June 23, 1970 G. GUBELA 3,516,337

TRAFFIC BUTTON OR ROAD MARKER

Filed March 18, 1968 2 Sheets-Sheet 1

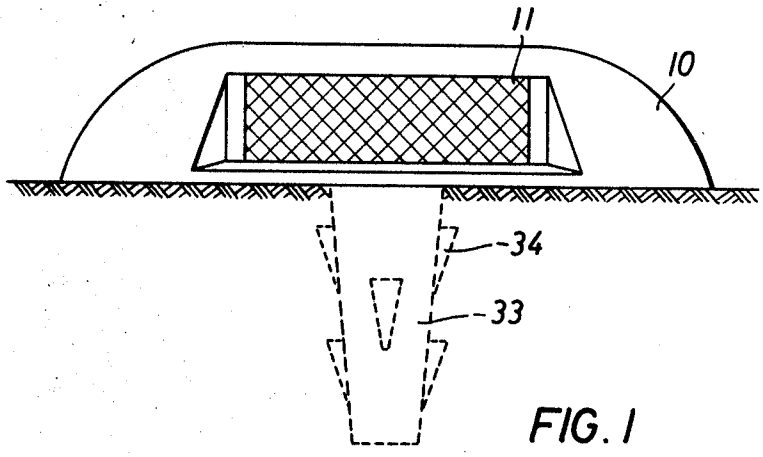

FIG. 1

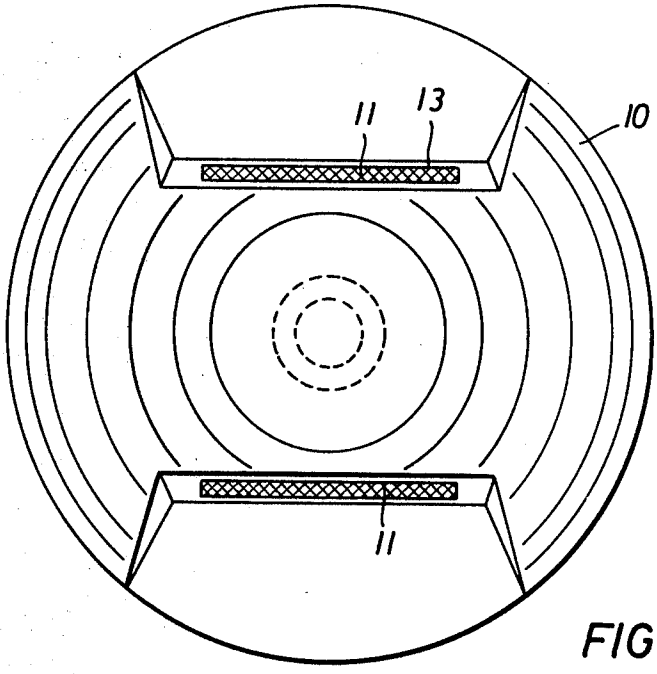

FIG. 2

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June 23, 1970 G. GUBELA 3,516,337

TRAFFIC BUTTON OR ROAD MARKER

Filed March 18, 1968 2 Sheets-Sheet 2

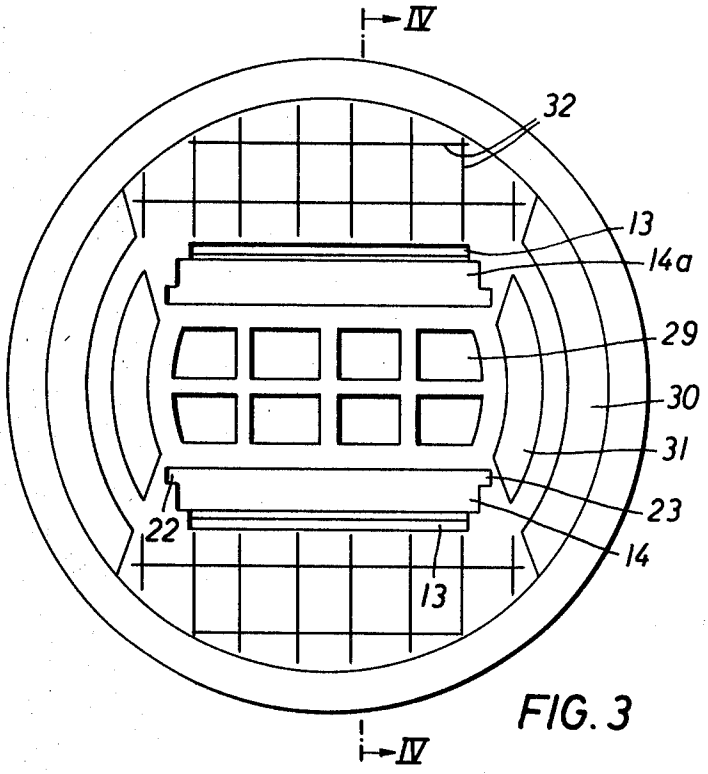

FIG. 3

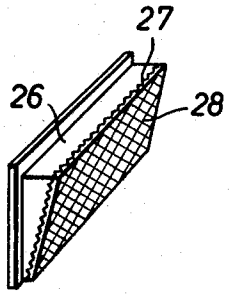

FIG. 8

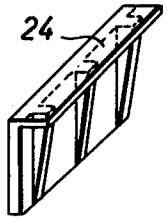

FIG. 7

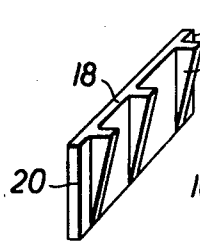

FIG. 6

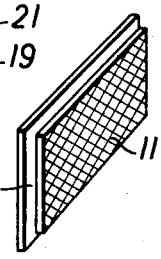

FIG. 5

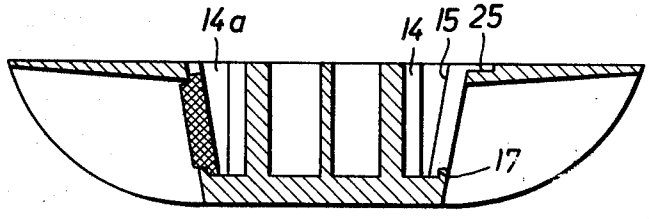

FIG. 4

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TRAFFIC BUTTON OR ROAD MARKER

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G 36,741
Int. Cl. E01c 23/16
U.S. Cl. 94—1.5 5 Claims

ABSTRACT OF THE DISCLOSURE

A traffic button or road marker in which a reflector defined by a plastic plate having reflecting elements die-cast with optical accuracy is mounted in the body of the button and is readily visible through a window provided in the body.

The invention relates to a traffic button or road marker, especially of plastic, which is formed by die-casting and which is provided with two reflectors at the opposite sides.

The reflectors of traffic buttons are often damaged by the vehicles, especially by the spikes of the vehicle tires. The known reflectors are integral with the marker or button. Also, if reflectors in the form of cylindrical pins of glass which are semispherically rounded at their front ends are inserted as so-called cat's-eyes into bores of the button. Until now it has always been endeavored to arrange such reflectors in a stationary and not removable manner.

In a marker or traffic button, especially of plastic, which is formed by die-casting and which is provided with a reflector, preferably with two reflectors at the opposite sides, it is proposed according to the present invention that the reflectors be removably mounted in the body of the button. From this measure results the advantage that the entire marking button need not be thrown away in case of damage of a reflector but that the damaged reflector may be exchanged with a new reflector.

According to a particularly advantageous embodiment of the invention, the reflector in the form of a plate with reflecting elements die-cast with optical accuracy is mounted in a wedge-shaped opening in the body of the button together with a wedge, the reflector being visible through a window provided in the button. By this solution, it is possible to insert the reflector with the wedge from above, from the side or, according to a further feature of the invention, from the bottom of the button.

According to another feature of the invention, the window in the body of the button surrounds the reflectors which is provided with a supporting surface abutting behind the window.

The reflector plate and the wedge may be separate parts. According to a further feature of the invention, in a special embodiment of the reflector they may be in one piece.

It is proposed according to another feature of the invention that the vertically directed edges of the wedge are guided in vertical grooves at the sides of the wedge-shaped opening in the body of the button. The wedge may have a flat rear side and projecting wedge-shaped legs at the side turned towards the reflector. The wedge may be provided with a bottom plate which covers the reflector and is mounted in a corresponding indentation of the bottom surface of the button.

In an embodiment in which the reflector plate and the wedge consist of one piece, is provided according to the invention, a structural member which has reflecting elements die-cast with optical accuracy. Upon these elements is applied a chrome or nickel layer as a reflecting

surface which is covered by a transparent plastic plate forming the front surface of the reflector.

According to a further feature of the invention is proposed in connection with the wedge-shaped closure for the reflector to provide the bottom surface of the button with a plurality of recesses which are filled with a viscous heat-sealing adhesive on a plastic-bitumen base for fixing of the button of plastic. The heat-sealing adhesive covers wholly or partly the wedge with the reflector and secures them in position. It is especially advantageous to arrange the recesses in such a manner that the bottom surface of the button is provided in the range between the two reflectors with the wedges with several, preferably eight prismatic recesses arranged in two rows. On the narrow sides of these recesses are provided two grooves in the form of annular sectors. The rest of the bottom surface of the button extending from the periphery to the wedge-shaped openings for the reflectors with wedges is provided with a rectangular or rhombic pattern of small depth.

In the drawings is illustrated by way of example an embodiment of the invention. The invention is not limited to the illustrated embodiment but several further embodiments may be made within the frame of the invention. In the drawings:

FIG. 1 is a side elevational view of a road marker or traffic button,

FIG. 2 is a top plan view of a button according to FIG. 1,

FIG. 3 is a view of the bottom side of a button according to FIGS. 1 and 2,

FIG. 4 is a cross-section on the line IV—IV of FIG. 3, the button being illustrated in inverted position,

FIG. 5 is a perspective view of a reflector plate of plastic,

FIG. 6 is a perspective view of the mating wedge,

FIG. 7 is a perspective view of a modified wedge, and

FIG. 8 is a perspective view of a one piece reflector plate and wedge.

A road marker or traffic button **10** consists of plastic and is formed by die-casting. The button is provided at opposite sides with reflectors **11** of plastic and may be made in a different manner. A plastic plate is, for example, provided with reflecting elements (prisms or the like) die-cast with optical accuracy which are either covered by a silver layer or by a spaced white plastic plate. As is shown in FIG. 2, the reflector plate **11** is arranged in inclined position behind a window or aperture **13**.

To removably mount the reflector plate **11** in the body of the button of plastic, the bottom surface thereof is provided with openings **14**, **14***a* which have a wedge or tapered surface **15** on one side. As is described in connection with FIGS. 5, 6 and 7, the reflector plate **11** is first inserted into this wedge-shaped opening. The periphery of the reflector plate is provided with a projecting supporting surface **16** which abuts the inner side of the frame of window **13**. This arrangement may be seen on the left side of FIG. 4. The front side of the reflector projects through the window while the rear side of the reflector is provided with the supporting surface **16** which prevents the reflector from dropping out of the window. Subsequently or simultaneously with the mounting of the reflector, a wedge **18** is inserted into the wedge-shaped opening. The surface of wedge **18** turned towards the rear side of the reflector is provided with several projecting wedge-shaped legs **19** which effect the wedging action. Vertically directed edges **20** and **21** of the wedge **18** are guided in vertical grooves **22** and **23** of the wedge-shaped opening.

To prevent entry of a sealing compound between the reflector and wedge when adhering the button to the road surface, the wedge **18** is provided with a bottom plate **24**

(FIG. 7) which fits into a corresponding indentation **25** at the bottom surface of the button so that a flat bearing surface is obtained.

FIG. 8 shows a reflector plate and a wedge in one piece. A wedge-shaped structural element **26** is provided at its inclined front surface with reflecting elements die-cast with optical accuracy. These reflecting elements in the form of pyramids, prisms or the like are covered with a chrome or nickel layer **27** so that a reflecting surface is obtained at the front. This reflecting surface (illustrated in FIG. 8 by serrated lines) is then covered by a transparent plastic layer **28**. It is obvious that a one piece reflector unit may also be used in the embodiment of FIG. 4.

An additional protection for retaining of the reflector is the use of a viscous heat-sealing adhesive of a plastic-bitumen base by which the button is adhered to a road surface. To increase the adhering power, the bottom surface of the button is provided in the range between the two reflectors with the wedges having eight prismatic recesses **29**. At the narrow sides of these recesses are provided two groove **30** and **31** in the form of annular sectors. The rest of the bottom surface of the button extending from the periphery to the wedge-shaped openings for the reflectors is provided with a rectangular or rhombic pattern of small depth. This rectangular or rhombic pattern is therefore available at those parts of the bottom surface of the button which lie before the windows with the reflectors.

A modified embodiment is shown by dotted lines in FIGS. 1 and 2. The button can have on its bottom surface a shaft preferably provided on the outside thereof with projections. This shaft is secured in a hole in the road by means of a sealing compound.

What is claimed is:

1. A traffic button comprising a body adapted to engage a road surface, a reflector mounted within the body, said reflector being defined by a plastic plate having reflecting elements die-cast with optical accuracy on at least the outer surface thereof, said body having a window therein through which said reflecting elements are visible and provided with a wedge-shaped opening, said plate being planar and mounted in said opening, a wedge in the opening maintaining the plate in position, said wedge having a flat rear side and projecting wedge-shaped legs on the side facing the rear surface of the reflector plate.

2. The traffic button as claimed in claim **1** in which the wedge is provided with a bottom plate which covers the reflector plate and is mounted in a corresponding indentation of the bottom surface of the body.

3. A traffic button comprising a body adapted to engage a road surface, a reflector mounted within the body, said reflector being defined by a plastic plate having reflecting elements die-cast with optical accuracy on at least the outer surface thereof, said body having a window therein through which said reflecting elements are visible and being provided with a wedge-shaped opening, said plate being planar and mounted in said opening, a wedge in the opening maintaining the plate in position, said reflector plate and wedge defining a one piece unit, tural element, a chrome or nickel layer for said elements as a reflecting surface, and a transparent plastic layer covering the chrome or nickel layer at the front of the reflector.

4. A traffic button comprising a body adapted to engage a road surface, a reflector mounted within the body, said reflector being defined by a plastic plate having reflecting elements die-cast with optical accuracy on at least the outer surface thereof, said body having a window therein through which said reflecting elements are visible, said body being provided with two oppositely disposed wedge-shaped openings, a planar plate mounted in each opening for maintaining the plate in position, the bottom surface of the body being provided in the range between the two plates with the wedges with several prismatic recesses arranged in two rows, the narrow sides of these recesses being provided with two grooves in the form of annular sectors and the rest of the bottom surface extending from the periphery to the wedge-shaped openings being provided with a rectangular or rhombic pattern of small depth.

5. A traffic button comprising a body adapted to engage a road surface, a reflector mounted within the body, said reflector being defined by a plastic plate having reflecting elements die-cast with optical accuracy on at least the outer surface thereof, said body having a window therein through which said reflecting elements are visible and being provided with a wedge-shaped opening, said plate being planar and mounted in said opening, a wedge in the opening maintaining the plate in position, said wedge having vertically directed end edges, said body having a pair of vertical grooves merging with said opening at the sides of the opening for receiving said vertical edges.

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