

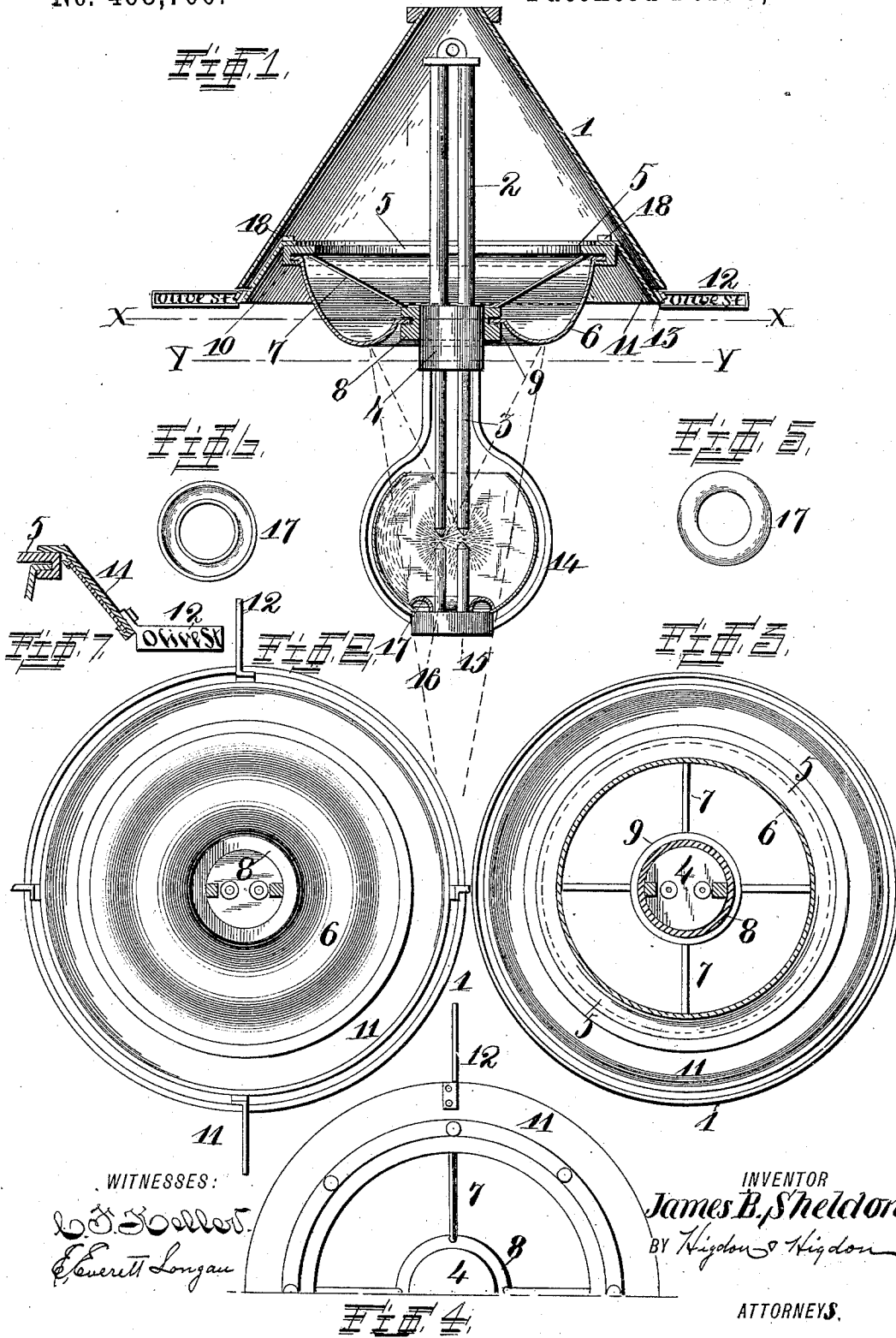
(No Model.)

J. B. SHELDON.

DEVICE FOR PREVENTING SHADOWS OF ELECTRIC OR OTHER  
FORMS OF LAMPS.

No. 468,700.

Patented Feb. 9, 1892.



# UNITED STATES PATENT OFFICE.

JAMES B. SHELDON, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO  
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DEVICE FOR PREVENTING SHADOWS OF ELECTRIC OR OTHER FORMS OF LAMPS.

SPECIFICATION forming part of Letters Patent No. 468,700, dated February 9, 1892.

Application filed December 19, 1890. Serial No. 375,249. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES B. SHELDON, of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Devices for Preventing Shadows of Electric and other Forms of Lamps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in devices for preventing shadows of electric lamps; and it consists in the novel arrangement and combination of parts, as will be more fully hereinafter described, and designated in the claims.

In the drawings, Figure 1 is a vertical longitudinal section of my invention. Fig. 2 is a horizontal cross-section looking upward, taken on the line *yy* of Fig. 1. Fig. 3 is a similar section taken on the line *xx* of Fig. 1. Fig. 4 is a top plan view showing half of the supporting-frame for the reflectors, &c. Fig. 5 is a top plan view of a small reflector which I employ in carrying out my invention, and Fig. 6 is a bottom plan view of the same. Fig. 7 is an enlarged sectional view showing the manner of attaching street-signs and counter or secondary reflecting rim to the main horizontal supporting-frame of the main or primary reflector.

The object of my invention is to obviate the formation of shadows caused by the interposition of the opaque portions of the lamp.

It is well known in the construction of electric-arc lamps for street purposes that there is usually a shadow formed and part of the luminous rays emitted from the said lamps answer no purpose.

Referring to the drawings, 1 represents a shed, which is of the form of a frustum of a cone and is used to protect the lamp and its contiguous mechanism from being exposed to rain and snow and the inclemency of the weather. Extending upwardly in said shed and suitably attached are carbon-holding tubes 2, in which adjustable carbon points 3 are incased. 4 indicates a drum in which said tubes are secured and also a feeding mechanism for the adjustable carbons 3.

5 represents a circular horizontal frame from which a primary reflector 6 is suspended. Said reflector 6 is in the form of a circular ring or an annular body having a circular opening at the base of a central depression, an inner rim or flange surrounding said opening and an outer or peripheral flange adapted to be received within a groove of the supporting-frame. Thus it will be noticed a continuous curved reflecting-surface surrounds said central depression and central opening. Said frame is supported by means of bars 7, which bars are secured to the horizontal circular frame 5 and also to a stationary support 8, which support is secured to the drum 4 in any suitable manner. Said support 8 is provided with a peripheral groove 9, adapted to receive the inner rim or flange of the reflector 6. Said circular horizontal frame 5 is also provided with an internally-formed groove 10, which groove is adapted to receive the other edge or rim of the reflector 6, whereby said reflector is held in its normal position. Said reflector 6 may be constructed out of any suitable reflecting medium—for instance, burnished metal, quicksilver, plated glass, or any material that will reflect the luminous rays.

11 indicates a secondary reflecting circular rim, which is composed of one or more pieces of suitable reflecting medium, or it may be made of one continuous piece, and is set at such an angle relative to the primary reflector 6 as will act as a counter-reflector intended for the purpose of reflecting the luminous rays emitted from the source of light to such parts or points of primary reflector 6 as may not be reached by the source of light—practically speaking, for reaching by secondary or counter reflection such parts as are not reached by direct reflection. Said secondary reflector 11 is of a circular form, as hereinbefore stated, and is secured to the horizontal circular frame 5 by means of bolts or rivets 18 or in any other suitable manner. To said reflector 11 street-signs 12 may be secured by means of bolts or rivets 13.

14 indicates supporting-bars for the base 15, on which the stationary carbons 16 are secured. Encircling said carbons and secured

to the base which supports them is a small reflector 17, which reflects the light that would otherwise fall upon the opaque base 15. The rays of light that are emitted from the points of the carbon and that tend to pass downward strike the reflecting-surface of reflector 17 and are reflected upwardly and are utilized in place of being absorbed by the opaque base 15. The function of the annular or ring-like reflector 6, with its curved surface completely encircling the source of light, is to diffuse the rays which strike it, rather than to concentrate them, as would a concave surface placed in the same position. The rays of light upon striking said curved surfaces will be reflected and thrown in many different directions, crossing each other, some above the base 15 and a great many beneath it, thereby preventing in a great measure any shadow beneath the lamp. A portion of the rays first strike the outer reflector 11, and are by it reflected upon the curved reflecting-surface, and thence downwardly, some beneath the base 15 and intersecting each other thereat and some of course outwardly in many different directions. The reflector 6 may be compared to a continuous ring of light when in practical operation, throwing rays of light past the opaque base of the lamp from all sides.

Having fully described my invention, what I claim is—

1. As an article of manufacture, a reflector in the form of an integral annular body having a circular central depression in its under side, and a downwardly and upwardly curved reflecting-surface surrounding said central depression, substantially as set forth.

2. As an article of manufacture, a reflector comprising an annular body having a central depression, a central opening, an attaching flange or rim surrounding said central opening, and a curved reflecting-surface surround-

ing said central depression, substantially as set forth.

3. The improved reflector consisting of a primary reflector, as 6, in the form of an annular body having a central depression and a curved reflecting-surface surrounding said central depression, a secondary reflector, as 11, both of said reflectors being situated above the source of light, and a third reflector, as 17, encircling the source of light and situated below the same, substantially as set forth.

4. The improved reflector consisting of a circular horizontal support provided with an inner groove 10, a stationary support 8, provided with a peripheral groove 9, supports 7 for said horizontal frame, and a reflector 6 in the form of an annular body having a central depression and a central opening, a curved reflecting-surface surrounding said central opening and depression, and flanges or rims upon the inner and peripheral edges of said reflector, the peripheral flange fitting in said groove 10 and the inner flange fitting in groove 9, substantially as set forth.

5. The combination, with an electric or other form of light, of a primary reflector 6, a secondary or counter reflector 11, situated above said primary reflector, a support 8, provided with a peripheral groove 9, secured to the drum 4 of said light, supports 7, secured to said support 8, a circular horizontal support 5, provided with an inner groove 10, mounted on said supports 7, street-signs 12, secured to secondary or counter reflector 11, and a reflector 17, encircling the stationary carbons 16, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES B. SHELDON.

Witnesses:

E. E. LONGAN,  
C. F. KEELER.