W. T. MORAN.

HEADLIGHT.

APPLICATION FILED OCT. 29, 1913.

1,086,303. Patented Feb. 3, 1914.

Fig. 1.

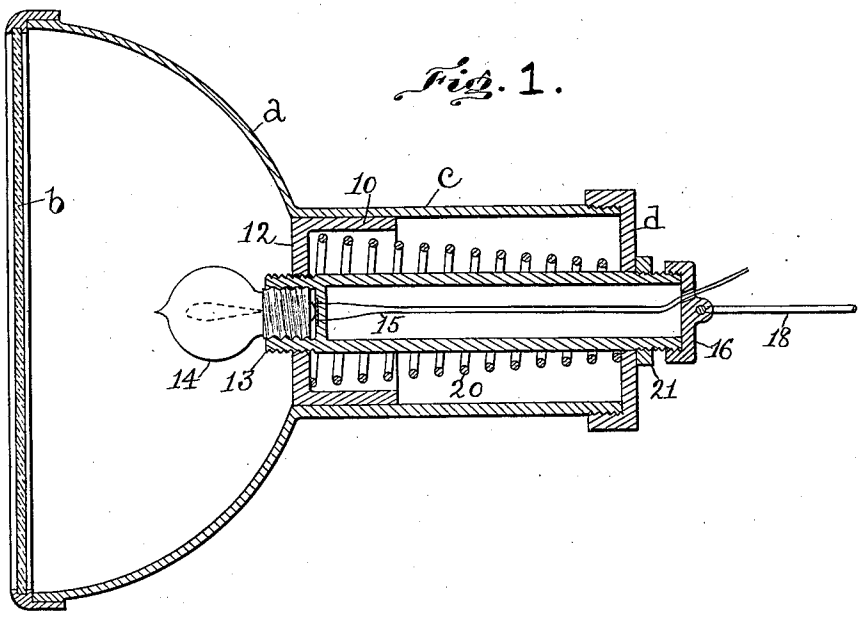
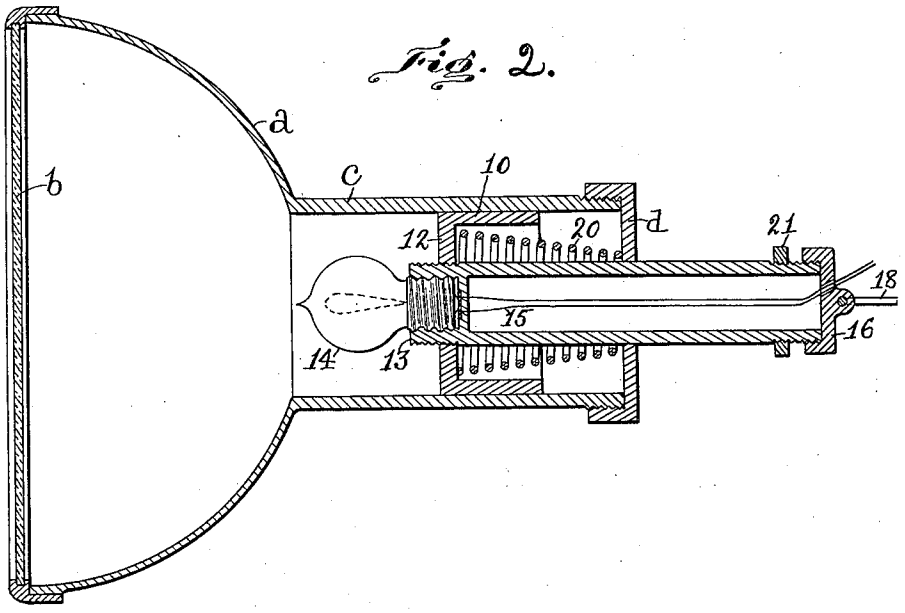


Fig. 2.



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UNITED STATES PATENT OFFICE.

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HEADLIGHT.

1,086,303. Specification of Letters Patent. Patented Feb. 3, 1914.

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To all whom it may concern:

Be it known that I, WILLIAM T. MORAN, a citizen of the United States, residing in Quincy, in the county of Norfolk and State of Massachusetts, have invented an Improvement in Headlights, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to an electric light especially designed and adapted for use as a head light on vehicles, such as automobiles, electric railway cars and the like, and has for its object to provide a head light with which a substantially wide area of the road in front of the vehicle can be illuminated under certain conditions, which may be designated normal conditions, and with which an area of limited width may be illuminated under other conditions, which may be designated abnormal conditions. To this end the head light is provided with an electric lamp and with an opaque sleeve cooperating therewith, one of which parts is movable with relation to the other, and said head light is provided with a reflector which coöperates with the lamp under normal conditions to illuminate a wide area of the roadway, and under abnormal conditions is rendered ineffective upon the lamp, so as to reduce the width of the lighted area and also to reduce the intensity of the light. Provision is made for operating the movable part from a point remote or at a distance from the head light, and for restoring the movable part to its normal position.

The invention is especially applicable to automobiles so as to avoid collisions between two automobiles approaching each other, especially on substantially narrow roads, and is also applicable to interurban electric railway cars, to avoid accidents in the streets of cities, towns or like places having lighted streets and ways.

In the present instance I have shown one embodiment of the invention, in which the sleeve is affixed to the reflector and the lamp is movable into and out of the sleeve.

These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 is a longitudinal section of one form of electric light embodying this invention, and showing the lamp in its normal position. Fig. 2 is a like view with the lamp in its abnormal position.

Referring to the drawing, *a* represents a reflector provided with the usual glass front *b*, and having extended from its rear surface a sleeve or tube *c*, which is of metal or other opaque material and which opens at its front end into the reflector and is closed at its rear end by a cap *d*, which is screwed upon the threaded end of the said sleeve. The sleeve *c* contains within it a cylinder 10 provided with a head 12 having a threaded opening through which extends the threaded end of a tube or pipe 13, which serves as a socket for an incandescent electric lamp 14 of usual construction, which is electrically connected with a suitable source of current by the conductors 15, which pass through the tube 13 and through an opening in a cap 16 on the rear end of the tube which projects through the cap or removable head *d* for the sleeve *c*. The tube 13 constitutes a movable carrier for the lamp 14 and is capable of being moved in one direction by the operator located at a distant point, by means of a cord, wire or other connection 18 which is fastened at one end to a cap 16 and has its other end within easy access of the operator. The lamp carrier 13 is moved in the opposite direction as herein shown by a spring 20, which is preferably conical in form and encircles the carrier 13 and has its larger end bearing against the head 12 of the cylinder 10, and has its smaller end bearing against the cap *d*. The movement of the lamp carrier by the spring 20 may be limited, as shown, by a nut 21, which is mounted on the threaded rear end of the tube 13 and is adapted to engage the cap *d* as represented in Fig. 1.

Under normal conditions, the lamp 14 is located within the reflector *a* and its rays of light are projected over a wide or substantially wide area of the road on which the vehicle is traveling, and under these conditions the roadway is well lighted, which is desirable both for automobiles and electric railway cars, under normal conditions, but under what may be termed abnormal conditions, it is highly desirable that the glare of the headlight should be reduced, and that the light should be restricted to a narrow area and reduced in intensity in order to avoid accidents. In the case of automobiles, the danger of accident, when two automo-

biles are approaching each other, caused by the misjudging of the distance at which the automobiles would pass, is very great, owing to the blinding light from the usual headlights of the approaching automobiles, and this danger is well recognized by operators of automobiles, and numerous accidents have been caused by the intense light which is thrown into the eyes of the operators of the approaching automobiles. In the case of electric railway cars, the danger of accidents is also greatly increased by the use of strong or powerful lights in the cities, where the streets are well lighted. By means of the present invention, this danger is avoided or at least reduced to a minimum, for the operator is enabled to narrow up or reduce the width of the area which is lighted in front of his car, and further can reduce the intensity of the light, and in effect practically convert the powerful headlight into a light of small intensity, and substantially equal to an ordinary side light, by pulling on the cord or other device 18, so as to move the lamp carrier in one direction and bring the lamp 14 within the opaque sleeve *c* as represented in Fig. 2, in which position the lateral rays of light are cut off and the rays from the lamp are projected in a straight path and are not influenced by the reflector, consequently the area of the road illuminated is materially reduced in width, and the strength of the light materially diminished and robbed of its blinding effect upon the operator of an approaching vehicle. As soon as the vehicle has passed the danger point, the chauffeur or other operator releases the cord or connection 18, and the spring 20 restores the lamp to its normal position shown in Fig. 1.

In the present instance I have shown one construction of headlight embodying this invention, but it is not desired to limit the invention to the particular construction shown.

Claims:

1. In a headlight, in combination, a reflector provided with a sleeve extended from its rear, a lamp carrier movable in said sleeve, a lamp movable with said carrier and normally projected into said reflector, means connected with said carrier for moving said carrier in said sleeve to withdraw the lamp from said reflector, and means for automatically moving said lamp carrier in the opposite direction to project the lamp into the reflector.

2. In a headlight, in combination, a reflector provided with a sleeve extended from its rear, a tube movable in said sleeve, a lamp carried by said tube, a spring to move said tube in one direction to normally project said lamp into said reflector, means to limit the movement of the tube under the influence of said spring, and means for moving said tube in opposition to said spring, substantially as described.

3. In a headlight, in combination, a sleeve, and a lamp coöperating therewith, one of said parts being movable with relation to the other to cause the sleeve to cut off rays of light from the lamp, a reflector coöperating with said lamp to diffuse its rays of light over a wide area, means for moving said movable part in one direction to render the reflector ineffective upon the lamp and to confine the light from the lamp within a substantially narrow area and to reduce the intensity of the light, and means for moving said movable part in the opposite direction to render the reflector effective upon said lamp and intensify the light therefrom and increase the width of the area over which the light from the lamp is diffused.

4. In a headlight, in combination, a sleeve, and a lamp coöperating therewith, one of said parts being movable with relation to the other to cause the sleeve to cut off rays of light from the lamp, a reflector coöperating with said lamp to diffuse its rays of light over a wide area, means for manually moving said movable part in one direction, and a spring for moving the said movable part in the opposite direction, and means for limiting the movement of said movable part under the influence of said spring.

5. In a headlight, in combination, a reflector provided with a sleeve extended from its rear, a lamp carrier movable in said sleeve and accessible from the rear end thereof, a guide for said carrier, and a spring within said sleeve to normally project the lamp into the reflector, substantially as described.

6. In a headlight, in combination, an opaque sleeve, and a lamp coöperating therewith, one of said parts being movable with relation to the other to cause the sleeve to cut off rays of light from the lamp, means connected with said movable part to enable the latter to be moved in one direction from a point remote from the headlight, means for moving the movable part in the opposite direction, and a reflector coöperating with said lamp and sleeve, for the purpose specified.

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

WILLIAM T. MORAN.

Witnesses:
ARTHUR MURPHY,
WALDO B. FAY.