J. J. DOBES.

LIGHT DIMMER.

APPLICATION FILED MAR. 14, 1914.

1,163,590. Patented Dec. 7, 1915.

Fig. 1.

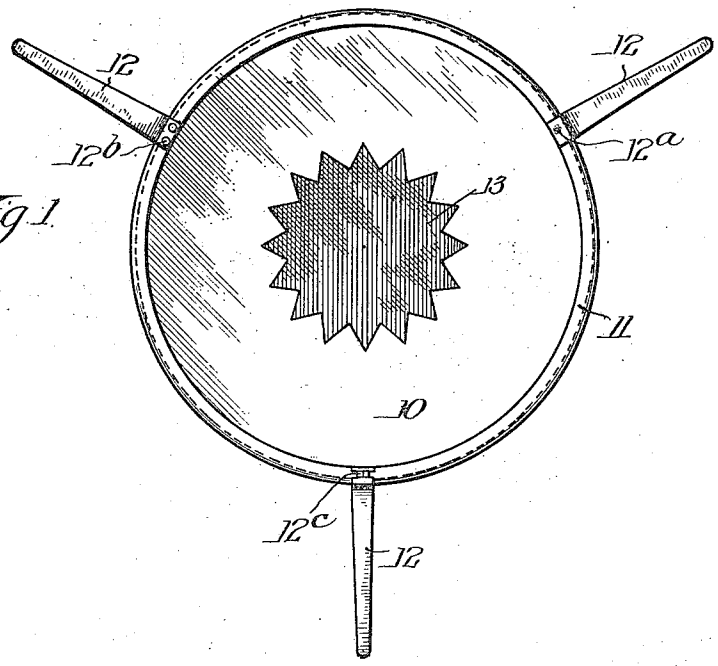


Fig. 2.

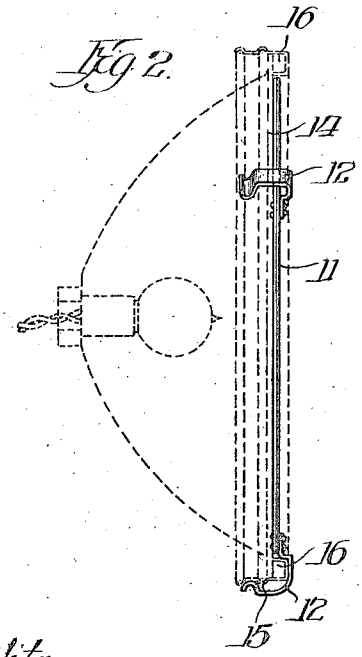


Fig. 4

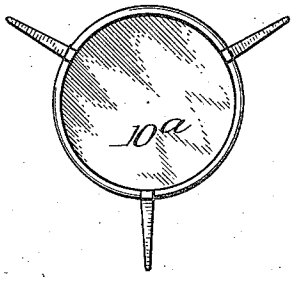


Fig. 3.

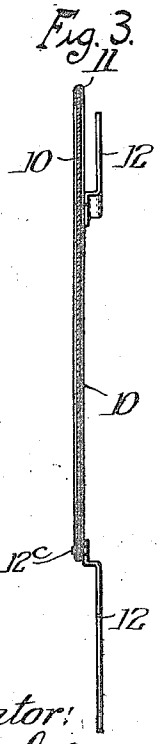
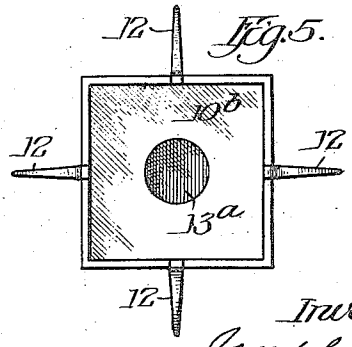


Fig. 5.



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LIGHT-DIMMER.

1,163,590. Specification of Letters Patent. Patented Dec. 7, 1915.

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To all whom it may concern:

Be it known that I, JOSEPH J. DOBES, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Light-Dimmers, of which the following is a specification.

My invention relates to dimmers adapted for use upon the lamps of vehicles, such as automobiles, and has for its principal objects the provision of a dimmer which will effectively prevent the annoyance, discomfort and danger to pedestrians (as from temporary blinding) due to the intense rays from the light-generating element of the modern high-power vehicle lamp, such dimmer providing, nevertheless, such a degree of soft and well tempered light as will permit the clear distinguishing of obstacles in the road.

A further object is to provide a dimmer of simple and cheap construction, which is strong and durable, of light weight, and one which may be readily attached to and detached from the lamp as occasion may suggest or require.

Other objects will appear hereinafter.

In the accompanying drawings, which form a part of this specification, I have illustrated preferred and modified embodiments of my present invention.

In these drawings Figure 1 is a face view of the device in its preferred form, the holding arms however, not being bent into a holding position; Fig. 2 is a side view of the device in operative position upon a conventional form of lamp, the lamp being shown by dotted lines; Fig. 3 is a sectional view of the circular dimmer of Fig. 1 on a diametric line; Figs. 4 and 5 are face views of modified forms respectively on a smaller scale.

It is old to provide dimmers for lamps, and it is not broadly new to secure a light-obstructing element to the face of a lamp by means of springs adapted to engage an annular rim or flange on the lamp.

The present invention resides more particularly in the dimming element itself by which notable advantages are obtained over other dimmers heretofore suggested, as will be hereinafter more specifically pointed out.

In all of the figures the dimming element is shown as a substantially flat plate 10, 10^a or 10^b which is preferably mica, celluloid or a similar hard and durable substance. Such plate is also to be considered as being of semi-transparent or translucent properties or material. If the stock material or substance from which the dimming element is made be transparent or approximately transparent, as in the case of mica or of some grades of celluloid, the material or substance is preferably roughened on one or both sides and given what is known as a mat finish—that is, dull—in ways well known, thus providing the quality of semi-transparency or translucency desired, but the plate may be coated, as by paint, or made of other material having the desired light-obstructing properties.

In practice I procure sheets of celluloid or of a celluloid-like article which is at first substantially transparent and subsequently given the mat finish or roughened surface, and preferably on one side only. From such sheets the dimming elements are cut, the outer sides respectively of these elements, as applied to the lamps, being left smooth, thus facilitating cleaning. The degree of semi-transparency or translucency preferably employed by me in these dimmers is such that articles viewed therethrough in an ordinary light in a room cannot be observed except when the article is brought to within five or six inches of the plate, and cannot be fairly distinguished therethrough except when brought practically against the plate. When held toward the light of a window so that the light is seen through the plate the preferred plate appears of a soft, silvery, light-grayish shade. The degree of translucency may, however, be varied within reasonable limits according to the strength of the light which it is desired to reduce.

A border 11 formed of light sheet metal is bent or crimped upon the edge or periphery of the plate, and upon this rim or protective and strengthening border I preferably secure a plurality of metallic arms 12 of light spring metal, such as brass, which arms may be made rigid upon the rim 11 by spot welding as at 12^a or by rivets as at 12^b or, preferably, by projections stamped up from the element 12 projecting through suitable apertures in the rim 11 and clenched or bent over on the other side, as at 12^c.

The device shown in Fig. 4 is constructed according to the foregoing teaching, the dimming element 10^a being a disk of the

semi-transparent substance or material described, or its equivalent. Where the light is very strong, however, as from the usual high-power lamps, I ordinarily desire greater dimming properties than those possessed by the simple form of Fig. 4, and in such case I desire particularly to avoid the glare of the intense rays proceeding directly forward from the electric bulb or other source of light. To this end I provide, in the preferred form of my device, a dimming element as hereinabove described but having its substantially central portion, or that portion immediately in front of the source of light, more opaque than the semi-transparent plate described. In Fig. 1 I have shown such more opaque portion 13 as having radial star-like points, thus providing interfitting points between the more opaque and less opaque portions effecting a blending of the light in this area of juncture, as in vignetting processes, and a substantially insensible equalization and diffusion of the light obtained. This more opaque portion may suitably be circular, however, as 13^a in Fig. 5, or may be given some other outline appropriate in any given case and accomplishing the results herein set forth. In practice in order to form the portion 13 or 13^a I preferably apply to the roughened or mat side of the dimmer plate 10 or 10^b a coating of a suitable substance such as white lead paint, such white-lead coating permitting the passage therethrough of a considerable quantity of light from the lamp, yet effectively preventing the objectionable glare of the intense centrally projected rays. The light-deadening portion 13 or 13^a may, of course, be formed otherwise than by means of paint, and the invention is not limited to such means. When the white-lead coated dimmer is held between the observer and the light, as from a window, the more opaque portion appears light gray, but is distinctly darker than the surrounding area of the plate.

In Fig. 5 I have shown a rectangular form of the device suitable for use upon a lamp of similar contour, and in this figure the shading of the more opaque portion 13^a is to be considered as indicating color, which the device may suitably have within limits of effectiveness, as where it may be desired to distinguish a particular vehicle or class of vehicles, or where it may be desired to distinguish the right and left sides of the automobile or car, this feature providing a combination of signal and dimmer in the same device. It will be seen therefore that in the most advantageous embodiments of the invention I provide a light dimmer of which a substantially central portion is relatively opaque; while the remainder, which may be termed annular in shape and which constitutes an outer or marginal portion, is semi-transparent and of less opacity than the central portion. The term annular as herein employed is to be understood in a broad sense as descriptive of that portion of the dimming means included between the outer boundary of said means and the portion of relatively great opacity; and not as limited to an annulus in the strict geometrical sense of the term.

The dimmer may be distributed to users in the form shown in Fig. 1, wherein the spring elements 12 are not formed holdingly to engage the lamp. When so distributed the dimmer may be applied to the front of the lamp, the elements 12 bent down upon the frame thereof and by means of a pair of pliers the elements 12 may then be readily bent to conform to such annular rim or flange as may exist upon such particular lamp. The device is thus adapted for application to a large variety of lamps, and the device is designed primarily for application to such lamps as are now in use or hereafter may be put into use and by simple attachment thereto.

In Fig. 2 I have illustrated the application of the dimmer to a conventional form of lamp in which the dimmer plate 10 rests upon the glass or lens 14 and the spring elements 12 are bent so as to engage lockingly the annular rim or flange 15 upon the frame supporting the glass or lens. It will readily be appreciated that the dimmer may be easily snapped or spring-caught upon the lamp, where it will be securely held so long as its use is desired, and that it may be just as readily removed as when, for instance, on country roads it may be desired to project forward all of the light from the lamp. It will be observed from Fig. 2 that the preferred form of plate 10 with its rim 11 substantially covers the entire area of light projection from the lamp. That is to say, the rim 11 is adapted substantially to interfit with the annular projection 16 surrounding and forward of the glass or lens, thus efficiently dimming all of the direct and reflected rays from the light-generating element within the casing of the lamp.

The use of my improved dimmer results in a diffused white light which is free from all objection of intensity and harshness. The light issuing therefrom is in the nature of a soft, pleasing, silvery glow, and is yet bright enough for the purposes of the person driving the car. Indeed, a lamp equipped with my improved dimmer affords a light far more helpful to the driver of the car than is provided by any lamp projecting intense and direct rays in that, among other considerations, objects on the road are distinguishable clearly as stones, lumps of earth or ruts, whereas with the dimmer absent these inequalities cause such deep shadows as often greatly to confuse the driver with respect to their nature and extent.

While I have illustrated preferred and modified embodiments of these improvements it will be apparent to those skilled in the art that some changes may be made therefrom without departing from the spirit of the invention herein set forth, and all such changes and modifications are contemplated by me as fall within the scope of the appended claims.

I claim:

1. A light dimmer for a vehicle lamp comprising a plate adapted to be positioned on such lamp in the path of light projection therefrom, said plate being relatively opaque in a portion thereof in the path of the most intense rays of light from the light producing element of such lamp, and the remainder of said plate being semi-transparent and less opaque than such relatively opaque portion, and means for securing said plate upon such lamp in the path of light projection therefrom.

2. A light dimmer for a vehicle lamp, comprising a plate adapted substantially to cover the area of light projection from such lamp, said plate having means on the substantially central portion thereof adapted to prevent intense rays of light from passing therethrough, said plate being semi-transparent in the portion thereof between the circumference of the plate and said central portion, and means for securing the plate readily removably upon such lamp in light obstructing relation thereto, said means comprising a spring catch secured to said plate and adapted to engage a portion of such lamp.

3. The combination with a vehicle lamp having a lens and a lens-supporting frame, of a plate adapted substantially to cover said lens, said plate having a substantially centrally disposed portion adapted to obstruct intense rays of light, and a semi-transparent portion about said centrally disposed portion, and means for removably securing said plate upon said lens frame substantially to cover said lens thereby, said means comprising a spring catch upon said plate and adapted to engage a portion of said lens frame.

4. A light dimmer for a vehicle lamp comprising a substantially flat dimming device adapted to be positioned on said lamp in the path of light projection therefrom, said plate being semi-transparent in the substantially circumferential portion thereof and more opaque in the substantially central portion thereof, said semi-transparent and semi-opaque portions vignetting into each other, and means for holding said dimming device on said lamp in light obstructing relation thereto.

5. A combined light dimmer and signal for a vehicle lamp having a lens, comprising a plate-like device adapted to be positioned on said lamp in front of said lens and in the path of light projection therefrom, said plate-like device being more opaque in one portion thereof and semi-transparent in another portion thereof, one of said portions being colored whereby a colored signal light may issue therethrough from said lamp, and means for holding said device readily detachably upon said lamp in light obstructing relation thereto.

6. A light dimmer for a vehicle lamp, comprising a substantially semi-transparent light-obstructing element of celluloid or the like in sheet form adapted substantially to cover the area of light projection form said lamp, said element having a supporting outer rim and spring clips thereon, said spring clips being adapted to engage such lamp and hold said dimming element readily detachably thereon.

7. A light dimmer for a vehicle lamp, comprising a substantially semi-transparent light-obstructing element of celluloid or the like in sheet form, and means on said element adapted to hold the same upon a lamp in light-obstructing relation thereto, said element having a portion thereof in the path of the most intense rays of light from said lamp more opaque than the semi-transparent portion.

8. A light dimmer for a vehicle lamp, comprising a plate-like dimming element having a light-transmitting portion of one surface thereof mat-finished, said element being adapted to be positioned upon a lamp in the path of light projection therefrom, said dimming element having means on a portion thereof adapted to prevent the projection of intense rays from said lamp, said portion lying directly in the path of such intense rays when the dimmer is in operative position on the lamp, and means for holding said dimming element upon a lamp in light-obstructing relation thereto.

9. The combination with a vehicle lamp having a lens supporting frame, of a plate adapted substantially to cover the area of light projection from said lamp, and means for securing said plate to said lens frame in the path of light projection from said lamp, said plate being semi-transparent in the circumferential portion thereof and having means on the central portion thereof relatively darker than the semi-transparent portion, said means on the central portion being adapted to prevent the projection of intense rays of light from said lamp.

10. In a vehicle headlight, the combination, with a source of light, of light-dimming means arranged in the path of light projection from said source, said means comprising a semi-transparent annular outer or marginal portion and a substantially central portion of materially greater opacity.

11. In a vehicle headlight, the combina-

tion, with a source of light, of plate-like dimming means arranged to obstruct light projected from said source, said means comprising a mat-finished annular outer or marginal portion and a substantially central portion of materially greater opacity.

12. A dimmer for lamps comprising a mask to extend across the path of the reflected light to be dimmed, said mask being translucent to dim the reflected light without obscuring the same and means located in such relation to the source of light as to cut off the spot glare from the central front of the lamp but not to obscure the light thereof, and coöperating with the less translucent part of the mask radially exterior thereto to diffuse the projected light and widen the area of the driving light.

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