Aug. 18, 1925.

1,549,987

H. F. JUERGENS

SEARCHLIGHT

Filed Dec. 8, 1923

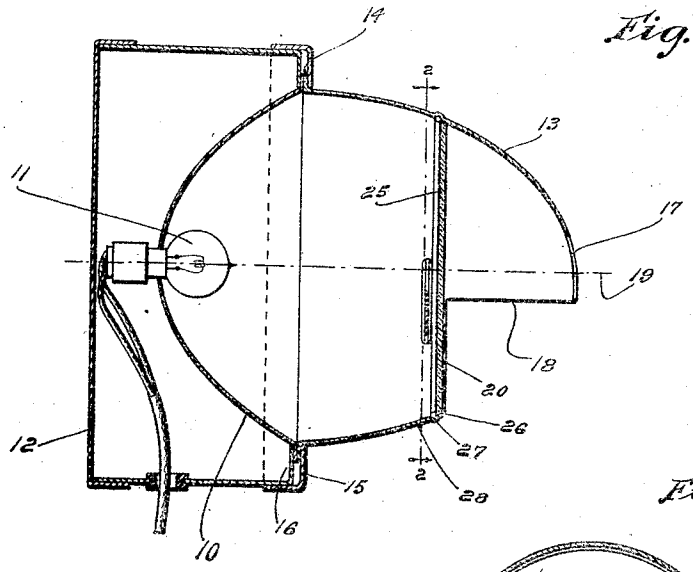


Fig. 1

Fig. 2

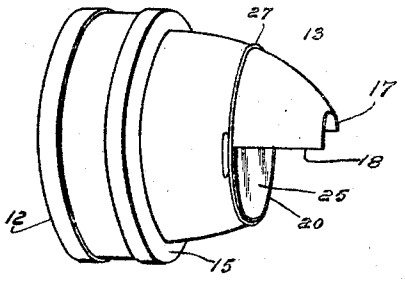
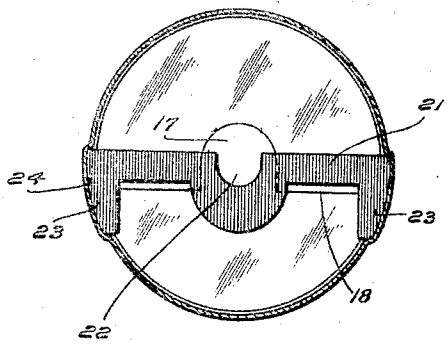


Fig. 4



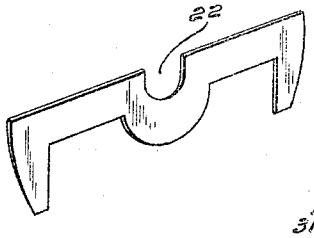


Fig. 3

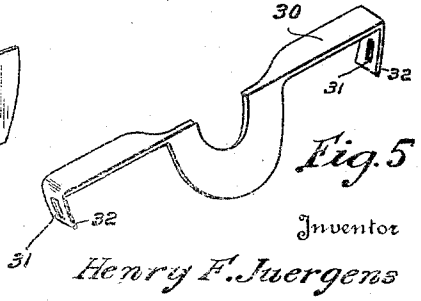


Fig. 5

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UNITED STATES PATENT OFFICE.

HENRY F. JUERGENS, OF PROVIDENCE, RHODE ISLAND.

SEARCHLIGHT.

Application filed December 8, 1923. Serial No. 679,483.

To all whom it may concern:

Be it known that I, HENRY F. JUERGENS, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Searchlights, of which the following is a specification.

This invention relates to improvements in the construction of so-called search lights or head lights and more particularly to those adapted for use on motor vehicles; and the object of this invention is to provide a light of this character having means for controlling the reflected beams of light primarily for the purpose of preventing the glare of the light from blinding the driver of a vehicle approaching from the opposite direction.

A further object of the invention is the provision of a shield for the light, which may be made to extend forwardly from the reflector a substantial distance, the shield being provided with a small central opening at its outer end and having a partition located intermediate the reflector and the open end of the shield for the purpose of controlling the reflected upwardly projecting beams of light.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings:—

Figure 1 is a central sectional side elevation of my improved device.

Figure 2 is a sectional view of the device on line 2—2 of Figure 1 in the direction of the arrow.

Figure 3 is a perspective view of the partition adapted to be mounted in the shield to control the upwardly-projecting rays of light.

Figure 4 shows another form of supporting arms for the light-screening partition by which it may be adjustably supported in its shield.

It is found in the practical operation of head lights for vehicles that the ordinary light of this character will throw beams of reflected light into the eyes of the driver of a vehicle approaching from the opposite direction to such an extent as to materially interfere with his vision, and therefore is a menace to drivers of vehicles after dark. To obviate this difficulty, I have constructed a shield to be applied to the light, the same being so arranged as to cut off the upwardly-projecting rays and prevent any from being directed above a horizontal plane. In other words all of the blinding rays which are projected on an angle upwardly from the horizontal axis through the lamp are cut off permitting only those which will project in lines substantially parallel with the horizontal axis and those which are directed at an angle below this horizontal axis to be projected from the lamp, these rays being controlled by means of an inclosing shield extending forwardly from the reflector and also by a partition positioned within the shield, and the following is a detailed description of one means by which these advantageous results may be accomplished:—

With reference to the drawings, 10 designates the usual reflector for a search light or head light which is formed on the usual paraboloidal contour in which the usual electric lamp is centrally mounted, the whole being located within the usual casing 12.

In order to control the beams of light which are reflected from this lamp and reflector, I have provided a metal shield 13 preferably formed in somewhat of an acorn or paraboloidal shape the same being provided with an outturned flange 14 on its inner edge which abuts against the corresponding outturned flange of the reflector 10 both being held in position by the members 15 and 16.

This shield is arranged to project forwardly from the forward edge of the reflector a substantial distance on some cases the distance being substantially that of the largest diameter of the reflecting surface of the reflector but this distance may vary to meet varying requirements. The outer end of this shield is provided with a relatively small hole or opening 17 which may in some cases be approximately the size of the lamp itself and a portion of this shield is cut away as at 18 on a line below the axial line 19 through the lamp, and down on the line 20 providing a relatively large opening through which the rays of light may be projected

downwardly to light the road directly in front of the vehicle and also forwardly to assist in illuminating distal objects.

It is found in practice that if no partition is mounted in this shield between the opening 17 and the reflector 10 that certain reflected rays of light will pass through the small opening 17 at a sufficient upward angle to shine into and blind the eyes of the driver of a vehicle approaching from the opposite direction and therefore to cut off these particular beams of light it is found necessary to interpose a bridge or partition 21 at a point intermediate the opening 17 and the reflector 10 and that this bridge or partition should be provided with a central opening 22 cooperating with the opening 17 to permit the central parallel rays of light to be projected in substantial alignment with the horizontal central axial line 19 of the lamp and which partition will cut off those upwardly-projecting reflected rays which would interfere with the driver of the approaching vehicle; also by mounting this bridge or partition at a point above the bottom of the sheld only those upwardly-projecting blinding rays of light which are not desired are cut off permitting most of the downwardly-projecting rays to illuminate the road directly in front of the vehicle.

In mounting this bridge member or partition, I may form a broad foot 23 at either end of the bridge and provide a recess 24 in the inner surface of the shield for the reception of the ends of this bridge but I preferably dispose the side arms 30 of the bridge horizontally as shown in Figure 5 so as to present the minimum interference to the forwardly-projected beams of light; and I also slot as at 31 the ends 22 of these arms and turn them downwardly to rest against the side walls of the shield and receive bolts therethrough whereby the bridge may be adjusted to accommodate different adjusted positions of the lamp 11.

It has been found in the construction of this shield to be of advantage to mount a lens 25 in the shield at the edge 26 of the cut-away lower portion thereof for the purpose of excluding foreign matter such as rain, snow, dust, etc., to prevent a deteriorating action upon the reflector. And to mount this lens in a simple and effective way, I press the same forwardly from the larger end inwardly to seat against the inturned edge 26 of the opening 20 and I have also provided an annular recess 27 in the inner surface of the shield for the reception of a spring ring 28 or the like which snaps into place to bind the lens in its set position or the lens may be set in the shield in any desired manner.

By my improved construction of search light the reflected rays may be nicely controlled and effectively prevented from projecting upwardly into the eyes of the driver of an approaching vehicle, the forwardly and downwardly projecting rays are not interfered with thereby permitting the throwing of sufficient light to well illuminate the road ahead. The upper inside surface of the shield may be polished to serve as a reflector if desired, for those rays which are directed against it to re-direct the same downwardly to diffuse the light in the front of the vehicle.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible, the invention being defined and limited only by the terms of the appended claims.

I claim:

1. A search light comprising a body having a source of light mounted therein, a reflector positioned relatively to the source of light, a shield for the light substantially of acorn shape and extending forwardly from the reflector a distance substantially equal to the greatest diameter of the reflector, said shield having a relatively small central opening in its outer end and a partition intermediate the reflector and the end of the shield for controlling the reflected upwardly projected beams of light, a portion of the underside of the shield at its outer end being cut away to permit the passage of the horizontally and downwardly-projected beams of light.

2. A search light comprising a body having a source of light mounted therein, a reflector positioned relatively to the source of light, a shield for the light substantially of acorn shape and extending forwardly from the reflector a distance substantially equal to the greatest diameter of the reflector, said shield having a relatively small central opening in its outer end, a partition intermediate the reflector and the end of the shield for controlling the reflected upwardly-projected beams of light, the under side of the shield at its outer end being cut away to permit the passage of the horizontally and downwardly-projected beams of light, and a lens mounted in the shield at the edge of said cut-away portion to exclude foreign matter therefrom.

3. In a search light, a reflecting surface, a shield of substantially acorn contour having its larger end set adjacent the light reflector and having a cut-out portion at its smaller end to permit the passage of downwardly and horizontally directed beams of light, and a U-shaped partition supported in said shield between its axial center and the bottom thereof for obstructing upwardly directed beams of light which would nor-

mally be projected through said opening, and a lens supported at the outer edge of the cut-out portions of the shield for excluding foreign matter therefrom.

4. A search light shield having one edge adapted to be attached adjacent the reflector of a search light, said shield extending forwardy a substantial distance and having a cooperatively small opening in its front end, and a partition in said shield just below its horizontally axial center for preventing upwardly reflected rays of light from being projected out through said front opening.

In testimony whereof I affix my signature.

HENRY F. JUERGENS.