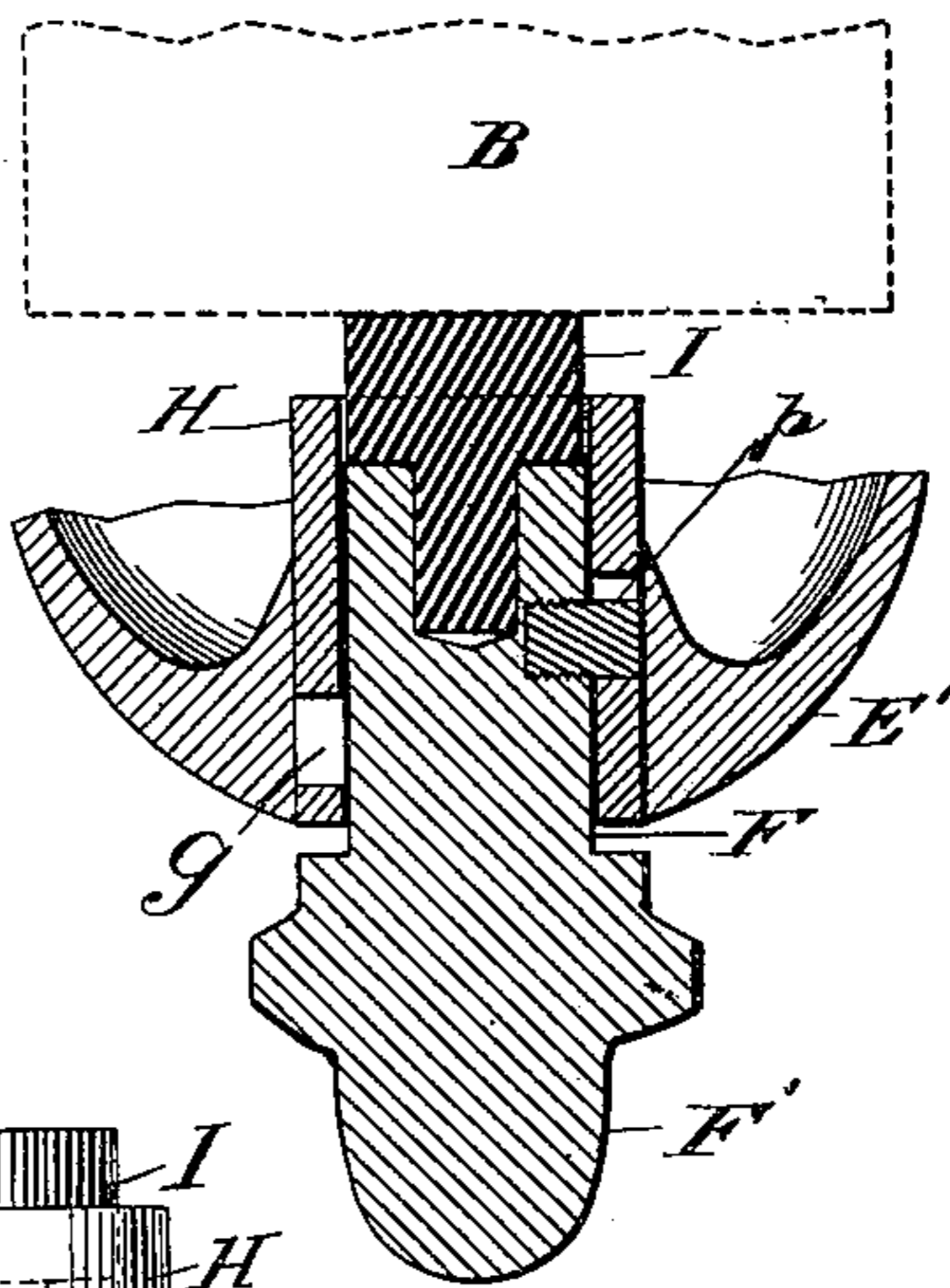
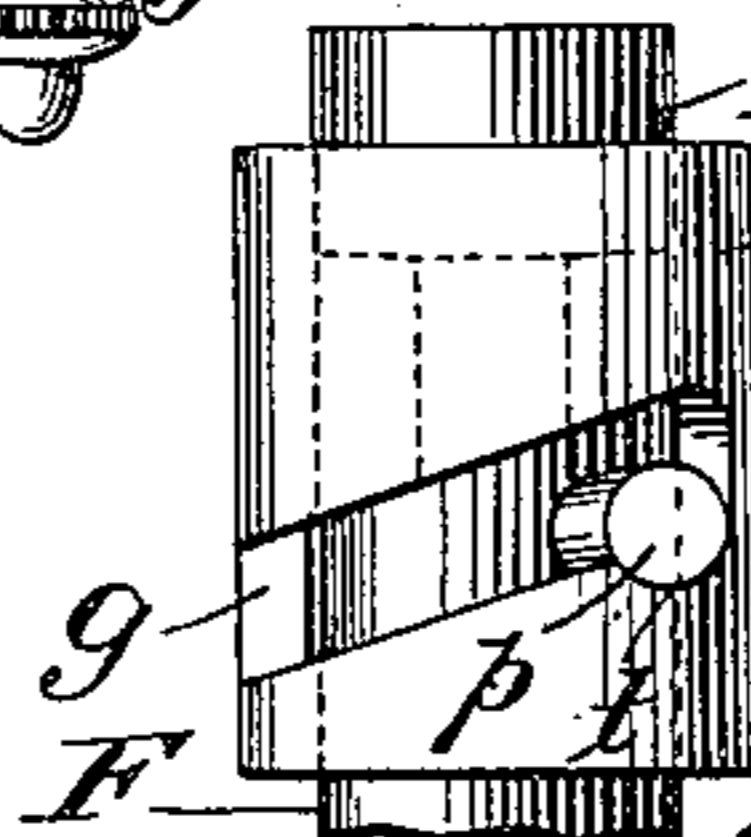


Fig. 4.



Witnesses  
Edward C. Rowland.  
M. F. Keating

Inventor  
Alexander F. Vetter  
By his Attorney  
Charles J. Kintner.

# UNITED STATES PATENT OFFICE.

ALEXANDER F. VETTER, OF NEW YORK, N. Y., ASSIGNOR TO THE UNITED STATES BATTERY COMPANY, OF SAME PLACE.

## PORTABLE ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 646,114, dated March 27, 1900.

Application filed October 11, 1899. Serial No. 733,273. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER F. VETTER, a citizen of the United States, residing at New York, in the borough and county of Queens and State of New York, have made a new and useful invention in Portable Electric Lamps, of which the following is a specification.

My invention is directed particularly to an improvement in portable lamps like that disclosed in United States Patent No. 614,318, granted to Owen T. Bugg, Jr., on the 15th day of November, 1898; and its objects are, first, to adapt such a portable lamp for use in connection with well-known forms of carriage and similar vehicle lamps; second, to so connect a portable electric lamp of the character referred to with the body part of a carriage or other vehicle-lamp that the same may be quickly detached therefrom and used wherever desired, and, third, to provide switching means for effecting the circuit connections from the bottom of the battery-inclosing tube or casing.

My invention will be fully understood by referring to the accompanying drawings, in which—

Figure 1 illustrates a front elevational view of the body part of a well-known form of carriage-lamp with my novel detachable portable electric lamp secured thereto, the front part of the carriage-lamp being broken away and the parts of the improved portable lamp being illustrated in longitudinal sectional view, with the inclosed batteries, yielding circuit connections, and the switching means in elevational view. Figs. 2 and 3 are enlarged vertical sectional views of the detachable end cups which secure the lamp and the batteries in place within the battery-inclosing tube or casing, the opposite ends of the two adjoining batteries being shown in dotted lines. Fig. 4 is a detail view of the switch-controlling plug in the bottom end of the lower detachable cup.

Referring now to the drawings in detail and first to Fig. 1, C represents the body part of an ordinary or well-known form of carriage-lamp having a reflector R and a downwardly-extending apron A at its lower side, to which is secured the usual extension D for attaching the lamp proper.

One feature of my novel invention consists

in adapting a portable electric lamp for use in connection with carriage-lamps of this type, and to this end I secure within the downward extension D a screw-threaded ring N, said ring being easily attached by solder or otherwise to the body part of existing or well-known forms of carriage-lamps.

T represents a metallic inclosing tube or casing which constitutes the battery-chamber for inclosing the battery-cells B B', said tube being lined interiorly with insulating material K.

E and E' are removable or detachable screw-threaded end cups adapted to be secured to corresponding screw-threads on the opposite ends of the metallic tube or casing T. The lower screw-cup E' is provided with a switch-controlling plug F, fitted in a sleeve H, which is secured in turn directly to the cup, said sleeve being provided with an inclined spiral or screw groove g, adapted to receive a pin p on the switch-controlling plug F. At the upper end of the inclined groove g is a notch t for receiving the pin p when it reaches its extreme or upper position. (See Fig. 4.) The lower end of the switch-controlling plug F is provided with a milled head F' for rotating it as desired, and in its upper end is seated a cylindrical block of insulating material I of the same interior diameter as the interior diameter of the sleeve H, the arrangement being such that when the plug F is in its lower position the insulating-block I is drawn downward into the sleeve H, so that the bottom of the lower battery-cell B will rest upon said metallic sleeve and make electrical connection therewith. The upper metallic end cup E is provided with an upwardly-extending neck which is screw-threaded interiorly for receiving the corresponding metallic screw-threads of an incandescent lamp L, the arrangement being such that when the lamp is in position, as shown in Fig. 2, circuit is made from the conductor w', running from the filament through the metallic screw-threaded part c' and the cup E. The lower part of the cup E is so constructed as to have a shoulder o for receiving the yielding conducting parts which convey the current to the lamp.

P and P' are conducting-plugs having heads h and h' turned upon their adjacent ends

and secured directly to a spiral spring S, the plug P being adapted to slide longitudinally in a sleeve W, screw-threaded in the upper end of a surrounding sleeve J, through an opening in the bottom of which the lower plug P' is adapted to slide longitudinally, all of said parts being held in the lower end of the upper detachable end cup E by a nut n.

I<sup>1</sup> and I<sup>3</sup> are insulating-washers and I<sup>2</sup> an insulating-cylinder for effectually insulating the parts from the cup. The arrangement of these parts is such that when the lamp L is secured in place its exterior metallic contact c will rest upon the upper end of the plug P.

The tube or casing T for a brief distance near its upper end is slightly enlarged and screw-threaded for the purpose of receiving an adjustable sustaining part L', screw-threaded exteriorly and interiorly, the arrangement being such that by reason of the adjustability of the parts the lamp L may be properly focused with relation to the reflector R and adapted for use with different types of carriage-lamps.

In using my improved lamp the parts are put together as follows: The incandescent lamp L is secured in place, thus causing the contact c to come into mechanical and electrical contact with the yieldingly-supported plug P, acting against the upward pressure of the spring S. The cup E is then secured to the upper screw-threaded end of the tube or casing T. The upper battery-cell B' is now slipped into place with its inner electrode against the lower end of the lower yielding metallic plug P'. The second battery-cell is then slipped into place with its inner electrode resting against the metallic bottom of the upper cell B', and the lower screw-cup E' is secured to the lower screw-threaded end of the tube or casing T. In this position, with the switch-controlling plug F in its lower position, the batteries are in circuit with the lamp by reason of the fact that the bottom of the cell B rests upon the top of the metallic sleeve H, so that the circuit is closed from said sleeve through the lower end cup E', outer tube or casing T, upper end cup E, metallic screw-threaded part c' of the lamp, (see Fig. 2,) conductor w', lamp-filament, outer metallic contact c of the lamp, yielding contact-plug P, head h, spiral spring S, head h', lower yielding metallic plug P' to the inner electrode of the upper cell, thence through the cells to the starting-point. For disconnecting the cells it is only necessary to rotate the switch-controlling plug F by the milled head F' to the right, causing the pin p to slide up the inclined groove g until it falls into the locking-notch t. By doing this both of the battery-cells are lifted bodily, as will be seen on inspection of Fig. 3 of the drawings, so that the circuit is interrupted at the bottom of the lower cell so long as the switching-plug is maintained in this position.

I am aware that it is not broadly new with me to combine an incandescent electric lamp

with a carriage-lamp in which the incandescent lamp is retained or held in a socket supported by the candle-holder of the lamp. I am also aware that a reflector has heretofore been combined with an incandescent electric lamp, the latter being provided with means for adjusting the same relative to the focus of the reflector, and I make no claims hereinafter broad enough to include such structures, my most generic claim being directed to the combination of a portable electric lamp embracing an incandescent electric lamp and a metallic tube or casing, the latter inclosing one or more battery-cells, said portable lamp being adapted to be detachably supported by the downwardly-extending apron or part of a carriage-lamp which usually sustains or supports the candle or lamp, my novel improvement making it possible to utilize such a portable lamp either with a carriage-lamp or as a portable lamp at the will of the user.

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

1. A portable electric lamp embracing an incandescent lamp, a metallic tube or casing and one or more battery-cells inclosed therein and circuit connections between the casing, the battery and the lamp; in combination with the body part of a carriage-lamp, said portable electric lamp being detachably supported by the downwardly-extending apron or part of the carriage-lamp, substantially as described.

2. A portable electric lamp electrically connected with a metallic tube or casing and one or more battery-cells inclosed in said casing, with switching means for effecting circuit connections between the battery and the lamp; in combination with the body part of a carriage-lamp having a reflector; together with adjustable means for varying the location of the portable electric lamp with relation to the reflector, said portable electric lamp being detachably supported by the downwardly-extending apron or part of the carriage-lamp, substantially as described.

3. A portable electric lamp electrically connected with a metallic tube or casing and one or more battery-cells inclosed therein and switching means for effecting circuit connections between the battery and the lamp; in combination with the body part of a carriage-lamp having a reflector and a downwardly-extending apron or part, the portable electric lamp being provided with means for detachably connecting it to the downwardly-extending apron or part, substantially as described.

4. A portable electric lamp embracing an incandescent lamp, a metallic tube or casing, one or more battery-cells inclosed therein, yielding circuit connections between the battery and the lamp and switching means at the bottom of the inclosing tube or casing adapted to lift the batteries bodily, substantially as described.

5. A portable electric lamp embracing an

incandescent lamp, a metallic tube or casing and one or more battery-cells inclosed therein, the incandescent lamp being detachably secured to a removable metallic cup screw-threaded to one end of the metallic casing; 5 in combination with a second removable metallic cup screw-threaded to the other end of the tube or casing and switching means located in said cup adapted to move the battery 10 bodily and connect it to or disconnect it from the lamp, substantially as described.

6. A portable electric lamp embracing an incandescent lamp, a metallic tube or casing inclosing one or more battery-cells, provided 15 with yielding connections between the upper electrode of the battery and the incandescent lamp; in combination with means located at the bottom of the tube or casing for lifting the battery bodily and interrupting the circuit 20 between it and the casing, substantially as described.

7. A portable electric lamp embracing an incandescent lamp electrically connected with a metallic tube or casing provided with a lining of insulating material; in combination 25 with one or more battery-cells inclosed in said tube or casing, together with yielding circuit connections between one electrode of the battery and a switch-controlling plug located in one end of the metallic tube or casing, said 30 plug being provided with means for causing the battery to be lifted bodily and in such manner as to interrupt the circuit between it and the metallic tube or casing, substantially as described. 35

In testimony whereof I have hereunto subscribed my name this 6th day of October, 1899.

ALEXANDER F. VETTER.

Witnesses:

C. J. KINTNER,

D. H. DARLING, Jr.