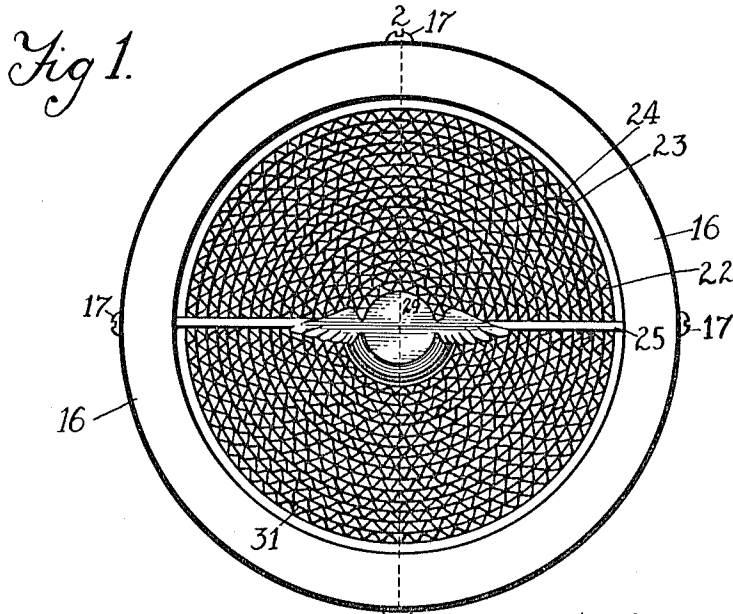
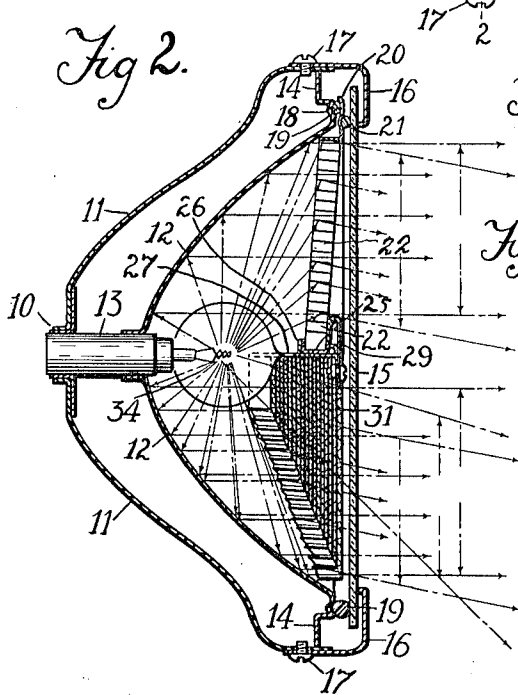
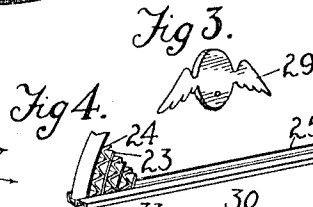
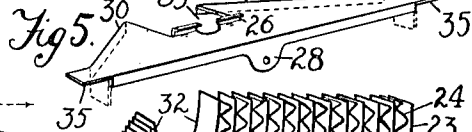
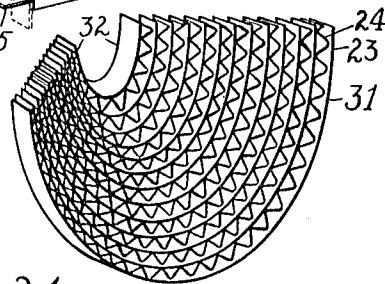


1,309,449.

Patented July 8, 1919.  
 3 SHEETS SHEET 1.

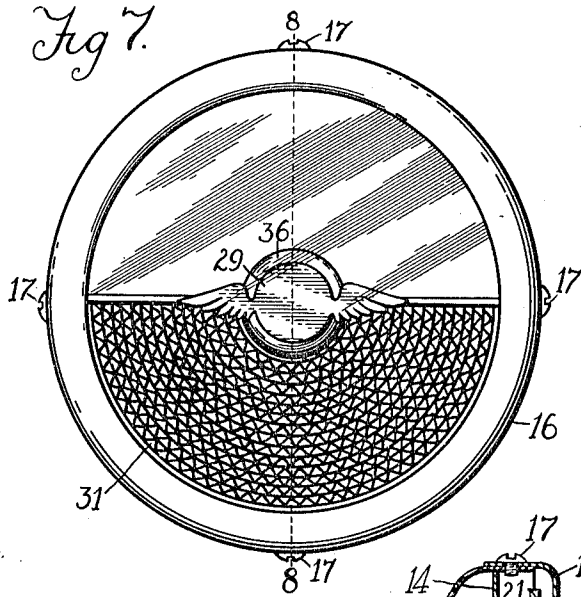
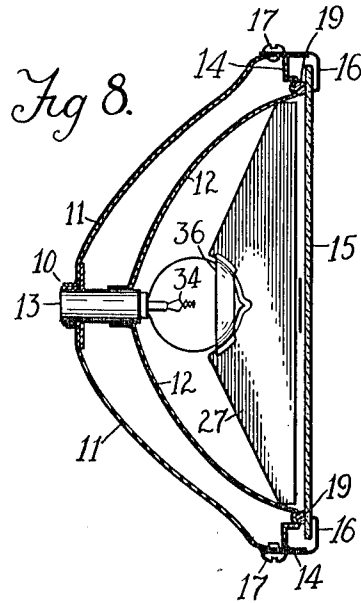
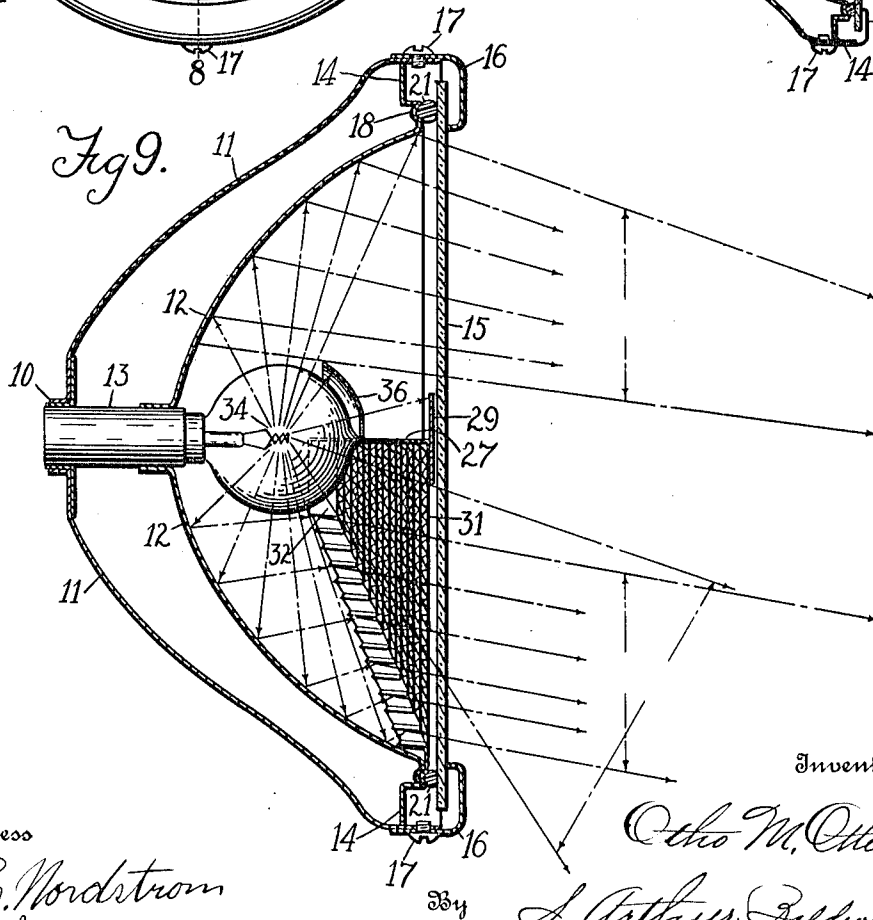


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1,309,449.

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 3 SHEETS—SHEET 2.



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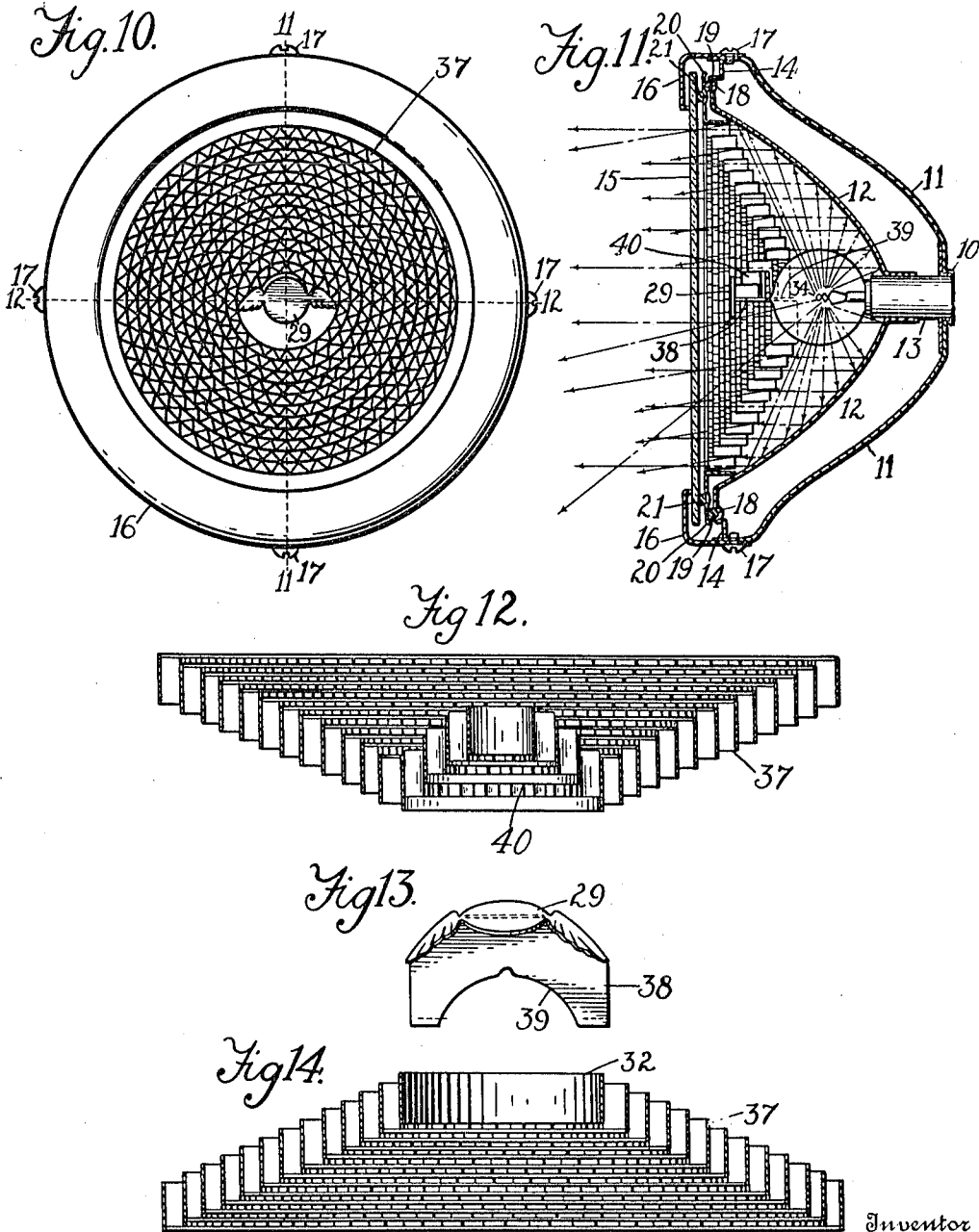
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 AUTOMOBILE LAMP.  
 APPLICATION FILED JAN. 2, 1918.

1,309,449.

Patented July 8, 1919.

3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

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## AUTOMOBILE-LAMP.

1,309,449.

Specification of Letters Patent.

Patented July 8, 1919.

Application filed January 2, 1918. Serial No. 209,912.

*To all whom it may concern:*

Be it known that I, OTHO M. OTTE, a citizen of the United States, residing at the city of Jamestown, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Automobile-Lamps, of which the following, taken in connection with the accompanying drawings, is a specification.

The invention relates to lamps for vehicles and similar uses in which mechanism is provided to project and control the light; and the object of the present improvement is to provide a lamp with a parabolic shaped reflector having means whereby the reflected light is controlled so that a portion of the direct light is projected upon the roadway immediately in front of the lamp and the remaining rays are controlled so that an area of the roadway at a distance from said lamp is brightly lighted and the intervening area between said distant area and the area immediately in front is lighted sufficiently well to distinguish objects therein, which light controlling means consists of a metallic screen having tubular openings formed by flat and corrugated strips or blades arranged conically or semi-conically in a series of stepped planes or annuli or semi-annuli so that the front portion of the light for the spot light type of lamp passes unobstructed and an aperture for the lower front portion of the direct rays of the headlight type of lamp also passes unobstructed while substantially all the remaining rays are reflected into horizontal alinement through the tubular sight intercepting metal screen; and the invention consists in the novel features and combinations hereinafter set forth and claimed.

In the drawings, Figure 1 is a front elevation of the automobile headlight type of lamp showing a tilted flat sight intercepting screen in the upper portion and a conical shaped screen in the lower portion, and the apertures of said screens in the upper and lower portions so placed as to be in substantial parallel alinement for the major portion of the reflected rays of light, the upper portion being slightly inclined so as to give a downward inclination to certain of the rays of light to assist in lighting the intermediate area of the roadway in front of the lamp. Fig. 2 is a vertical sectional view

at line 2—2 of the headlight type of lamp shown in Fig. 1, showing in dotted lines the control of the rays of light by means of the parabolic reflector and the light screens in the upper and lower portions. Fig. 3 is a perspective view of the central plate for stopping the central line of light. Fig. 4 is a perspective view of the channeled strip for holding in position the lower edge of the upper sight intercepting tubular screen on the cross plate; and Fig. 5 is a perspective view of the divisional cross plate separating the upper flat sight intercepting screen and the lower semi-conical shaped sight intercepting screen showing the opening in the rear of the cross plate for the electric light. Fig. 6 is a perspective view of the unattached semi-conical shaped sight intercepting screen for the lower portion. Fig. 7 is a front elevation of the headlight type of lamp having a conical shaped sight intercepting screen for the lower half and a clear glass upper half. Fig. 8 is a horizontal sectional view immediately above the horizontal divisional plate showing a screen extending up over the front central portion of the electric light; and Fig. 9 is a sectional view at line 8—8 in Fig. 7 showing the control of the rays of light as reflected from the parabolic reflector, the upper portion being reflected downward upon the roadway by said parabolic reflector and the lower portion reflected downward by means of the conical shaped sight intercepting screen. Fig. 10 is a front elevation of the spot light type of lamp having a conical shaped inwardly extending sight intercepting screen; and Fig. 11 is a vertical sectional view at line 11—11 in Fig. 10 showing the construction and arrangement of the conical shaped sight intercepting screen and the manner in which it is supported in the parabolic reflector lamp. Fig. 12 is an elevation of the upper portion of the conically shaped sight intercepting screen at line 12—12 in Fig. 10; and Fig. 13 is a perspective view of the central plate of the screen shown in Figs. 10 and 11; and Fig. 14 is an elevation of the lower portion of the screen shown in Fig. 10 sectioned at line 12—12 showing the central opening for the exit of the downward direct rays of light.

Like characters of reference refer to corresponding parts in the several views,

The numeral 10 designates a reflector lamp for vehicles which may be either of the spot light or headlight type. The lamp 10 is constructed with a substantially parabolic shaped outer casing 11 which is held in spaced relation to the substantially parabolic shaped reflector 12 by the light post 13 at the center of the reflector 12 and casing 11 and by the outwardly turned flange 14 around the outer rim of the reflector 12 which flange 14 braces against the inner wall of the rim of the casing 11 thereby holding the casing 11 and reflector 12 firmly in position and in spaced relation.

A glass 15 is provided to cover the front of the reflector 12 which glass is held in place by the inclosing rim 16 attached to the casing 11 by spaced screws 17. A groove 18 is provided in the outwardly turned flange rim 14 to receive therein a suitable packing 19 against which the outwardly turned flange pin 20 of the sight intercepting screen 22 rests in the upper portion, which rim also has a groove therein similar to groove 18 to receive a packing 21 for the glass 15 to rest against.

The tubular sight intercepting screen is preferably made of alternate flat and corrugated strips or blades 23 and 24 which provide triangular shaped parallel openings between said strips. The walls of the triangular shaped openings provide multiple reflecting surfaces for all rays of light which strike against the same.

In the headlight type of lamp the upper screen 22 is supported in a channel strip 25 which rests upon a division plate 27 engaging beneath the hooked upwardly projecting lugs 26 on said plate 27 and being spot welded to said plate 27. The plate 27 has a downwardly projecting front flange with a central extension 28 and a hole therethrough to receive the sight intercepting central plate 29 which is attached to said extension 28 either by spot welding or by a suitable rivet. The plate 28 has the rear downwardly projecting flanges 30 which stiffen the plate and extend inwardly at the angle of the conically shaped sight intercepting lower screen 31.

The screen 31 is made of alternate corrugated and flat strips or blades 23 and 24 the same as the upper portion 22, and the central strips are pushed inward to the desired angle to form the conical shaped screen which rests firmly against the downward flange 30, being attached thereto preferably by soldering or welding. This arrangement provides the tubular apertures in the screen 31 in parallel alinement with the reflected rays from the parabolic reflector 12. A central opening 32 is provided in the conical shaped screen portion 31 for the electric lamp 34 so that the direct rays from said lamp will shine down through the opening

32 upon the roadway immediately in front of the lamp. An opening 33 is provided in the rear side of the plate 27 to receive the front portion of the bulb of the electric lamp 34. The lamp 34 is mounted in the lamp post 13 and is preferably adjustable.

The plate 27 is attached to the outer flat strip 23 of the lower sight intercepting screen 31 by means of the downwardly turned lugs 35 at each end of said plate 27. The upper screen 22 is preferably placed at a slight inward inclination as shown in Fig. 2 so that the direct rays of light are reflected downward upon the roadway by the multiple reflector surfaces of the screen reflector 22. The upper multiple screen reflector 22 may be dispensed with for certain head lights as shown in Figs. 7, 8 and 9, in which case the parabolic reflector 29 is inclined inward slightly from the true parabolic, that is, are given a contracted parabolic curve which reflects the rays of light therefrom so that, as shown in Fig. 9, said rays of light are conically inclined toward one another at a spaced distance from said reflector.

This arrangement reflects the upper portion of the rays of light downward upon the roadway and the conical shaped reflector 31 for the lower portion receives the rays of light against the multiple reflector walls of the tubular openings deflecting them downward upon the roadway. This provides for the farther and intermediate distance areas while the direct light through the opening 32 in the reflector 31 provides for the area immediately in front of the lamp. In order to protect the sight of the passerby or bystander from direct rays when the upper screen reflector is dispensed with, as shown in Figs. 7, 8 and 9, a shield plate 36 is provided on plate 27 immediately in front of the upper half of the electric lamp 34 thereby completely shielding the sight from said direct rays of light.

For the spot light type of reflector the corrugated and flat strips are preferably continuous as shown at 37, not being divided horizontally of the center of the lamp as in the headlight type with the exception of a small central portion to provide for the opening 32 in the lower part of the complete conical screen reflector. A small plate 38 is provided to cover the upper half of the opening 32 which has a rear side opening 39 for the electric lamp 34 and bears the round central plate 29 on its front edge. A series of short stepped conical flat and corrugated strips or blades 40 are provided for the upper half of the central portion corresponding to the opening 32 and covered by the plate 38, which screen portion 40 intercepts the sight from the light 34 yet permits the passage of the light through the corrugated openings.

I claim as new:

1. In a screen for automobile lamps, a concentric series of spaced semi-circular blades, said blades having a stepped arrangement to form a pronounced concave outer and concave inner face for the screen and extending from the front of the lamp to points adjacent the source of light of the lamp.
2. In a screen for automobile lamps, a concentric series of spaced semi-circular blades, said blades having a stepped arrangement to form a pronounced concave outer and concave inner face for the screen and extending from the front of the lamp to points adjacent the source of light of the lamp, and arranged to extend on opposite sides of and beneath the lamp so as to partly surround the latter.
3. A screen including a substantially central cross-bar, a lower member supported at its top by the cross-bar and an upper member supported at its bottom by the cross-bar.
4. A screen for automobile lamps including a concentric series of spaced curved blades, said blades having a stepped arrangement and the blades adjacent the lamp being shaped to receive and extend to opposite sides of the lamp and terminating adjacent to the central part of the lamp.
5. In combination with a parabolic reflector, a cross-bar at approximately the center of the reflector, an upper screen having a base supported by the cross-bar and being tilted bodily at an incline toward the source of light, and a lower screen having a top supported by the cross-bar.
6. In combination with a parabolic reflector, a cross-bar at approximately the center of the reflector, an upper screen having a base supported by the cross-bar and being tilted bodily at an incline toward the source of light, and a lower screen having a top supported by the cross-bar, said lower screen being composed of a series of semi-circular spaced strips having their ends affixed to the cross-bar and a series of undulating strips between the first named strips.
7. A screen including a series of spaced strips each of equal width and a series of undulating strips each also of equal width arranged in the spaces of the first named strips, all of the strips being curved and further disposed in stepped relation so as to provide a screen having a concave outer and convex inner face.
8. A screen composed of alternate flat and corrugated strips to provide apertures with multiple reflecting surfaces, said screen conically shaped to permit free egress of direct light rays and the strips being related so as to provide a concave outer and convex inner face for the screen.
9. A screen including an upper member bodily tilted and a lower member cooperating therewith and having an outer concave and an inner convex face, each of said members having a series of spaced blades.
10. A screen including an upper and lower member, a cross-bar between the members supporting each, and oppositely facing semi-circular spaced blades borne by the respective members.

In testimony whereof I have affixed my signature in the presence of two witnesses.

OTHO M. OTTE.

Witnesses:

H. A. SANDBERG,  
I. E. NORDSTROM.