Aug. 29, 1939. S. B. HAYDEN 2,171,336

NONGLARE REFLECTOR

Filed May 2, 1938

Fig. 1

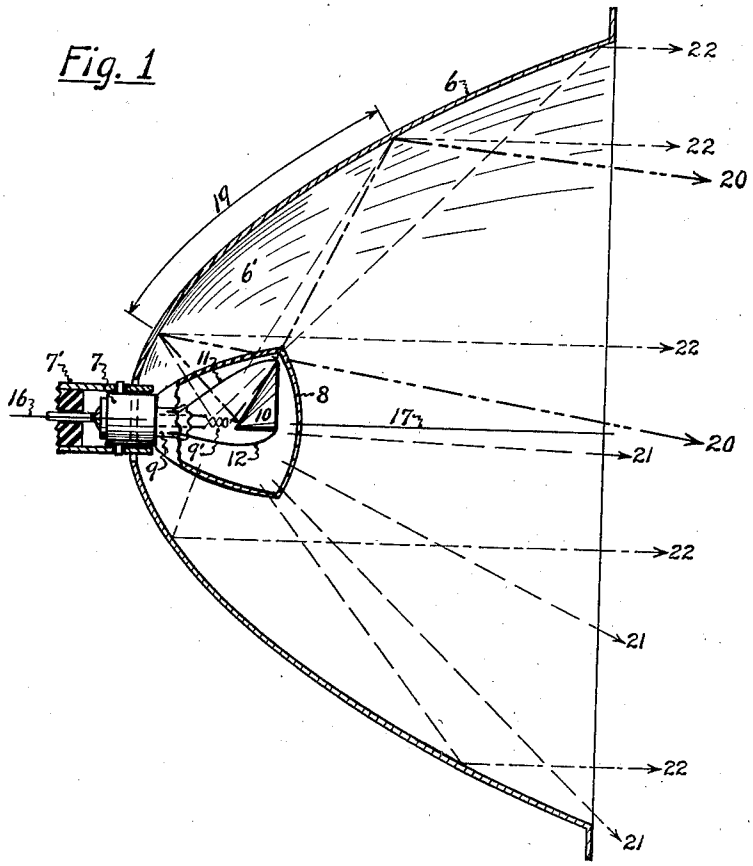


Fig. 2

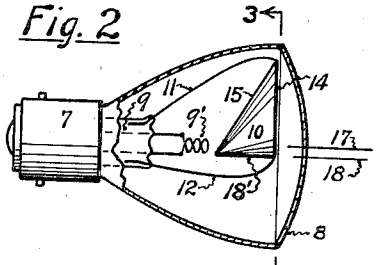


Fig. 3

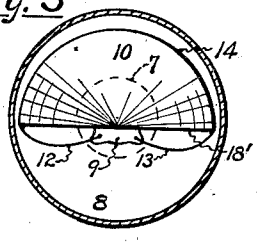


Fig. 4

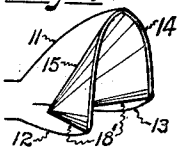
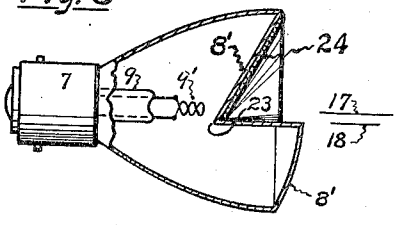


Fig. 5



INVENTOR.
Silas B. Hayden

BY G. Ward Kemp

ATTORNEY.

Patented Aug. 29, 1939 2,171,336

UNITED STATES PATENT OFFICE

2,171,336

NONGLARE REFLECTOR

Silas B. Hayden, Seattle, Wash.

Application May 2, 1938, Serial No. 205,408

4 Claims. (Cl. 176—34)

This invention relates to reflectors for nonglare lamps used for motor vehicle headlights.

It is, therefore, an object of this invention to provide a cheaply and simply constructed device with high efficiency for preventing all objectionable upward glare from car headlights, and at the same time to preserve and utilize the full power and efficiency of all light emitted from the headlight lamps.

A particular object is to provide a reflector plate obliquely mounted in front of a lighting filament or other source of light for concealing the same from the front view and for reflecting all objectionable lines of light upward and the majority of them backward as well against another reflecting surface as within an automobile headlight reflector, which light is to be thence directed forward and downwards for illuminating the roadway.

With these and other objectives to be hereinafter shown, I have illustratively exemplified my invention by the accompanying drawing:

Figure 1 is a side elevation of the interior of a headlight reflector of the ordinary automobile and light bulb in section, with a reflector plate within the bulb together with diagrammatic lines to indicate direction of rays of light.

Figure 2 is an enlarged side elevaton of a bulb in section and a detail of a reflector plate.

Figure 3 is a front elevation of a light bulb in section, and showing a reflector plate and side supports therefor, taken on lines 3—3 of Figure 2.

Figure 4 is a perspective view of the reflector plate.

Figure 5 is another embodiment of my invention showing a light bulb in section with the front thereof indented for a plate seat and a reflector plate mounted thereon.

Like numbers on the different figures represent like parts. 6 represents the reflector of any ordinary headlight. 6′ represents the reflecting surface of the said reflector for projecting rays of light forward and outward therefrom. 7 represents an ordinary lamp base within an ordinary lamp socket 7′. 8 represents the outside walls of the bulb for illumination which may be of glass of any desired color, but preferably transparent. 9 represents a neck of glass or suitable insulating material for supporting the ordinary wire or lighting filament 9′.

10 represents generally my reflector plate for preventing upward glare and for utilizing the full power and efficiency of light emitted by filament or other source of light. This plate is preferably disposed within the light bulb with its face in an oblique position across the upper portion thereof. Said plate is preferably supported by wires 11 at the top and lower side wires 12 and 13 which are extended from the neck 9. My preferred form for this plate is shown in Figures 1 to 4 as a segment of a cone. The base 14 thereof is located outward from the filament and the apex 14′ inward and adjacent to the filament. A reflector face 15 is preferably sloped outward and upward from the filament for reflecting the rays of light that are emitted from the lamp. The lower flat edge or bottom 18′ is positioned preferably slightly below the center 17 or axis of both the outside reflector and of the bulb, and approximately opposite the lower edge of the filament as indicated by line 18. Said face 15 of said plate directs the rays of light from the filament or other source of light upwards and the majority of them backwards as well, and upon the reflecting surface 6′ of the said automobile reflector 6, within the band or field indicated by the imaginary line limits 19. This reflecting surface 6′, in turn then projects the full force of such light rays forward and slightly downward in directions as indicated by lines 20 and within the area indicated by said lines 20. Said rays so reflected within said field 19 being the rays which would otherwise be projected at an elevation that would strike in the eyes of an oncoming driver of another car. The position of the reflector plate is such that the incandescent filament is concealed from the eyes of the oncoming driver. The remaining rays of light from the lamp not affected by my plate, impinge upon the reflecting surface 6′ and are thereby projected forward as indicated by lines 21 and 22 in the ordinary manner.

The lamps may be constructed by first assembling the reflector plate 10 and wires, 11, 12 and 13 with the neck 9 within the side walls of the bulb shown best in Figs. 1 and 2. The front wall or cap of the bulb on which the numeral 8 appears in Figs. 1, 2 and 3, is afterward affixed and fused to the front margin of the side walls, along the line 3—3 Fig. 2, in the manner understood by those skilled in the art of lamp building.

While I have shown my reflector plate as a section of a cone with curved face, my invention also includes the use of reflectors with other forms which may have one or more flat or plain faces and other variations. For the purpose of illustration, I have shown my plate as suspended by wires inside of the bulb, but in some cases, I refer to use a different form as shown in my Figure 5. In this construction, the bulb 8′ is provided with an indentation in the upper portion

of the front end thereof as shown by triangular line **23**. Within this indentation may be mounted a reflector plate **24** which may be of similar construction as that previously described as placed within the bulb. In some cases, instead of affixing the plate within this indentation, I may cover the face of the formation provided by the indentation with quicksilver or some other suitable material to appear as said **24** for providing a reflector. The lower inner edge of said indentation is preferably positioned slightly beneath and in front of the front end of the filament or other source of light.

It will thus be seen that by the use of my reflector plate, positioned substantially as described, that all of the light produced from said filament or other source of light is projected upward and mostly backward to be re-reflected forward for illumination without loss, and that none of the light rays, whether direct, reflected or re-reflected, are projected upward to produce the blinding and danger-causing glare to oncoming drivers.

For the purpose of illustration, I have shown a light bulb as a source of light, but my reflector device is designed for adaptation in front of any other source of light for headlights, and I do not limit my invention to the specific construction and arrangement shown in the drawing, and desire to cover the same broadly within the scope of the said claims.

Having described my invention, I claim as new:

1. A lamp for automobile headlights, including a source of light, a reflector plate mounted within the lamp bulb in front of such source of light, said plate being provided with a reflecting face in front of and adjacent to the lighting source, the lower edge of said plate positioned at approximately the lower level of said source of light and the face of said plate inclined obliquely upward and outward from the source of light and adapted so as to intercept a portion of the direct rays from such light and to reflect the same upward and a majority of them backward, upon the inner reflecting surface of a headlight.

2. In a light bulb for car headlights including a filament centrally disposed in the rear end of said bulb, a reflector body mounted in front of said filament with a face at an angle, the lower edge of said body approximately on the same plane as the lower portion of said filament, and the face of said body adjacent to said filament sloping upward and outward therefrom to conceal said filament from a point in front thereof and to reflect the upper portion of said light from the filament upward and mostly backward against the inner face of a headlight reflector for forward projection thereby.

3. A lamp bulb for automobile headlights, including a light filament in the rear end of the bulb, a reflector plate in the front portion of the bulb, said reflector plate comprising approximately one half of a cone cut by a plane passing through its axis; the flat side of said half cone mounted horizontally with its axis on substantially the same level as the lower margin of the filament, the slant side of said half cone facing toward the light filament and adapted to reflect the upper portion of light rays from the filament upward, sideways and backward against the inner reflecting walls of a headlight, for reflection by said last named walls forwardly upon the roadway, without loss of any light from said filament, and to prevent the glare of any of said rays of light upward toward eyes of drivers of other vehicles.

4. A lamp bulb for automobile headlights including a light filament in the rear end of the bulb, a reflector plate at the front portion of the bulb, said reflector plate comprising approximately one half of a cone, the flat side of said half cone mounted horizontally with the apex thereof toward the filament and on substantially the same level as the lower margin of the filament, the upper portion of said half cone curved to conform with the curve of the side walls of the bulb and adapted to reflect the upper portion of light rays from the filament upward and backward against inner reflecting walls of a headlight, for reflection by said last named walls forwardly upon the roadway, without loss of any light from said filament, and to prevent the glare of any of said rays of light upward toward eyes of drivers of other vehicles.

SILAS B. HAYDEN.