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J. P. NIKONOW

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TAIL LAMP

Filed Feb. 21, 1931

Fig. 1

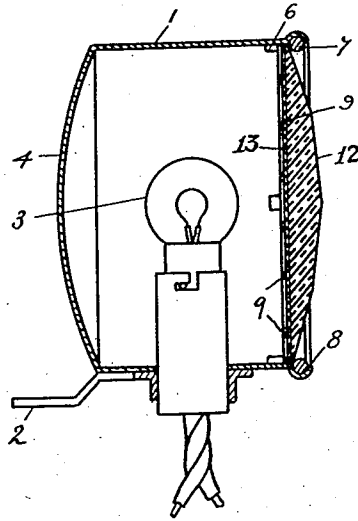


Fig. 2

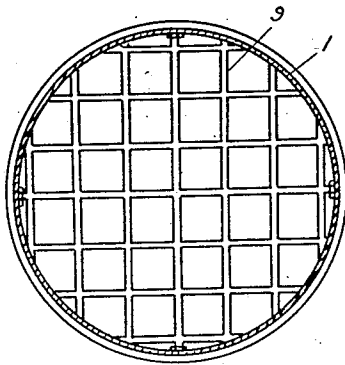


Fig. 3

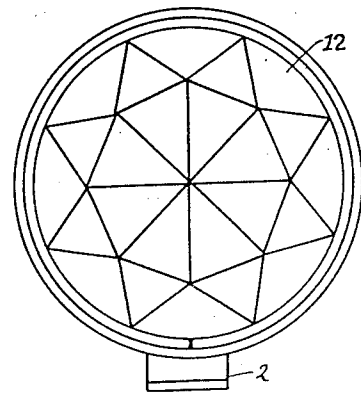
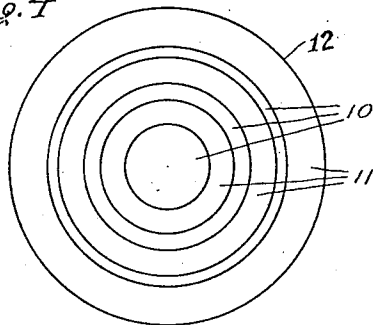


Fig. 4



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# UNITED STATES PATENT OFFICE

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## TAIL LAMP

Application filed February 21, 1931. Serial No. 517,493.

My invention relates to tail lamps and has a particular reference to lamps adapted to be displayed on vehicles and other objects for their protection at night.

5 Numerous highway accidents demonstrate that it is extremely important to display warning red lights at the rear of any objects on the highway in order to prevent the fast moving vehicles from colliding with them. The lights often fail, however, or are not  
10 lighted in time when the darkness falls.

It has been found that a lens with numerous facets on its front surface and provided with mirror coating on its rear surface (such as  
15 silver, mercury or other metals) acts like a lighted lamp in the rays of light, for instance, when it is illuminated by the headlamps of an approaching automobile. The facets refract the straight beam of light in  
20 different directions, these refracted rays being then reflected in different directions, so that the lens reflects a scattered beam of light.

I have also discovered that a very thin metal coating (a fraction of one thousandth  
25 of an inch), when applied to the rear surface of such a lens, will act as a perfect mirror for the scattered light, such as passes through the front facets, while offering but a slight resistance to the passage of direct light rays from  
30 the rear, for instance, from an electric lamp. An ordinary tail lamp of an automobile, provided with such a lens, will afford sufficient protection on a dark highway even if the electric current is not turned on.

35 In order to afford a still greater degree of protection, I place a grating back of the lens covered with a luminous paint. Such a grating admits the light between the grating bars and provides illumination when the electric  
40 lamp is not lighted.

My invention is more fully described in the accompanying specification and drawings in which—

45 Fig. 1 is a sectional elevation of my lamp, Fig. 2 is a rear view of my lens with grating, Fig. 3 is a front view of same, and Fig. 4 is a rear view of a modified lens.

50 My lamp consists of a housing 1 adapted to be supported on a vehicle, for instance, by a lug 2. It has an electric bulb 3 of an ordi-

nary type and a rear reflector 4. The front lens 12 is rested against lugs 6 and is retained by a ring 7 in a groove 8. The lens has a number of facets on its front surface adapted to reflect and to refract the light in different  
55 directions. The rear surface of the lens is provided with a very thin layer of silver or similar metal (mirror) coating 13 so as to reflect the scattered light from the front. The coating must be sufficiently thin so as to permit direct light from the bulb to pass through  
60 the lens practically unobstructed. The lamp, therefore, will strongly reflect the outside light, when the bulb is not lighted, and will act as an ordinary lamp when the bulb is  
65 lighted.

A grating 9 may be also provided at the rear of the lens, formed of narrow strips of some suitable material such as metal, coated with a luminous paint on the side adjacent  
70 to the lens. This grating will afford additional illumination when the bulb is not lighted. The silver coating may be removed in strips corresponding to the grating bars in order to fully expose the luminous surface. In such  
75 a case the grating can be replaced by the luminous paint directly applied to the lens in the places where the mirror coating has been removed.

A modified arrangement is shown in Fig. 80 4, the mirror coating being removed in concentric circles 10, leaving mirrored circles 11. In such a case the coating may be of any thickness as a sufficient amount of light from the bulb will be passed through the area 10.  
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I claim as my invention:

1. A lens for a lamp, comprising in combination a luminous grating at its rear surface, and reflecting members between the bars of said grating.  
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2. A lens for a lamp, a portion of the rear surface of said lens being covered with a reflecting coating, and another portion of said lens being covered with a luminous material.  
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3. A lens for a lamp, a portion of the rear surface of said lens being covered with a transparent reflecting coating, and another portion of said surface being covered with a luminous material.  
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4. In a lamp, the combination with a housing, of a lens in front of said housing, a source of light in the rear of said housing, a luminous grating covering portion of said lens, and a transparent mirror coating covering the other portion of said lens.

In testimony whereof I affix my signature.

JOHN P. NIKONOW.

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