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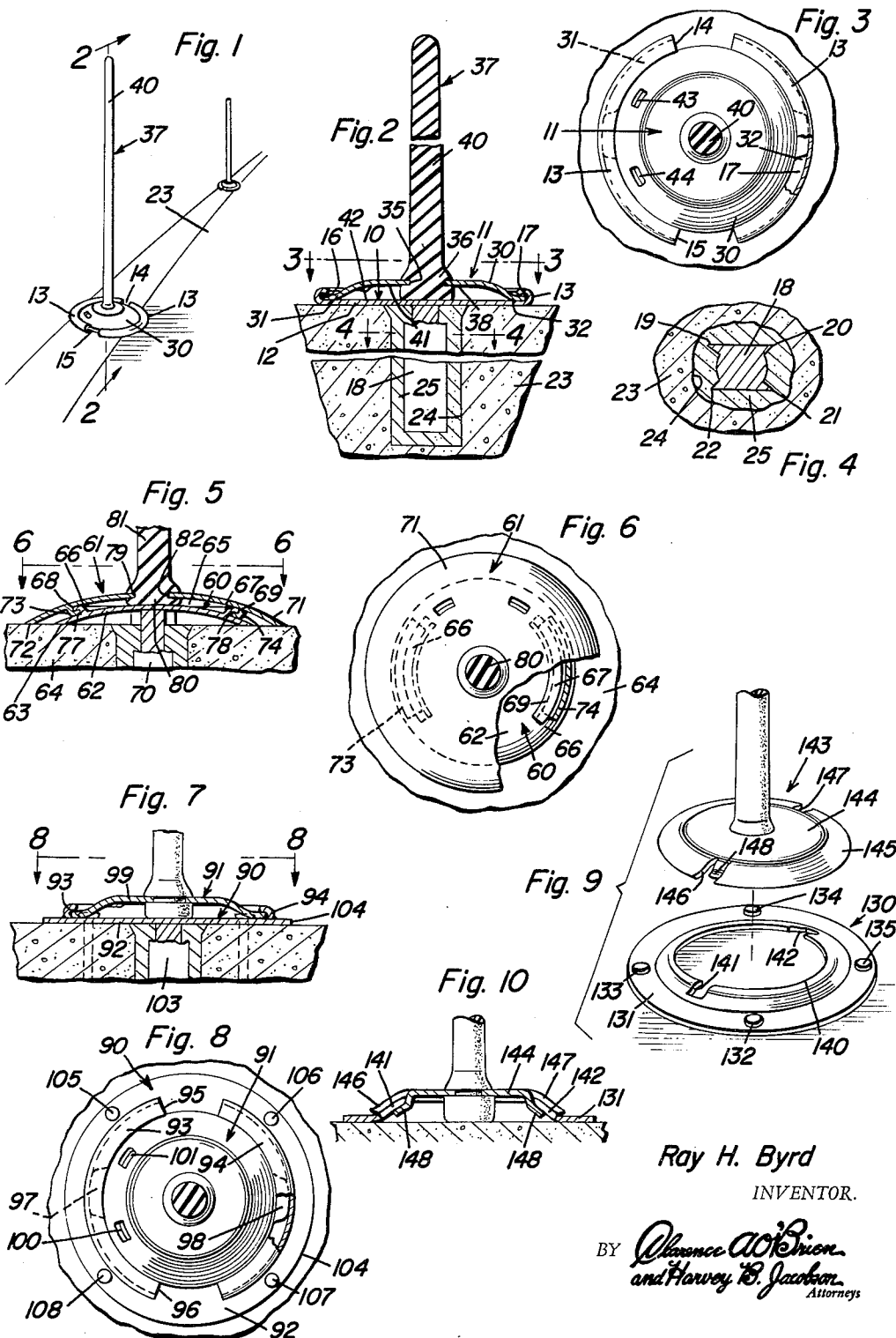
R. H. BYRD

3,212,415

TRAFFIC LANE DIRECTIONAL MARKER

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2 Sheets-Sheet 1



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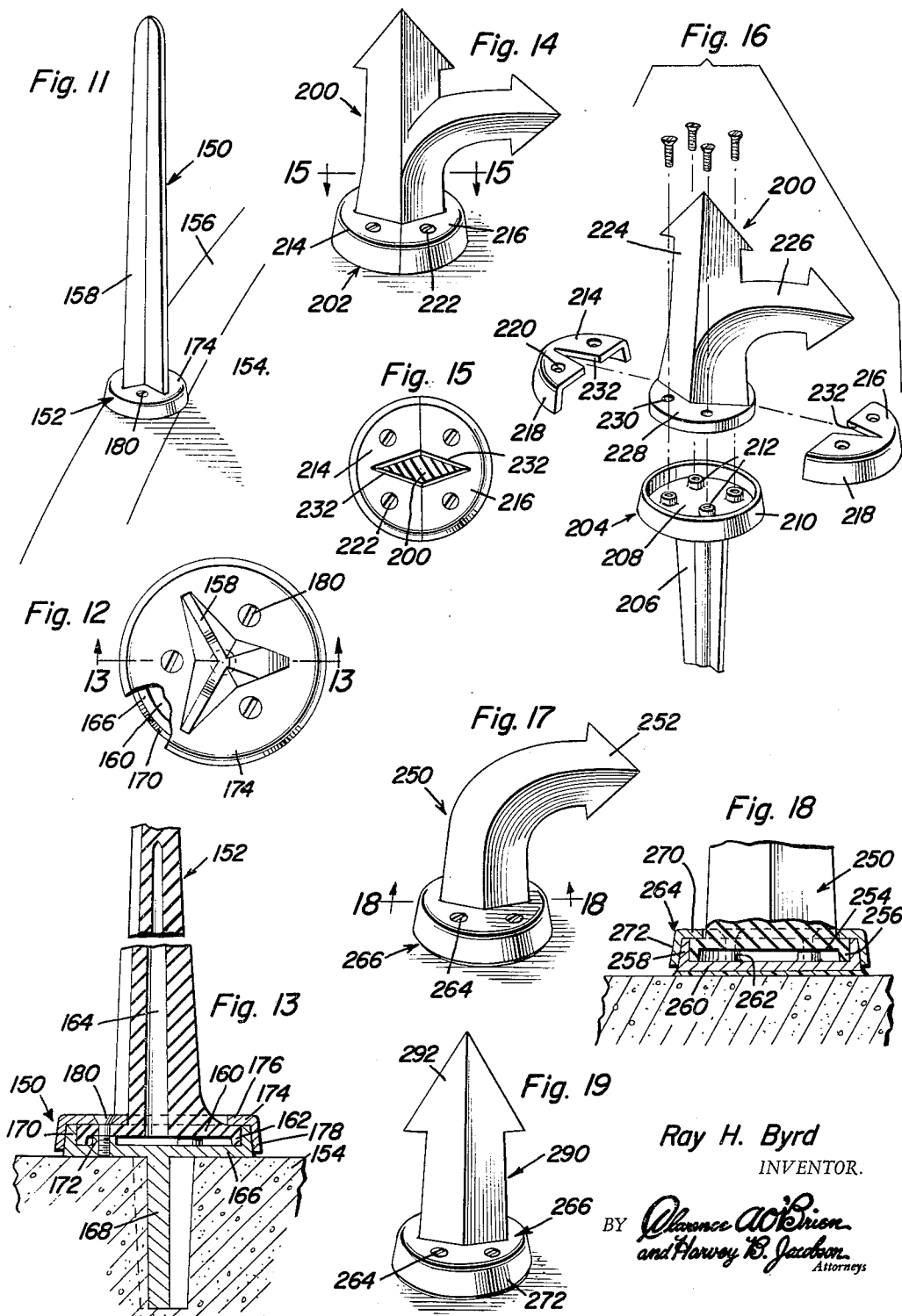
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3,212,415

TRAFFIC LANE DIRECTIONAL MARKER

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6 Claims. (Cl. 94-1.5)

This invention comprises a novel and useful directional marker and constitutes a continuation-in-part of my prior copending applications Serial Nos. 738,190, filed May 27, 1958, for Highway Picket, now abandoned, and 3,360, filed January 19, 1960, for Highway Picket and Reflective Marker, now Patent No. 3,091,997, issued June 4, 1963.

It is frequently desirable to clearly mark or delineate certain sections or lanes of a highway and in such an unmistakable manner that it will be virtually impossible for a motorist to inadvertently stray from the desired lane or area. It is also frequently desirable to similarly mark aircraft runways, vehicle parking areas and the like. However, no matter how well marked, if the marking is accomplished solely by paint, reflectors or the like placed on the highway surface, the motorist may, if he so chooses, or through carelessness, disregard such markings with impunity. If however, picket or marking devices are utilized which have a substantial vertical projection above the surface, so that the motorist must actually run into such picket if he disregards the warning of the same, it is much less likely that the motorist will either intentionally or inadvertently disregard such markers. It is therefore a primary object of this invention to provide a directional marker for highways, traffic lanes, parking areas and the like which shall include a substantial vertical projection above the road surface which, although it will not present a hazard to the vehicle, will nevertheless act as a deterrent for the motorist or others disregarding the marking.

It is a further and more important object of the invention to provide a directional marker which may be supported upon and will project above a roadway to provide a clear marking and warning of a traffic lane or a direction for traffic movement which will be inescapably evident to the motorist or other persons.

A further object of the invention is to provide a directional marker in accordance with the foregoing objects which shall be of a suitable material and character such that even though struck by a vehicle there will result no damage or danger to the vehicle or its occupants and substantially no damage to the marker itself.

A still further object of the invention is to provide a directional marker in accordance with the foregoing objects which shall provide a variety of different anchor means for attaching the marker to the roadway or other surface and a variety of markers which may be detachably secured to the anchor means.

Yet another purpose of the invention is to provide a directional marker construction which may incorporate therein a base permanently anchored to a roadway or other surface together with a removably mounted resilient marker element secured thereto.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view showing one form of the invention in use and illustrating the manner in which the marking devices may be utilized to designate or delineate various zones or lanes within a highway or other surface;

FIGURE 2 is an enlarged vertical section, parts being broken away, and being taken substantially on the plane indicated by the section line 2-2 of FIGURE 1 and il-

lustrating details of the base and top sections of the marking device;

FIGURE 3 is a horizontal sectional view taken substantially upon the plane indicated by the section line 3-3 of FIGURE 2 and partially broken away, and illustrating further details of the assembly and showing more clearly the manner in which the top section is removably secured or locked to the permanently anchored base section thereof;

FIGURE 4 is a further detail view in horizontal section taken substantially upon the plane indicated by the section line 4-4 of FIGURE 2 and illustrating the anchoring means utilized to permanently secure the base section into the pavement or other surface;

FIGURE 5 is a fragmentary view in vertical section similar to that of FIGURE 2 but illustrating a modified form of construction of the base section with parts being broken away;

FIGURE 6 is a detail view in horizontal section taken substantially upon the plane indicated by the section line 6-6 of FIGURE 5 and with portions thereof being broken away and illustrating further details of the base construction shown in FIGURE 5;

FIGURE 7 is a view in vertical section with parts broken away of a still further modified form of the invention and particularly of the base section thereof;

FIGURE 8 is a horizontal sectional view taken substantially upon the plane indicated by the section line 8-8 of FIGURE 7 and illustrating further details of the modified form of base shown in FIGURE 7;

FIGURE 9 is an exploded perspective view illustrating a further modified form of the standard and base sections of the invention, with parts being broken away;

FIGURE 10 is a view in vertical section of the assembled standard and base of FIGURE 9;

FIGURE 11 is a perspective view similar to FIGURE 1 of still another form of the invention;

FIGURE 12 is a top plan view of the arrangement of FIGURE 11, parts being broken away;

FIGURE 13 is a fragmentary view in vertical central section taken substantially upon the plane indicated by the section line 13-13 of FIGURE 12 and showing further details of the standard and base sections of this form of the invention;

FIGURE 14 is a perspective view of yet another form of directional marker in accordance with the invention;

FIGURE 15 is a horizontal sectional view taken substantially upon the plane indicated by the section line 15-15 of FIGURE 14 and showing certain details of the manner in which the standard is secured to the base of the device;

FIGURE 16 is an exploded perspective view of the form of standard shown in FIGURE 14;

FIGURE 17 is a perspective view showing another form of directional marker similar to that of FIGURE 14 but with a different base structure;

FIGURE 18 is a detail view in vertical transverse section taken substantially upon the plane indicated by the section line 18-18 of FIGURE 17 and showing the details of the standard and base and the connection of these two sections to each other but with the anchor spike omitted and the base secured to the roadbed as by an adhesive; and

FIGURE 19 is a perspective view of a modified standard element of this form of the invention.

Referring now more particularly to the embodiment of the invention shown in FIGURES 1-4 inclusive, the invention will be seen to consist substantially of a base section indicated generally by the reference character 10 and a top section indicated generally by the reference character 11. The base section is in the form of a generally circular plate 12 having a curled peripheral edge

or edges 13 having diametrically opposed interruptions or spaces 14 and 15 therein (see FIGURES 1 and 3) whereby the lip 13 defines a pair of diametrically opposed semi-circular pockets 16 and 17 substantially as shown. Projecting downwardly from the central portion of the plate 12 is an anchor post 18 which, as can be seen most clearly in FIGURE 4, is preferably of non-circular cross section and preferably including the radially projecting splines or ribs 19, 20, 21 and 22 such as to firmly affix and anchor the plate 12 to the highway indicated by the reference character 23.

In installing the base section of the marking device, a suitable hole 24 is drilled in the highway as can be best illustrated in FIGURE 2 and the post 18 is inserted thereinto after the hole 24 is filled with a suitable mastic compound 25, the mastic then being allowed to set and permanently affix the base to the highway surface. The hole 24 may be conveniently made with a rock drill or the like.

The top section 11 includes a generally circular plate 30 of a dimension to fit generally within the confines of the lip 13 on the base plate 12 and which is provided with diametrically opposed, radially outwardly projecting ears 31 and 32 respectively received in the pockets 16 and 17 defined by the lip 13. The width of the ears 31 and 32 is such as to be received within the interruptions 14 and 15 of the lip 13 when the top section is initially engaged with the base section whereafter rotation of the top section will effect a positioning of the ears 31 and 32 in the manner substantially illustrated in FIGURE 3 whereby the top section is removably affixed to the base section substantially as is shown.

The top plate 30 is provided with a centrally disposed opening 35 receiving the base portions 36 of the marker or picket indicated generally by the reference character 37. The base portion 36 of the picket is provided with a circumferentially extending groove 38 receiving that portion of the top plate 31 surrounding the opening 35 substantially as is illustrated in FIGURE 2 effecting a removable connection between the markers 37 and the top plate 30.

It is preferred that the markers 37 be in the form of a vertically elongate rod 40 made of suitable flexible and resilient material such as rubber or the like which can be best deflected as a vehicle passes thereover so as to cause no injury or deflection of the vehicle. However, due to the vertical height of the marker itself, the same will act effectively as a deterrent to a motorist passing over or striking the same.

It is preferred that the base portion 36 of the picket 37 extends below the undersurface 41 of the top plate 30 to such an extent as to engage the top surface 42 of the base plate 12. That is to say, it is preferred that the base portion 36 of the deformable picket constitute a spacer and necessarily be deformed between the surfaces 41 and 42 in order to interengage the ears 31 and 32 into the pockets 16 and 17 thereby effecting a tight locking action therebetween.

For the purpose of twisting or turning the top section with respect to the base assembly, the plate 30 may be provided with circumferentially spaced slots 43 and 44 for receiving a suitable wrench.

In the modified form of the invention illustrated in FIGURES 5 and 6, the base section is indicated generally by the reference character 60 whereas the top section is indicated generally by the reference character 61. The base includes a concavo-convex plate 62 peripherally engaging, as at 63, with the highway construction or pavement 64 and provided on its upper surface 65 with a pair of diametrically opposed semi-circular flanges 66 and 67 having outwardly projecting overlying rims or edges 68 and 69 substantially as is shown. Centrally disposed of the base plate 62 and depending therefrom is the anchor post 70.

The top section 61 consists of a plate 71 of concavo-convex configuration peripherally engaging as at 72 with

the highway surface and provided on its under surface with a pair of interrupted flanges 73 and 74 complementary to the flanges 66 and 67 of the base section and including inwardly projecting rims or edges 77 and 78 interdigitated with the flanges 66 and 67 substantially as is illustrated best in FIGURE 5.

Centrally disposed on the top plate 71 is an opening 79 receiving the base 80 of the picket or marker 81. The base of the picket is provided with a circumferentially extending recess 82 receiving the marginal portion of the top plate 71 defining the opening 79 therein and serving to effect a removable attachment between the marker or picket and the top plate 71. Similar to the construction illustrated in FIGURES 1-4 inclusive, the base 80 of the picket is preferably of such dimension as to be deformed by interengagement of the two plates 62 and 71 so as to effect a locking action therebetween.

In the modified form of the invention illustrated in FIGURES 7 and 8, the device will be seen to consist substantially of the base section 90 and the top section 91. The base section includes a plate 92 having the diametrically opposed, semi-circular interrupted flanges 93 and 94 integral therewith or rigidly affixed thereto with the interruption 95 and 96 therebetween of such width as to receive the radially projecting ears 97 and 98 rigid with the top plate 99 so as to permit the initial interengagement between the two sections substantially as is shown. The top plate 99, as is the case in FIGURES 1-4 as well as FIGURES 5 and 6, is provided with circumferentially spaced slots 100 and 101 to receive a suitable wrench. In FIGURES 7 and 8, in addition to the anchor post 103, the base plate 92 may be provided in its radially extending projecting marginal edge 104 with suitable openings circumferentially spaced therearound as to receive additional anchoring pins 105, 106, 107 and 108, substantially as is shown to further effect the anchoring or substantially permanent affixing of the base section to the highway 108.

In the modified form of the invention illustrated in FIGURE 9, the base section, indicated generally by the reference character 130, includes an annular rim portion 131 provided with a series of apertures receiving therein anchoring pins 132, 133, 134 and 135 which pins effect the sole anchoring of the base section 130 to the highway or other surface. On the inner margin of the rim 131 there is provided a concavo-convex upwardly projecting flange 140 interrupted as indicated by the reference characters 141 and 142 in diametrically opposed portions thereof. The top section indicated generally by the reference character 143 includes, in its plate portion 144, a marginal edge 145 of concavo-convex configuration and provided with the cut-out portions 146 and 147 defined by the downwardly struck ear portions 148 which are projectable through the interruptions 141 and 142 so as to engage under the portion 140 of the base section 131 and thus effect a removable attachment between the top section 143 and the bottom section 130.

The embodiments of the invention illustrated in FIGURES 1-8 correspond and are identical with the embodiments shown in FIGURES 1-8 of my prior copending application Serial No. 3,360 while the embodiment of FIGURES 9 and 10 is identical with that disclosed in FIGURE 11 of said copending application.

FIGURES 11-19 describe and relate to further embodiments of this invention which are specifically designed for use as directional markers, and preferably are relatively low in height so that they may pass beneath a motor vehicle and will flex without damage to themselves or the vehicle if struck by some portion of the vehicle passing thereover. These forms of the invention are intended specifically to constitute markers for designating the outlines of lanes of travel, or indicating directions in which traffic is to proceed.

Considering first the embodiment of FIGURES 11-13 it will be observed that this embodiment consists of a

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flexible upstanding post or standard 150 which is secured as by a base 152 to a surface 154 of a roadway or other surface for indicating a lane or direction of travel as at 156. Referring specifically to FIGURE 12 it will be observed that this form of the standard 150 is generally triangular in cross section having the radially extending ribs 158 extending from the tip to the base thereof, and with the standard tapering from its tip to its base as suggested in FIGURE 13. The standard 150 is of rubber or other similar resilient elastic material and has a diametrically enlarged annular base portion 160 provided with a peripheral downwardly extending flange 162 as shown in FIGURE 13. In order to reduce the material, lighten the weight and increase the flexibility of the standard, there is provided one or more hollow passages 164 therein.

The base structure 152 includes an annular plate 166 provided with a depending anchor means 168 by means of which the same may be embedded or anchored firmly in the surface 154. A peripheral upstanding flanged wall 170 rises from the plate 166 and tubular upstanding internally threaded bosses 172 are likewise formed upon the surface of the plate 166 within the confines of the flanged rim 170.

In assembling the device, the flanged lower portion 160 of the standard is disposed upon the plate 166 within the rim 170 thereof and a retaining ring 174 having an annular flange 176 at its top and having a depending conical skirt 178 is secured as by fastening screws 180 to the base plate 166. It will be observed that the flange 174 is notched or cutaway to conform to the cross-sectional shape of the triangular standard 150 so as to snugly embrace the lower end of the latter and by means of the fastening screws will securely clamp the enlarged annular portion 160 of the standard to the plate 166.

Both the exterior surface of the flange 170 of the plate 166 and the interior surface of the flange 178 of the retaining ring 174 are of complementary conical configurations so as to facilitate a tight-fitting joint therebetween thus excluding water from the interior of the connection.

In this manner, the standard may be readily applied to or removed from permanently anchored base sections of the device as may be desired as when temporary use only of the directional markers are required, or where directional markers of other configuration are to be installed.

Referring next to the embodiment of FIGURES 14-16, it will be observed that there is disclosed a directional marker consisting of a standard section 200 and a base section 202. The base section includes an anchor portion indicated generally by the numeral 204 which as shown in FIGURE 16 consists of a depending standard or anchor spike 206 adapted to be permanently anchored in the roadbed or other supporting surface in any of the manners previously described. The anchor section includes an annular plate 208 having an upstanding conical flange or rim 210 thereabout within which are formed a plurality of internally threaded upstanding tubular bosses 212. Cooperating with the anchor section and constituting the rest of the base section is a retaining means in the form of split sections 214 and 216, each of which has a depending conical flange 218 complementary to the flange 210 and frictionally engaging the same. Apertures 220 are formed in these sections to receive fasteners 222 by which the split retaining sections are secured to the anchor section.

The standard 200 may be of various desired configurations, in this instance consisting of an upwardly projecting arrow section 224 and an angularly disposed arrow section 226 to thus designate alternative branching lanes of travel. The standard is of rubber or other suitable material having an annular base portion in the form of a flange 228.

The flanged portion of the standard is apertured as at 230 to receive the previously mentioned fasteners 222.

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The cross-sectional configuration of the standard may be of any desired shape, and it will be understood and observed that the base sections are notched as at 232 to correspond to this shape. As illustrated the standard is diamond shaped in cross section as will be seen from FIGURE 15.

In this form of the invention it will be understood that the anchor sections are permanently embedded in the surface and the standard sections are removably secured thereto.

A slightly modified construction from that shown in FIGURE 14 is illustrated in FIGURES 17-19. In this form of the invention the standard indicated generally by the numeral 250 has an arrow shaped tip 252 at its extremity for indicating the direction to be pursued by vehicles. This standard is likewise of diamond shaped configuration in cross section and at its lower end, as shown in FIGURE 18, is provided with an annularly enlarged plate-like extremity 254 having a depending peripheral flange 256 which latter is received within the upstanding peripheral flange 258 of the plate 260 which constitutes the base portion of the anchor means of this embodiment. This anchor means may be identical with that indicated by the numeral 204 in FIGURE 16, it being likewise provided with internally threaded tubular bosses 262 for the reception of the fasteners 264. However, in place of a sectional retaining means there is provided as indicated at 264 a cup-shaped retainer consisting of a flat plate-like upper portion 270 having a downturned peripheral flange 272. The fasteners 264 extend through apertures in the portion 270, through corresponding apertures in the base portion 254 of the standard, and into the tubular bosses 262 to thus securely unite these three elements together. Since the standard 250 is not bifurcated as was the standard 200, the retainer may be placed upon or removed from the standard by passing the same over the flexible extremity of the standard. Consequently, the retainer 266 can be a single member rather than requiring the split sections of the preceding embodiment.

A slight variation of the curved arrow form of standard 250 of FIGURES 17, 18 is shown at 290 in FIGURE 19. This form of member is identical with that of FIGURES 17, 18 except that the standard 290 is a straight marker having an arrow 292 thereon. The standards 290 and 250 are interchangeable and therefore the same numerals designate the base member.

It will be appreciated that the directional markers may take various shapes in accordance with the directions to be given to the motorists. Moreover, the standards may be readily interchanged upon the various bases in order to afford varying traffic directions. The standards may have various reflected indicia thereon so as to increase their visibility under varying weather and light conditions.

The directional markers are of relatively low height so that although they will readily project above and be visible above the roadway, they can be struck by and passed over by a vehicle without damage to either the vehicle or the device.

Further, it is to be understood that the anchor portion 204 illustrated in FIGURE 16 can be constructed without the standard 206 in which case the anchor portion 204 may be bonded to the surface of a roadway. Still further, an anchor portion similar to anchor portion 204 may be used on any of the markers 37, 150, 200, 250 and 290.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A roadbed marker consisting of a base, a standard and a retainer removably secured upon said base and detachably connecting said standard thereto, said base including a member having an upper surface and further having a bottom surface adapted to lie upon and be disposed flush with a roadbed top surface, anchoring means connected to said base member and being adapted to secure the latter fixedly to said roadbed, said retainer comprising a cover member consisting of an inverted dish-shaped disk overlying said base member and having an opening therethrough slidably receiving said standard, the lower end of said standard being laterally enlarged, engaged by and disposed and retained between said members, fastening means carried by one of and engaging the other of said cover and base members and detachably securing said members together and clampingly retaining said standard laterally enlarged end between said members and upon said base member upper surface, said base member upper surface having a plurality of upstanding tubular internally threaded bosses, said cover member and said standard laterally enlarged lower end having bores of smaller diameter than but registering with said bosses for reception of said fastening means, said standard laterally enlarged lower end being compressively clamped between the top of said bosses and said cover member.

2. The combination of claim 1 wherein said base member has a peripheral upstanding wall surrounding and spaced outwardly from said bosses and extending upwardly above the latter, said standard laterally enlarged lower end having a peripheral depending wall received in said upstanding wall and engaging said top surface of said base member.

3. The combination of claim 2 wherein said cover member has a peripheral depending wall embracing said upstanding wall and having a sealing engagement with the latter.

4. A roadbed marker consisting of a base, a standard and a retainer removably secured upon said base and detachably connecting said standard thereto, said base including a member having an upper surface and further having a bottom surface adapted to lie upon and be disposed flush with a roadbed top surface, anchoring means connected to said base member and being adapted to secure the latter fixedly to said roadbed, said retainer com-

prising a cover member consisting of an inverted dish-shaped disk overlying said base member and having an opening therethrough slidably receiving said standard, the lower end of said standard being laterally enlarged, engaged by and disposed and retained between said members, fastening means carried by one of and engaging the other of said cover and base members and detachably securing said members together and clampingly retaining said standard laterally enlarged end between said members and upon said base member upper surface, said inverted dish-shaped disk substantially completely covers the top surface of said base member and has its periphery forming a seal preventing the ingress of foreign matter to said standard laterally enlarged end and the top surface of said base member, said cover and base members having at their peripheral edges complementary detachably engaging arcuately extending retaining flanges comprising said fastening means.

5. The combination of claim 4 wherein said retaining flanges constitute the peripheral edge of one of said members.

6. The combination of claim 4 wherein said retaining flanges comprise the peripheral edges of both members and include an internal channel forming lip on said base member.

References Cited by the Examiner

UNITED STATES PATENTS

1,124,718	1/15	Ferris	189—28 X
1,265,386	5/18	Richards	94—1.5
1,266,152	5/18	Poole	189—28 X
1,267,021	5/18	Watts	94—1.5
1,337,947	4/20	O'Toole	94—1.5
1,362,352	12/20	Rasmussen	189—28
1,822,916	9/31	Woods	94—1.5
2,073,968	3/37	Krebs	94—1.5 X
2,121,961	6/38	Gill	94—1.5
2,161,896	6/39	Cutler	94—1.5 X
2,229,075	1/41	Haggart	94—1.5 X
2,448,413	8/48	Borghesi	189—28 X
2,834,133	5/58	Carmack	94—1.5 X
3,086,430	4/63	Emmel	94—1.5 X
3,091,997	6/63	Byrd	94—1.5

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