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W. E. PHELPS

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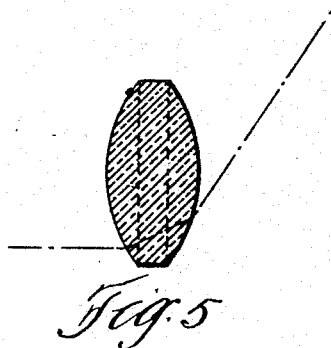
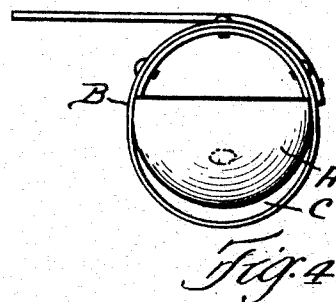
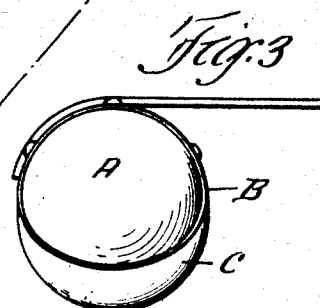
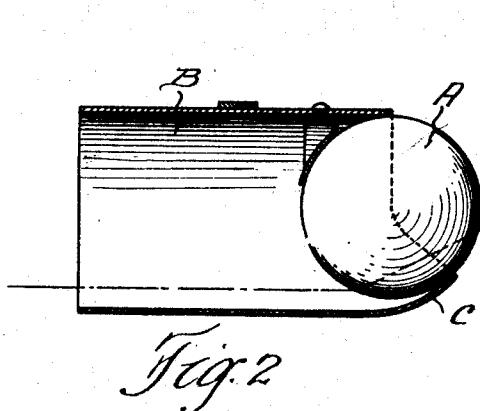
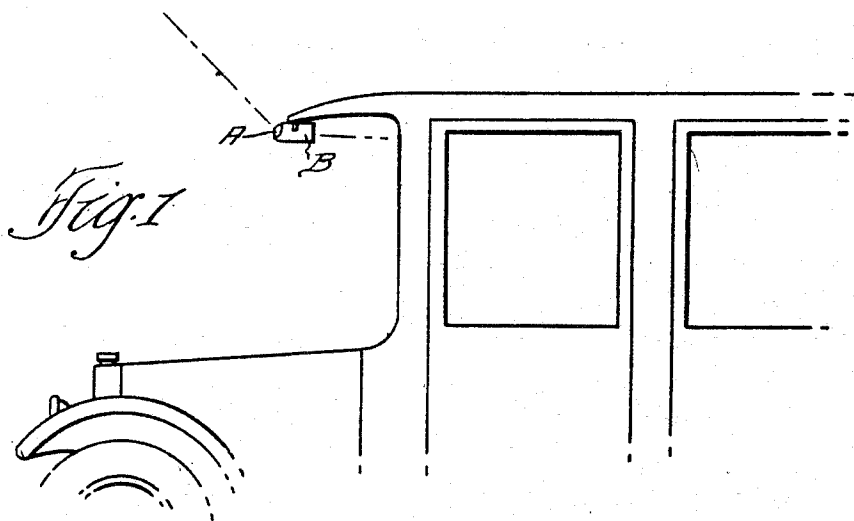
TRAFFIC SIGNAL INDICATOR FOR AUTOMOBILES

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UNITED STATES PATENT OFFICE

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TRAFFIC SIGNAL INDICATOR FOR AUTOMOBILES

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This invention is a signal indicating device for use upon automobiles.

At the present time there are in use in a large number of cities traffic signals which
 5 at predetermined times flash a red light to approaching vehicles signalling to them the necessity for stopping at a given point and after an interval of time the red signal is extinguished and a yellow one displayed indicating caution and then a green signal indicating that the vehicle driver may proceed.
 10 If the vehicle driver is some distance from the traffic signal no difficulty is had in observing the transitions but if the vehicle driver approaches the traffic signal to the point
 15 where he is compelled to stop, it frequently happens that the vehicle driver is obliged to lean forward and look upwardly from beneath the visor in order to observe the signal and at other times it is necessary for him to lean outside of the vehicle to observe the transitions of the traffic signal. With open cars this is not particularly troublesome but
 20 in closed cars it is inconvenient except at times when the glass is lowered.

The objection of my invention therefore is to provide an exceedingly simple and highly efficient device which will display to the vehicle driver the projected image of the traffic
 30 signal and this device is of such a nature that the vehicle driver sitting in natural position for driving the car can by looking at the device observe the transitions of the traffic signal, the projected images showing the color
 35 as well as the transitions.

Another object of the invention is to provide a device which is capable of use in connection with both open and closed cars and a still further object is to provide a device
 40 which will be effective irrespective of whether the car is directly in line with the traffic signal or to the right or left hand side of said signal and a still further object is to provide a device capable of projecting the
 45 image whether the car is directly beneath the traffic signal or removed some distance rearwardly therefrom.

Another object of the invention is to provide a device embodying these characteristic
 50 features which can be attached to any one

of a number of points upon the forward portion of a motor vehicle.

Another object of the invention is to provide a device in which images of tail lamps in advance of the motor vehicle will not be
 55 projected but will be eliminated from the vision of the vehicle driver.

With these various objects in view the invention consists in the novel features of construction and in the manner of combining or
 60 arranging the same all of which will be fully described hereinafter and set forth in the appended claims.

In the drawings forming a part of this specification, Fig. 1 is a side view of a portion of an automobile provided with my improved signal indicator; Fig 2 is a vertical longitudinal sectional view of the device; Fig. 3 is a front view of the device; Fig. 4 is a rear view and Fig. 5 is a view illustrating
 70 a modification.

In carrying out my invention I employ a transparent lenticular body A carried in a shell or holder B with the forward convex side of said body exposed. In practice I prefer to provide the shell or holder with a forwardly and upwardly extending shield portion C extending around the lower and side edges of the exposed convex side of the lenticular body, the purpose of this shield being to cut out or obscure the projection of images of tail lamps in advance of the vehicle to which the signal device is attached.

The shell or holder may extend rearwardly a short distance in the form of a cylinder
 85 open at its rear end and a sector shaped plate may be arranged in the upper portion thereof for the purpose of holding the lenticular body in the forward end of the holder or shell and said plate also has for its object the cutting out or obscuring of projected images or objects substantially level with the vehicle to which the device is attached and this would include the lamps of approaching vehicles, the object, therefore, being to project only the images of the traffic signal which traffic
 95 signal is usually elevated either directly in the center of the street or at one side thereof and in either event the said signal is at a
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point considerably above the top of the vehicle.

By the employment of a convex transparent body the image of the traffic signal will appear either in the transparent body itself or it will be projected upon the inner wall of the shell or holder and in some instances both the image will appear in the lenticular body and also upon the interior wall of the shell.

In both instances the color of the traffic signals will be truly shown but in a more concentrated form due to the fact that there is a concentration of the light beams emanating or projected from the traffic signal.

The device is arranged upon the forward portion of the motor vehicle either upon the visor or to the frame carrying the windshield and is so positioned that the vehicle driver may look into the rear open end of the device, the lenticular body filling the forward end of the shell or holder with its convex face projecting beyond the forward end of the shell or holder. The image of the traffic signal will appear in the lower half of the lenticular body and can be easily observed by the vehicle driver, consequently it will not be necessary for the said driver to lean forward and look upwardly in order to notice the transition of the traffic signal.

In practice I have found that a complete transparent glass ball or sphere answers all the purposes perfectly but a plano-convex lens or a concavo-convex lens could also be employed provided the convex side thereof is arranged forwardly and is of such size and curvature that the rays of light emanating or projected from the traffic signal will be received upon the convex surface thereof.

In practice I have found that the device has a range of practically 180° of lateral scope and something slightly in excess of 90° vertical scope. In other words, the device is effective even when slightly in advance of the traffic signal.

While I have shown the shield at the forward lower end of the holder and a plate upon the upper interior side it is obvious that the elimination of troublesome projections could be avoided by painting certain portions of the lenticular body or other suitable means might be employed. It will also be understood that some other shape of transparent body might be employed for the projection of the image of the traffic signal but in practice I have found the forms of lenticular bodies illustrated to be practical and efficient and therefore prefer to employ such forms.

Having thus described my invention, what I claim is:

1. In a motor vehicle a traffic signal indicator attached to the forward portion of said vehicle and adapted to show to the vehicle driver the transitions or transformations in the traffic signal, said transparent body having a convex outer face, said transparent body

being carried by a shell or holder attached to the vehicle, the convex face of the transparent body projecting beyond the forward end of the shell or holder.

2. In a device of the kind described, a shell or holder and a convex lenticular body arranged in the forward end of said shell or holder, the convex face of said body projecting beyond said forward end, the lower portion of the lenticular body being obscured upon the exterior, and means contained within the holder for obscuring the rear upper portion of the lenticular body.

3. In a device of the kind described, a cylindrical shell or holder having a forwardly and upwardly projecting shield at the lower forward end thereof, a convex lenticular body arranged in said shell or holder, the convex face of said lenticular body projecting beyond the forward end of said shell or holder and a plate arranged within the upper portion of said shell or holder and obscuring the upper rear portion of said lenticular body.

4. The combination with an automobile, of a bracket secured thereto and a signal light indicator carried by the bracket and comprising a transparent body constituting a lens of very short focal length presenting forward and rear convex surfaces, said lens forming an image of the signal light on the rear surface thereof.

5. The combination with an automobile, of a traffic signal indicator attached to the forward portion of the vehicle and adapted to show to the vehicle driver the transitions or transformations in a traffic signal, said indicator comprising a transparent body constituting a lens of very short focal length presenting forward and rear convex surfaces, said lens having such an angle of refraction as to form an image of the traffic signal on the rear surface thereof.

In testimony whereof, I hereunto affix my signature.

WILL E. PHELPS. 110

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