J. DONALDSON.

GLARE SHIELD.

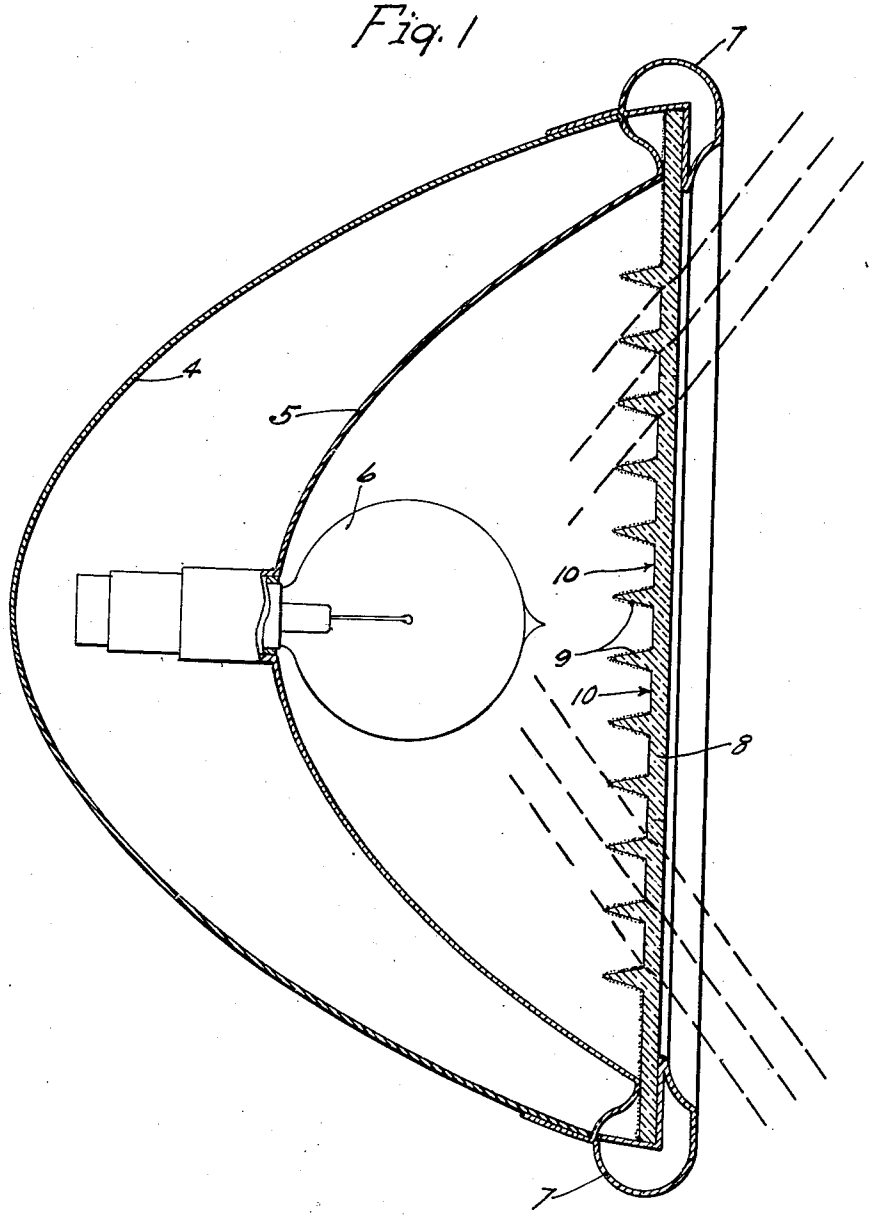
APPLICATION FILED JAN. 26, 1918.

1,331,422.

Patented Feb. 17, 1920.

3 SHEETS—SHEET 1.

Fig. 1



WITNESSES
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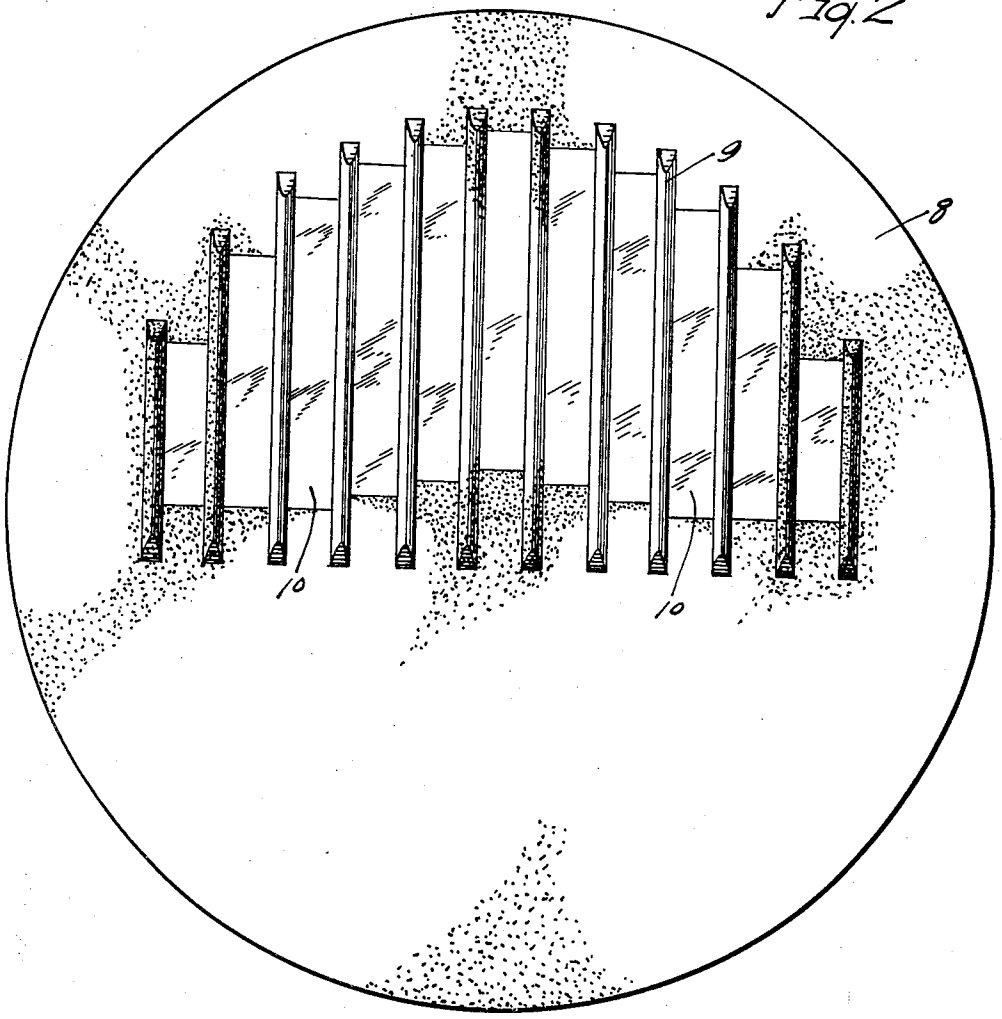
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3 SHEETS—SHEET 2.

Fig. 2



WITNESSES

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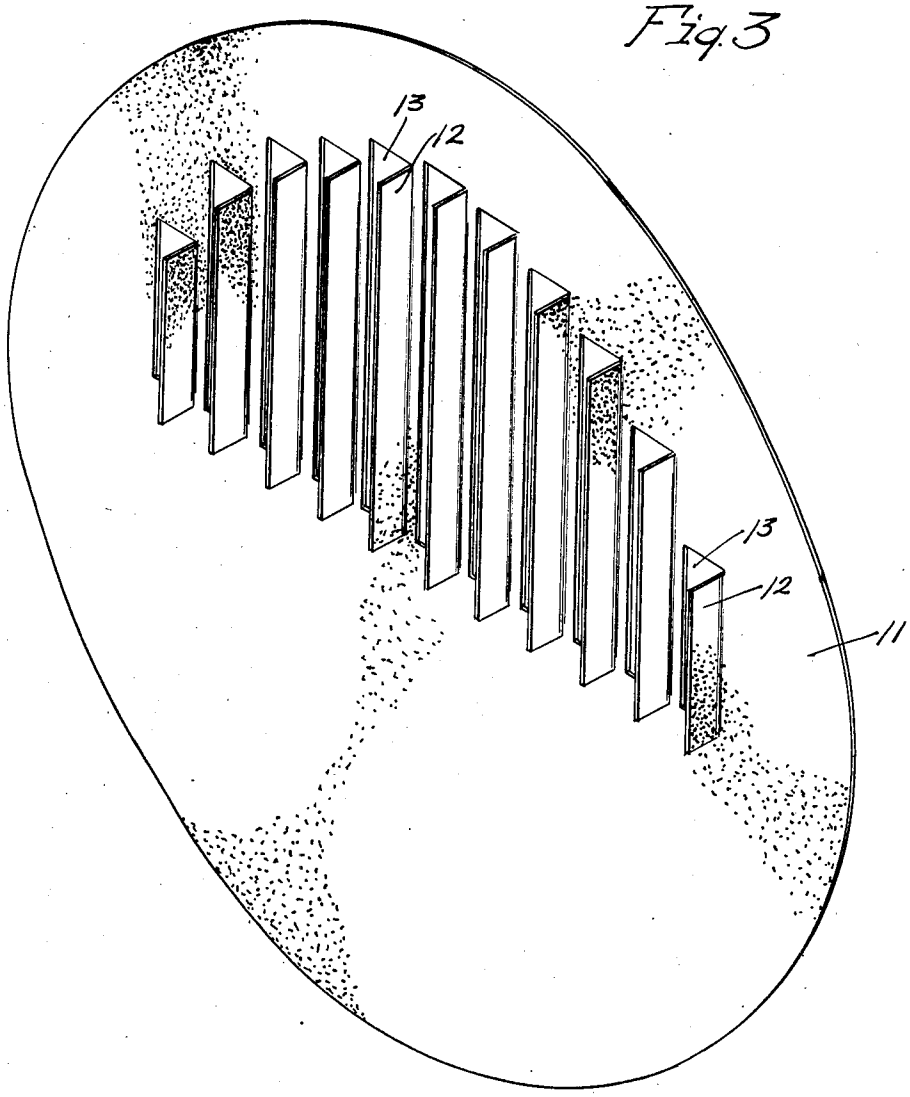
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3 SHEETS—SHEET 3.

Fig. 3



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UNITED STATES PATENT OFFICE.

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GLARE-SHIELD.

1,331,422. Specification of Letters Patent. Patented Feb. 17, 1920.

Application filed January 26, 1918. Serial No. 213,641.

To all whom it may concern:

Be it known that I, JOHN DONALDSON, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Glare-Shields; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to headlights such as used on motor propelled vehicles and street cars, and has for its object to provide an improved glare shield for preventing blinding of the drivers in oncoming cars.

My invention provides a so-called glare shield which will intercept, dim, or cut off those rays of light that would blind drivers in oncoming cars, but will not interfere with nor dim, to any considerable extent, those rays that are properly projected on the roadbed in the line of travel of the machine.

This so-called glare shield in some forms of my invention is incorporated in, or is made a part of the lens of the headlight, and in accordance with other forms of my invention is made as a separate element to be associated with the lens, but preferably placed adjacent to the inner face thereof. The elements or parts that perform the function of a shield may be either translucent or opaque, but preferably they will be translucent so that they will dim the rays enough to prevent blinding, but permit a diffused mild spreading of the light. Hence, the expression "light dimming surface" is herein used in a broad and liberal sense to include any kind of a surface that will entirely, or in part, intercept the blinding rays.

In my improved glare shield the laterally spreading rays that would produce the chief blinding effect are cut off or dimmed by a multiplicity of laterally spaced vertically extended parallel, or approximately parallel, so-called intercepting flanges which, however, do not interfere to any appreciable extent with the forward projection of those rays of light that are chiefly effective to light the road ahead of the machine. Between the intercepting flanges, the lens or other element of the shield has clear light passages. These clear light passages and the intercepting flanges may be given any desired vertical extension, but preferably they are in the upper portion only, or above the horizontal plane that intersects the filament or light source of the headlight.

In the drawings of this application I have illustrated two forms of the glare shield; in one of which the glare shield is formed as a part of the lens itself, and in the other of which the glare shield is formed as an independent element adapted for application to the lens.

In the drawings, like characters indicate like parts throughout the several views.

Referring to the drawings:

Figure 1 is a horizontal section taken axially through a headlight and showing the same provided with a lens designed in accordance with my invention;

Fig. 2 is a rear or inner face elevation of the lens shown in Fig. 1; and

Fig. 3 is a perspective view showing a shield formed from a sheet of suitable material, such as celluloid or metal.

Describing first those illustrated in Figs. 1 and 2, the numeral 4 indicates a casing, the numeral 5, the reflector, the numeral 6, the light bulb, and the numeral 7, the clamping rim of an ordinary headlight, such as used on automobiles, or other motor propelled vehicles.

The glass lens is indicated by the numeral 8. This lens above the horizontal plane of the axis of the headlight is formed with a multiplicity of laterally spaced vertical intercepting ribs 9 and between these ribs with clear light passages 10. Preferably the ribs 9 and the entire inner surface of the lens, except for the clear light passages 10 is frosted, sanded, or colored, or otherwise constructed so that it will dim all the light projected through the lens, except that which passes through the said clear light passages 10.

While the invention is not limited to the relative arrangement of clear light passages and light dimming surfaces shown in Figs. 1 and 2, such an arrangement is, nevertheless, believed to be highly desirable because not only the laterally projected blinding rays will be intercepted or dimmed, but the rays coming from the lower portion of the reflector will also be dimmed in passing through the lower portion of the lens. Those rays that come from the upper portion of the reflector and are projected straight ahead or slightly toward one side or the other, will pass freely through the clear light passages 10 and will reach the road ahead of the machine where they are

effective to light the road. Of course, the intercepting ribs 9 will intercept some of these forwardly projected rays, but by making the said ribs as thin as possible, this may be reduced to a minimum. At any rate, actual use of the invention has demonstrated the fact beyond question that even with high power bulbs blinding effects will be eliminated, and hence, that powerful light bulbs such as required to light the road ahead of the machine for a long distance may safely be employed. All experienced automobile drivers are well aware of the fact that there is very great danger in driving a machine at high, or even moderate, speed on country roads without the use of powerful headlights which will light up the road far ahead of the machine. My invention makes possible the safe usage of powerful headlights.

The diverging dotted lines in Fig. 1 illustrate the fact that the laterally diverging rays from the headlight will be intercepted or dimmed. Of course, by varying the horizontal projection of the intercepting ribs, the extent to which the laterally diverging blinding rays are intercepted may be greatly varied it, of course, being understood that the farther the said ribs project rearward from the body of the lens, or glare shield, the less will be the lateral divergence of the blinding rays.

In the preferred arrangement, the upper extremities of the clear light spaces 10 follow somewhat closely the curve of the upper portion of the lens, while the lower portions thereof follow somewhat closely the horizontal plane that contains the axis of the reflector. However, I find that I obtain the best result by bringing the frosting from below the central clear light space 10 slightly above said plane, or substantially as shown in Fig. 2 so that they cut off more of the direct light rays than would be the case if the said central clear light passages were extended farther downward.

Fig. 3 illustrates very much the same general arrangement of light passages and light dimming surfaces and intercepting flanges above described, but in this case the shield is formed from sheet material 11, such as celluloid, frosted on one side. This shield has the laterally spaced vertically intercepting flanges 12 formed by cutting vertical slots 13 in the sheet. These slots 13 in this case afford the clear light passages. A shield of this character is adapted to be placed against the inner surface of an ordinary clear lens with the flanges 12 projecting rearward or away from the lens. In actual practice I have found this form of the glare shield highly efficient.

In stamping the flanges 12 from the body of the shield as above described, their projection from the shield, when turned rearward, is limited by the width of the slots or clear light passages 13, but in making the shield from sheet metal, for example, it is not only feasible, but practicable, to form the flanges independently of the shield and to attach them by solder, or otherwise, and in which case, of course, said flanges may be given any desired depth or projection from the shield. Also, in forming the intercepting flanges as an integral part of the lens, they may be given as great projection as the conditions of manufacture will make possible. Within certain reasonable limits, the greater the projection the better.

What I claim is:

1. The combination with the reflector and light source of a headlight, of a glare shield positioned in front of said light source and having a multiplicity of laterally spaced vertically extended intercepting flanges and intervening clear light passages, the main body portion of said shield having a light dimming surface.

2. The combination with the reflector and light source of a headlight, of a glare shield positioned in front of said light source and having a multiplicity of laterally spaced vertically extended intercepting flanges and intervening clear light passages, the said clear light passages being extended vertically from the approximate horizontal plane of the axis of said reflector, and the main body portion of said shield having a light dimming surface.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN DONALDSON.

Witnesses:
CLARA DEMAREST,
BERNICE G. BAUMANN.