Dec. 25, 1951 A. E. BRICKMAN 2,579,467

PAVEMENT LANE MARKER

Filed June 14, 1947 2 SHEETS—SHEET 1

FIG. 1.

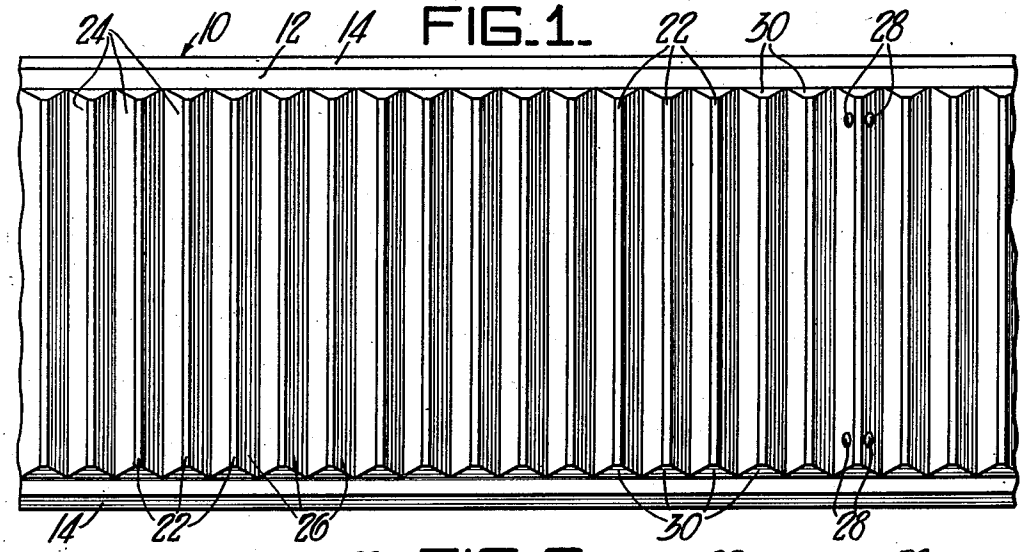


FIG. 2.

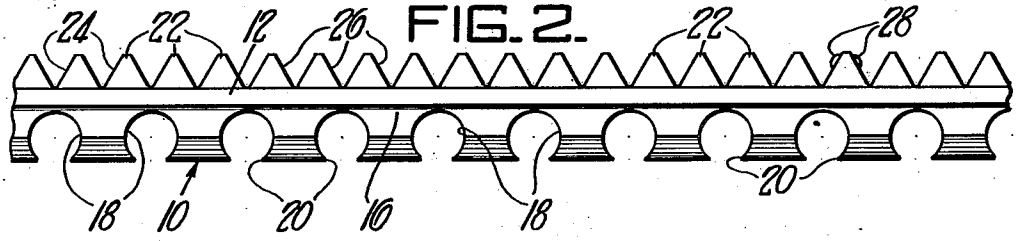


FIG. 3.

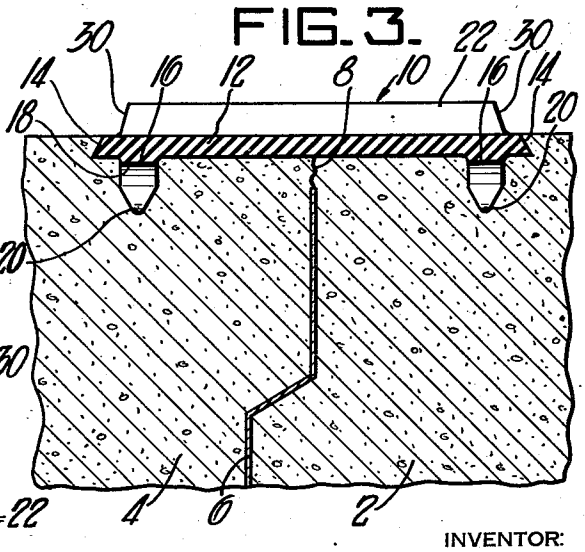
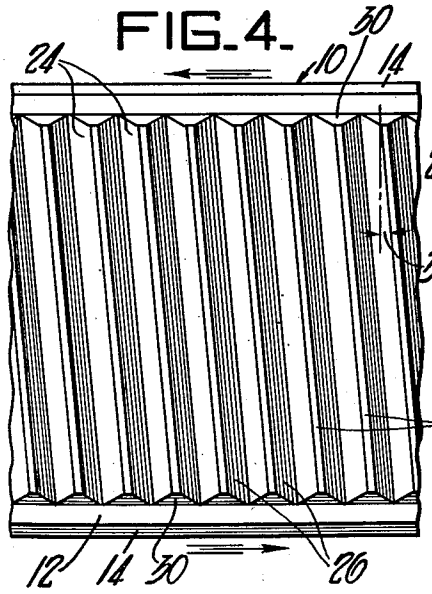


FIG. 4.



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PAVEMENT LANE MARKER

Filed June 14, 1947 2 SHEETS—SHEET 2

FIG. 5.

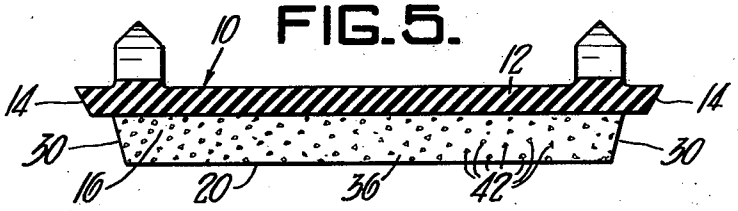


FIG. 6.

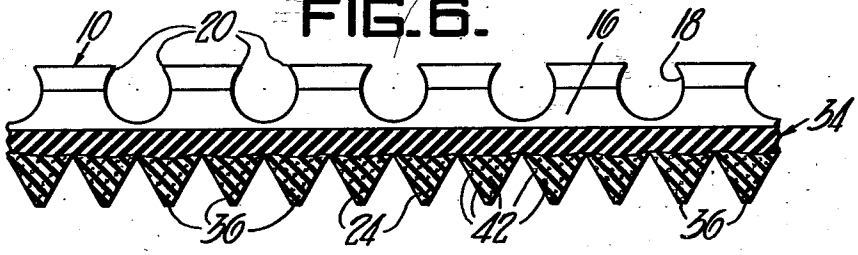
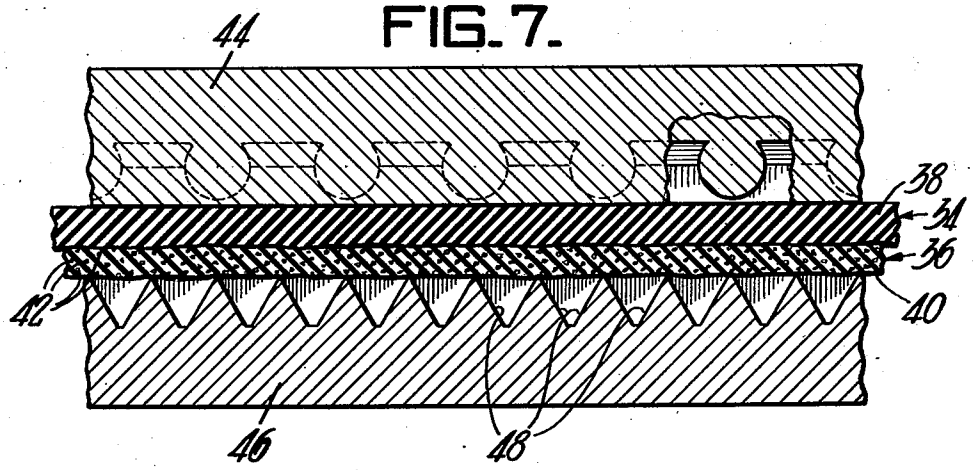


FIG. 7.



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UNITED STATES PATENT OFFICE

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PAVEMENT LANE MARKER

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12 Claims. (Cl. 94—1.5)

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This invention relates to a pavement lane marker and more particularly to such a marker for use between two parallel slabs of concrete. It is generally desirable to separate a highway into specific traffic lanes and this is frequently done by painting lines on the pavement surface. Such lane marking, however, becomes soiled and wears off, thus requiring frequent repainting which is a hazardous task and causes traffic delay. Painted lines cannot be seen at night in the glare of wet roads and transmit no feel or sound when crossed or recrossed. In the making of highways, concrete is poured between road forms and is further divided into lanes having a width equal to that desired for traffic control. These divisions which extend through the thickness of the pavement are generally obtained by use of lane separator plates which break the bond and interlock of the cement and aggregate. A further purpose of these pavement separations is to provide for expansion, contraction and hinge reaction which results from temperature changes and subgrade shifting. In these reactions the separations often open to such extent as to permit surface water, dirt and sand to infilter, this being the principal cause of early pavement failures. In order to overcome such pavement failure it is necessary to keep these separations filled with a poured hot mastic material.

It is an object of this invention to provide a marker with anchoring means which may be installed permanently at the time the road surface is poured.

Another object is to make the marker of rubber or other flexible material so that it can stretch, contract or bond to conform with changes which occur in the underlying surface.

A further object is to provide the marker with a raised rib surface which can be felt and heard when a vehicle passes on or over it.

A still further object is to provide reflecting surfaces on the marker which improves its visibility at night.

It is also an object of my invention to provide a method of making the marker.

These and other objects will be more apparent after referring to the following specification and attached drawings, in which:

Figure 1 is a plan view looking down on the raised rib construction;

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Figure 2 is a side elevational view of the rubber marker showing the anchorage and raised rib construction;

Figure 3 is a cross sectional view of the rubber marker imbedded in a concrete roadway;

Figure 4 is a plan view similar to Figure 1, but showing a slight modification;

Figure 5 is an end view of a further modification;

Figure 6 is a sectional view taken through the center of Figure 5; and

Figure 7 is a sectional view showing one step in the method of making the lane marker.

Referring more particularly to the drawings, reference numerals 2 and 4 indicate two parallel slabs of concrete or the like which, as a safety measure, must be separated to form individual lanes of traffic. Ordinarily, a separator plate 6 is used between the slabs and forms a plane of weakness which causes a crack 8 to form directly thereabove when the concrete contracts. I provide a flexible line marker 10, preferably made of rubber, which is imbedded in the poured concrete before it sets. The marker has a body portion 12 which extends across the joint between the slabs 2 and 4 with the top thereof being in the same plane as the top of the slabs. The longitudinal edges 14 of the body member extend downwardly and outwardly from the joint or crack 8, thus restraining withdrawal of the marker from the slabs. On each side of the joint 8 is a downwardly extending anchoring rib 16, each of which has a plurality of apertures 18 therein which are open at the bottom to form lips 20. The apertures 18 in conjunction with the lips 20 facilitate the flow of the concrete around the ribs to provide good anchorage for the marker. Extending upwardly from the body member 12 are a plurality of transverse substantially V-shaped ribs 22 which provide reflecting surfaces 24 and 26. The surfaces 24 and 26 may be coated with a paint of any color or glass beads 28 may be fastened thereto to increase the reflecting qualities thereof. The ends 30 of the transverse ribs are bevelled downwardly and outwardly. It will be seen that my invention provides a permanent pavement line marker which is readily visible at night because of the reflecting surfaces 24 and 26 and which is also clearly visible during the day. Furthermore, because of the raised

ribs, the driver of the vehicle will both feel a bump and hear a noise when the wheel of his car passes over the ribs. Since the body member 12 extends across the joint 8, no filler is necessary and the slabs 2 and 4 are free to contract and expand. Because of the flexibility of the marker 10, it is possible to bend the marker to follow the curvature of the road.

Figure 4 shows a slight modification of my invention in which the ribs 22 are arranged at a slight angle 32 with respect to a transverse plane through the road. This angle may be of the order of 5° and serves to reflect light more directly back toward the vehicle. This modification will be used only when the lines of traffic on the opposite sides thereof are moving in opposite directions.

Figures 5 to 7 disclose a further modification of my invention and the method of making it. As best shown in Figure 7, the body portion 34 of the marker is made from a sheet of rubber 38 and the V-shaped ribs 36 are made from a second sheet of rubber 40 into which has been milled reflector beads 42, these being generally spherical in shape. After the reflector beads 42 are milled into sheet 40, the sheets 38 and 40 are placed between two mold parts 44 and 46 and pressure and heat is applied thereto to force the beaded sheet 40 into the corrugation cavities 48 and to bond the unbeaded sheet 38 to the sheet 40, thus forming the marker shown in Figure 6. Some of the beads appear on the surface of the corrugations while others show up when the rubber wears and fluxes under car action. The rubber as it comes from the mold is smooth with few beads showing, so that for best results it is necessary to wear away part of the rubber surface to expose more beads. This is ordinarily done by means of a wire brush. In Figure 6 the dividing line between the sheets 38 and 40 is exaggerated to show the flow under molding pressure, but in the cured article there is no segregation at this dividing line. This construction and method enables the expensive beads to be better utilized and to remain imbedded in the rubber. The sheet 38 can be made of a cheaper and/or stiffer rubber than the sheet 40 so that the corrugations can be made of a grade of rubber which withstands wear and flexes freely, this latter being necessary to prevent damage thereto when snow is cleared from the road by a plow blade which is not raised sufficiently to clear the corrugations. If desired, the sheet 40 can be made of white rubber for dark concrete and black for white concrete. It can also be made yellow or red to meet certain code requirements.

While several embodiments of my invention have been shown and described it will be apparent that other adaptations and modifications may be made without departing from the scope of the following claims.

I claim:

1. A flexible pavement line marker for use between two parallel slabs comprising a body member adapted to extend across the joint between the slabs, a pair of downwardly extending longitudinal anchoring ribs one on each side of said body member, transverse substantially V-shaped rubber ribs extending upwardly from said body member, and reflecting beads milled into said ribs.

2. A flexible pavement line marker for use between two parallel slabs comprising a body member adapted to extend across the joint between the slabs, the longitudinal edges of said body member extending downwardly and outwardly, a pair of longitudinal anchoring ribs, one adapted to extend downwardly into the slab on each side of said joint, each of said ribs having apertures therein, said apertures being open at the bottom of the rib, transverse substantially V-shaped rubber ribs extending upwardly from said body member, and reflecting beads milled into said ribs.

3. A flexible pavement line marker for use between two parallel slabs comprising a body member adapted to extend across the joint between the slabs, a longitudinal anchoring rib on each side of said body member extending downwardly into the slab, each of said ribs having apertures therein, said apertures being open at the bottom of the rib, transverse substantially V-shaped rubber ribs extending upwardly from said body member, and reflecting beads milled into said ribs.

4. A pavement line marker comprising a body member, means for anchoring the body member to the pavement, a raised rubber rib surface extending upwardly from said body member above the surface of said pavement, and reflecting beads milled into said rib surface.

5. A pavement line marker comprising a body member, means for anchoring the body member to the pavement, transverse substantially V-shaped rubber ribs extending upwardly from said body member, and reflecting beads milled into said ribs, the ends of said transverse ribs being bevelled downwardly and outwardly.

6. A pavement line marker comprising a body member, a longitudinal anchoring rib on each side of said body member extending downwardly into the pavement, transverse substantially V-shaped rubber ribs extending upwardly from said body member, and reflecting beads milled into said ribs, the ends of said transverse ribs being bevelled downwardly and outwardly.

7. A flexible pavement line marker for use between two parallel slabs comprising a body member made of relatively stiff rubber and extending across the joint between the slabs, a downwardly extending longitudinal anchoring rib on each side of said body member, transverse substantially V-shaped ribs made of relatively soft rubber extending upwardly from said body member, and reflecting beads imbedded in said ribs.

8. The method of making a pavement line marker comprising forming two sheets of rubber, milling reflector beads in one of said sheets, placing the two sheets together in a mold, and applying heat and pressure thereto to bond the sheets together and form substantially V-shaped ribs from the sheet with the reflector beads therein and anchoring means from the other sheet.

9. The method of making a pavement line marker comprising forming a sheet of relatively soft rubber with reflector beads milled therein, forming a sheet of relatively stiff rubber, placing the two sheets together in a mold, applying heat and pressure thereto to bond the sheets together and form substantially V-shaped ribs from the soft sheet and anchoring means from the stiff sheet.

10. The method of making a pavement line marker according to claim 8 in which at least part of the surface of the V-shaped ribs is brushed away to expose part of the beads.

11. The method of making a pavement line marker according to claim 9 in which at least part of the surface of the V-shaped ribs is brushed away to expose part of the beads.

12. A pavement line marker comprising a body member, means for anchoring the body member to the pavement, a flexible rib surface extending

upwardly from said body member, and reflecting beads milled into said rib surface.

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