

Aug. 6, 1963

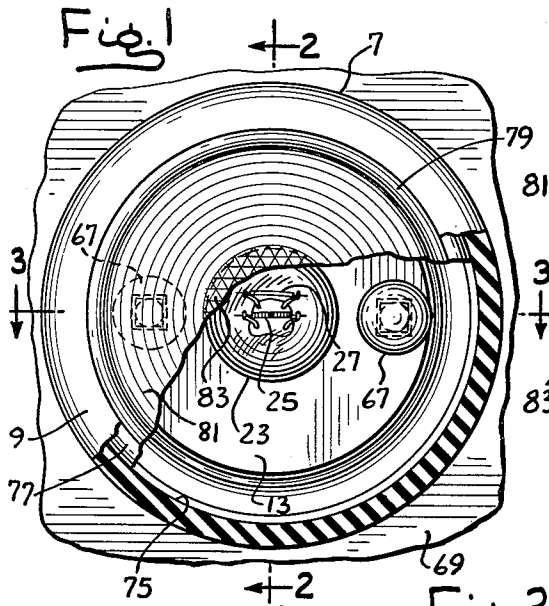
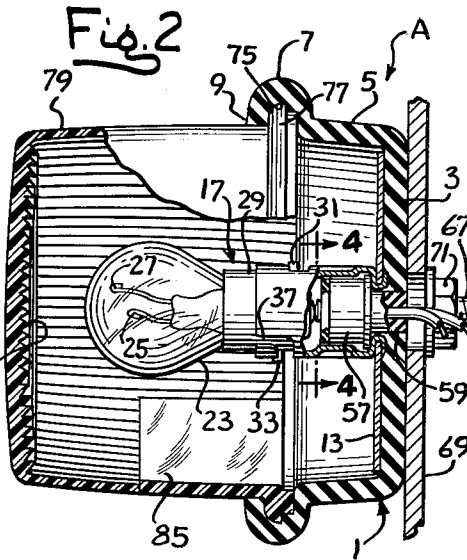
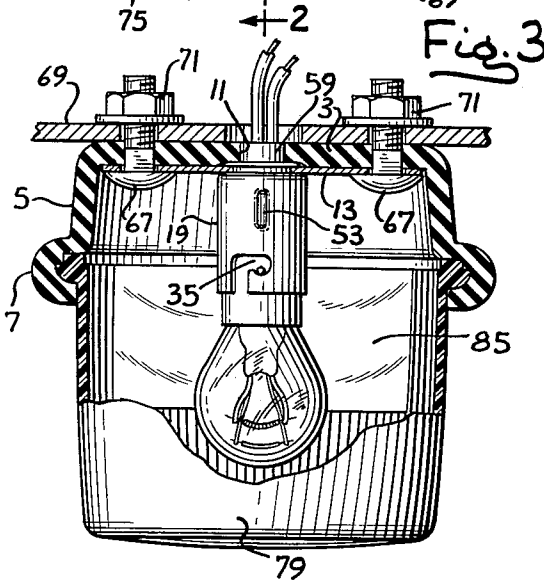
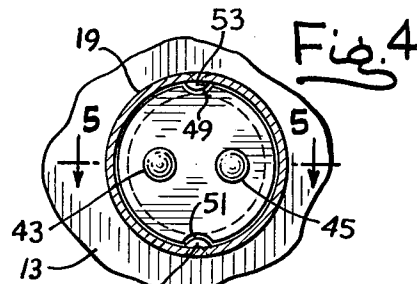
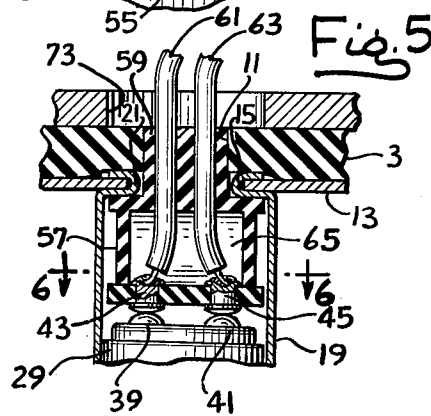
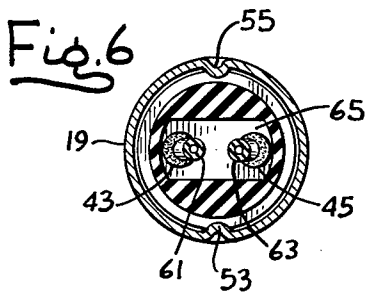
S. M. DOVER

3,100,085

SIGNAL LAMP

Filed Feb. 15, 1962

2 Sheets-Sheet 1



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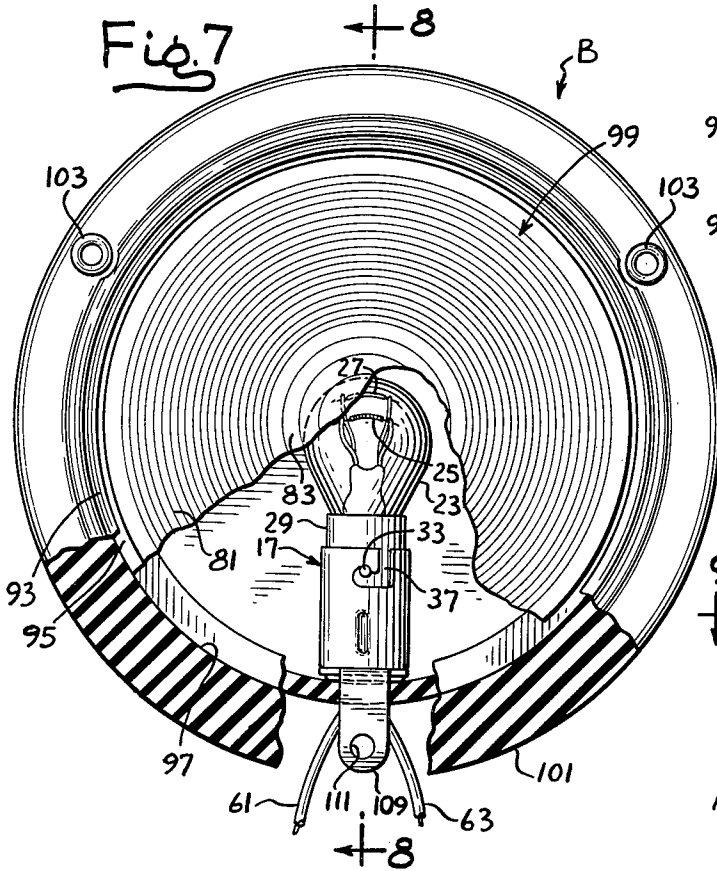
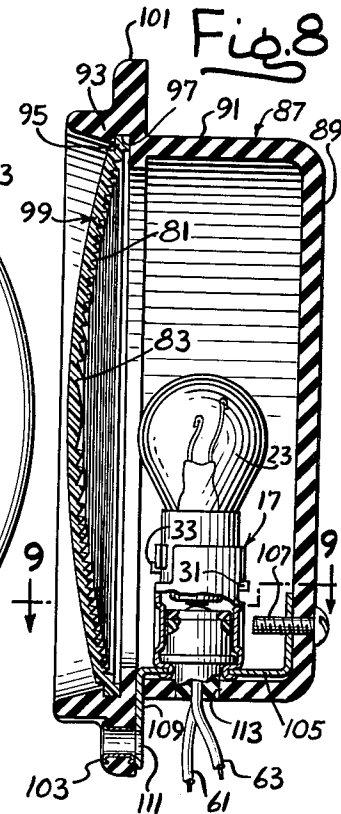
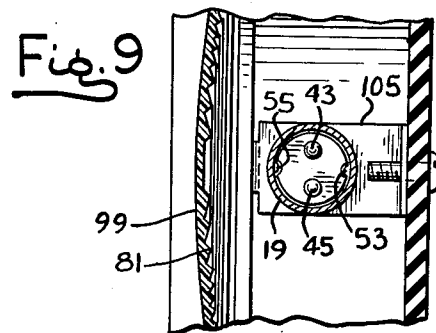
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2 Sheets-Sheet 2



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3,100,085

SIGNAL LAMP

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Filed Feb. 15, 1962, Ser. No. 173,565
1 Claim. (Cl. 240-8.3)

This invention relates in general to lamps, and, more particularly, to signal lamps of the type used on motor vehicles.

It is an object of the present invention to provide a signal lamp for a motor vehicle that is reasonably well sealed against the entrance of moisture, dust, and volatile fumes to the interior of the lamp, but at the same time is rugged, durable, and easily assembled and disassembled when it is desired to service the lamp. Such lamp may be a combined tail and stop lamp.

It is a further object of the present invention to provide a signal lamp of the type stated in which the lighting means within the lamp housing is a conventional bulb and socket removably secured together by a conventional bayonet connection and wherein the socket has a rubber spring that not only holds the bulb in place in the socket but also closes an opening in the housing through which lead wires from the socket project, thereby providing a reasonably effective seal where the lead wires pass through the housing.

The attainment of the above and further objects of the present invention will be apparent from the following description taken in conjunction with the accompanying drawing forming a part thereof.

In the drawing:

FIG. 1 is a front elevational view, partly broken away and in section, of a signal lamp constructed in accordance with and embodying the present invention;

FIGS. 2 and 3 are partial sectional views taken along lines 2-2 and 3-3 respectively of FIG. 1;

FIG. 4 is a fragmentary sectional view taken along line 4-4 of FIG. 2;

FIG. 5 is a fragmentary sectional view taken along line 5-5 of FIG. 4;

FIG. 6 is a fragmentary sectional view taken along line 6-6 of FIG. 5;

FIG. 7 is a front elevational view, partially broken away and in section, and showing a modified form of signal lamp embodying the present invention;

FIG. 8 is a sectional view taken along line 8-8 of FIG. 7; and

FIG. 9 is a fragmentary sectional view taken along line 9-9 of FIG. 8.

Referring now in more detail and by reference characters to the drawing, which illustrates the preferred embodiments of the present invention, A designates a tail and stop lamp for a motor vehicle and comprises a housing 1 molded of rubber-like material such as natural rubber, synthetic resins, or other suitable elastomers having rubber-like properties. The housing 1 is resilient and includes a circular back wall 3 and a conical side wall 5 that terminates in a rim section 7, the latter being at the open end 9 of the housing 1.

Somewhat centrally thereof, the back wall 3 is formed with an opening 11, and disposed against the inside surface of the back wall 3 is a metallic mounting plate 13 having a hole 15 overlying the opening 11. Mounted on the plate 13 is an electric lighting means, generally designated at 17, that includes a lamp socket 19 open at its opposite ends. The end of the lamp socket 19 that is adjacent to the mounting plate 13 has a flange 21 that projects through the hole 15 and is turned back to crimp the lamp socket 19 onto the mounting plate 13. Removably mounted on the other end of the lamp socket 19 is

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an incandescent bulb 23 having stop and tail light filaments 25, 27, respectively. The bulb base 29 has radially outwardly extending lugs 31, 33 that fit respectively within bayonet slots 35, 37 that are in the lamp socket 19.

The bulb base 29 has electrical contacts 39, 41 that engage electrical contacts 43, 45 on a terminal disk 47 within the lamp socket 19. The terminal disk 47 is fabricated of a dielectric material and has diametrically opposed notches 49, 51 which cooperate with inwardly struck ribs 53, 55 on the lamp socket 19 to prevent rotation of the terminal disk 47 within the lamp socket 19. Also within the lamp socket 19 is a rubber spring 57 that abuts the terminal disk 47 biasing it into engagement with the bulb base 29 and maintaining firm engagement of the contacts 39, 41, 43, 45. The force of the spring 57 also biases the lugs 31, 33 into the ends of the bayonet slots 35, 37, thereby to retain the bulb 23 within the lamp socket 19. The spring 57 has a diametrically reduced end or plug-forming portion 59 that projects outwardly of the lamp socket 19 through the hole 15 and into the opening 11, closing same. Insulated wires 61, 63 are attached to the contacts 43, 45 and extend through a clearance space 65 in the spring 57 and also through the spring end 59 for connection through appropriate tail and stop light switches on the vehicle upon which the lamp A is mounted.

The rubber of the spring end 59 surrounds and snugly grips the insulated wires 61, 63, and, similarly, the spring end 59 fits firmly within the housing opening 11. Consequently, the spring end 59 provides a reasonably effective seal against dirt, fumes and the like on the housing where the insulated wires 61, 63 project therethrough.

Bolts 67, 67 project through the mounting plate 13 and back wall 3 and through a frame member or other suitable portion 69 of the vehicle upon which the lamp A is mounted. Suitable nut and lock washer assemblies 71, 71 are threaded onto the bolts 67, 67 for securely retaining the lamp on the vehicle portion 69. The lighting means 17 is thus grounded to the vehicle through the plate 13 and bolts 67, 67. Furthermore, the vehicle portion 69 has a suitable clearance hole 73 through which the insulated wires 61, 63 project.

The rim section 7 of the housing 1 is formed with a circumferentially extending groove 75 for snugly but removably receiving the peripheral flange 77 of a lens 79. The lens 79 is conventionally formed of transparent plastic and preferably has concentric projections 81 of a known shape for reflecting light from the headlights of a vehicle to the rear of the vehicle upon which the lamp A is mounted. The lens 79 also has a central or light concentrating "bull's-eye" portion 83. The bulb 23 is located with respect to the "bull's-eye" portion 83 so that light from the stop light filament 25 is concentrated into a beam of high intensity light to the rear of the vehicle with that beam of light having only a slight spread. Furthermore, the lens 79 may be entirely red colored, or, as in the present embodiment may have a colorless section for illuminating a rear license plate on the vehicle. In such case, light from the filament 27 will pass through the colorless section 85 for that purpose.

A modified form of signal lamp B embodying the present invention is shown in FIGS. 7-9 and wherein parts similar to those of FIGS. 1-6 are designated by the same reference characters. The signal lamp B has a resilient rubber-like housing 87 having a back wall 89 and a cylindrical side wall 91, the latter terminating in a rim section 93 located at the open end 95 of the housing. The rim section 93 has an annular groove 97 for snugly but removably receiving the peripheral part of a lens 99. As best seen in FIG. 8, an integral part of the rim section 93 projects axially forwardly of the foremost part of the lens 99, surrounding the periphery of the

latter, and serving as a mechanical shield for the lens 99. The rim section 93, furthermore, has a radially outwardly directed flange 101 in which a plurality of metal grommets 103 are mounted. These grommets 103 are adapted to receive suitable mounting bolts or screws (not shown) by which the lamp B may be mounted on a suitable portion of the vehicle.

Within the housing 87 is a metal grounding and lamp socket mounting bracket 105 that lies against the side wall 91 and has an end thereof against the back wall 89. One end of the lamp socket 17 is mounted on the part of bracket 105 that lies against the side wall 91, and the socket extends toward the center of the housing 87. The other end of the socket receives the bulb. A screw 107 projects through the back wall 89 and is threaded into the mounting bracket 105. The other end of the mounting bracket has a grounding finger 109 that projects through the side wall 91 adjacent to the flange 101 and has a hole 111 in alignment with one of the grommets 103. Therefore, a mounting bolt passing through that grommet shown in FIG. 8 will also pass through the hole 111 whereby the lighting means 17 may be grounded to the vehicle.

Formed in the side wall 91 is an opening 113 which is for the same purpose as the opening 11. The spring end 59 fits snugly into the opening 113 and the insulated wires 61, 63 extend through the spring end 59, all as previously described in connection with the lamp A.

In the lamps A and B, the interfit between the peripheral parts of the lenses and the grooves in the housings provide a reasonably effective seal at the front of the housings against the entrance of dirt, volatile fumes, and the like.

In compliance with the requirements of the patent statutes I have herein shown and described a preferred embodiment of the invention. It is, however, to be understood that the invention is not limited to the precise construction herein shown, the same being merely illustrative of the principles of the invention. What is con-

sidered new and sought to be secured by Letters Patent is:

A signal lamp comprising a rubber-like housing having an encompassing side wall which is closed at one end by an integral back wall and is open at the opposite end, a lens closing the open opposite end of the encompassing wall, said encompassing wall having mounting means at said opposite end thereof around the periphery thereof and extending radially outwardly thereof and integral therewith, means forming an integral part of the rubber housing and projecting axially forwardly of the foremost part of the lens and extending around the periphery of the lens and serving as a mechanical shield for the lens, a socket holding and grounding bracket within the housing and secured thereto and having a portion thereof extending along the encompassing wall, a light bulb socket secured at one end to said portion and extending inwardly from the encompassing wall towards the center of the housing and having a light bulb at its other end, said bracket having a portion thereof extending through the encompassing side wall of the housing and bearing against said mounting means, said mounting means having a hole therethrough for receiving a mounting screw therethrough and said bracket projecting part being in a position adjacent said hole for grounding through the action of the screw.

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