April 22, 1958 D. W. TIEGLER 2,831,398

REFLECTOR ASSEMBLY AND MOUNTING

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Fig. 1

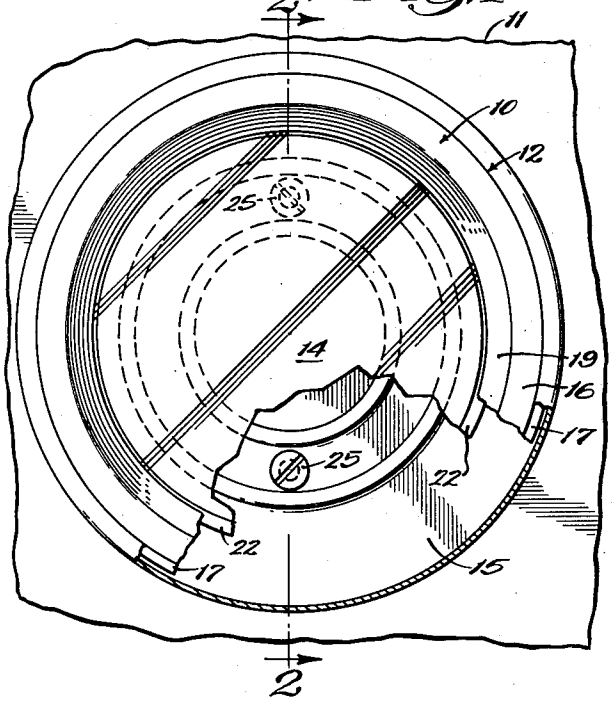


Fig. 2

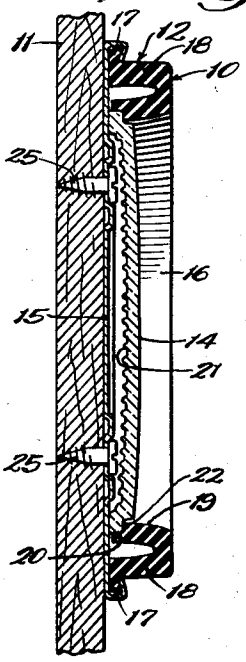
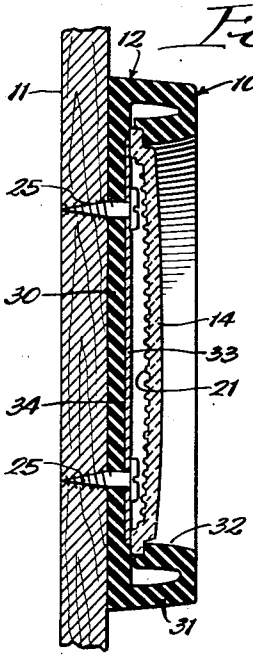


Fig. 3



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REFLECTOR ASSEMBLY AND MOUNTING

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This invention relates to a reflector assembly of the type for reflecting light rays. Devices of this type may be constructed and mounted so as to serve as a warning indicator in connection with vehicular traffic, or may be of the type adapted for mounting directly on the body of a vehicle, or may be mounted on suitable warning sign posts and the like, or may be in the form of a rearview mirror for guiding and assisting the operator in the proper maneuvering of a vehicle.

One of the objects of this invention is to provide an improved reflector assembly of the character indicated, constructed and arranged so as to normally preclude removal of the reflecting element from its mounting without breaking said element, and which is constructed and arranged to exclude dust, dirt and moisture from the interior of the assembly.

Still another object of this invention is to provide an improved reflector assembly of the character indicated, comprising a resilient member having a continuous recessed portion for embracing the outer marginal edge and a transverse shoulder of a reflecting element to resiliently and firmly secure it in position in its mounting.

A further object of this invention is to provide an improved reflector assembly of the character indicated, which is efficient and durable in use and which is capable of being economically manufactured.

Other objects and advantages of this invention will be apparent from the following description taken in connection with the accompanying drawing, in which:

Figure 1 is a face view of the reflector assembly embodying the present invention, shown applied to a mounting surface and with portions broken away to show details of construction.

Figure 2 is a vertical sectional view through the reflector assembly, taken substantially as indicated at line 2—2 on Figure 1.

Figure 3 is a sectional view similar to Figure 2, illustrating a modified construction.

The reflector assembly embodying the present invention is indicated generally at **10**, shown secured in position on a mounting surface **11**. The reflector assembly comprises a mounting member indicated generally at **12**, and a reflecting element **14**. In the construction illustrated in Figures 1 and 2 of the drawing, the mounting member is a two piece construction comprising a circular metallic plate **15**, constituting a back wall and a resilient ring member **16**, constituting a retainer for the reflecting element **14**. The base portion of the ring member **16** is formed with a marginal flange **17**, around which the marginal edge of the metal back plate **15** is pressed in an embracing manner to secure the two parts permanently together.

The mounting ring **16** preferably, though not necessarily, is formed of resilient material such as rubber, synthetic plastics or spring metal, and includes an outwardly projecting annular flange **18**, terminating in a reversely and inwardly extending annular flange **19**. The

free edge portion of the inner annular flange **19** terminates in close, spaced apart relation to the back plate **15**. The inner surface of the flange **19** slopes in an outwardly direction to facilitate insertion of the reflecting element **14** in the mounting member. The innermost portion of said flange **19**, adjacent the free edge, is formed with an annular recess or groove **20**.

As illustrated in the drawing, the reflecting element **14**, which is of circular contour, has its outer face formed slightly convex and its undersurface is recessed as indicated at **21**. The outer marginal edge of the reflecting element is recessed to provide a stepped shoulder **22**, adapted to be engaged by the transverse shoulder of the groove **20**, of the flange **19**, with the outer marginal portion of the reflector firmly surrounded by the wall defining said groove or recess **20**, so as to firmly confine the reflector in position against the back wall **15**, and precluding removal, except by breakage.

The reflecting element **14** may be formed of any suitable material, such as glass, plastic or metal. Preferably, however, said reflecting element is formed of a material possessing translucent or transparent characteristics and may be of a suitable color, such as red, amber or green. If desired, the reflecting element, when made of glass or plastic, may be of prismatic form on either its front or rear surface, providing a multiplicity of light reflecting surfaces. It is also to be understood that the reflecting element could, if desired, be in the nature of a mirror.

As may be seen in Figures 1 and 2 of the drawing, the reflector assembly is secured to the mounting surface **11** by a pair of screws **25** which extend through the back wall of the plate **15**, with their heads in registry with the recess **21**, formed in the underside of the reflecting element **14**. When the reflector assembly is to be mounted in position, the mounting member **12** is first secured to the mounting surface by means of said screws **25**. The reflecting element is then pressed into the cavity formed by the inwardly sloping surface of the projecting flange **19**, forcing said flange to be expanded in an outward direction until the reflecting element engages the back wall of the plate **15**, at which time the recessed portion **20**, at the free edge portion of said inwardly extending flange **19**, snaps back to its normal position, in firm engagement around the outer marginal edge and against shoulder **22** of the reflecting element **14**, for yieldingly and firmly securing the reflecting element in the mounting member.

By virtue of the construction embodying the present invention, it will be apparent that the reflector assembly excludes dust, dirt and foreign matter from the interior of the assembly and prevents and discourages theft or unauthorized removal of the reflector assembly because the fastening means, which are herein shown in the nature of screws, are totally concealed beneath the reflecting element. The only manner in which the reflecting element can be removed from its mounting is as a result of breaking said element or rupturing the flange **19** of the mounting, and by virtue of which access could then be had to the mounting screws **25**. The construction permits quick and easy removal of portions of a broken reflecting element, and quick and easy installation of a new element in proper operative position without the use of any tools whatsoever. Because flanges **18** and **19** are of resilient material, and because they project a substantial distance forwardly beyond the outer surface of the reflecting element, they serve as a guard for said element in the event that the reflector assembly is struck by or impinges against another object.

Figure 3 of the drawing illustrates a modification of the invention insofar as concerns the mounting member, designated generally at **10**. In this construction the mounting member comprises a back wall **30**, formed integrally

with an outwardly extending annular flange **31**, which terminates in an inwardly extending annular flange **32**. It is to be understood that the flanges **31** and **32** are of the same general shape and function in the same general manner as the flanges **18** and **19** in the construction disclosed in Figures 1 and 2 of the drawing. Thus, the back wall and flanges **31** and **32** are formed of a single molded piece of material, preferably of a resilient character, such as rubber, synthetic plastic or spring metal. In order to insure proper rigidity and support for the back wall portion **30** of the mounting member when secured to the mounting surface **11**, I employ a reinforcing metal plate **33** seated in an annular recess **34** formed in the forward surface of said back wall **30**. By virtue of this construction, the mounting member, formed entirely of resilient material, may thus be firmly and effectively secured by the screws **25** to the mounting surface. It is to be understood that the reflecting element **14** is substantially identical to the corresponding element shown in Figures 1 and 2 of the drawing, and is secured in position in substantially the same manner with the same attendant advantages.

While I have herein shown my reflector assembly as being of generally circular form, it should be apparent that it may be of various shapes, such as rectangular, oval or elliptical. When it is of rectangular shape the corners preferably will be rounded, having a somewhat small radius, and the inner flange of the mounting member may be provided with a multiplicity of slots at or adjacent each corner, so that portions between the slots will act as separate fingers providing the required resiliency, or if desired, the corners of the inner flange may be formed as separate sections, providing the same result and serving as an efficient mounting for the reflector element.

The reflector assembly embodying the present invention may be made up in various sizes, according to the requirements of use, and may be made in relatively small size for road signals or for use on bicycles and motorcycles. When made in such small size, the inner flange may be slotted to form separate sections, because of the small radius of the reflector. Furthermore, if desired, the flanges **18** and **19** or **31** and **32** may be molded without a cavity therebetween, forming a solid body of resilient material, and which will also provide the aforesaid benefits and advantages of this invention.

By the use in the claims of the term "reflector," it is my intention to accord said work a meaning of a scope comprising light reflecting elements as well as mirrors.

Although I have herein shown and described certain preferred embodiments of my invention, manifestly it is capable of further modification and rearrangement of parts without departing from the spirit and scope thereof. I do not, therefore, wish to be understood as limiting this invention to the precise form herein disclosed, except as I may be so limited by the appended claims.

I claim as my invention:

1. A reflector assembly and mounting, comprising a mounting member having a back wall for attachment to a support, said mounting member having a continuous marginal flange extending away from the marginal edge of the back wall and merging into a continuous, inwardly and reversely extending, yieldable flange, terminating in close spaced relation to said back wall, the free edge of said yieldable flange being provided with a continuous recess, forming a transverse shoulder, and a reflecting element seated in the mounting member with its outer marginal portion engaged in said recess, said reflecting element having a stepped shoulder cooperating with the transverse shoulder of the recess in the yieldable flange of the mounting member.

2. A reflector assembly and mounting comprising a mounting member having a back wall for attachment to a support, said member having a continuous, outwardly extending marginal flanges merging into a continuous, inwardly and reversely extending yieldable flange terminating in close spaced relation to the back wall, the inner surface of the yieldable flange, adjacent its free edge, being formed with a groove having a transverse face, and a reflecting element seated in the mounting member and having a portion of its marginal edge reduced in transverse dimensions to provide a stepped shoulder, whereby the outer peripheral edge of the yieldable flange with its groove and the stepped shoulder of the reflecting element are firmly engaged by the surfaces defining the groove in the flange of the mounting member for securing the reflecting element firmly against the back wall of the mounting member.

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