

May 15, 1928.

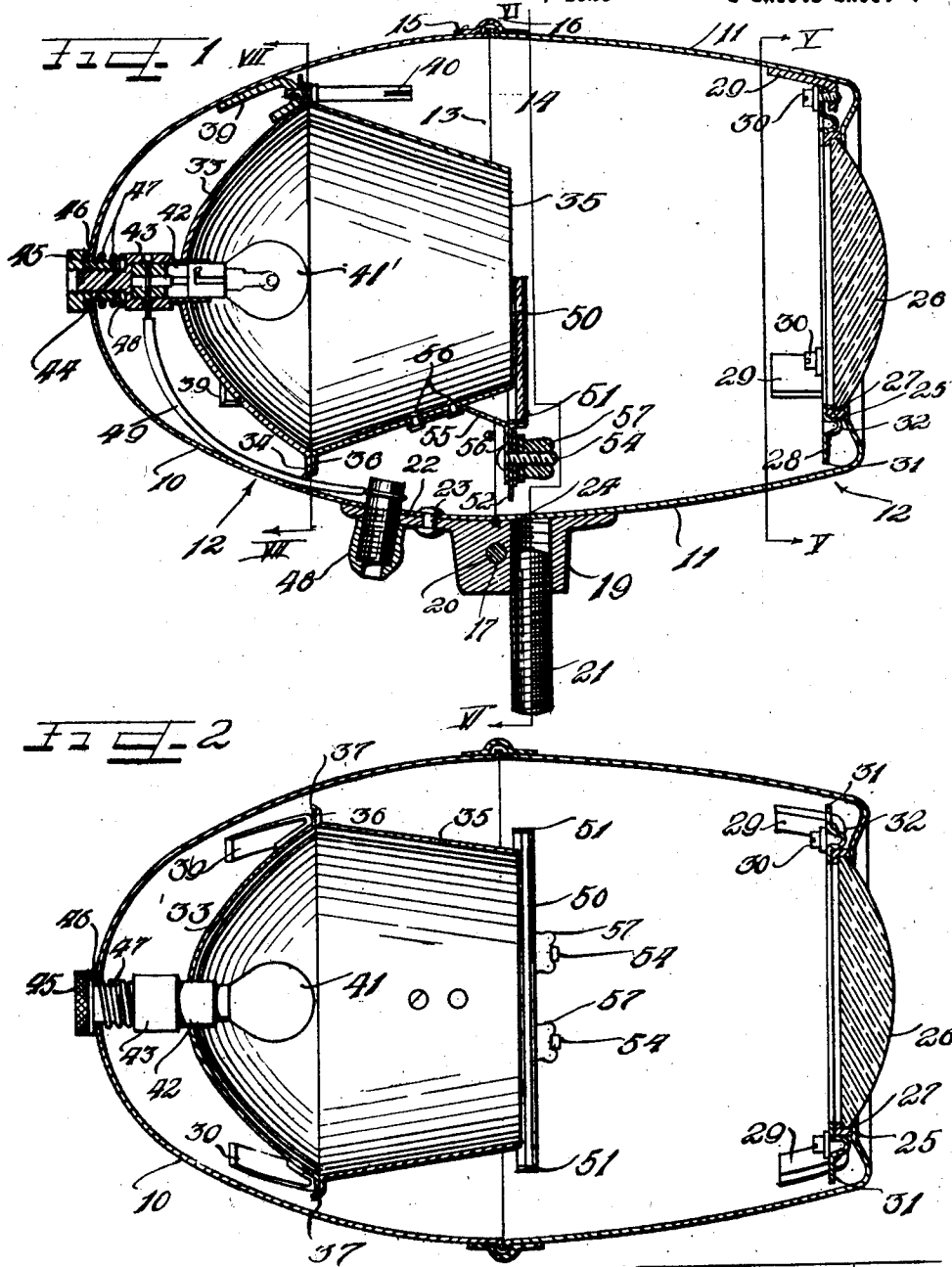
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C. L. DEWEY

LIGHT PROJECTOR

Filed Nov. 15, 1926

2 Sheets-Sheet 1



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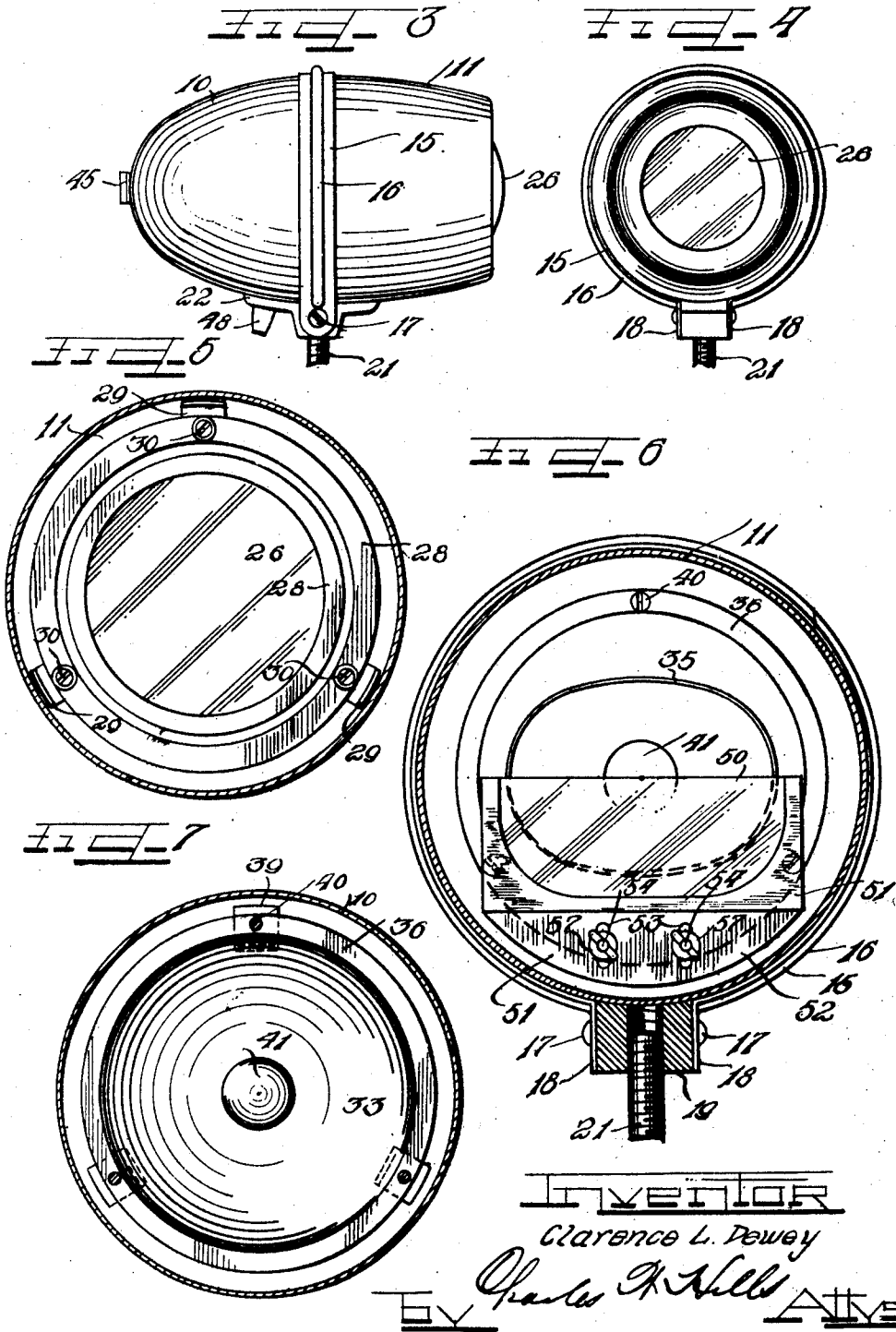
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UNITED STATES PATENT OFFICE.

CLARENCE L. DEWEY, OF ELKHART, INDIANA.

LIGHT PROJECTOR.

Application filed November 15, 1926. Serial No. 148,353.

The invention relates to improvements in light projectors and light diffusers, having especial reference to the type of projectors adaptable for use on vehicles, such as automobiles, boats and the like.

One of the objects of the invention is to so shield or diffuse the upwardly directed rays by means that will break up the rays and diffuse the light therefrom, thereby eliminating the glare effect without materially diminishing the lighting efficiency.

Another object is to provide, in a projector or lamp, means to prevent objectionable glare of the light, visible by occupants of approaching vehicles.

A further object is to provide a lamp having features of novelty and constructive efficiency to reduce its productive cost and to enhance its usefulness.

Other objects, advantages, benefits and refinements will become apparent to persons skilled in the art, from a consideration of the following description when taken with the drawings forming a part hereof, wherein:

On the drawings:

Figure 1 is a longitudinal central sectional elevation of the projector.

Figure 2 is a central horizontal sectional view.

Figure 3 is a reduced side elevation of the projector.

Figure 4 is a front elevational view of Figure 3.

Figure 5 is a section on line V—V of Figure 1.

Figure 6 is a section on line VI—VI of Figure 1.

Figure 7 is a section on line VII—VII of Figure 1.

In all the views, the same reference characters indicate the same parts.

The lamp casing is oval in outline and is made of two major parts to facilitate convenience of maintenance and manufacture. The rear casing portion for convenience of description I will call the lamp casing part, and the forward portion I will call the lens casing part.

These two casing parts form the complete casing 12 when properly assembled, as shown in Figures 1 and 2. The approximate edges 13 and 14 are coaxially positioned and held in place by a surrounding band 15.

The band 15 has a hollow, central outstanding bead 16 and the edges 13 and 14

of the casing parts are outturned and contained in said bead, thus forming contacting flanges that interlock with the bead. The terminals of the band 15 are perforated for a screw 17, or a pair of screws 17, as shown in Figure 6. The terminals 18 are outturned to lie closely against a supporting block 19.

The supporting block 19 is perforated at 20 for screws 17 and for the threaded stem or stud 21. The block 19 has a relatively thin portion 22 which is secured to the lamp casing part 10 by rivets 23. The block 19 has a groove 24 in register with the interior of the bead 16 to receive the flanges of the edges 13 and 14.

The lens part 11 of the casing may be separated from the lamp part 10 of the casing by removing the band 15.

The projector may be secured to a support by the threaded stud 21.

The front end of the lens casing part 11 is flanged inwardly at 25, leaving an opening for the plano-convex lens 26. The condensing lens 26 is mounted from the inside of the casing part 11. A rubber band or bushing ring 27 surrounds the perimeter of the lens and cushions it against adjacent metal parts.

The front of the lens 26, and band 27, rests against the inner surface of the flange 25 and is held in place by a metal ring 28. The ring 28 is held by screws 30 which pass thru the ring at intervals into clips 29. The clips 29, of which there may be three or more, are equally spaced and secured to the lens casing part 11 by spot welding, brazing, or the like. The ring 28 has an outturned, radial, flat flange portion 31 thru which screws 30 pass into clips 29 and a lateral bead portion 32 which intimately encloses the lens and its cushion band 27, holds the lens centrally of the opening and securely in place and presents a convenient manner of mounting the lens when the casing parts are separated.

When the casing parts are securely held together, in the manner described, the lens and its mounting cannot be disturbed from outside.

The rear lamp casing part 10, is in axial alignment with the forward lens casing part 11, as heretofore explained.

A suitable parabola or reflector 33 is mounted in the rear end of the lamp casing part 10. It is bounded by a flat annular flange 34.

A reflector funnel or concentrator 35 shaped as a hollow truncated cone is mounted

in front of the reflector and co-axially therewith, with its smaller end forward and its rear end attached to the periphery of the reflector.

5 The concentrating funnel has an annular flange 36 extending outwardly from its larger end for contact with the similar flange 34 of the reflector 33. The extreme edge of the flange 36 is bent rearwardly as shown at 37 to overlies the salient edge 34 to center the funnel with respect to the axis of the reflector.

Clips 39 are secured at intervals to the interior of the casing part 10. The flanges 15 34 and 36 have registering perforations to receive screws 40 which are threaded into the clips, as shown in Figure 1, to hold the reflector and funnel in place. The inner surfaces of the reflector and funnel are polished, the better to reflect or project the light rays emanating from the lamp 41.

A lamp socket 42 projects into the interior of the reflector thru an axially arranged perforation. A receptacle 43 is located between the reflector 33 and the lamp casing part 10 to receive and to hold the lamp 41. The socket and lamp may be of standard type.

A threaded stem 44 is secured to the rear 30 end of the receptacle 43 and extends thru a perforation in the rear part of the casing part 10. A knurled or hexagon nut 45 is threaded on said stem 44 and passes through said perforation in casing 10 to adjust the lamp 41 fore and aft. The nut 45 has an enlarged outer end to provide a shoulder 46 to act as a stop. An open helical spring 47 surrounds the smaller part 48 of the nut 45, and its ends are in contact with the casing 10 and with the receptacle 43 respectively. The friction of coil spring 47 bearing on said members is sufficient to prevent bulb 41 and lamp socket 42 from rotating when nut 45 is rotated to right or left to adjust lamp socket 42 axially.

By rotating the nut 45, the lamp 41 may be adjusted axially on the lens axis toward and from the focus point thereof. It will be observed that the outer end of the threaded stem 44 is slotted for insertion of screw driver or similar tool so that receptacle 43 may be rotated to the right or left, which in turn will rotate lamp 41 to right or left to bring filament of lamp 41 in proper focus in relation to the center of reflector 33. That is to say, due to the fact that no commercial bulb is made with the filament exactly in the center of the bulb, it is necessary in order to secure the most efficient light from the reflector that the bulb be rotated to the proper or best position. This is also true with respect to the longitudinal focus of the bulb. By these two means, a perfect adjustment of "longitudinal" focus may be obtained.

It will be observed that the heads of the screws 40 are longitudinally extended. This is done to render the screws more accessible when it is desired to remove the two part light reflector, after the casing parts 70 have been separated at their edges 13 and 14.

An electric plug receptacle 48 of conventional type is mounted on the lamp casing part 10 to receive a cooperating circuit terminal or plug and a wire 49 within the casing part connects the receptacle 48 with the socket receptacle 43. The return is thru the lamp body as usual with such structures when used on automobiles.

One of the specific and important objects 80 of the invention is to break up the rays of light projected from the device which is radiated upwardly of a horizontal plane passing thru the axis of the reflector and of the source of light to prevent the disagreeable glare observable by persons approaching the car carrying the projectors.

Instead of entirely shielding the aforesaid rays by an opaque plate and thereby reducing the efficient effect of the lamp structure, I diffuse the light passing thru the aforesaid field and retain its usefulness. To this end I provide a translucent screen 50, which may be a ground glass plate or a thin plate of porcelain, or other suitable substance 95 which possesses the quality to screen or shield the objectionable rays of light from the eyes of the observer. In some instances the screen 50 may be a red or green glass plate.

The plate 50 is preferably rectangular in planar dimensions, with its longest axis in a horizontal plane transverse to the axis of the rearwardly disposed reflector. The plate 50 is disposed over the lower half of the opening in the light concentrating funnel 35 to intercept any rays of light that would have an upward inclination as they emanate from the reflecting instrumentalities.

I prefer to flatten the front part of the funnel 35 so that the front opening thereof will be elliptical in cross-section with the longest axis of the ellipse in a horizontal plane, to thereby flatten out and spread the useful rays of projected light to illuminate a wider field of the roadway.

The screen is held in operative position by a frame 51 which has a vertically flat part 52 slotted at 53 to receive attaching screws 54 and which permit of some adjustment of position of the frame and screen. A bracket 55 is secured to the concentrating funnel 35, as by rivets 56. The bracket 55 has a downturned flat part 56^a in a vertical plane to receive the flat part 52 of the frame. The screws 54 pass thru both of the aforesaid flat parts and the nuts 57 clamp the aforesaid flat parts together to support the frame 51 and the screen 50. The ground glass or porcelain plate screen or filter 50 breaks up 130

the rays of light and filters out the objectionable rays or diffuses the light to render it more agreeable to the eyes. The light that passes out of the tube 35, above the filter, is projected downwardly toward the roadway or in horizontal lines.

I claim as my invention:

1. A lamp having rear and front separable casing parts divided in a transverse plane and having outwardly flanged contacting edges, a mounting block secured to one of said parts and bridging both edges and having a groove to receive said flanges, a band overlying said edges and flanges and clamping means engaging the ends of the band and said mounting block to clamp the band firmly about said casing parts to hold them together and to the block.

2. In combination in a lamp, a casing comprising two detachable parts, a lens mounted in the forefront of one part, a bulb mounted in the rear of the other part, a reflector mounted in said second part adjacent said lamp, a concentrating funnel disposed with its large end abutting the peripheral edge of said reflector, means for securing said funnel to said second casing

part in alignment with said lamp and reflector, and a screen covering the lower part of the small end of said funnel and attached to the funnel, said funnel and screen being removable from said second part of the casing as a unit.

3. In combination, in a lamp, a casing comprising two detachable parts, a lens mounted in the fore-front of one part, a bulb mounted in the rear of the other part, a reflector mounted in said second part adjacent said lamp, a concentrating funnel disposed with its large end disposed in operative cooperation with the peripheral edge of said reflector, means for maintaining said funnel in alignment with said lamp and reflector, and a light screen covering the lower part of the smallest end of the funnel to diffuse the rays of light that would be unobstructed passing therethrough, said screen being removable from cooperation with the small end of said funnel without necessitating removal of said funnel from said casing.

In testimony whereof I have hereunto subscribed my name.

CLARENCE L. DEWEY.