

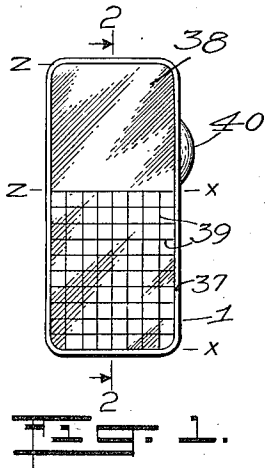
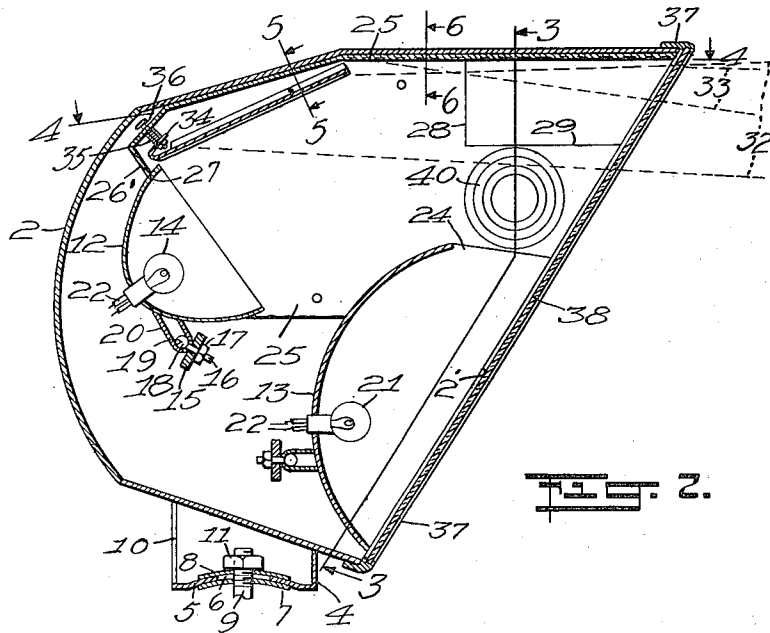
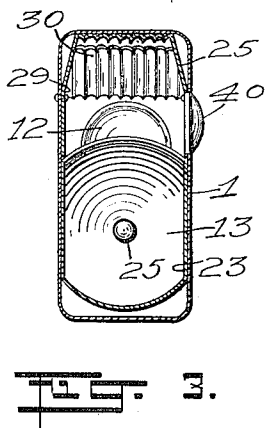
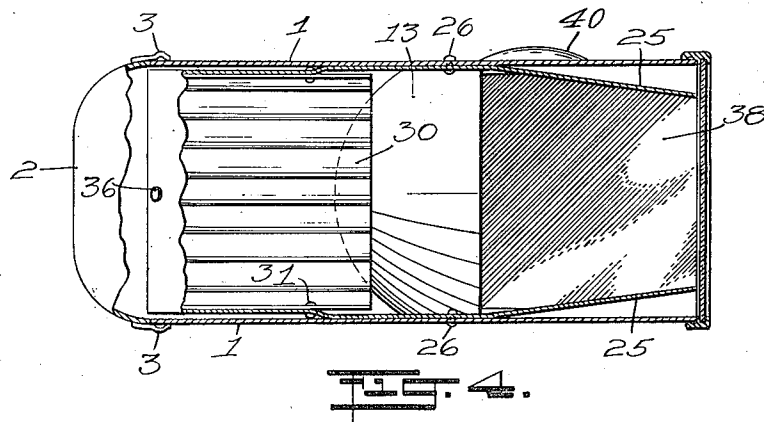
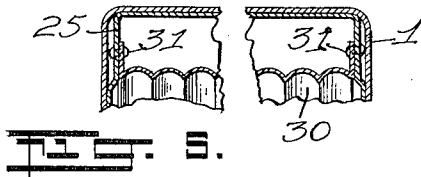
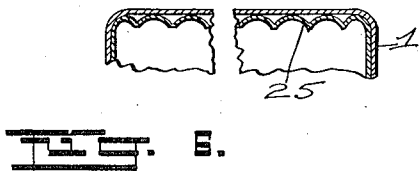
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R. B. STIERT

AUTOMOBILE HEADLIGHT

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UNITED STATES PATENT OFFICE.

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AUTOMOBILE HEADLIGHT.

Application filed December 27, 1926. Serial No. 157,296.

My invention relates to improvements in headlights for automobiles, and it consists in the combinations, constructions, and arrangements herein described and claimed.

5 An object of my invention is to provide a headlight in which two sources of light are used and in which each light is focused upon a different portion of the road ahead of the automobile in such a manner as to illuminate the road far in advance of the machine as well as relatively near the machine.

10 A further object is to provide a headlight in which the light is so projected that it is of a non-glaring quality, thereby making it unnecessary to dim the light when passing approaching vehicles.

15 A further object is to provide a headlight in which novel means is employed for adjusting the reflection of the light to any desired angle.

20 Other objects and advantages will appear in the following specification, and the novel features of the invention will be particularly pointed out in the appended claims.

25 My invention is illustrated in the accompanying drawings, forming part of this application, in which

Figure 1 is a front elevation of my device,
30 Figure 2 is a sectional view along the line 2—2 of Figure 1,

Figure 3 is a sectional view along the line 3—3 of Figure 2,

Figure 4 is a sectional view along the line 4—4 of Figure 2,

35 Figure 5 is a detail view taken along the line 5—5 of Figure 2, and

Figure 6 is a detail view along the line 6—6 of Figure 2.

40 In carrying out my invention, I make use of metal outer casing 1 having a removable cover portion 2, and a slanting front end 2'. The cover portion 2 is secured to the casing 1 by means of suitable spring members 3. The casing 1 is secured to the frame of the car by means of a base 4. The base 4, as will be noted from Figure 2, is provided with a convex bottom 5 having a relatively large opening 6 therein. A washer 7 having the same curvature as the bottom 5 is placed underneath the bottom 5 and adjacent the frame of the car. A similar washer 8 is placed upon the top surface of the bottom 5. A bolt 9 which is secured to the frame of the car extends through the washers 7 and 8.
55 The relatively large opening 6 in the bottom of the base permits the headlight to be ad-

justed to any desired angle with respect to the car. One side of the base 4 is provided with an opening 10 so that a nut 11 on one end of the bolt 9 can be reached. In tightening the nut 11 the bottom 5 of the casing 4 is firmly retained between the washers 7 and 8.

A pair of reflectors 12 and 13 is mounted within the casing 1. The reflector 12 is parabolic in cross section, as shown in Figure 2, and therefore has the property of projecting light to a relatively long distance ahead of the vehicle. An incandescent electric bulb 14 is mounted in the reflector 12. The reflector 12 is supported within the casing 1 by means of a crossbar 15 which extends from side to side of the casing 1. The crossbar is provided with a bolt 16 having a nut 17 on one end and a ball bearing 18 on the other end. The ball 18 is retained by a socket 19 in one end of a supporting member 20 which is secured to the reflector 12. It will therefore be seen that the reflector 12 can be adjusted to any required angle.

The reflector 13, as will be seen from Figure 2, is of a relatively shallow type and is positioned near the front of the casing 1. The reflector 13 is supported by a ball and socket connection of the same construction as that used in supporting the reflector 12, and therefore requires no detailed description. The reflector 13 is also provided with an incandescent electric bulb 21. Both of the bulbs 14 and 21 are connected by means of conductor wires 22 to a storage battery, not shown, such as is usually carried in motor vehicles.

Looking now at Figure 3, it will be seen that two sides of the reflector 13 are cut away, thereby forming flat surfaces 23, whose purpose will be explained later. The reflector 13 is further provided with an opening 24 in the top for the purpose of permitting a certain amount of light to pass out and into the interior of the casing 1.

An inner metal casing 25 is disposed within a certain portion of the casing 1. The interior surface of the inner casing is provided with a coating of material for reflecting light such as nickel or silver plate. The inner casing 25 fits snugly within the outer casing 1 and is secured thereto by means of rivets 26, or other suitable fastening means. The rear end 26' of the inner casing is provided with an opening 27

through which the outer end of the reflector 12 is inserted. The top portion of the inner casing 25 is corrugated, as shown in Figure 6. The purpose of this corrugated surface is to cause the light which is reflected therefrom to be spread out and projected in a flat beam below the range of vision of the driver of the oncoming car.

A portion of the inner casing 25 is tapered as shown in Figures 3 and 4. Lines 28 and 29 in Figure 2 indicate the extent of this tapered portion. It has been found that a better distribution of light and less glare is obtained by the use of this tapered portion.

A deflector 30 is disposed within the casing 25. As shown in Figures 4 and 5, the edges of the deflector 30 are bent upwardly and pivotally secured to the inner casing 25 by means of rivets 31. The deflector is made from material such as that used in the inner casing 25 and is also provided with a coating for reflecting light. The deflector is further provided with corrugations similar to those in the top portion of the inner casing 5. Dotted lines 32 in Figure 2 indicate the flat beam of light reflected from the deflector 30, while dotted lines 33 indicate the flat beam of light reflected from the corrugated portion of the inner casing.

Referring now to Figure 2, it will be observed that the deflector 30 is provided with a bent back portion 34. A coil spring 35 is disposed between the portion 34 and the inner casing 25. A bolt 36 is disposed within the spring 35 and extends through the inner casing 25. The other end is threaded and screws into a threaded opening in the deflector 30. The deflector 30 may be adjusted to different angles by means of the bolt 36.

A detachable frame 37 is disposed upon the front end 2' of the casing 1. This frame contains a glass 38 which closes the entire front end of the casing 1. That portion of the glass between the letters $x-x$, see Figure 1, is frosted on the inside so as to dim the reflection from the reflector 13. This portion is also provided with vertical and horizontal flutings as indicated generally at 39. That portion of the glass between the letters $z-z$ is clear so as to offer as little resistance as possible to the light reflected from the deflector 30 and the corrugated top portion of the inner casing 25.

A colored glass 40 is disposed on one side of the headlight. The color may be of any desired shade. This glass is exposed to the reflected light from the reflector 12 and also the light passing out through the opening 24 in the reflector 13. This side glass provides a convenient means for indicating the direction in which cars are traveling, especially at street intersections, and also gives some indication of the speed at which such cars are traveling.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood. My headlight is designed to be used in pairs and is positioned on the car in the same manner as the ordinary type of light. Switches are provided for illuminating the bulbs 14 and 21 separately or simultaneously. While driving in the country it is intended that both bulbs shall be illuminated. Light which is projected from the bulb 14 is reflected from the reflector 12 in a conical beam. As will be seen from Figure 2, the reflector 12 is disposed at such an angle as to reflect the light upwardly against the deflector 30 and the top portion of the inner casing 25. The light which strikes the corrugated deflector 30 is reflected forwardly in a flat beam, as indicated by dotted lines 33 in Figure 2, and the light which strikes the corrugated top portion of the inner casing is reflected in a flat beam as indicated by dotted lines 33 in Figure 2. The result is that a flat beam of light is projected far in advance of the car, and at the same time projected below the line of vision of the driver of the approaching car. For this reason it is unnecessary to dim the light when passing approaching cars, as there is no danger of the light blinding the driver of the approaching car.

It will be observed that since the reflector 13 is of a shallow type the light reflected therefrom will be projected in a broad beam, thereby illuminating the crown and sides of the road near the car. The frosted portion of the glass 38 which is directly in front of the reflector 13 destroys all glare caused by the reflection of light from the reflector 13 and the sides 23 of the reflector.

For city driving where dim lights are required, the bulb 14 is not used.

I claim:

1. A headlight of the type described, comprising a casing having a detachable glass front, a reflector disposed adjacent said glass front, a source of light for said reflector disposed between the reflector and said glass front, said reflector being arranged to project light to a distance relatively near the headlight, an inner casing disposed within said casing, said inner casing having corrugations and arranged to reflect light, a reflector disposed near the rear end of said first named casing and partially encased by said inner casing, said second named reflector having a source of light disposed in front thereof and arranged to project a beam of light against said corrugations, whereby the beam of light is reflected to a distance relatively far from the car.

2. A headlight of the type described, comprising a casing having a detachable glass front, a reflector disposed adjacent said glass front, a source of light for said reflector disposed between the reflector and said

glass front, said reflector being arranged to project light to a distance relatively near the headlight, an inner casing disposed within said first named casing and having 5 corrugations arranged to reflect light, a deflector having corrugations and pivotally mounted within said inner casing, a reflector disposed near the rear end of said deflector and partially encased by said inner 10 casing, said second named reflector having a source of light disposed in front thereof and arranged to project a beam of light against said deflector and said inner casing, whereby the beam of light is reflected in a flat 15 form to a distance relatively far from the headlight.

3. A headlight comprising a casing having a glass front, a reflector disposed adjacent said glass front, a source of light for 20 said reflector disposed between the reflector and said glass front, said reflector being arranged to project light to a distance relatively near the headlight, an inner casing disposed within said casing, said inner casing 25 having corrugations and arranged to reflect light, said inner casing being provided with tapered portions, a deflector having corrugations and pivotally mounted within the inner casing, and a reflector disposed 30 near one end of said deflector and partly encased by said inner casing, said second

named reflector having a source of light disposed in front thereof and arranged to project a beam of light against said deflector and said inner casing, whereby a beam 35 of light is projected in a flat beam to a distance relatively far from the headlight.

4. A headlight comprising a casing having a glass front, a reflector disposed adjacent said glass front, a source of light for 40 said reflector disposed between the reflector and said glass front, said reflector being arranged to project light to a distance relatively near the headlight, an inner casing disposed within said casing, said inner casing 45 having corrugations and arranged to reflect light, said inner casing being provided with tapered portions, a deflector having corrugations and pivotally mounted within the inner casing, a reflector disposed near 50 one end of said deflector and partly encased by said inner casing, said second named reflector having a source of light disposed in front thereof and arranged to project a beam of light against said deflector and said 55 inner casing, whereby a beam of light is projected in a flat beam to a distance relatively far from the headlight, and a window disposed on one side of said headlight and arranged to permit a beam of light to 60 pass therethrough.

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