ABSTRACT

A variable carriageway marker comprises an elongated platform located below the carriageway surface and on which a flexible sleeve extends longitudinally, the sleeve comprises a laterally intermediate part incorporating a marking portion and located above the platform, and parts on either side of the intermediate part, each defining loops located below the carriageway surface. The marker is provided with means whereby the relative sizes of two or three of the parts of the sleeve can be varied to move the carriageway marking portion of the sleeve relative to the carriageway surface to vary the carriageway marking. The intermediate part of the sleeve may include a carriageway surface level marking, or may be enlargeable to form a raised carriageway marking.

18 Claims, 3 Drawing Figures
MARKING OF CARRIAGEWAYS

This invention relates to the marking of carriageways and more particularly but not exclusively relates to the marking of the boundaries of traffic lanes.

Traffic lanes are often marked by permanent white lines, or by permanent raised markers such as kerbs, and are intended to define the area within which a vehicle on the carriageway should normally travel. Many urban carriageways have three traffic lanes, the two outside lanes are reserved one for traffic in each direction and the middle lane may be used for overtaking by traffic from either direction. However, such three-lane carriageways are often able effectively to carry only two lanes of traffic, one in each direction, because of hazards which arise in the situation where a driver has no more right to use the middle lane than another driver travelling in the opposite direction.

Moreover, urban carriageways often have a major traffic flow that is tidal, i.e., the direction of major traffic flow on the carriageway varies with the time of day or week. For instance in the morning the major traffic flow may be into a town, and in the evening it may be out of the town. The operating capacity of three-lane urban carriageways can often be increased if the carriageway is provided with variable markings for dividing the traffic flow into two lanes of traffic in one direction and only one in the other direction, and indicating to drivers, at the current time, the direction of the two lane flow, which can be changed by varying the markings to suit traffic conditions.

Accordingly the invention provides a variable carriageway marker which comprises an elongated platform located below the carriageway surface and an elongated flexible sleeve extending longitudinally of the platform, said sleeve having a laterally intermediate part located above the platform and incorporating a carriageway marking portion, the parts of the sleeve on either side of said intermediate part defining loops located below the carriageway surface, and means whereby the relative sizes of at least two of the three parts of the sleeve can be varied to move the carriageway marking portion relative to the carriageway surface to vary the carriageway marking.

The relative sizes of any two or three of the parts of the sleeve can be varied by means of enlarging the size of at least one of the parts and reducing the size of at least one of the other parts of the flexible sleeve.

Preferably the elongated flexible sleeve comprises a continuous tubular sleeve, the intermediate part of which, comprises two layers of the sleeve, and is located on the platform, the loops being formed by the portions of the tubular sleeve located on either side of the intermediate part.

The loops may conveniently each be provided with an inflatable inner tube, which when inflated causes the size of the associated part of the flexible sleeve to enlarge.

According to one arrangement of the invention the outer surface of the flexible sleeve is provided with a plurality of carriageway surface level markings, each extending along the flexible sleeve, the variable marker being arranged such that one of the markings may be visible from the carriageway. The marker may be varied by enlarging the size of one of the loops of the flexible sleeve and reducing the size of the other, to move the visible part of the sleeve laterally so that a different one of the markings becomes visible from the carriageway.

According to another arrangement of the invention the size of the intermediate part of the flexible sleeve is enlargeable, so that when enlarged the intermediate part forms a raised marking above the surface of the carriageway and when unenlarged forms a carriageway surface level marking, the raised marking being formed by reducing the size of at least one of the loops and enlarging the size of the intermediate part of the flexible sleeve, and the carriageway surface level marking being formed by enlarging the size of at least one of the loops and reducing the size of the intermediate part of the flexible sleeve.

The variable carriageway marker may be fitted to a road surface to provide a variable traffic lane marking, and the alternative road surface level markings may conveniently include any two or three of a single, double or broken line, preferably white or the marking may even be coloured to match the road surface if it is desired to indicate that no lane boundary exists. The raised marking may conveniently be arranged to have a cross section similar to that of a motor vehicle tyre, to form a raised kerb.

Conveniently the platform comprises a member located in a trough open to the surface, which member defines two longitudinally extending cavities within which the loops of the flexible sleeve may be respectively located.

The lower thickness of the intermediate part of such a continuous tubular sleeve may conveniently be fixed to the upper surface of the platform allowing relative motion only between the upper thickness of the intermediate part of the sleeve and the carriageway surface.

The elongated platform may comprise a resilient member which may have a chamber therein, which can be filled with fluid either before or after the platform has been located in the carriageway surface, to strengthen the platform.

Examples of particular arrangements of the invention are hereinafter described with reference to the drawings in which:

FIG. 1 is a cross section view of one embodiment of the invention which illustrates a road surface level variable lane marker.

FIG. 2 is a cross sectional view of another embodiment of the invention which provides a variable raised lane marker, the two halves of this figure being respectively a part view of the marker in its raised configuration and a part view of the marker at road surface level, and

FIG. 3 is a cross-sectional view of a further example of the invention illustrating a road surface level variable lane marker.

Referring to FIG. 1, the marker includes a steel plate 1, to which are welded, along each edge, steel angle strips 2 and 3 to form a trough 33. The trough is provided with a low friction nylon liner 5 which is bonded to the inside surface of the trough. A platform, which comprises an L-shaped girder 4 extending centrally along the trough 33, defines cavities 22, 23 in the trough 33 and is rigidly fixed to the steel plate 1 by screws 6, spaced at regular intervals along the length of the L-girder 4. At these intervals a vertical hole is drilled through the girder to accommodate a screwdriver when assembling the marker. When the platform 4 has been
fixed to the steel plate 1, loose rivets 7 are fitted into the holes in the upper surface 8 of the platform 4. The l-girder is arranged such that its upper surface 8 which is faced with a layer of resilient material 9 is located slightly below the top edge of the angle strips 2, 3.

A continuous flexible sleeve 10 is arranged in two loops 12 and 13 located on either side of the l-girder 4 in the cavities 22 and 23, and the intermediate part 11, comprising two layers 14 and 15 of the sleeve, rests on the resilient layer 9 over the upper surface 8 of the platform 4. The loops 12 and 13 respectively are formed by passing folded edges of the flattened sleeve through the gaps between the upper surfaces 8 of the l-girder 4 and the angle strips 2 and 3. The lower layer 15 of the intermediate part 11 is attached to the layer 9 of resilient material on the upper surface 8 of the platform 4, and the upper surface of layer 14 of the flexible sleeve lies at approximately the same level as the upper edges of the angle strips 2 and 3.

Referring to FIG. 1 inflatable rubber inner tubes 16 and 17 extending length wise of the flexible sleeve 10 are respectively freely located within the loops 12 and 13 and rigid non-inflatable rubber or plastic tubes 18 and 19 are freely located within the respective inner tubes 16 and 17.

The plastic liner 5 is provided near its edges with outwardly serrated portions 20, 21 which act to retain flexible triangular shaped rubber wedges 24, 25 inserted between the liner 5 and the upper portions of the angle strips 2, 3 in the gaps between the angle iron and the upper flange of the l-girder 4.

Alternative road markings, which could include for example a single or double white line and a broken white line, are painted on the outside surface of the flexible sleeve 10. In FIG. 1, one of the markings is painted on the upper surface of the layer 14 of the intermediate part of the flexible sleeve 10 and is in view from the road. Another marking is painted on the concealed outside surface of the loop 13 and is out of sight from the road.

In operation the marker is sunk into the road surface at the desired position of a traffic lane boundary, so that the upper surface of the marker corresponds to the level of the road. The layer 14 which is visible has on its upper surface a lane marking which may, for example, be the painted broken white line. This marking may be changed by inflating the inner tube 16 whilst at the same time allowing the inner tube 17 to deflate. This will enlarge the size of the loop 12 of the flexible sleeve 10, and will reduce the size of the loop 13. As the layer 15 is attached to the resilient material of the upper surface 8 of the platform 4, the increase and decrease respectively in the sizes of the loops 12, 13 will cause layer 14 to move over the layer 15 on the surface 8 of the platform 4 into the cavity 22. In this way the painted broken white line will move out of view and the alternative lane marking, for example, the painted single or double white line will emerge into view from the cavity 23.

The rigid tubes 18 and 19 located within the inner tubes 16 and 17 respectively of the loops 12 and 13 of the flexible sleeve 10 are of sufficient diameter to ensure that loops 12, 13, when deflated, are prevented from leaving the cavities 22, 23.

The marker is installed in a road by first enclosing pre-welded unitary lengths of the trough 33 in the road at the boundary of the traffic lane with the upper surface of the angle brackets 2, 3 at road surface level. The liner 5, which is continuous lengthwise, is bonded to the lengths of trough 33, covering any irregularities at the joints of the pre-welded lengths of trough. Lengths of l-girder 4 are then screwed to the plate 1 and the loose rivets 7 fitted. A continuous length of the resilient material 9 is bonded to the lengths of l-girder 4 covering any irregularities at the junctions. The flexible sleeve 10 is then positioned on the upper surface of the l-girder 4 and the loops 12, 13 are fitted into the recesses 22, 23 respectively in the trough 33. The lower layer 15 of the intermediate part 11 of the sleeve 10 is adhesively fixed to the layer 9 of resilient material on the upper surface 8 of the l-girder 4. The inflatable inner tubes 16, 17 with the hard rubber or plastic tubes 18, 19 respectively inside, are then fitted into the loops 12, 13 respectively from one end of the l-girder. The flexible triangular shaped rubber wedges 24, 25 are firmly pressed into place between the upper edge of the trough 33 and the serrated edges 20 of the liner 5.

The inner tubes 16, 17 may conveniently be inflated by air pumps located away from the traffic lanes at the side of the road. Air lines for each of the inner tubes can be passed through or imbedded in the road surface, allowing vehicles to drive over without damaging or restricting the air lines.

When the variable lane marker is used on three lane urban roads which have a tidal traffic flow it is convenient to provide a time clock connected to an electrically operated air pump arranged such that at predetermined times during the day the marker can change to suit the traffic conditions.

The flexible sleeve 10 in the embodiment of FIG. 1 may not be continuous, in which case each of the ends of the sleeve may be fixed, one either side of the platform, the intermediate part 11 having one layer only of the discontinuous sleeve.

In FIG. 3, in which the numerals are used for parts similar to those of FIG. 1, and which illustrates a second embodiment of the invention, a third inner tube 32 is located between the layers 14 and 15 of the intermediate part 11 of the flexible sleeve 10, the layer 15 being attached directly to the upper surface of the I-girder 4. The right hand half section of the figure illustrates the marker with inner tube 32 deflated, the upper surface of the layer 14, which may have a conventional lane marking such as a broken white line or no marking at all, being at road surface level. The left hand half section illustrates the marker with inner tube 32 inflated to form a raised kerb to create a physical barrier between one lane of the road and another.

The trough 33 and platform 4 of the marker are constructed in a similar manner to the embodiment of the invention shown in FIG. 1, but the liner 5 which has no serrated edge is bonded along its entire width to the sides of the trough and the triangular shaped wedges 26, 27 are formed as integral parts of the flexible sleeve 10. The wedge 27 is shown in the road surface level configuration of FIG. 2 and acts in a similar manner to the wedge of the previous embodiment. The wedge 26 is shown in a raised configuration where it serves to thicken part of the side wall of the raised marker.

The flexible sleeve 10 has two portions of extra thickness 28, 29 which respectively form parts of the loops 12, 13 within the cavities 22, 23. When the marker is in the raised configuration these portions of extra thickness 28, 29 are so spaced from wedges 26, 27 that
they take up positions on each side of the marker near the road surface in contact with the liner 5 at the top of the trough 33, and help to fill the gaps between the angle strips 2, 3 and the flanges of the I-girder 4. The portions 28, 29 each have a plurality of outwardly directed recesses 30 spaced at regular intervals along the length of the marker. These recesses 30 provide a passage of increasing cross sectional area leading to the cavities 22, 23. The recesses are designed to allow rain water which may run down the sides of the raised marker or which may be splashed towards the lane marker by passing vehicles to drain away into the trough beneath the road surface. The water may conveniently be channelled from the trough to the roadway drains.

Each of the loops 12, 13 in the embodiment of FIG. 2 has an inflatable inner tube 16, 17 and a rigid rubber or plastic tube 18, 19 inside it. With the inner tube 32 deflated, and the inner tubes 16, 17 of the loops 12, 13 inflated the marker provides a lane marking at road surface level. It is convenient to have a common air supply for the tubes 12, 13 which are best inflated or deflated in unison. To affect the raised marker a separate air line inflates the inner tube 32, and at the same time the inner tubes, 16, 17 are allowed to deflate. This causes those portions of the flexible sleeve 10 between wedges 26, 27 and thickened portions 28, 29 respectively to move out of the cavities 22, 23 respectively to form side walls of a raised marker as illustrated in the left-hand section of FIG. 2. Subsequent inflating of the inner tubes 12, 13 whilst allowing the inner tube 32 to deflate will return the marker to the road surface level configuration.

The side walls of the raised marker of FIG. 2 may conveniently be coloured white to form a continuous upstanding white line, which can be easily seen by the drivers of passing vehicles.

The embodiment of FIG. 2 may be modified so that the raised marker is formed by inflating the inner tube 32 of the intermediate part of flexible sleeve and allowing the inner tube of one only of the loops to deflate. The road surface level marking is produced by inflating the inner tube of one of the loops whilst allowing the inner tube of the intermediate part of the flexible sleeve to deflate. It is also possible to arrange separate controllable air supplies to each inner tube of the loops, so that either can be inflated and deflated separately. With this arrangement each side wall of the raised marker can have a different marking, either of which can be formed into a road surface level marking by inflating one or other of the inner tubes, 16, 17 of the loops and allowing the inner tube 32 of the intermediate part 11 to deflate.

The air pressure in the inflated inner tube 32 may conveniently be kept at a minimum, sufficient only to maintain the marker in the raised configuration. The raised marker would not then constitute a hazard to traffic on the roads as a vehicle driving over the raised marker would merely depress the marker locally to road surface level. In this way hazards such as loss of control, skidding or damage to vehicles riding over the marker are reduced. In one application, this type of marker may be used in its raised configuration as a physical barrier between lanes of traffic in opposite directions, and in its road surface level configuration as a marking between lanes of traffic travelling in the same direction.

FIG. 3 illustrates another example of a road surface level variable lane marker, in which the same numerals are used for parts similar to those in FIGS. 1 and 2. The marker includes an elongated rolled steel channel base member 35 which forms a trough 33 in the road surface, and has the upper portions of the two arms 36, 37 bent inwards having horizontal chamfered edges 45, 46 on their upper surfaces. The platform 38 is positioned longitudinally and centrally along the trough 33 and is shaped so that it defines cavities 22, 23 in the trough 33, one either side of the platform 38. The platform 38 is of resilient material such as rubber or plastic, and has a longitudinal cylindrical hole 39 formed therein.

The arrangement of the continuous flexible sleeve 10 is formed and operates in an exactly similar manner to the embodiment of the invention illustrated in FIG. 1 and as herebefore described.

The marker illustrated in FIG. 3 may be installed by emplacing unitary lengths of the channel base member 35 along a traffic lane boundary below the road surface level with the upper chamfered edges 45, 46 of the arms 36, 37 horizontal and a road surface level. The resilient platform 38 which may have a maximum width that is slightly greater than the minimum distance between the arms 36, 37 is then inserted into the trough 33 by pushing it between the arms 36, 37. The upper surface 8 of the platform 38 is located slightly below the road surface level, and the platform 38 may if desired be fixed to the channel base member 35 at the lower surface of the trough 33, for instance by adhesive means or by means of a slot (not shown) formed in the lower surface of the channel base member 35 into which a corresponding stepped portion (not shown) on the lower surface of the platform 38 could be inserted.

The flexible sleeve 10 is positioned on the platform 38 and the loops 12, 13 are fitted into the respective recesses 22, 23 by local deformation of the resilient platform 38. The inner tubes 16, 17 and respective hard rubber or plastic tubes 18, 19 are then inserted into the respective loops 12, 13 from one end of the resilient platform 38, or alternatively they might be inserted into the respective loops 12, 13 before the loops 12, 13 are inserted into the respective recesses 22, 23, in which case the resilient platform 38 will need to be deformed at the upper surface 8 to allow the respective hard rubber or plastic tubes 16, 17 to be introduced into the respective recesses 22, 23 from the upper surface of the marker.

The lower layer 15 of the intermediate part 11 of the flexible sleeve 10 has a thickened portion 42 which is fitted into a similar shaped slot in the upper surface 8 of the platform 38, to prevent lateral movement of the lower layer 15 of the intermediate part 11 of the flexible sleeve 10 on the upper surface 8 of the platform 38. Alternatively the lower layer 15 may have no thickened portion and may be adhesively and directly fixed to the upper surface 8 of the resilient platform 38.

When the resilient platform 38 has been located in the trough 33, the cylindrical hole 39 is filled with liquid under pressure, which has the effect of considerably stiffening the platform 38 which thus acts in a similar manner to a prestressed beam. The stiffening of the platform helps to prevent excess deformation of the platform 38 at the upper surface 8, when for instance a heavy vehicle passes over the marker.
The cylindrical hole 39 in the resilient platform 38 may alternatively be dispensed with, and the platform manufactured of a hard resilient material so that the platform would not deform excessively under the load of a heavy vehicle. As a further alternative the platform 38 may comprise a member of substantially rigid or hard resilient material, and the marker may include two elongate inflatable cylindrical tubes (not shown), one positioned at each upper edge of the platform, adjacent the respective space 43, 44 in the respective loops 12, 13 respectively. These inflatable cylindrical tubes may be either attached to the sleeve or to the platform. Both tubes may be deflated when installing the platform 38 in the channel base member 35 and also may be deflated when the marker is being changed so that the parts of the flexible sleeve are more readily movable when changing the marking. When the marker has been changed the tubes may be inflated to pinch the two layers of the sleeve against the respective arms 36, 37 of the base channel member 35, at both upper edges of the platform, to help prevent movement of the intermediate part 11 of the sleeve as a vehicle passes thereover.

The base channel member 35 illustrated in FIG. 3 may include such members (not shown) which are parallel to or are an extension of the lower surface of the channel base member 35 so that when installed in the road they are parallel to the road surface and help to hold the marker in position.

The spaces 43, 44 formed in loops 12, 13 respectively, may advantageously be filled with a lubricating fluid, contained within the continuous sleeve, which fluid will facilitate movement of the parts of the sleeve when the road surface level marking is being changed.

The embodiment illustrated in FIG. 3 may be adapted to provide a raised carriageway marking. Advantageously additional fluid may be pumped into the intermediate portion of the continuous sleeve, at the same time allowing the loops 12, 13 to deflate. The intermediate part 11 of the sleeve is thus inflated to form a raised marker. Such an arrangement would obviate the need for an inner inflatable tube within the intermediate part 11 of the sleeve. Alternatively the embodiment illustrated in FIG. 3 may be adapted to provide a raised carriageway marking by positioning an inner inflatable tube within the intermediate part 11 of the sleeve, which when inflated forms a raised marker and when deflated forms a road surface level marker.

Any of the embodiments of the invention described above may be used as markers on three lane urban roads. Each of the lane boundaries in a three lane road can be provided with a variable marker, and a time clock connected to an electrically operated air pump control can be arranged such that at times when the major traffic flow is in one direction two traffic lanes are provided in that direction and one in the opposite direction and when the major traffic flow is reversed the direction of the flow in the centre lane can be reversed. A convenient form of the embodiments of the invention illustrated in FIGS. 1 or 3 would provide, for a three lane road, either a broken white line or no lane marking at all between the two lanes of traffic in the same direction and would provide a continuous single or double white line as the boundary between the two lanes of traffic in opposite directions. In a similar traffic situation the embodiment of the invention illustrated in FIG. 2 can be used as the boundary between the lanes of traffic in opposite directions in the raised marker configuration as illustrated in the left-hand section of FIG. 2.

The variable road surface level marker illustrated in FIG. 1 that appreciable frictional forces occur as the marker is being changed from one configuration to the other. The use of low friction materials road, the liner 5, flexible more 10 and the resilient layer 9 have proved effective in combating this. The frictional forces when raising or lowering the raised marker (FIG. 2) are not so great, but the use of low friction materials for the liner 5 and flexible sleeve 10 in this embodiment has also proved advantageous. A liner may also be provided in the embodiment illustrated in FIG. 3, to cover any irregularities at the joint of the unitary lengths of the platform, and also to reduce the frictional forces when varying the marker.

The flexible sleeve 10, illustrated in each of the embodiments FIGS. 1, 2 and 3, need not be continuous, and may comprise a single length of material, both ends of which are fixed to the platform 38, preferably one end being fixed to the platform at each upper corner thereof. The intermediate part 11 of the flexible sleeve 10 would in such an arrangement comprise only one layer of the sleeve resting on the platform and being relatively movable thereto.

It may be preferable to use only lane markings at road level for three lane roads, as the use of a raised marker has the effect of decreasing the operative width of the road, as drivers generally leave more safe distance between their vehicle and a raised marker or kerb than with a marker at road surface level.

The raised marker may be more suitable for roads having five or more lanes when it would be advantageous to vary the number of lanes in each direction in accordance with the major traffic flow at the time. The invention is also applicable to the marking of a reserved lane for omnibuses. The reserved lane may be in either direction depending on the major traffic flow. Generally a reserved lane will be directed into the centre of a town in the morning and out of the centre in the evening. Preferably the variable raised marker can be installed at a lane boundary to mark a single lane on either side of the road, and can be raised or lowered depending on which side of the road an omnibus lane is to be reserved.

Although the invention has been described in relation to intermediate stretches of road, particularly in and out of towns, an important application of the invention is in alleviating traffic congestion at bottle necks, such as bridges, busy junctions, narrow stretches of road between wider stretches of road, or approaches to traffic lights. In these conditions only relatively small lengths of variable marker are necessary, and when using only small lengths of the raised marker, drainage is not so significant, and the recesses 30 illustrated in FIG. 2 may not be required.

It may be desirable for variable markers installed on exposed roads in winter, to fit the marker with a heater. The heater which may be thermostatically controlled may be the embodiments illustrated in FIGS. 1 and 2 conveniently comprise a pair of electrically heated wires fitted (as shown at 34 of FIG. 1) on the upper surface of the I-girder underneath the flexible sleeve, and extending the length of the marker. The heater initially tends to heat the intermediate part of the flexible sleeve and raise the temperature of the I-girder which in turn
radiates heat to the loops of the flexible sleeve within the recesses 22, 23. In this way any ice particularly around the gap between the flanges of the girder and the angle strips, which may restrict the movement of the flexible sleeve, is melted. The nylon liner 5 fitted to the inside of the trough 33 acts as an insulator to minimise loss of heat through the steel plate and angle strips. In the embodiment of the invention illustrated in FIG. 3 a the heating wire 40 and sheath 41 are conveniently located within the hole 39 within the resilient platform 38, but may alternatively be positioned in a recess on the lower surface of the platform 38, in contact with the rolled steel channel base member 35.

1 claim:

1. A variable carriageway marker comprising,
   a. an elongated platform located below the carriageway surface,
   b. an elongated flexible sleeve partially contained within said carriageway and extending longitudinally of the platform, said sleeve having a laterally intermediate part located above the said platform and substantially flush with the carriageway and incorporating a carriageway marking portion, parts of the sleeve, one on either side of the said intermediate part defining loops located below the carriageway surface, and
   c. means operatively related with said sleeve whereby the relative sizes of at least two of the said parts of the sleeve can be varied to move the said carriageway marking portion of the sleeve relative to the carriageway surface to vary the carriageway marking.

2. A variable carriageway marker as claimed in claim 1 wherein the relative sizes of the said parts of the sleeve are variable by enlarging the size of at least one of the said parts and reducing the size of at least one of the other said parts of the flexible sleeve.

3. A variable carriageway marker as claimed in claim 2 wherein the enlarging or reducing is achieved by inflating or deflating thereof.

4. A variable carriageway marker as claimed in claim 1 wherein the said elongated flexible sleeve comprises a continuous tubular sleeve, the intermediate part of which comprises two layers of the sleeve and is located on the platform, the said loops being formed by the portions of the tubular sleeve located on either side of the said intermediate part.

5. A variable carriageway marker as claimed in claim 4 wherein one of the said layers of the intermediate part of the flexible sleeve is fixed to the platform so that relative motion can take place only between the other of the said layers of the intermediate part of the flexible sleeve and the carriageway surface.

6. A variable carriageway marker as claimed in claim 4 wherein a lubricating fluid is introduced within the said continuous flexible sleeve, to facilitate the movement of the said parts thereof.

7. A variable carriageway marker as claimed in claim 1 wherein the outer surface of the said flexible sleeve is provided with a plurality of carriageway surface level markings, each of which extends along the said flexible sleeve, said sleeve being arranged in the variable marker so that one or other of the said carriageway markings may be visible from the carriageway.

8. A variable carriageway marker as claimed in claim 7, having means for enlarging the size of one of the said loops of the flexible sleeve and reducing the size of the other of the said loops to vary the marking by moving the visible part of the said sleeve laterally so that a different one of the markings becomes visible from the carriageway.

9. A variable carriageway marker as claimed in claim 1 wherein the said intermediate part of the flexible sleeve is enlargeable, so that when enlarged the intermediate part forms a raised marking above the surface of the carriageway, and when unenlarged is located at carriageway surface level.

10. A variable carriageway marker as claimed in claim 9 wherein the said raised marking is formed by enlarging the size of the said intermediate part of the flexible sleeve and reducing the size of at least one of the said loops, and a marking at carriageway surface level is formed by enlarging the size of at least one of the loops and reducing the size of the intermediate part of the flexible sleeve.

11. A variable carriageway marker as claimed in claim 9 wherein the said intermediate part of the flexible sleeve incorporates an inflatable inner tube which inflatable tube can be inflated to increase the size of the said intermediate part.

12. A variable carriageway marker as claimed in claim 1 wherein the said platform is located in a trough in the carriageway, the said platform defining a cavity on each side of the platform within which the loops are respectively located.

13. A variable carriageway marker as claimed in claim 13 wherein the said trough is formed by a metal channel member in the carriageway surface.

14. A variable carriageway marker as claimed in claim 1 wherein the marker includes two inflatable tubes, one positioned near each edge of the upper surface thereof, and which may be deflated when the carriageway marking is being varied.

15. A variable carriageway marker as claimed in claim 16 wherein the said resilient member has a chamber therein, which chamber is adapted to be filled with fluid to stiffen the platform.

16. A variable carriageway marker as claimed in claim 1 of the preceding claims having a heating cable extending along the marker.

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