Sept. 16, 1941. J. C. HAGGART, JR 2,255,748

REFLECTOR DEVICE

Filed Jan. 5, 1940

Fig. 1.

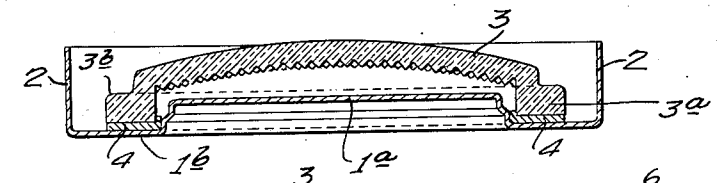


Fig. 2.

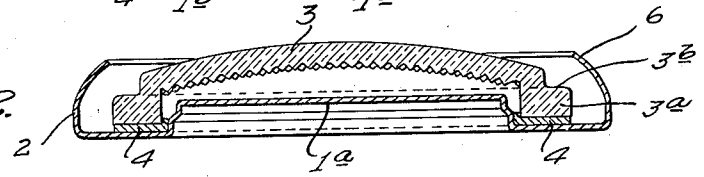


Fig. 3.

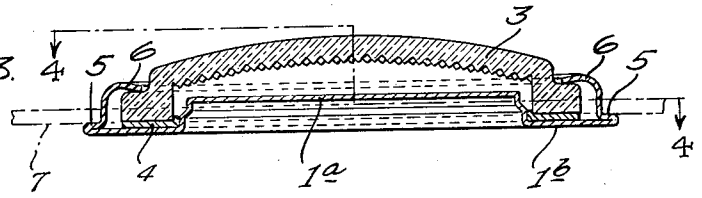
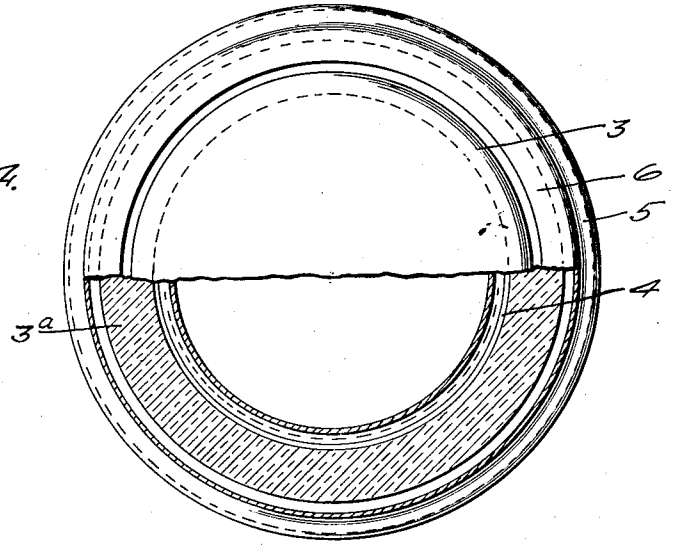


Fig. 4.



INVENTOR
JOHN C. HAGGART, JR.
BY Victor D. Bard
ATTORNEY

Patented Sept. 16, 1941

2,255,748

UNITED STATES PATENT OFFICE

2,255,748

REFLECTOR DEVICE

John C. Haggart, Jr., Westfield, N. J., assignor to Signal Service Corporation, a corporation of Delaware

Application January 5, 1940, Serial No. 312,486

3 Claims. (Cl. 88—78)

This invention relates to holders for autocollimating devices particularly central triple reflectors in the form of discs such as are used, for example, in signs or on standards along the sides of highways.

For the purpose of mounting such reflecting discs on a metal plate, it is usual to provide a metal cup-like holder for them which has its flange turned in and overlapping the edge of the disc.

These disc reflectors most commonly are made of a plastic material which is more easily subject to deformation than is glass. At any rate in their usual form the reflective disc portion is surrounded by a rearward peripheral axial flange, and the assembling of these reflectors in their metal holders has been a source of trouble for the reason that the drawing of the sheet metal around the flange in peripheral clamping relation with the front face has been apt to warp the disc and impair its optical properties.

The primary object of the present invention is to provide a holder construction which will in its application to the disc avoid the production of warping stresses.

Another object is to facilitate the proper initial relative positioning of the disc in the holder in its blank form.

Other objects are ease of assembly and simplicity and cheapness of construction. Still other general objects will appear from the following description.

In accordance with this invention the holder is designed so as to avoid radial stresses on the flange. Its center is preferably raised so as to fit within the flange and thus locate the reflector, and the diameter of the cup blank which is the initial form of the holder at the beginning of the assembling operation considerably exceeds that of the reflector. The top edge of the cup flange is turned in to form an overhanging lip, and the flange is turned back upon the bottom of the holder, thus bringing the lip down upon a circumferential shoulder on the front face of the disc and producing an axial pressure. To assure that there is no radial component to the stress the holder flange in its final form is spaced from the periphery of the disc.

The illustrated embodiment of the invention will now be described after which the invention will be pointed out in the claims.

Figs. 1, 2 and 3 are sectional elevations showing an initial, intermediate and final condition, respectively, of the assembled parts in the formation of the unit.

Fig. 4 is a plan, partially in section on the line 4—4 of Fig. 3, of the completed unit.

The holder in its initial blank form is a cup shape sheet metal member having its center *1a* raised and its edge **2** turned up in the form of a cylindrical flange. The reflector **3** is meniscus in shape with the central triple, trihedral reflecting formations on its back or concave face and surrounded by a peripheral axial flange *3a* the front face of which is shouldered, as indicated at *3b*. The reflector is disposed in the holder with the rear face of the flange *3a* opposing the flat, annular bottom portion *1b* of the holder and surrounding the raised center *1a* of the holder. An annular gasket **4** is interposed between the face of the holder and the flange *3a*, this gasket in the form shown having an upturned inner edge forming an annular cushion between the inner axial face of the flange *3a* and the annular shoulder connecting the portions *1a* and *1b* of the bottom of the holder. This construction serves to center the reflector in the holder.

As shown in Fig. 1 of the drawing, the diameter of the holder substantially exceeds that of the reflector, the flange **2** being spaced from the outer periphery of the flange *3a* when the reflector is on its seat coaxial with the holder. Therefore, the flange **2** can be closed down upon the shoulder *3b* without exerting any radial stress upon the flange *3a* of the reflector.

In practice this is accomplished by folding the flange **2** at its bottom inwardly upon the adjoining bottom portion *1b*, as indicated at **5**, and either at the same time or previously forming an inturned lip **6** at the outer edge of the flange **2**. This lip may be partially formed, as shown in Fig. 2, before the reflector is inserted, but with a proper tool the formation of the lip is completed and the fold **5** is formed, either successively or simultaneously.

It will be apparent that the axial resilient pressure of the lip **6** on the shoulder *3b* is effected without the production of any warping force upon the reflector, as would be the case if the flange **2** were drawn tightly around the edge of the reflector. Being spaced from the reflector periphery the flange can be turned in to form the fold **5** and thus draw the lip **6** down on the shoulder with the necessary resilient force.

The assembled units are inserted in proper sized holes in the sign or standard **7**, a back plate (not shown) or other suitable means being employed to hold them in place. The fold **5** forms

an annular radial lip or flange to bear against the inner face of the supporting member.

It is obvious that various modifications may be made in the construction shown in the drawing and above particularly described within the principle and scope of the invention as expressed in the appended claims.

I claim:

1. A combined reflector and holder therefor comprising a central triple reflector of generally disc shape and having an axial peripheral flange with a peripheral shoulder on its front face, and a sheet metal holder bearing against the rear face of the flange having a central raised portion fitting within the flange and having a peripheral forwardly extending flange spaced radially from the reflector flange with its forward edge bent inwardly and bearing resiliently on said shoulder.

2. A combined reflector and holder therefor comprising a central triple reflector of generally disc shape and having an axial peripheral flange with a peripheral shoulder on its front face, and a sheet metal holder bearing against the rear face of the flange having a central raised portion fitting within the flange and having a peripheral forwardly extending flange spaced radially from the reflector flange with its forward edge bent inwardly in contact with said shoulder and the holder flange at its juncture with the back portion of the holder being permanently bent back upon the holder and thereby effecting a resilient engagement of the holder flange with the shoulder.

3. A combined reflector and holder therefor comprising a central triple reflector of generally disc shape and having an axial peripheral flange with a peripheral shoulder on its front face, a sheet metal holder bearing against the rear face of the flange having a central raised portion fitting within the flange and having a peripheral forwardly extending flange spaced radially from the reflector flange with its forward edge bent inwardly in contact with said shoulder and the holder flange at its juncture with the back portion of the holder being permanently bent back upon the holder and thereby effecting a resilient engagement of the holder flange with the shoulder, and an annular gasket disposed between the rear and inner faces of the reflector flange and the holder.

JOHN C. HAGGART, JR.