H. W. LAKIN.

HEADLIGHT FOR MOTOR VEHICLES, &c.

APPLICATION FILED NOV. 10, 1916.

1,240,583.

Patented Sept. 18, 1917.

FIG. 1.

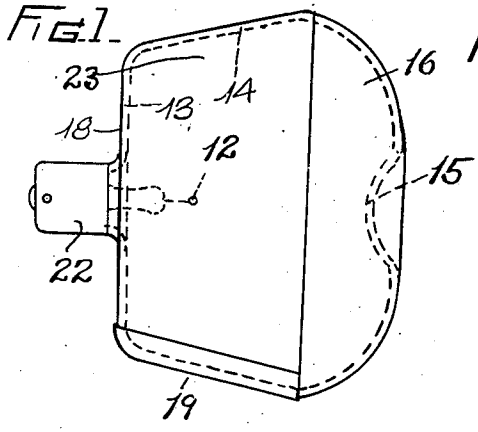


FIG. 2.

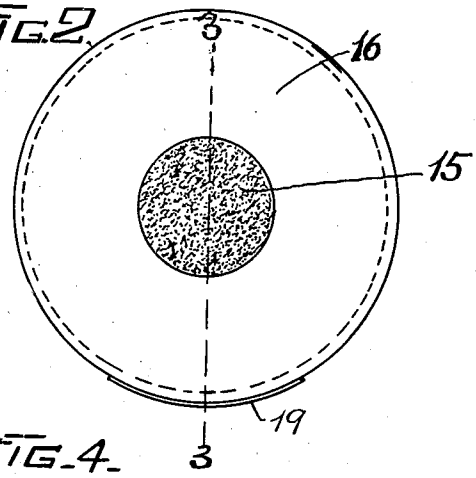


FIG. 3.

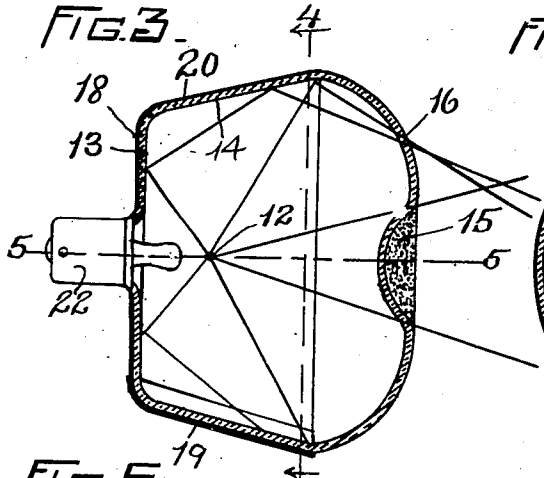


FIG. 4.

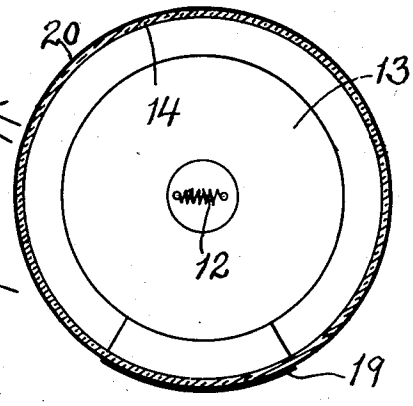


FIG. 5.

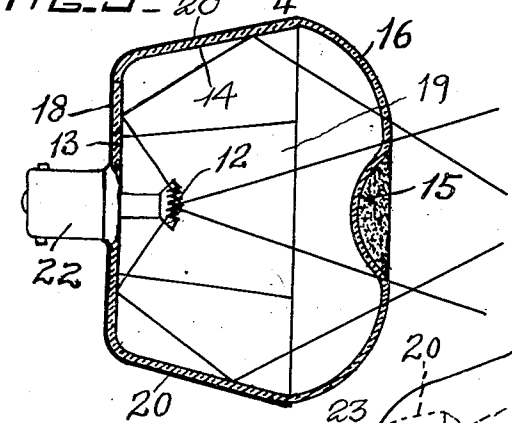
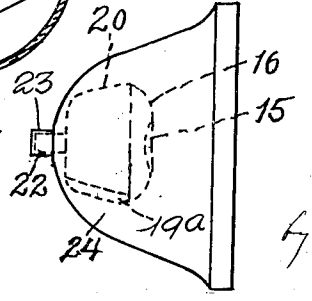


FIG. 6.



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UNITED STATES PATENT OFFICE.

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HEADLIGHT FOR MOTOR-VEHICLES, &c.

1,240,583. Specification of Letters Patent. Patented Sept. 18, 1917.

Application filed November 10, 1916. Serial No. 130,572

To all whom it may concern:

Be it known that I, HARRY W. LAKIN, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Headlights for Motor-Vehicles, &c., of which the following is a specification.

This invention relates particularly to headlights for motor vehicle, such as automobiles and street railway cars, and its object is to utilize an incandescent electric lamp as a self-contained non-glaring headlight, preventing the emission of glaring rays from the lamp filament in a forward and upward direction and thereby preventing the temporary blinding effect of direct glaring rays thrown into the eyes of pedestrians and occupants of vehicles, and at the same time providing for a sufficient illumination of the track or road ahead of the vehicle carrying the lamp as a headlight. The invention is embodied in the improved electric lamp hereinafter described and claimed.

Of the accompanying drawings forming a part of this specification,—

Figure 1 represents a side elevation of an incandescent electric lamp embodying my invention.

Fig. 2 represents a front end elevation of the same.

Fig. 3 represents a section on the line 3—3 of Fig. 2.

Fig. 4 represents a section on the line 4—4 of Fig. 3.

Fig. 5 represents a section on the line 5—5 of Fig. 3.

Fig. 6 represents the lamp, shown by the preceding figures, engaged with a support, the lamp being shown by dotted lines.

The same reference characters indicate the same parts in all of the figures.

In the drawings, 22 represents the usual plug element of an incandescent electric lamp, and 12 represents the incandescent filament thereof.

The lamp bulb which is made of glass and exhausted by the methods usually employed in the manufacture of incandescent electric lamps, comprises a forwardly facing rear wall 13, surrounding and substantially perpendicular to the axis of the plug 22 and located behind the filament 12, a body wall 14 joined to the rear wall and surrounding the filament, said body wall being preferably of frusto-conical form, and substantially concentric with a prolongation of the plug axis, and a front end wall joined to the body wall and having a central light-obstructing portion 15, the center of which coincides with a prolongation of the plug axis, and a transparent zone 16 surrounding said portion and joining the body wall. The front wall as originally formed is preferably concavo-convex with its convex side outward, the portion 15 being subsequently formed by pressing the central portion of the front wall inwardly to form a concavo-convex boss, the concave side of which faces outwardly. Said portion may be treated in any suitable way to intercept direct rays of light and preferably remain at the same time translucent. This result may be obtained by treating the external surface of the portion 15 with a suitable acid to give it the appearance of ground glass.

The rear wall 13 is so treated that it constitutes a reflector adapted to reflect rays of light against the body wall 14 as indicated by Fig. 3.

The bottom portion of the body wall is so treated that it is non-reflecting, while the remaining portions of the body wall, including the sides and top, are so treated that they constitute a segmental reflector adapted to reflect rays of light forward and downward from the top portion of the body wall through the transparent zone 16 as indicated by Fig. 3, and forward and horizontally in oblique directions from the sides of the body wall through the transparent zone 16 as indicated by Fig. 5.

In treating the said walls as above stated, I preferably apply to the external surface of the rear wall 13 a heat-resisting coating the inner surface of which combines with the outer surface of the glass wall in creating a reflecting surface.

To the bottom portion of the body wall 14 I apply a coating 19, which may be a suitable paint or pigment, forming, with the glass surface to which it is applied, a dead or non-reflecting surface.

To the remaining portions of the body wall 14, I apply a coating 20 of the same nature as the coating 18.

An incandescent electric lamp having the walls of its bulb formed and treated, and arranged relatively to each other and to the lamp plug, substantially as described and as shown by the drawings, when engaged

with a fixed horizontal lamp socket 23, as shown by Fig. 6, constitutes a self-contained, non-glaring headlight, adapted to sufficiently illuminate the road ahead of the vehicle carrying said socket, without temporarily blinding persons ahead of the vehicle and looking toward the same.

The socket 23 may be an ordinary lamp socket, and may be supported by a holder or casing 24, formed to protect the lamp, and attached in any suitable way to the vehicle. Said casing may have the same general form as an ordinary casing equipped with a parabolic reflector and provided with a lamp socket. The casing does not, however, perform the function of reflecting light, said function being performed wholly by the lamp bulb.

The relative arrangement of the lamp filament, the reflecting surfaces, the non-reflecting surface, the light-intercepting portion 15 and the transparent zone 16, is such that direct rays projected forward on and around the horizontal axis of the lamp are sufficiently intercepted by the portion 15 to prevent a blinding effect, the said portion 15 casting a shadow of gradually increasing diameter forward along said horizontal axis 7. The rays that are projected through the transparent zone 16 extend at such angles, and are so distributed that they are not blinding rays, and as they include both direct and reflected rays, it follows that a sufficiently wide portion of the road is effectively illuminated.

I claim:—

An incandescent electric lamp, the bulb and plug element of which are coaxially arranged, the bulb including a forwardly facing inner wall, substantially perpendicular to the axis of the plug, and constituting a reflector located behind the lamp filament, a body wall surrounding and substantially concentric with a prolongation of said axis, the bottom portion of said body wall being non-reflecting, and the remaining portion constituting a segmental frusto-conical reflector, and a front wall having a light-obstructing central portion, the center of which is substantially coincident with the axis of the plug, and a transparent annular zone surrounding said central portion and joining the body wall, said reflectors and non-reflecting portion being relatively arranged to coöperate with the lamp filament in projecting rays through said zone in forward and downward directions and obliquely in forward and substantially horizontal directions when the plug is engaged with a horizontal fixed socket, the said non-reflecting portion preventing the projection of rays in forward and upward directions, and the said light-obstructing portion intercepting rays projected in the plane of the axis of the lamp, so that the lamp is adapted to constitute a self-contained, non-glaring, road-illuminating headlight.

In testimony whereof I have affixed my signature.

HARRY W. LAKIN.