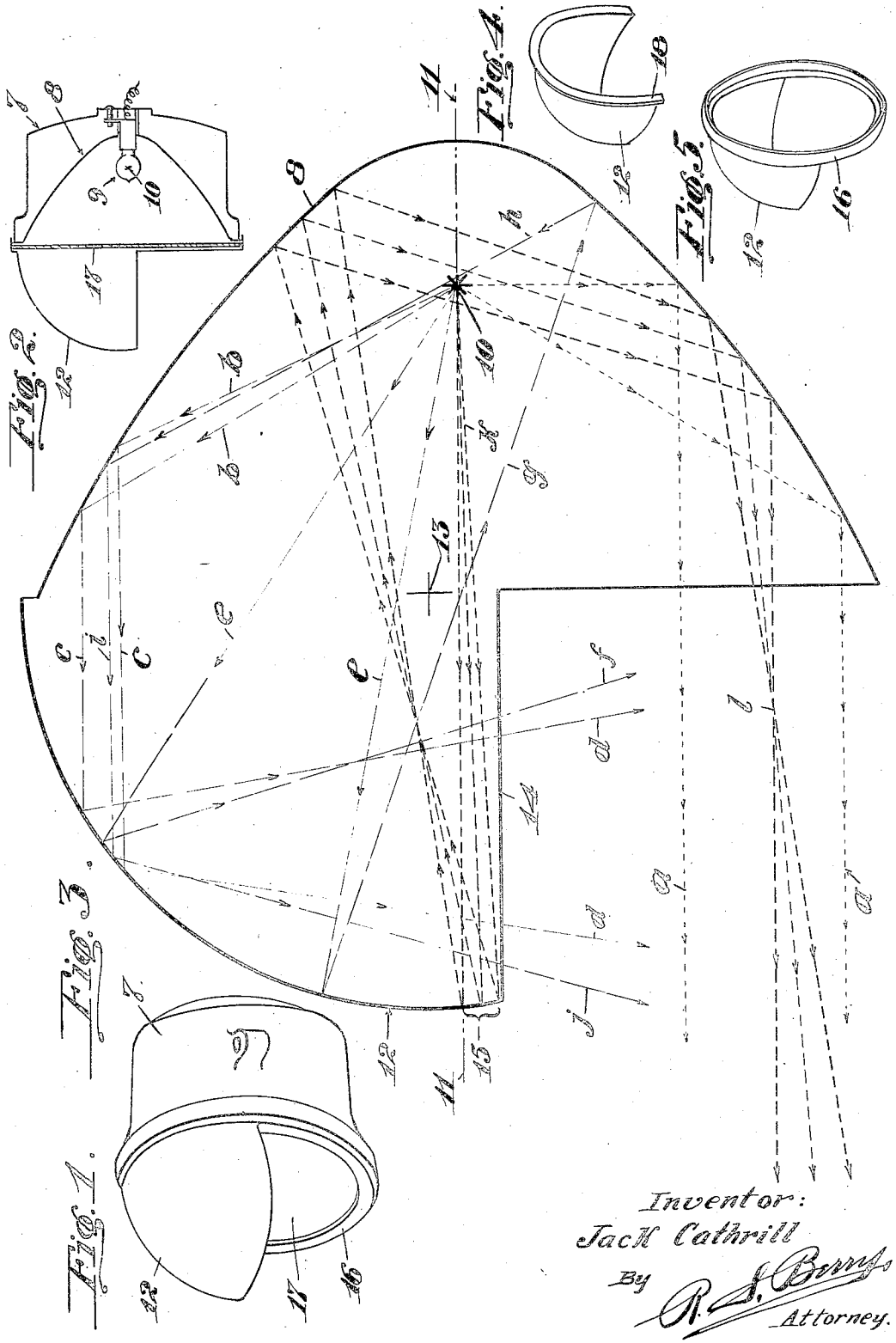
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LAMP

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LAMP.

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This invention relates to a lamp and particularly pertains to lamps of the type employed as headlights for motor vehicles and the like.

An object of my invention is to provide a lamp in which the light rays emanating therefrom are directed in such fashion that when the lamp is positioned to direct a beam light horizontally, such rays as would normally diverge upwardly above the horizontal will be directed downwardly thereby obviating the blinding effect caused by the upwardly diverging rays.

Another object is to provide a head lamp in which a beam light may be projected horizontally from the lamp with the beam light emanating from the lamp below or to one side of an axial plane extending through a lighting element in the lamp, and embodying means for intensifying a portion of the beam light.

With the foregoing objects in view, together with such other objects as may later appear, my invention resides in the parts and in the construction, arrangement and combination of parts hereinafter described and claimed and illustrated by way of example in the accompanying drawings, in which:—

Fig. 1 is a perspective view of a lamp constructed in accordance with the invention.

Fig. 2 is a view of the lamp as seen in longitudinal section.

Fig. 3 is a diagram illustrating the manner of directing and projecting light rays or beams by means of cooperating reflectors or mirrors, showing the manner of intensifying the beam light.

Fig. 4 is a detail in perspective of a reflector visor forming part of the lamp.

Fig. 5 is a perspective view illustrating another form of the reflector visor.

More specifically, 7 indicates a lamp housing which may be of any suitable construction and which, in carrying out my invention, is fitted with a reflector 8, of substantially parabolic form as is common in ordinary headlight construction. A light element 9, here shown as comprising an incandescent lamp, is located so that the source of light indicated by 10, will be positioned substantially at or near the focal point of the reflector 8; the source of light being located on or near the principal axis of the reflector, which axis is indicated by the dotted lines 11—11 in Fig. 3, and which, for the purpose of explanation, will be assumed to extend on a horizontal plane.

In carrying out my invention I employ a visor 12 which is in the form of a segment of a sphere, the visor having a form approximately a quarter of a sphere. This visor is arranged in front of the reflector 8 and extends over the portion of the latter projecting above the horizontal axis 11—11 so that the visor will act as a shield against upwardly projecting rays. The inner concave surface of the visor is of reflective character, thus forming a spherical mirror comprising a segment of a spherical surface. The visor in extending over the upper open portion or aperture of the parabolic reflector, the outlet for the light from the light element 10 is confined to the portion of the lamp below the axial line 11—11; the light rays reflected by the lower portion of the parabolic reflector being directed substantially parallel through approximately one-half the area of the aperture of the parabolic reflector, thus forming a beam light in which the major portion of the rays will extend parallel to each other in the direction of the axial line 11—11, as indicated by the dotted lines *a*—*a* in Fig. 3.

In order to accomplish the intensifying of the beam light *a*—*a* and to effect the desired spread of a flood light, the concave reflective surface on the inner face of the visor 12 is formed on the segment of a spherical surface, the center of curvature of which is located above and spaced from the horizontal principal axis of the parabolic reflector, as indicated at 13. This center of curvature is also located preferably on the plane of the outer end of the parabolic reflector.

The visor 12 is formed with its lower marginal portion extending on a plane below and spaced from the axial line 11—11 of the parabolic reflector, thus providing a mirror 15 in the form of a segment of a spherical surface extending below the source of light 10.

The visor may be of any suitable construction and may be attached to the lamp housing 7 in any desired manner. For example, the visor may be formed of a ring 16, as shown in Fig. 5, which ring is adapted to encircle the margin of the parabolic reflector, as shown in Fig. 2; the ring 16 being attached to the housing 7 in any desired manner and serving to hold the glass

plate 17 in position over the parabolic reflector, as is common in head lamp construction. In some instances, however, the visor 12 may be formed with a flange 18 as shown in Fig. 4, by which it may be engaged with the front of the lamp housing in any desired manner.

The concave spherical reflective surface interiorly of the visor 12 may be formed in any desired manner, as by forming the visor of metal which may be polished, nickled, or coated with any suitable reflective material. In some instances a silvered mirror formed of glass may be disposed within the interior of the visor. I therefore do not limit myself to any specific construction of the visor, or the manner of mounting same; the essence of the invention residing in providing a reflector or mirror in the form of a segment of a spherical surface arranged forward of the parabolic reflector in such fashion as to cooperate with the latter in directing light rays as hereinafter described.

In the operation of the invention, it is to be noted that the rays or beams of light from the light element 10 directed against the parabolic reflector will be projected substantially parallel from the latter, as is well known in the operation of parabolic reflectors in headlights, searchlights, and the like. The light rays projected against the upper portion of the parabolic reflector directly from the light element 10, as indicated on broken line *b*—*b* on Fig. 3, are projected horizontally and substantially parallel, as indicated by the broken lines *c*—*c* against the concave reflective surface of the spherical mirror, and are thence projected downwardly and divergently as indicated by the broken lines *d*—*d* to form what is termed a flood light. The upwardly diverging rays from the light element 10, passing through the aperture of the parabolic reflector, as indicated by the broken lines *e*—*e* and are intercepted by the reflective surface of the spherical mirror and in the case of the uppermost rays are directed downwardly in front of the parabolic mirror as indicated by the dotted lines *f*, and in the case of the lowermost rays *e* are reflected rearwardly into the parabolic reflector and re-reflected thereby as indicated by the broken lines *g h* and *i* back on to the spherical mirror and thence reflected downwardly as indicated by the broken line *j*. It will thus be seen that all of the rays or beams projecting upwardly from the light element 10 above the axis of the parabolic reflector will be finally emitted from the lamp in a downward direction.

A beam *k* of light projecting from the light element 10 immediately below the axis 11—11, is projected against the portion 15 of the spherical mirror extending below the plane of the axis 11—11, and is thence projected upwardly and rearwardly against the parabolic reflector as indicated by the heavy dotted lines, and are then directed downwardly against the lower portion of the parabolic reflector so as to be finally projected from the lamp through a focal point *l*, from whence the rays of the beam diverge among the substantially parallel rays *a*—*a* of the beam light thus intensifying the beam light. The portion of the visor 12, extending below the plane of the axis 11, serves as a shield to obscure the source of light from view from a point on a plane forward of the lamp extending on the axis 11—11 thereof, thereby obviating the blinding effect of the horizontal rays; but, the rays or beam thus cut off by the visor below the plane of the axis 11—11, being reflected and re-reflected as before described, are not so obstructed as to diminish the beam light; they being projected with the beam light on a plane below that on which they would normally be projected. In this manner it will be seen that the beam light will be condensed and intensified.

I claim:

1. In a lamp, a substantially parabolic reflector, a source of light arranged at or near the focal point of said reflector, and a concave reflector extending in front of the opening of said parabolic reflector throughout the area above the plane of the axis thereof and having a straight lower margin extending throughout on a horizontal plane being below the axis of the parabolic reflector; said concave reflector having its entire reflective surface conforming to the segment of a sphere the curvature of which is struck from a center located above the axis of said parabolic reflector.

2. In a lamp, a substantially parabolic reflector, a source of light therein, and a reflector-visor extending in front of the opening of said parabolic reflector having a lower marginal portion extending below the plane of the axis of said parabolic reflector said visor being curved both horizontally and vertically on arcs struck from a center located above the axis of the parabolic reflector.

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