June 21, 1927. R. H. SHIPPEY ET AL 1,633,387

HEADLIGHT

Filed Oct. 30, 1925 2 Sheets-Sheet 1

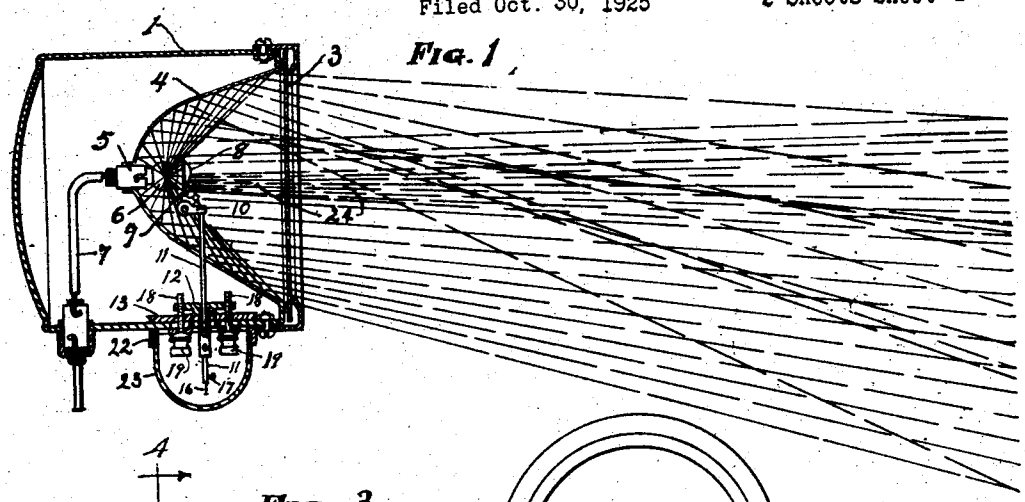


FIG. 1

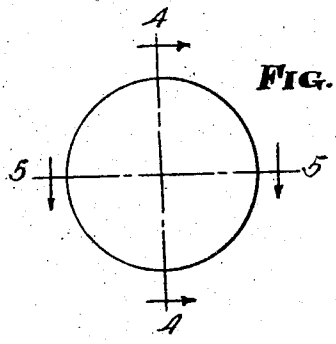


FIG. 3

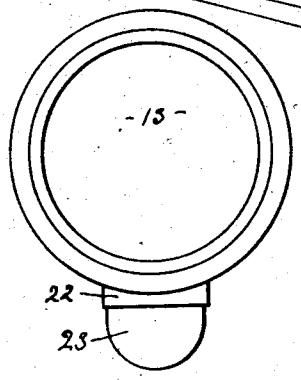


FIG. 2

FIG. 4

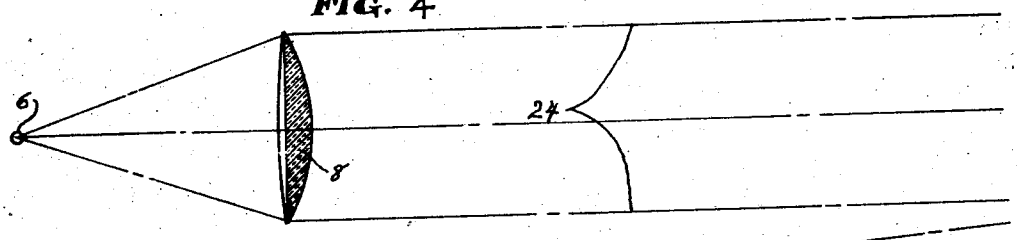
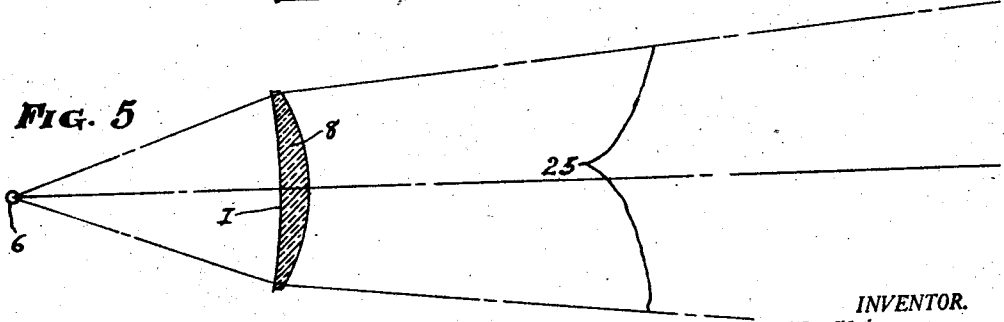


FIG. 5



INVENTOR.
Roland H. Shippey
Harry D. Van Leunen
BY
U. G. Charles
ATTORNEY.

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HEADLIGHT

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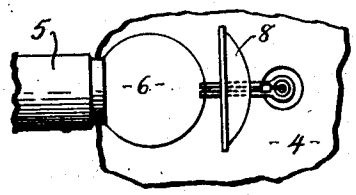


FIG. 8

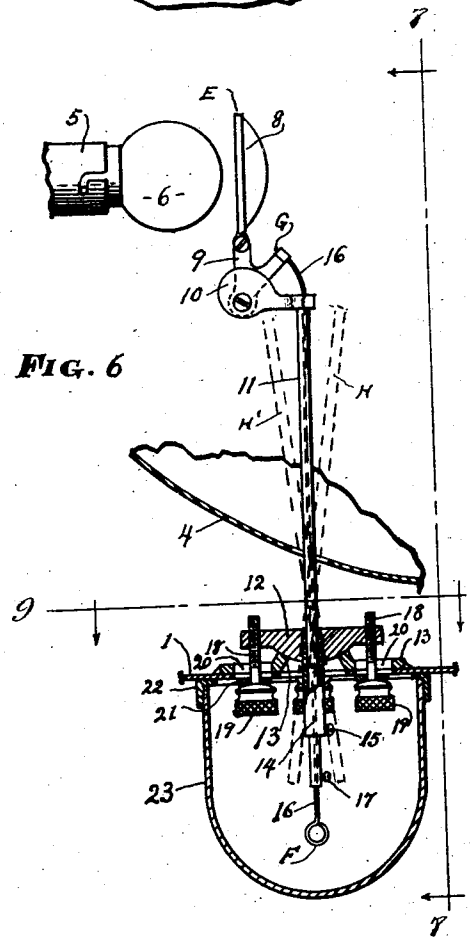


FIG. 6

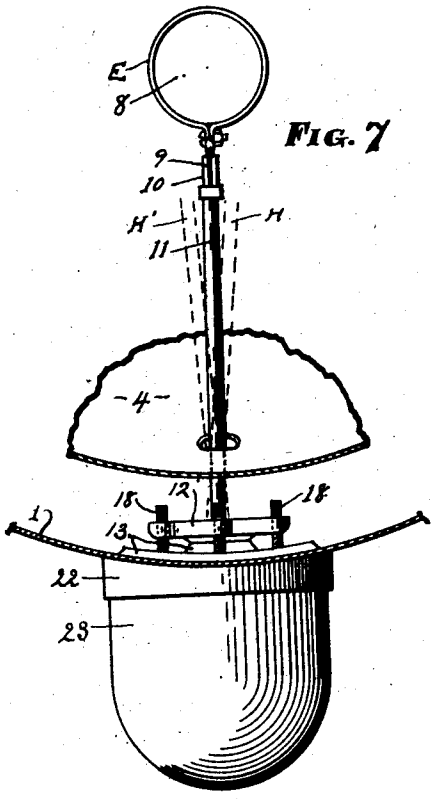


FIG. 7

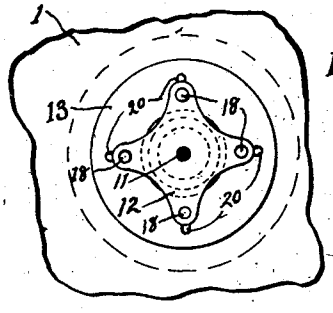


FIG. 9

INVENTOR.
Roland H. Shippey
Harry D. Van Leunen
BY U. G. Charles
ATTORNEY.

Patented June 21, 1927. 1,633,387

UNITED STATES PATENT OFFICE.

ROLAND H. SHIPPEY AND HARRY D. VAN LEUNEN, OF WICHITA, KANSAS.

HEADLIGHT.

Application filed October 30, 1925. Serial No. 65,785.

Our invention relates to head lights.

The object of our invention is to intensify the light power of the lamp by the use of a specially made lens.

A further object of our invention is to provide a reflector that the reflection of the light rays are centralized along the road bed.

A still further object of our invention is to provide adjusting means for the lens from the exterior of the headlight housing.

A still further object of our invention is to provide a lens refracting the rays on the horizontal plane.

These and other objects will be hereinafter more fully explained; reference being had to the accompanying drawings which form a part of this specification, wherein like characters refer to like parts throughout the different views.

Referring to the drawings:

Fig. 1 is a vertical sectional view through the head light.

Fig. 2 is a front elevation of the head light.

Fig. 3 is a diagram used to explain the grinding of the lens.

Fig. 4 is a sectional view taken on lines 4—4 in Fig. 3.

Fig. 5 is a transverse sectional view to Fig. 4 taken on lines 5—5 in Fig. 3.

Fig. 6 is an enlarged side elevation of the headlight lamp and the lens supporting means, part being in section.

Fig. 7 is a transverse view of Fig. 6 taken on line 7—7.

Fig. 8 is a top view of Fig. 6.

Fig. 9 is a plan view of the adjusting means taken on line 9—9 in Fig. 6 looking in the direction of the arrow.

The head light mechanism herein disclosed consists of a housing 1, having a plain glass lens 3, the said glass having detachable means as a support therefor. Positioned within said housing is a reflector 4, being conical in shape and the rear portion being semispherical, the said reflector being so positioned that the axis thereof is horizontally inclined for convenience of light ray refraction described.

In the rear of the reflector is positioned a socket 5 having a lamp 6 placed therein, 7 is a feed wire connecting the lamp with the electric current, note that the lamp is positioned slightly eccentric in the semispherical back of the reflector, but the said lamp tends to direct the rays through a lens 8 on a horizontal plane independent of the reflector, the said lens 8 is supported by an annular frame E which is rigidly connected to a bell crank 9, the said bell crank being pivotally supported by a member 10 which is rigidly positioned on the end of a tube 11 extending downward and being supported and adjusted by a mechanism consisting of a ball plate 12 seated in a socket 13, the said socket being rigidly attached to the bottom of the housing 1, concentrically positioned in said plate is a sleeve 14, the said sleeve being rigidly connected to the plate and adapted to receive tube 11 slidably engaging therein, on the lower end of the sleeve is placed a set screw 15 as means for binding the tube in a set position, slidably engaging in tube 11 is a rod 16 having a ring F on the end thereof functioning as a grip when rocking the lens to a desired position, the opposite end of the rod being rigidly connected to the bell crank as at G, and being resilient the end thereof will yield to the curvature required as the crank is rocked.

When the desired angle of the lens is acquired the rod is held firmly in position by means of a set screw 17 positioned at the lower end of the tube 11. It being understood that rocking of the lens is to position the rays obliquely to the horizontal axis of the lamp, and the raising and lowering of the tube is to position the center of the lens in axial alignment with the horizontal plane of the lamp axis. The said adjustment may be due to the rocking of the tube as shown by dotted lines H and H', the object of which is to vary the distance between the lamp and the lens, the said rocking of the vertically positioned tube 11 is actuated by means of screws 18 threaded in the wings in the plate 12, the said screws each having a knurled head as at 19 as convenient means for manipulation by the thumb and fingers, when the said plate is tilted the screws will change from their vertical position, therefore we have provided elongated slots 20 in the base of the socket plate and the knurled head being crowned to receive a socketed washer 21 providing a direct bearing on the face of the crown when the screw is positioned at an angle.

On the underside of the lamp housing an annular member 22 is rigidly attached, the said member being threaded on the inside

to receive a housing 23 which is threaded at its open end. The said housing functions as an inclosure for all of the adjusting means for the lens and can be removed when adjustments are required.

In Fig. 1 is shown the reflection of the light rays from the reflector by a plurality of lines radiating from the lamp center and horizontally inclining and obliquely from the surface of the reflector by lines extending therefrom as shown in Fig. 1, the light rays indicated by lines 24 which are centrally positioned and flowing on a horizontal plane are those projected by the lens as positioned in Fig. 4 and the rays transversely thereto as shown at 25 in Fig. 5. The said rays extending to the sides of the road by reason of the rear side of the lens as at L being cylindrical ground, and the axis thereof vertically positioned and the opposite side or front of the lens is convexed, therefore the rays from the lamp travel practically parallel horizontally and flaring transversely. This arrangement produces a brilliant light on a plane below the vision of the driver of an approaching car, and by reason of the inclined position of the reflector as heretofore described tends to refract the rays to the road bed and to the sides thereof simultaneous with the reflection by the lens.

Such modifications may be employed as lies within the scope of the appended claim.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

In a head light, the combination of a housing, a reflector, electric lighting means, of a lens, said lens adapted to intensify and direct light rays of said lighting means, a vertically disposed tube supporting said lens, a ball plate, a sleeve concentrically mounted in said ball plate, said tube slideably engaging in said sleeve, means for binding said tube in said sleeve at a fixed position, a socket bearing for said ball plate and a plurality of screws as rocking and binding means for said plate by which said lens is positioned as desired in front of said lighting means.

ROLAND H. SHIPPEY.
HARRY D. VAN LEUNEN.