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GB 1560288
GB 1531793
GB 1507385
EP A2 0173289

(58) Field of search
E1G
Selected US specifications from IPC sub-class E01F

(54) **Road marker**

(57) A marker for insertion into a road surface has a domed top (2) and a base part (1) with side walls (9) depending from a flange which will be set flush into the road surface. Keyway cut-outs (7) extend vertically in the outer face of the base part which acts to receive a suitable mastic provided in the hole receiving the mounting, to help to hold the mounting rigidly in place. A circumferential groove (8) provides additional keying of the mounting. The top incorporates either cavities (4) for the receipt of reflectors, or grooves (not shown) to receive or define coded marking strips. Centrally of the domed surface is a cruciform keyed recess (6) which will receive a similarly shaped fitting at the end of a fixing tool for enabling the mounting to be rotated.

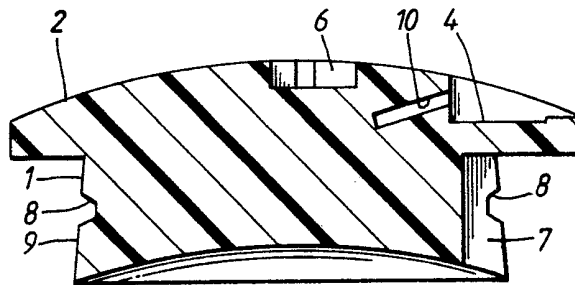


FIG. 3.

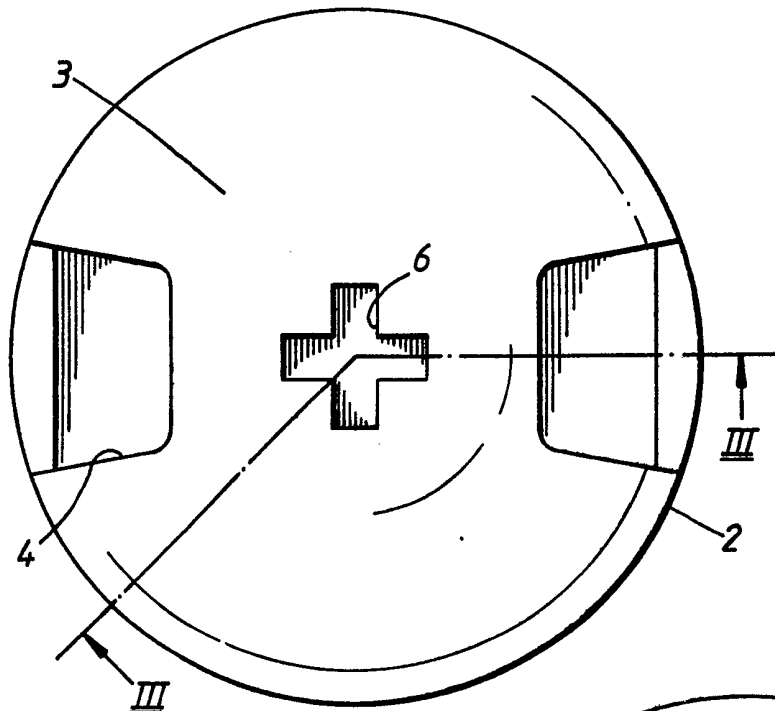


FIG. 1.

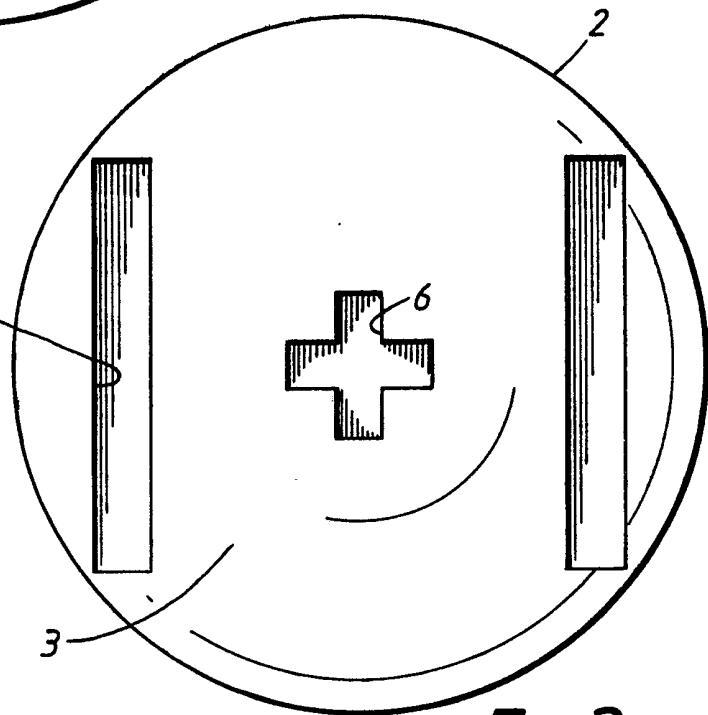


FIG. 2.

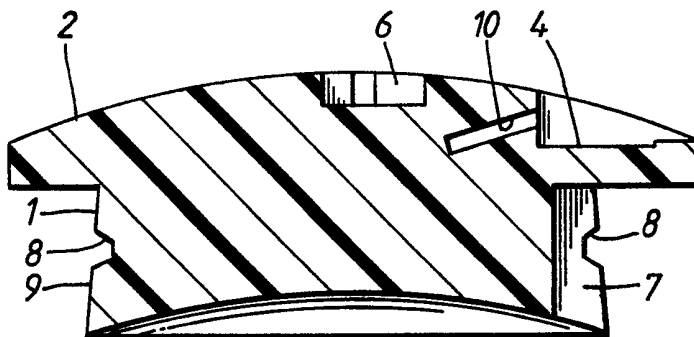


FIG. 3.

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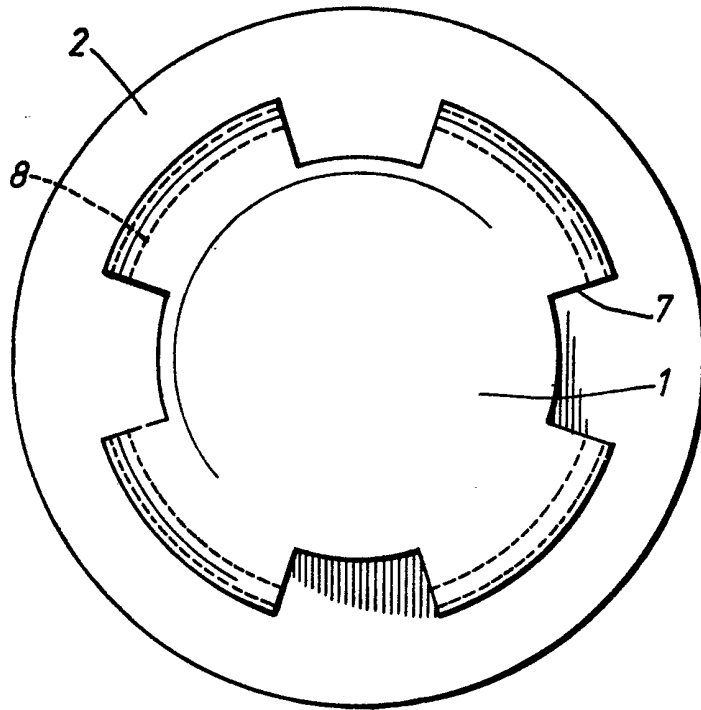


FIG. 4.

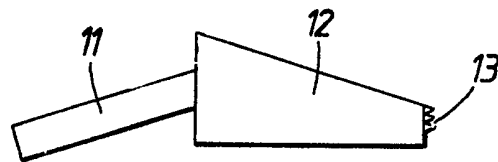


FIG. 5.

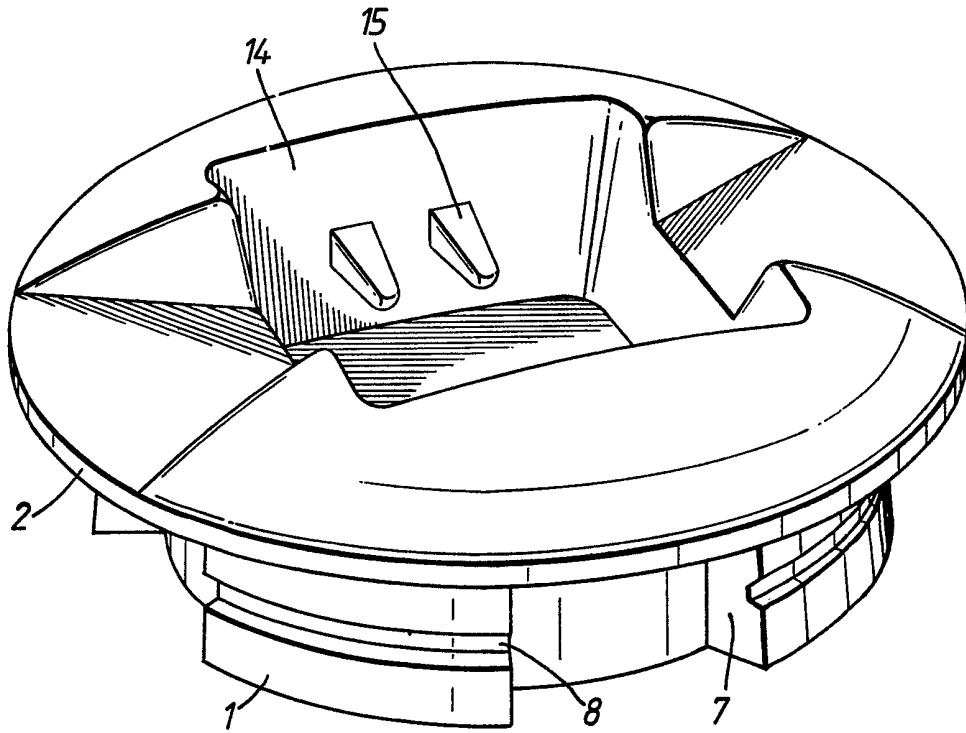


FIG. 6.

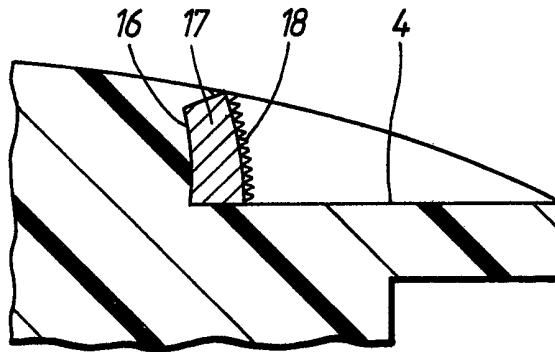


FIG. 7.

SPECIFICATION

Improvements Relating to Mountings for Insertion in Road Surfaces

This invention relates to mountings which are intended to be fixed into road surfaces to act as markers or reflectors. A major problem with such mountings is the need to ensure that the mountings are securely fixed into the road surface so that they will not become loose and possibly fly out as a vehicle wheel passes over the mounting, creating a hazard for other road users as well as loss of the marking itself and the creation of a cavity in the road surface.

It is an object of this invention to provide an improved form of mounting which can be held securely within a road surface.

Accordingly, this invention provides a mounting for insertion into a road surface, the mounting being of a basically circular cross-section defining a base part and a top flange of larger radius, the top surface of the mounting being domed and the base part having vertically-extending keyway cut-outs at the outer face.

A circular mounting may readily be received within a hole which can be drilled by a drilling tool. The mounting will be set into the drilled hole with heated bitumen which will fill the keyways. Once the bitumen has set the keyways will resist rotation of the mounting. Preferably the base part will also have at least one circumferential groove and bitumen filling, the circumferential groove will resist any tendency for the mounting to lift out of position. It is preferred that the base part should be of larger overall diameter at its lower end than at the end which meets the top flange. Thus the base part has a tapered side wall which will be contacted by the solidified bitumen formed into a wedge shape, thus providing further resistance to lifting of the mounting from the road surface.

The top surface of the mounting may incorporate cavities for receipt of fixed reflectors which will be inset into the cavities. Ideally the cavities will be set back into the body of the mounting or alternatively a bore could extend inwardly of each cavity for receipt of a fixing stalk projecting from a reflector. In another arrangement the top surface of the mounting may incorporate grooves whose base surface can receive or define a coded marking strip. The markings might be formed by means of a punching tool which will impress coded letters or numerals. In another arrangement the top surface of the mounting may have a central cavity with locating prongs for receipt of a resilient reflective insert. In the first two of these three types of mounting there will ideally be a keyed recess formed centrally within the top face of the mounting for receipt of a locating tool. This will enable a fixing tool to be used to rotate the mounting whilst it is being positioned in the molten bitumen so that it is firmly embedded and orientated in the correct direction. Where the mounting has a central cavity for receipt of an insert, this cavity could also define the keyed recess.

The invention further extends to a mounting as

65 defined above together with a fixing tool comprising a rod defining a handle at one end and a fitting at the other end to locate within and operate upon the keyed recess. An additional feature may be a tray having an outer lip and a central opening whose circumference matches that of the outer edge of the flange of the mounting.

70 The mounting may be constructed from any convenient material but cast aluminium is preferred to cast iron as the weight of the mounting will then be considerably reduced. Another possibility is to form the mounting from a moulded plastics material which gives even greater weight reduction and enables the mountings to be constructed in a very straightforward and rapid manner.

80 The invention may be performed in various ways and preferred embodiments thereof will now be described with reference to the accompanying drawings, in which:—

85 Figures 1 and 2 are plan views of two preferred forms of mounting constructed in accordance with this invention;

Figure 3 is a vertical cross-section on line III—III of Figure 1;

90 Figure 4 is an underneath plan view of the mountings shown in Figures 1 to 3;

Figure 5 illustrates a reflector member to be inserted into the mounting; and

95 Figure 6 is a perspective view of a further form of mounting of this invention.

As shown in Figures 1 to 4 a mounting of this invention is of basically circular cross-section and defines a base part 1 and a top flange 2. The top surface 3 of the mounting is domed and incorporates either cavities 4 for the receipt of reflectors or grooves 5 to receive or define coded marking strips. Centrally of the domed surface is a cruciform keyed recess 6 which will receive a similarly shaped fitting at the end of a fixing tool for enabling the mounting to be rotated. The base part 1 of the mounting incorporates keyway cut-outs 7 and a circumferential groove 8. As can be seen from Figure 3 the side wall 9 of the base part 1 tapers inwardly as it approaches the flange 2.

110 In order to install a mounting of the form as illustrated in Figures 1 to 4 a hole is bored into a road surface which will also have a shallow recess of larger diameter at the top. The main bore will receive the base part 1 and the shallow recess will receive the flange 2 of the mounting. Molten bitumen is then poured into the bore hole and the mounting is dropped into place so that the bitumen will fill the keyways 7 and the circumferential groove 8. Any excess bitumen pushed up around the edge of the flange 2 will be received in a slop tray positioned around the outer edge of the flange 2 and provided with an outer lip. This excess bitumen can then be scraped away and removed. The fixing tool is used to rotate the mounting into a desired orientation. Once the bitumen has set it will hold the mounting securely in the bore hole, vertical movements of the mounting being resisted by the tapered side walls 9 and the groove 8 whilst rotation of the mounting will be resisted by the bitumen within the keyways 7.

The cavities 4 (as shown in Figure 3) communicate with a bore 10 which will receive a fixing stalk 11 on a reflector body 12 (Figure 5). This body 12 will be glued in place in the cavity 4 and carries a reflector surface 13 which will reflect light from vehicle headlamps.

The grooves 5 can either have a pre-formed strip carrying suitable markings fixed therein by gluing or the like; alternatively, coded markings could be punched into the base surface of the groove 5.

As illustrated in Figure 6 the mounting could be of a form which incorporates a central cavity 14 for receipt of a resilient reflective insert, projections 15 being provided within the cavity to hold the insert in place; otherwise the mounting will have the features of the base part 1 with keyways 7 and the groove 8 and the top flange 2. A special fixing tool can be used to fit within the cavity 14 for rotation of the mounting when it is being fixed in place.

These particular mountings will be formed by a moulding process from plastics material to the desired shapes.

The accompanying Figure 7 of the drawings illustrates a modified means of incorporating a fixed reflector instead of that shown in Figures 3 and 5. In this instance the cavities 4 formed at either side of the mounting define recesses 16 at the rear face which receive and protect a reflector body 17 carrying a reflector surface 18. The body 17 will be glued securely in place into the recess 16 and will be visible through the front of the recess 4 which in this instance does not have a forward upstanding ledge as is illustrated in Figures 1 and 3.

CLAIMS

1. A mounting for insertion into a road surface, the mounting being of basically circular cross-section defining a base part and a top flange of larger radius, the top surface of the mounting being domed and the base part having vertically-extending keyway cut-outs at the outer face.

2. A mounting according to claim 1, wherein the

base part incorporates at least one circumferential groove.

3. A mounting according to claim 1 or claim 2, wherein the under surface of the base part is of concave form.

4. A mounting according to any one of claims 1 to 3, wherein the base part is of larger overall diameter at its lower end than at the end which meets the top flange.

5. A mounting according to any one of the preceding claims, wherein the top surface of the mounting incorporates cavities for receipt of reflectors which will be inset into the cavities.

6. A mounting according to claim 5, wherein a bore extends inwardly of each cavity for receipt of a fixing stalk projecting from a reflector.

7. A mounting according to any one of claims 1 to 4, wherein the top surface of the mounting incorporates grooves whose base surface can receive or define a coded marking strip.

8. A mounting according to any one of claims 1 to 4, wherein the top surface of the mounting has a central cavity for receipt of a resilient reflective insert.

9. A mounting according to any one of claims 1 to 8, wherein a keyed recess is formed centrally within the top face of the mounting for receipt of a locating tool.

10. A mounting according to claim 8 in combination with claim 9, wherein the central cavity also defines the keyed recess.

11. A mounting according to claim 9 or claim 10, together with a fixing tool comprising a rod defining a handle at one end and a fitting at the other end to locate within and operate upon the keyed recess.

12. A mounting according to any one of claims 1 to 11, including a tray having an outer lip and a central opening whose circumference matches that of the outer edge of the flange of the mounting.

13. A mounting substantially as herein described with reference to the accompanying drawings.