

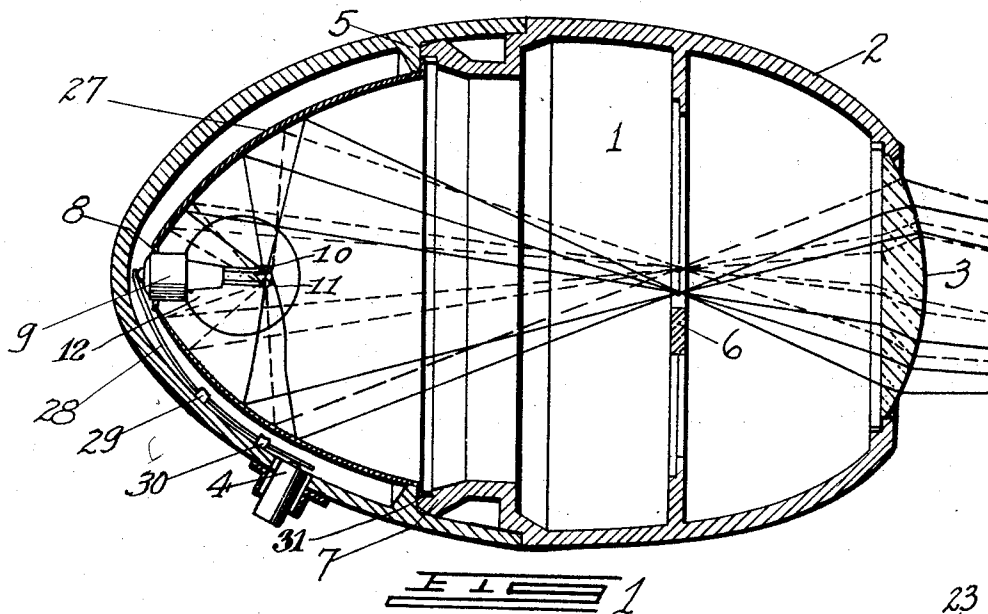
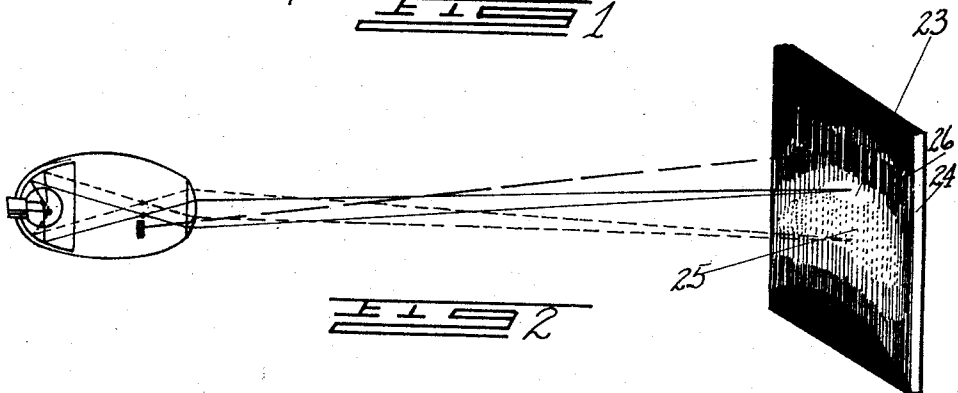
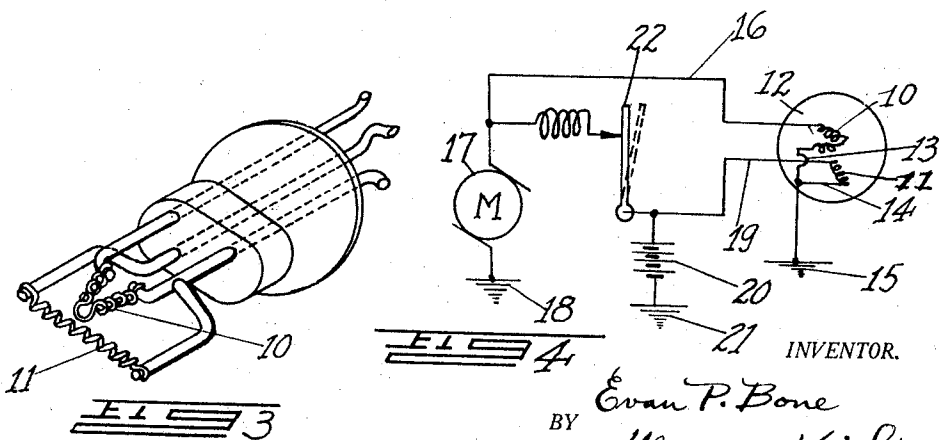
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E. P. BONE

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HEAD LAMP

Filed Jan. 30, 1928



INVENTOR.

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UNITED STATES PATENT OFFICE

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HEAD LAMP

Application filed January 30, 1928. Serial No. 250,549.

My invention relates to headlamps and more particularly means therein for projecting an image from a specific pattern in the initial producing means without requiring any assistance from the reflector or lens except in projection.

An ideal light image on the road ahead of an automobile is one in which the image is in the general form of an isosceles triangle with a broad base. This result has been approximated by forming flutes or convolutions on the reflector or lens of the headlamp; however, the resultant image is not well defined and has dark spots or waves. Manufacturing expense also presents a drawback to such construction.

One of the objects of my invention is to attain such ideal illumination without any of the above imperfections or drawbacks accompanying it. I accomplish this by providing a novel incandescent lamp for the headlamp which obviates the necessity of flutes or convolutions on the lens or reflector.

Another object of my invention is to provide an area of illumination immediately in front of the headlamp which is sufficiently spread out to illuminate both sides of the road and another area of greater concentration to brightly light the road at a great distance from the lamp. To accomplish this, I construct the headlamp bulb with a V-shaped filament or its equivalent for the distant illumination and an elongated horizontal filament for nearer illumination, both of which may be formed as one or may be separately mounted.

Experience has shown that the V-shaped filament which is of greater concentration and illuminates the roadway a great distance ahead, is needed only when the automobile is moving at a fair rate of speed, and that when the machine is standing still or is moving very slowly, the spread-out area of illumination provided by the horizontal filament is ample to provide sufficient light. Therefore, I prefer to connect the V-filament to the generator of the automobile and the horizontal filament to the battery. When the automobile is standing still or when running very slowly the generator will not provide suffi-

cient electrical energy to render the V-filament incandescent and unnecessary illumination and cost will be avoided, and this is another object of my invention. If one filament burns out the other will still operate and provide illumination sufficient to enable the autoist to reach his destination in safety.

In the particular embodiment of my invention selected for illustration,

Figure 1 is a vertical axial section through a headlamp using my novel bulb,

Fig. 2 is a diagrammatic view of the headlamp and a wall upon which the light rays are cast forming the desired image.

Fig. 3, a detail, is an enlarged view of the filaments of the bulb secured to the bulb base, and

Fig. 4, is a wiring diagram of the electrical connections.

Referring now to the drawings, the headlamp 1 of any suitable design has a two part casing 2 and a plano-convex lens 3 secured to the casing in any desired manner. A reflector 27 having a flaring rim 31 is placed inside the rear part of the casing 2 and is securely held in position between an annular abutment 7 on the front half of the casing and an abutment 5 on the rear half, both struck up within the casing. A translucent screen 6 of mica or other material is placed upright horizontally and secured to the inside of the casing, slightly below the axis of the headlamp. My novel incandescent lamp passes through a central aperture 8 in the rear reflector and is removably secured in any convenient manner.

The incandescent lamp consists of any suitable base 9, through which the connections to the V-filament 10 above and horizontal elongated filament 11 below, pass and are firmly secured. The filaments are enclosed within the usual transparent casing 12. A spring connection 28 supported by posts 29 and 30 makes contact between the connections in the bulb base and the contact post 4 passing out through the casing.

Referring now particularly to Fig. 4 of the drawings, a connection 13 to one end of the V-filament and a connection 14 to one end of the horizontal filament are prefer-

ably joined together and pass into a common ground 15. The connection 16 from the other end of the V-filament is connected to the generator 17, grounded at 18. The connection 19 from the other end of the horizontal filament terminates in the battery 20, grounded at 21. A polarized switch or check valve 22 is provided between the generator and battery and connected to each to prevent draining of electricity from the battery to the generator when the generator is not charging the battery.

Referring now particularly to Figs. 1 and 2, the light rays from the V-filament (indicated in full lines) strike the reflector and being refracted pass out through the lens forming the brilliantly lighted area 23 on the board 24. The rays from the horizontal filament (indicated in broken lines) strike the reflector and passing out through the lens appear on the board in the general form of an isosceles triangle 25 of lesser illuminating intensity than area 23. The greater portion of the rays forming the base or lower part of the generally triangular image are formed by the horizontal filament 11 and the apex or upper part by the V filament 10. The two filaments are so placed in relation to each other and situated within the headlamp as to produce with their projected rays this ideal image. This desired image is effected from the two filaments without change of shape or refraction of rays by the reflector or lens. The shadowed or darker area 26 is formed by the screen 6 from within the headlamp, and is intended to be cast at such position as to prevent glare in the eyes of the driver of an opposing vehicle. The area 23 is of such intensity as to provide brilliant illumination a great distance ahead, and the area 25 is provided only a short distance in front of the lamp but is spread out to illuminate both sides of the roadway.

It can readily be seen that since the V-filament receives operative energy only from the generator, it will not be used except when the motor turns at a speed sufficient to provide the necessary current, while the horizontal filament may burn whether the motor is running or not since it is connected to the battery.

As here shown, the V-filament is placed at the focal point of the reflector above the horizontal filament but if a parabolic headlamp is used, the horizontal filament should be above rather than below since the image cast would be inverted.

I have shown and described my invention in its preferred form, however, I do not wish to be limited to this form alone as many changes may be made without departing from the spirit of my invention and I intend to include all forms readable on the claims.

I claim as my invention and desire to se-

cure by Letters Patent of the United States:

1. The combination with a headlamp having a screen, a reflector and a plano-convex lens, of an electric bulb adapted to cast an image ahead of the headlamp in the general form of an isosceles triangle with the base at the bottom, said bulb comprised of a base, a low concentration filament perpendicular to the axis of the headlamp to form the lower broad portion of the triangular image of lesser light intensity and a high concentration filament at the focal point of the reflector to cast the upper portion of the image of greater light intensity.

2. The combination with a headlamp having a screen, a reflector and a plano-convex lens of an electric bulb adapted to cast an image ahead of the headlamp in the general form of an isosceles triangle with the base at the bottom, said bulb comprised of a base, a horizontal elongated filament perpendicular to the axis of the headlamp to form the lower broad portion of the triangular image of lesser light intensity and a V-shaped filament in a parallel plane with said horizontal filament to cast the upper portion or apex of the image of greater light intensity.

In testimony whereof I have hereunto set my hand.

EVAN P. BONE.