C. E. MENTZER.

LIGHT RAY DEFLECTOR.

APPLICATION FILED DEC. 9, 1916.

1,245,006.

Patented Oct. 30, 1917

Fig. 2.

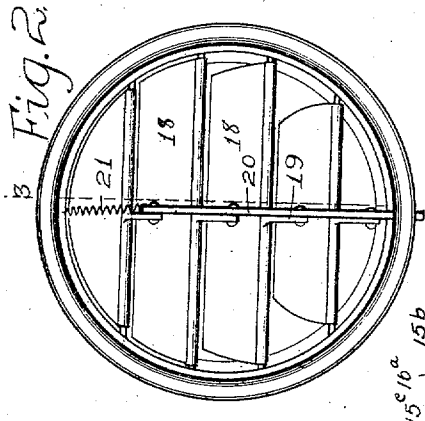


Fig. 3.

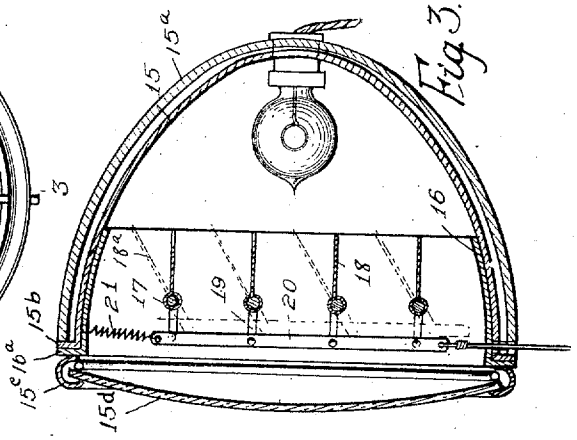


Fig. 1.

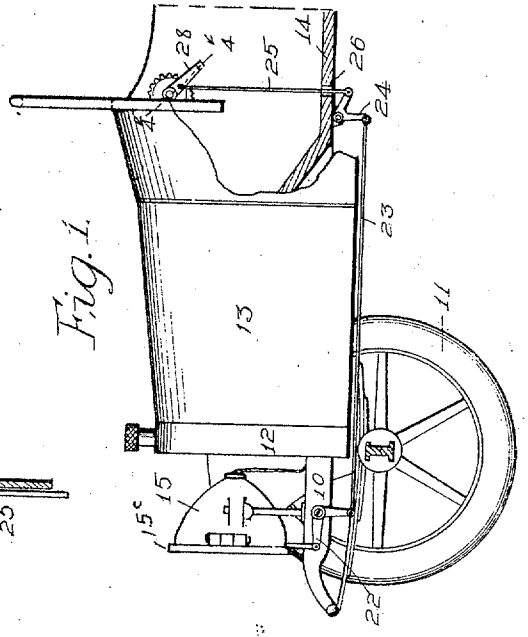
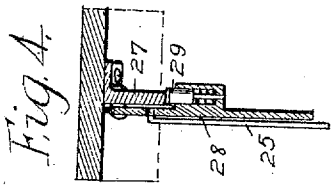


Fig. 4.



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UNITED STATES PATENT OFFICE.

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LIGHT-RAY DEFLECTOR.

1,245,006. Specification of Letters Patent. Patented Oct. 30, 1917.

Application filed December 9, 1916. Serial No. 135,981.

To all whom it may concern:

Be it known that I, CLAUDE E. MENTZER, a citizen of the United States, and resident of Des Moines, in the county of Polk and State of Iowa, have invented a certain new and useful Light-Ray Deflector, of which the following is a specification.

The object of my invention is to provide a light ray deflector of simple, durable and inexpensive construction, particularly adapted for use with the lamps of motor vehicles, and adapted to be adjusted to a variety of positions for permitting the light rays to be thrown forwardly or to be thrown downwardly toward the surface of the ground in front of the machine.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1 shows a side elevation partly in section, of the front portion of a motor vehicle, showing my improved light ray deflector installed thereon.

Fig. 2 shows a front elevation of part of the deflector mechanism.

Fig. 3 shows a vertical, sectional view taken on the line 3—3 of Fig. 2, and

Fig. 4 shows a sectional view taken on the line 4—4 of Fig. 1.

In the accompanying drawings, I have used the reference numeral 10 to indicate generally the frame of a motor vehicle having the front wheels 11, the radiator 12, the hood 13 and the body 14.

Mounted at the front of the vehicle is an ordinary electric lamp 15^a comprising a casing open at its forward end, having the reflector 15 provided at its open end with a peripheral outwardly extending flange 15^b. The lamp has the ordinary hinged door 15^c with the glass 15^d.

My improved light ray deflector comprises an attachment which can be readily mounted on the ordinary lamp.

My improved attachment comprises an annular ring 16 adapted to fit snugly into the open end of the lamp casing 15^a, as clearly shown in Fig. 3, and having at its outer edge a peripheral outwardly extending flange 16^a adapted to rest adjacent to the flange 15^b. Supported by the ring 16 are a plurality of horizontal rods 17, spaced vertically from each other in succession.

Pivotally mounted on the rods 17 are a plurality of plates 18 extending across the interior of the lamp casing 15 and preferably normally extending inwardly in the casing, as shown in Fig. 3, with their inner ends shortened to permit their free up-and-down movement within said casing.

Extending outwardly from the various plates 18 are arms 19. An upright bar 20 is pivoted to each of the arms 19, as shown in Fig. 3. Secured to the upper end of the bar 20 and to the ring 16 above said bar is a coil spring 21, which normally holds the bar 20 in its raised position for holding the plates 18 in horizontal position, as shown in Fig. 3, where the light rays may pass horizontally outward from the interior of the lamp casing.

Centrally pivoted on the frame of the machine between the lamp casing is a bell crank lever 22, one arm of which is pivoted to the bar 20, as illustrated in Fig. 1. The other arm of the bell crank lever is pivoted to a link 23 extending rearwardly in the machine. The rear end of the link 23 is pivoted to a bell crank lever 24, which lever 24 is centrally pivoted on the frame of the machine. A link 25 is pivoted to the other arm of the bell crank lever 24, and extends outwardly through a suitable opening 26 in the floor of the body of the machine.

Secured to the body of the machine at some point convenient of access to the driver, is a notched sector 27, pivoted on which is a lever 28. A spring actuated pawl 29 is carried by the lever 28 and is designed to coact with the notches or teeth of the sector 27 for locking the lever 28 in any position of its adjustment.

The lever 28 is normally left in position where the plates 18 are horizontal for permitting the light rays to pass outwardly horizontally from the interior of the casing 15.

The lower surfaces of the plates 18 are preferably white or highly polished. The upper surfaces of said plates may be polished, finished in colors, or otherwise as desired. When it is desired to cast the light days downwardly and forwardly from the machine, the lever 28 is raised, whereupon the bar 20 will be lowered and the plates 18 will be moved from their horizontal posi-

tions to positions extending upwardly and inwardly in the lamp 15^a, as illustrated by dotted lines 18^a, in Fig. 3. When the plates are in the position just described, it will be seen that the light rays will be reflected from the interior of the casing and from the lower surfaces of the plates 18, downwardly and forwardly.

Thus the device may be used as a dimmer device or to comply with the dimmer laws, by very slight and easy adjustment. Furthermore, the distance in front of the car where the light rays strike the ground may be regulated by adjusting the lever 28 so that the rays may be sent out from the lamp at a variety of desired angles with relation to horizontal.

The ring 16 may be held in position by the door of the lamp or the ordinary screws which secure the reflector flange 15^b to the lamp casing may simply be extended through the flange 16^a.

The advantages of such a device are largely obvious from the foregoing description. The user of the car is enabled to get the full benefit of his lights when he so desires, and to have the rays of light directed forwardly in the ordinary way for country driving or for driving on dark streets. When, however, the driver is driving on lighted streets or in districts where dimmer laws are in effect, or when he is approaching another car, my improved light ray deflector may be manipulated for throwing the rays of light from the automobile lamps downwardly and forwardly for complying with the law or for avoiding throwing a blinding light in the face of the driver of an approaching vehicle.

Some changes may be made in the construction and arrangement of my improved light ray deflector, without departing from the essential features and purposes of my invention, and it is my intention to cover by this application any modified forms of structure and any use of mechanical equivalents which may come within the reasonable scope of the claims of the patent to be issued upon this application.

I claim as my invention:

1. In a device of the class described, the combination of a light casing with an annular ring adapted to fit in the forward portion thereof, said ring having a peripheral outwardly extending flange at its forward end, a plurality of spaced horizontal rods rotatably mounted in said ring, a plurality of plates each having one edge fixed to one of said rods, said casing being contracted at its rear end, said plates being tapered toward their rear ends, arms extending forwardly from said plates, a link pivotally connected with said arms, a spring connected with said link and with the upper portion of said casing, a flexible member secured to said link and extending downwardly through said ring and casing, a bell crank lever centrally pivoted, having one arm pivoted to said flexible member, a link pivoted to the other arm of said bell crank lever, a second bell crank lever designed to be centrally pivoted below the body of a motor vehicle, having one arm pivoted to said last named link, a second link pivoted to the other arm of said last named bell crank lever and designed to extend upwardly through the floor of the motor vehicle, a bracket, a shaft mounted thereon for rotation, a toothed member fixed with relation to said shaft, and an arm fixed to said shaft, said last named link being pivoted to said arm, said arm having a spring controlled pawl adapted to coact with said teeth.

2. In a device of the class described, the combination of a lamp casing contracted at its rear end, an annular ring adapted to fit in the front end of said casing, a plurality of transverse rods mounted in spaced vertical succession for rotation in said ring, a plurality of plates each fixed at its forward edge on one of said rods, a forwardly extending rod on each plate, said plates being tapered toward their rear edges, a link pivoted to the respective arms, a spring connected with said link and with said ring at one end of said link, an operating device connected with the other end of said link and extended through said ring and said casing, and means for moving said operating device.

Des Moines, Iowa, November 17, 1916.

CLAUDE E. MENTZER.