

Jan. 2, 1923.

1,440,840.

F. A. REECE.
AUTOMOBILE HEADLIGHT.
ORIGINAL FILED SEPT. 22, 1917.

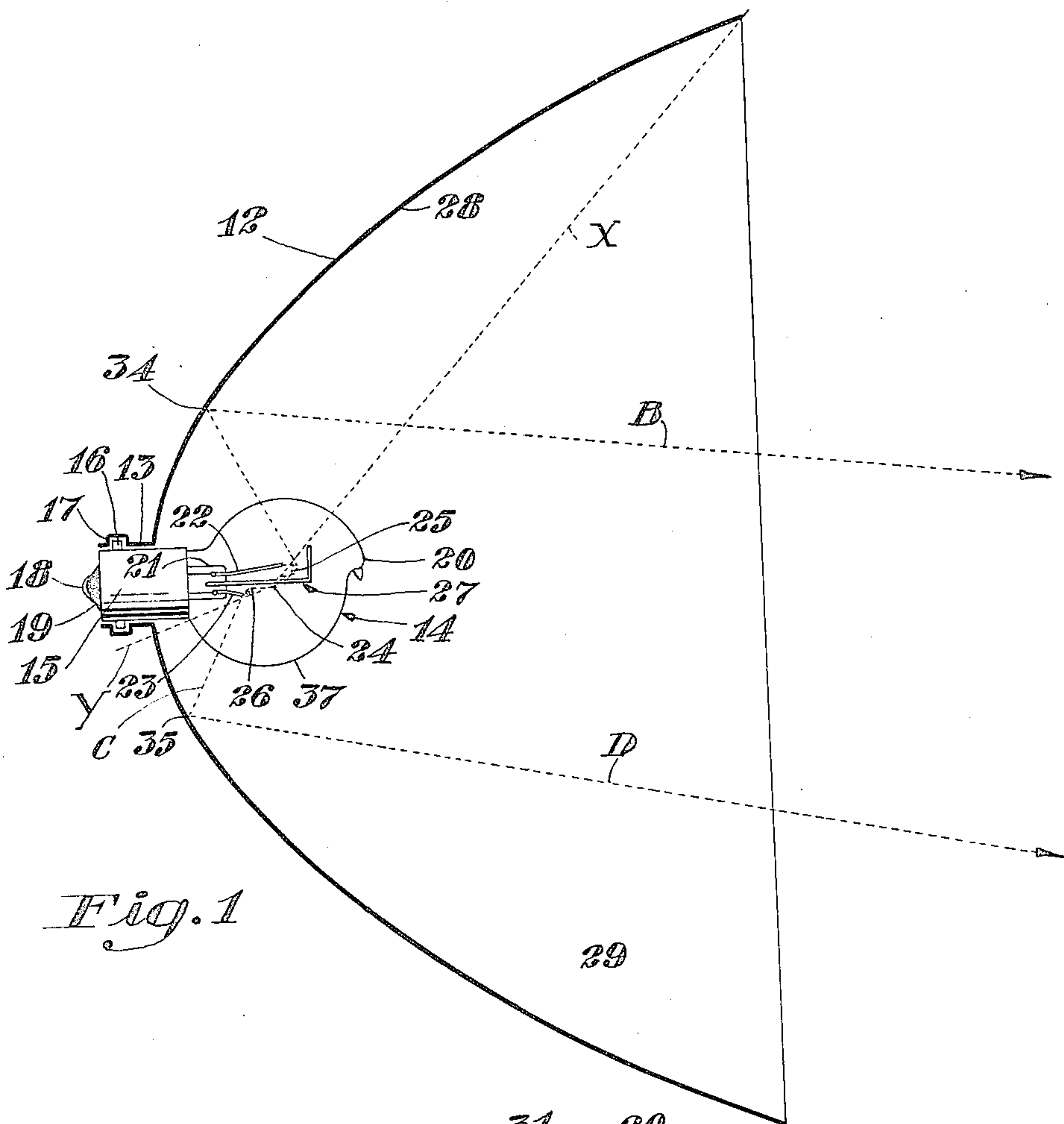


Fig. 1

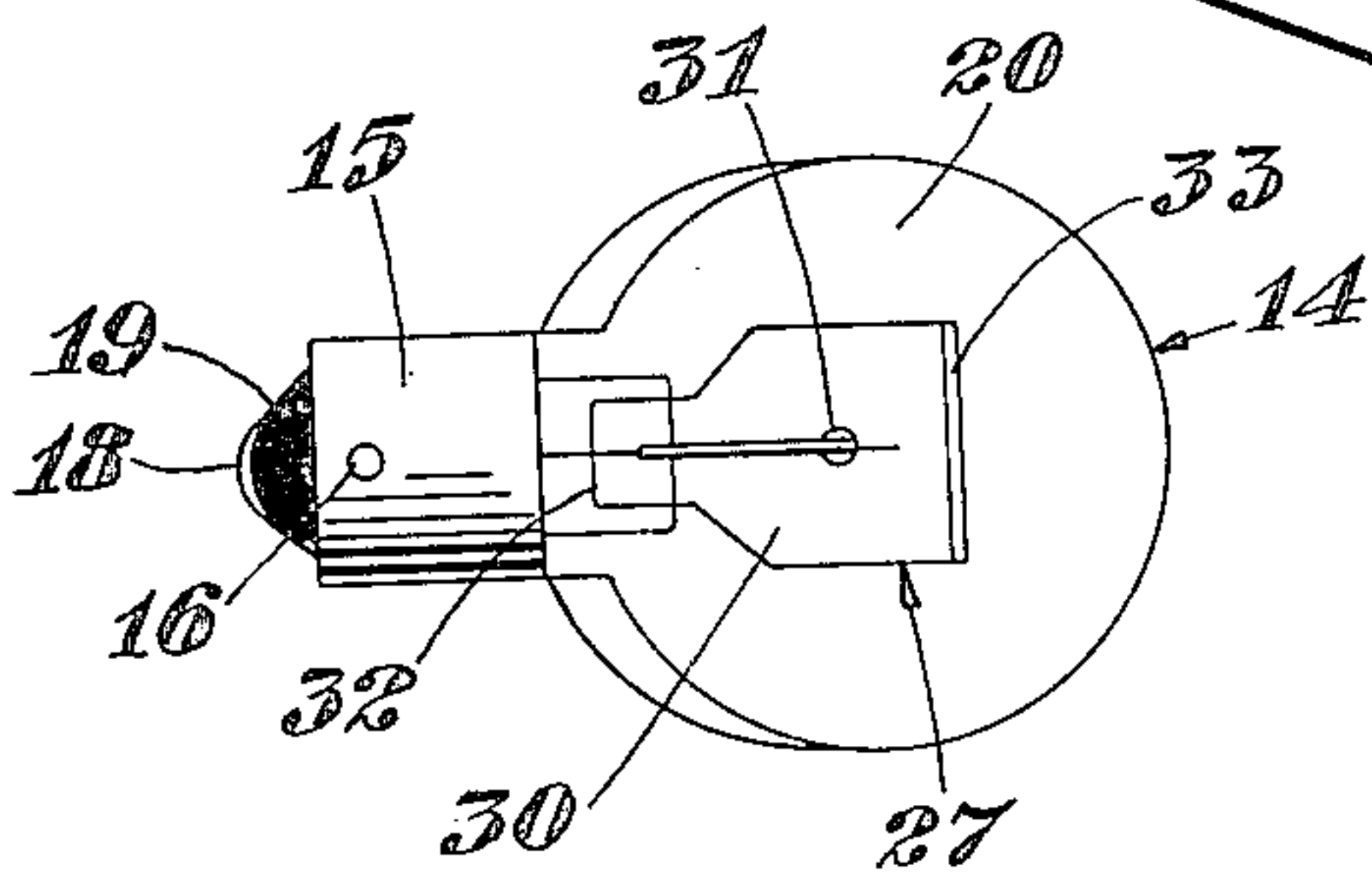


Fig. 2

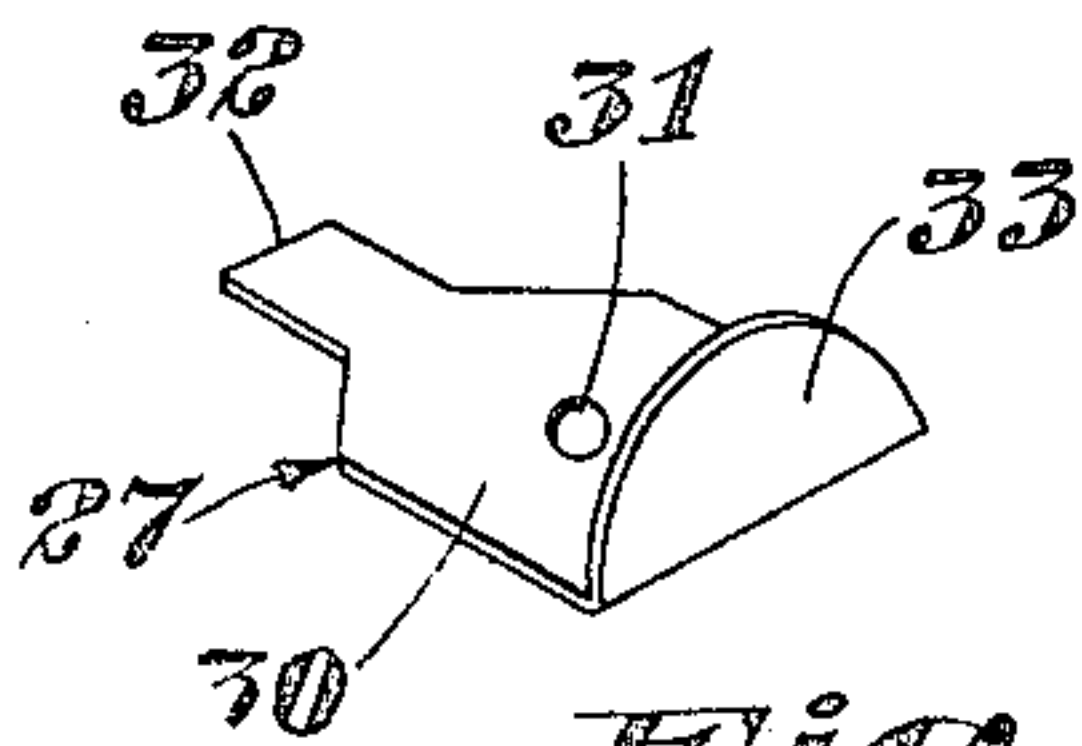


Fig. 3

Trustee
 by Frank A. Rice
 Macleod Cairn Copeland & Dike
Att'ys

UNITED STATES PATENT OFFICE.

FRANK A. REECE, OF CHESTNUT HILL, MASSACHUSETTS.

AUTOMOBILE HEADLIGHT.

Original application filed September 22, 1917, Serial No. 192,789. Divided and this application filed January 4, 1921. Serial No. 434,985.

To all whom it may concern:

Be it known that I, FRANK A. REECE, a citizen of the United States, residing at Chestnut Hill, county of Middlesex, State of Massachusetts, have invented a certain new and useful Improvement in Automobile Headlights, of which the following is a specification, reference being had therein to the accompanying drawings.

The present application is a division of my former application for automobile headlights, filed September 22, 1917, Serial No. 192,789, patented March 14, 1922, No. 1,409,469. The said application shows and describes a headlight for automobiles or the like, comprising a parabolic reflector provided with two light centers having certain specified relations to the focal point of the reflector and separated by an opaque member, the result being that all the light rays from both centers are thrown downwardly, so that no glaring rays are thrown above a predetermined line. The present invention relates to the incandescent lamp bulb therein shown containing two light centers with an opaque member between them, the said members being so positioned that when the bulb is inserted in an ordinary parabolic reflector the results described in my original application will be attained.

In the incandescent lamp embodying my invention, one of the light centers is located in front of the other, and there is an opaque partition, or dividing member, which separates the light centers. In use the lamp is placed in a reflector in such a position that the focal point of the reflector lies between the two light centers and the opaque dividing member prevents the rays of light from each light center being reflected by the opposite half of the parabolic reflector. The reflector causes the rays from the center of light in front of the focal point to converge, and causes the rays from the center of light behind the focal point to diverge. The centers of light are preferably arranged so that when the lamp is positioned in the reflector the rays of light thus reflected from both halves of the reflector are inclined downwardly to the horizontal, with the result that there is no glare from the reflector above a predetermined point at a distance from the headlight. In this way all objectionable glare from the headlight is done

away with without the use of a dimming screen of any sort, and the full benefit of the light produced from the light centers is obtained.

In the accompanying drawings I have shown and in this description I have described, the incandescent lamp embodying my invention in combination with a parabolic reflector of ordinary construction, as that is the manner in which the lamp is actually used, and because the mode of operation of the lamp will thus be more readily understood.

The invention will be fully understood from the following description when taken in connection with the accompanying drawings, and the novel features thereof will be pointed out and clearly defined in the claims at the close of this specification.

In the drawings, Fig. 1 is a diagrammatical view of a headlight embodying my invention.

Fig. 2 is an enlarged plan view of the lamp shown in Fig. 1.

Fig. 3 is an enlarged detail in perspective of a partition employed in the lamp embodying my invention.

Having reference to the drawings, there is shown a headlight which has a reflector of parabolic or of substantially parabolic shape. The headlight is provided with a socket 13 which is located centrally of the reflector 12 and in which an electric lamp 14 embodying my present invention, is received.

The lamp 14 is provided with the ordinary socket member having a shell 15 of brass provided with anchor pins 16 which are received in corresponding grooves 17 in the socket 13 and which detachably secure the lamp 13 in position. The shell 15 has centrally thereof a terminal 18 which is insulated from the shell by any common form of insulating material 19. The socket member is provided with a bulb 20, which is preferably of the shape shown for reasons hereinafter to be set forth, and within the bulb 20 is a neck 21 of any common insulating material such as glass or the like. While I have described the lamp socket shown in the drawings somewhat in detail, it will be understood that any desired form of lamp socket or mounting may be employed.

A pair of filament supporting members

or terminals 22 and 23, the former of which is preferably longer than the latter, are mounted in the neck 21 and are connected, one with the terminal 18, and the other with the shell 15 in a manner well known to those skilled in the art. Connecting the terminals 22 and 23 is a lighting filament 24 which may be of any desired material of high resistance, such as carbon, tungsten, platinum or the like. It is arranged in two coils 25 and 26, each of which forms a centre or unit of light. A partition 27 which may be of any non-transparent material, is mounted in the neck 21 between the terminals 22 and 23 and projects outwardly from the neck between the light coils 25 and 26, being preferably in the horizontal position shown. It separates the lighting coils 25 and 26 so that light from the coil 25 strikes the upper half 28 of the reflector 12 only, and light from the coil 26 strikes the lower half 29 of the reflector only. The partition 27 is preferably of the shape shown in Fig. 3 and consists of a plate 30 having a hole 31 through it and having a laterally extending projection 32 at one end, by which it is supported in the neck 21 of the lamp, and an upturned end 33 at the other end. The lighting filament 24 extends from the coil 25 through the hole 31 and to the coil 26 so as to connect the terminals 22 and 23. If desired the light coils may be separated, in which case additional terminals must be used, or the coils be connected through the plate as a conductor, in which case the hole 31 in the partition 27 is not used, the important feature being to arrange the light coils with relation to the focal point as will now be described. The focal point of the reflector 12 is indicated at F.

As is well known to those skilled in the art, reflected rays from a light unit which is in front of the focal point and in front of a straight line from the focal point to the edge of the reflector will converge, and reflected rays from a light unit which is behind the focal point and behind a straight line between the focal point and the inner edge of the reflector will diverge. The lines in question may be called "limiting lines" and are shown at X and Y in Fig. 1 of the drawings. The lamp embodying my invention is constructed with this principle in view. The lighting coil 25, which is located above the partition 27, is in front of the limiting line X so that a ray of light from the coil 25 which passes along the line A, strikes the reflector 12 at 34 and is reflected along the line B. The partition 27 cuts off the direct rays from the light coil 25 from the lower half of the reflector so that rays from the light coil 25 strike the upper portion of the reflector only. In order that there may be no direct rays from the light coil 25 which do not strike the upper half of the reflector, the par-

tion 27 is provided with the upturned end 33. The upturned end 33 is formed on a curve which corresponds to the curve around the front edge of the reflector, as shown in Fig. 3, so that all direct rays at the front of the headlight from the coil 25 are shut off and therefore any glare from this source is eliminated. The axis of the light coil 25 is preferably parallel with the limiting line X so that all the reflected rays from the light coil 25 travel on lines which are substantially parallel. The coil 26 is arranged below the focal point and behind the limiting line with its axis preferably parallel to the said line. A ray from this coil, which for example travels along the line C, strikes the reflector at 35 and is reflected along the line D. The light coil 26 is so arranged in relation to the focal point F that the reflected rays travel on lines, one of which is shown at D, which are inclined at substantially the same angle as lines along which reflected rays from the coil 25 travel, one of which is indicated at C. By this construction all the rays from each of the light coils are reflected along lines which may be made to incline downwardly as desired, so that no glare is afforded above a predetermined point at a distance from the headlight. While the partition 27 shown and described is preferably used to cut off from one portion of the reflector the direct rays from one of the light centres, and to cut off from another portion of the reflector the direct rays from the other light centre any other means for effecting this object may be employed if desired.

The bulb 20 of the lamp 14 is preferably shaped as shown. The upper half 36 of the bulb 20 is formed on an arc of a circle, the centre of which is at, or substantially at the light coil 25, and the lower half 37 of the bulb is formed on an arc of a circle, the centre of which is as near as is practicable to the light coil 26. This construction practically eliminates all reflection from the glass surface of the bulb. I regard this as important for where the bulb is not formed on a circle the centre of which is substantially at the light unit, an image is produced by reflection from the inner surface bulb and this image being away from the focus of the reflector produces reflected rays which are not parallel either with the direct rays from the source of light or with the reflected rays therefrom, and glare is produced in this manner.

What I claim is:—

1. An incandescent lamp containing a pair of longitudinally spaced light centres, and an opaque member between said light centres.

2. The incandescent lamp containing two longitudinally spaced light centres and a longitudinally disposed opaque member between said centers.

3. In a device of the character described, an incandescent lamp having a pair of light centres and a partition of non-transparent material separating them, the light centre on one side of the partition being further forward than the light centre on the other, and the portions of the bulb of the lamp which are on opposite sides of the partition being spherical and formed about the respective light centres as centres.

4. In a device of the character described, an incandescent lamp having a partition within the bulb, the axis of said bulb lying in the plane of said partition, and a filament

forming two longitudinally spaced light centres on opposite side of said partition. 15

5. An incandescent lamp containing a pair of longitudinally spaced light centers, and an opaque partition located between said light centers and having an upturned end. 20

6. An incandescent lamp containing a pair of longitudinally spaced light centers, and an opaque partition located between said light centers and having an upturned end formed with a curved edge. 25

In testimony whereof I affix my signature.

FRANK A. REECE.