(No Model.)

C. E. QUIMBY.

ELECTRIC LAMP.

No. 556,693. Patented Mar. 17, 1896.

Fig. 1.

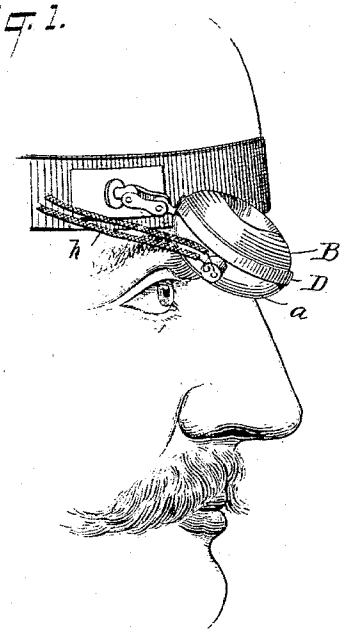


Fig. 2.

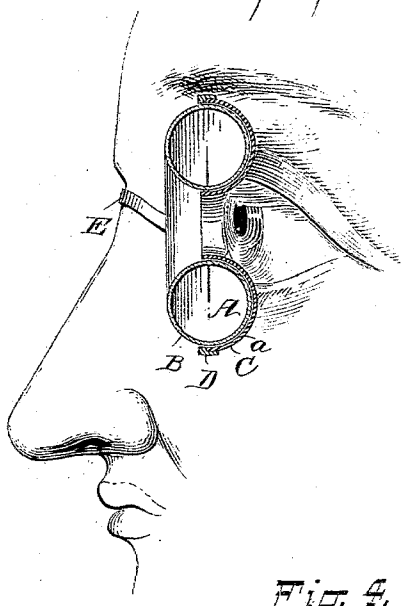


Fig. 3.

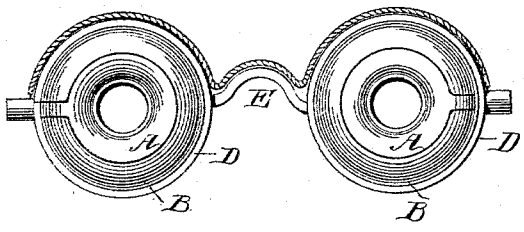


Fig. 4.

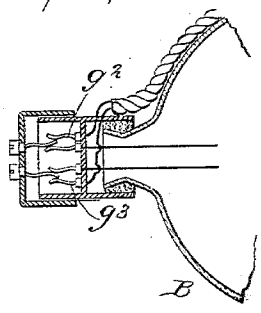


Fig. 5.

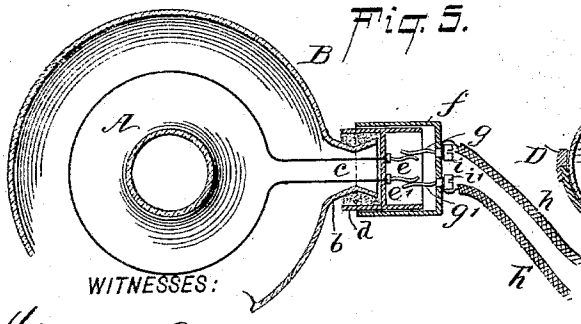
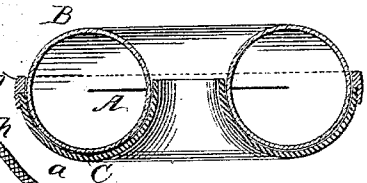


Fig. 6.



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UNITED STATES PATENT OFFICE.

CHARLES E. QUIMBY, OF NEW YORK, N. Y.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 556,693, dated March 17, 1896.

Application filed August 18, 1893. Serial No. 483,451. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. QUIMBY, of the city, county, and State of New York, have invented a new and Improved Electric Lamp, of which the following is a full, clear, and exact description.

My invention consists in an incandescent lamp constructed and arranged as hereinafter described and 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 perspective view of one form of my improved electric lamp, showing a method of applying it to the head of the user. Fig. 2 is a diametrical section of my improved lamp with a different form of support. Fig. 3 is a front elevation showing a pair of lamps mounted for use on a spectacle-frame. Fig. 4 is an enlarged view showing the electrical connections of a pair of lamps. Fig. 5 is an enlarged sectional view taking the plane at right angles to the axis of the incandescent loop, and Fig. 6 is an enlarged diametrical section.

The filament A of my improved incandescent lamp may be made of any material commonly used in electric incandescent lamps; but I prefer to use fine platinum wire. The said filament is bent to an annular form and placed in a plane at right angles to the available line of vision and circumferential to a circle of which the center is in said available line of vision. Under these conditions and relations the luminous pencil reflected from any point in said available line of vision is composed of reflected pencils from every point in said incandescent loop, and the distortions and deceptions arising from single or unilateral reflections are thereby reduced to a minimum, and the point of illumination placed essentially in the line of vision.

The glass globe E inclosing the filament may be made of any desired shape, provided it affords sufficient space for the incandescent loop and affords an unobstructed opening, the said opening being circular and concentric with the circle of which the incandescent loop forms the circumference. In the present case I have shown an annular glass globe B of circular cross-section with the annular loop arranged axially in the globe. In this case the inner and outer peripheries of the glass globe and the annular loop are concentric. A diameter of from one and one-half to two inches for the larger diameter of the globe and from three-eighths to one-half inch for the internal diameter have been found convenient dimensions for a lamp for general use. This globe may be blown entire, or it may be formed of a tube bent into circular shape, and it may be either transparent or translucent. The ends of the incandescent filament are attached to wires which are sealed in the glass of the globe.

To the back of the annular globe is fitted a protecting case or shield C, preferably of the aluminium, on account of its lightness. Said shield is formed by the process of spinning or by any of the known methods of shaping metal, so that it fits the annular glass globe accurately and incloses one-half thereof, except that such portion of this case as enters the central opening of the globe is extended sufficiently to cut off from the eye of the observer all reflections from the interior surface of the globe, as well as direct rays from the incandescent loop. The aluminium shield or case C is provided with a covering *a*, of ivory or other insulating material, and to the edge of the covering *a* is fitted a rim D, of ivory, metal, or other suitable material, which clasps the annular globe B in place in the case C. When two such lamps are employed, they are connected by a nose piece or bridge E, which rests upon the nose of the user, and in connection with ordinary spectacle arms or springs holds the lamps in the position of use.

The neck *b*, formed at one side of the lamp and in which are sealed the leads *c* carrying the current to the filament A, is returned in a socket *d* of insulating material which supports the contact-springs *e e'* attached to the leads *c*, and over the socket *d* is fitted a cap *f* carrying contact-springs *g g'* which form electrical contact with the springs *e e'* when the cap *f* is in place.

Insulated wires *h h'* are connected with the lamp by binding-screws *i i'* which communicate electrically with the springs *g g'*. Where two lamps are mounted in the frame, as above described, after the manner of spectacles, the electrical connection with one of the annular

loops A is made in the manner already described, and the connection with the other annular loop is made by means of auxiliary springs g^2 g^3 connected with wires leading to the terminals of the other annular loop.

In the form shown in Fig. 1 the lamp is attached by a universal joint to a band passing around the head of the user. This construction permits of turning the lamp out of the way when not in use.

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

1. As an improved article of manufacture, an incandescent electric lamp formed of an annular glass globe, an annular illuminating-conductor, a metallic shield inclosing one-half of the lamp and extending through the central aperture of the lamp beyond the plane of the annular illuminating-conductor, and a heat-insulating backing applied to the metallic shield, substantially as specified.

2. In apparatus for localized illumination, two annular incandescent electric lamps, provided with opaque shields, a supporting-frame for holding the lamps in the position of use, and the electrical connections, substantially as specified.

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Witnesses:
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