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(54) **TRAFFIC-CONTROL DEVICE**

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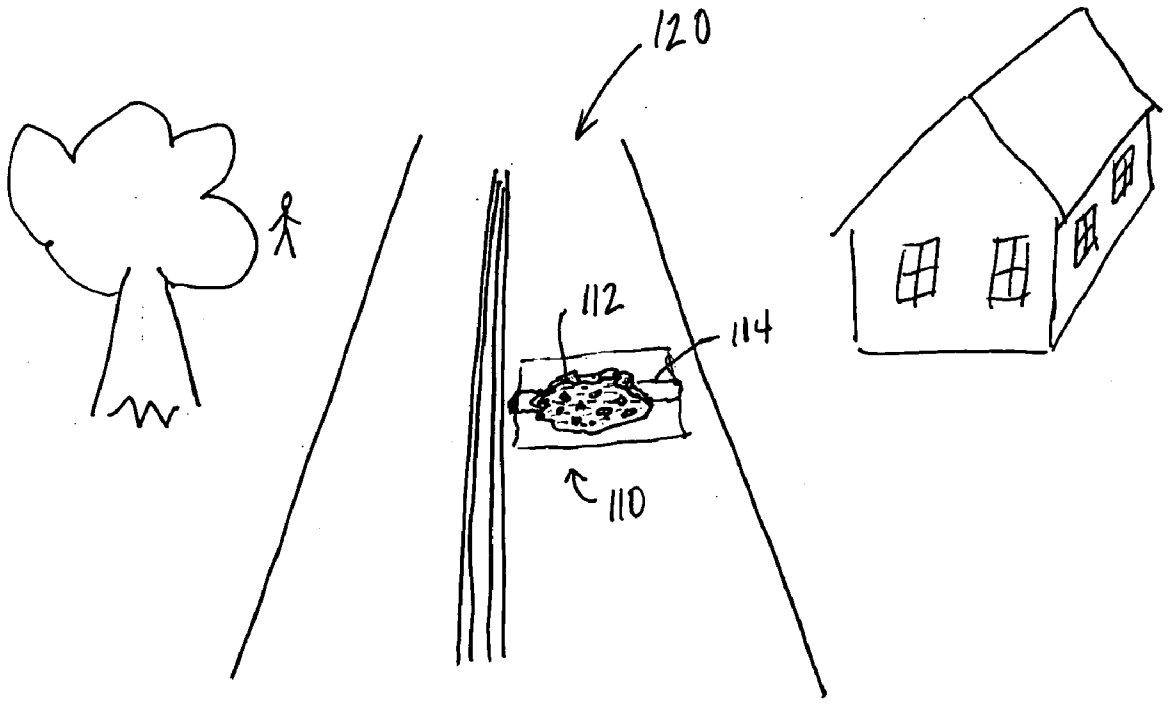
(57) **ABSTRACT**

A traffic control method and device, wherein an optical illusion of a pothole is applied to a roadway to create the appearance of a real pothole. Drivers encountering the illusory pothole will reflexively slow down, thinking it to be real.



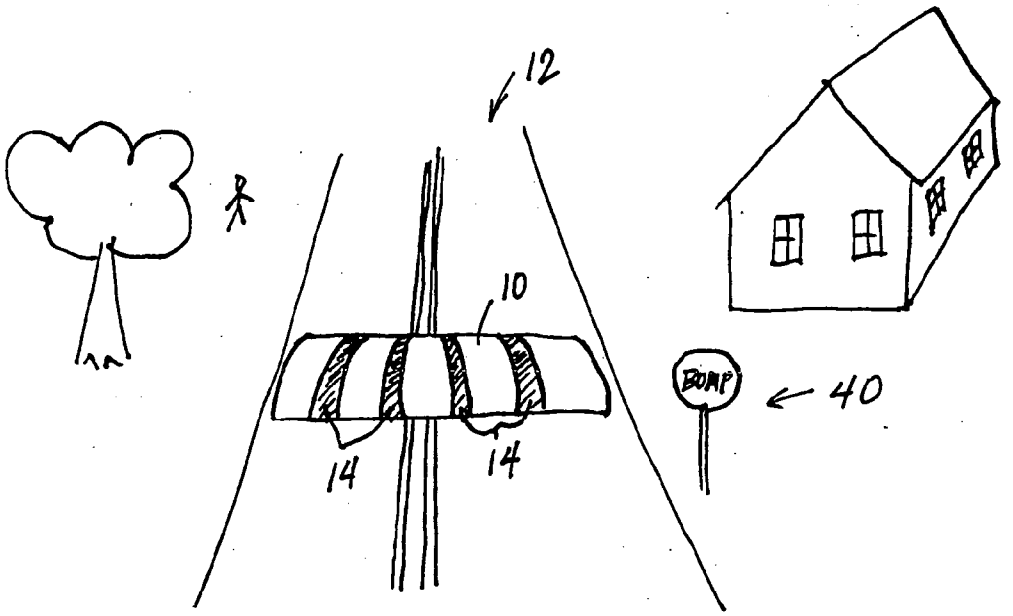


FIG. 1

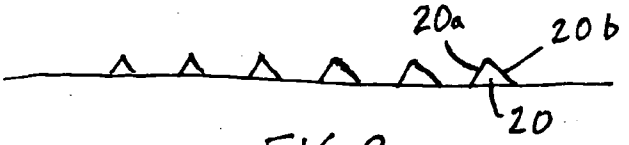


FIG. 2

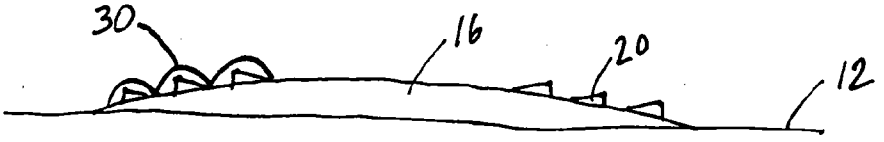


FIG. 3

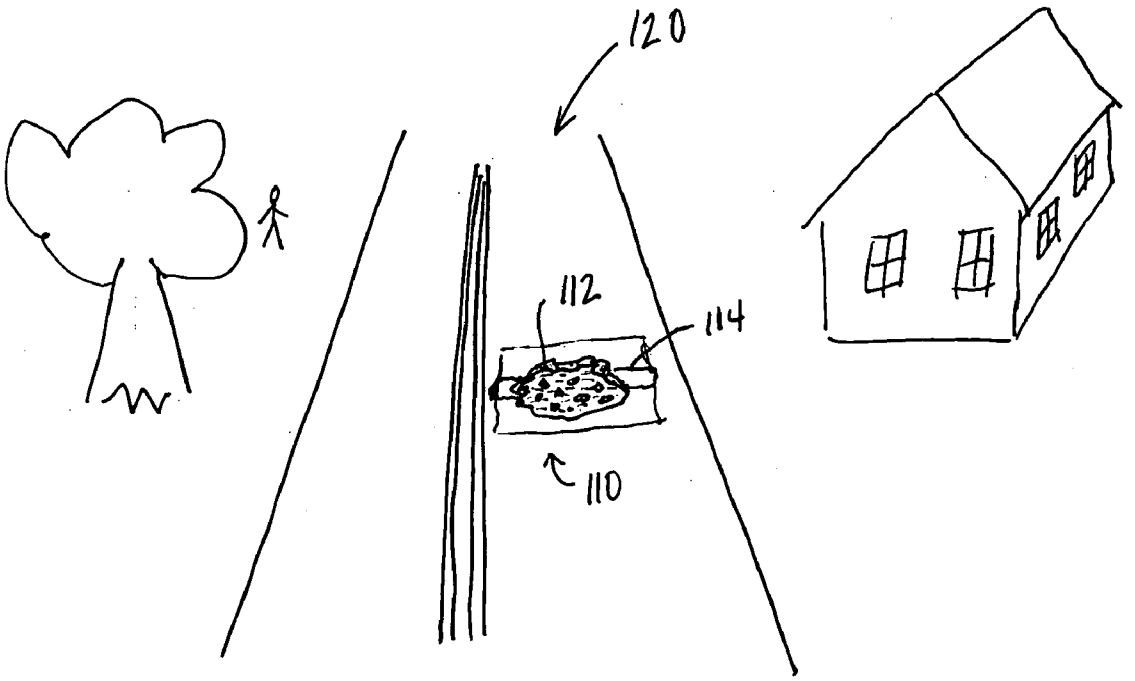


FIG. 4

TRAFFIC-CONTROL DEVICE

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application is a continuation-in-part of U.S. patent application Ser. No. 09/859,179, filed May 16, 2001, which application is incorporated by reference herein.

FIELD OF THE INVENTION

[0002] The present invention relates generally to traffic control methods and devices; and more particularly to a traffic control device that is optically enhanced or simulated.

DESCRIPTION OF RELATED ART

[0003] Traffic speed control devices such as speed bumps or road humps are utilized to discourage speeding in residential neighborhoods. These speed control devices, however, negatively affect even those drivers who are obeying the speed limit yet still must tolerate the discomfort or annoyance caused by bouncing over the speed bump. Repeated travel over speed bumps may also damage a vehicle's suspension or cause accelerated wear of vehicle components. Also, increased traffic noise is often generated as vehicles impact a speed bump, and as vehicles decelerate before a speed bump and accelerate after a speed bump.

[0004] Residents generally do not speed dangerously through their own neighborhood. Rather, the worst offenders of the speed limit laws are often non-residents cutting through a neighborhood, or visitors to the neighborhood. These speeding non-residents are all the more dangerous, as they typically do not know the roadways, traffic patterns or surroundings of a neighborhood as well as do the neighborhood's residents. For example, a non-resident is less likely than a resident to know that neighborhood children play in certain areas along the roadways, increasing the need for driver caution in these areas.

[0005] Thus it can be seen that needs exist for a manner of controlling vehicle speed that causes less inconvenience and annoyance for those persons who are most likely to obey posted speed limits, and that is most effective against speeding by those who are least familiar with the road and surrounding neighborhood. It is to a speed control method and device meeting these and other needs that the present invention is primarily directed.

SUMMARY OF THE INVENTION

[0006] The present invention provides an improved method and device for vehicle traffic speed control. The present invention takes advantage of non-resident drivers' unfamiliarity with neighborhood roadways, without subjecting residents and those familiar with the roadways to undue inconvenience and annoyance. The method and device of the present invention utilize a visually enhanced traffic impediment or a visually created simulated traffic impediment (i.e., an optical illusion) to control vehicle speed. Those unfamiliar with the roadway will not know that an upcoming traffic impediment is visually enhanced or optically simulated, and will slow down as if they were approaching a normal traffic impediment. Those familiar with a neighborhood will come to know which traffic impediments are real and which are optically simulated or enhanced, and will be less inconvenienced thereby.

[0007] In one aspect, the present invention is a traffic control device preferably comprising a portion of a roadway having at least one visually perceptible feature applied thereon, the at least one visually perceptible feature simulating the appearance of a pothole to oncoming traffic.

[0008] In another aspect, the present invention is a method of controlling vehicle traffic speed along a roadway, the method preferably comprising providing a plurality of traffic control devices at spaced apart locations along a roadway, wherein at least one of the traffic control devices comprises at least one visually perceptible feature applied to the roadway, the visually perceptible feature simulating the appearance of a pothole to oncoming traffic.

[0009] In yet another aspect, the present invention is a traffic control device including a portion of a roadway having at least one visually perceptible feature applied thereon, the at least one visually perceptible feature simulating the appearance of a pothole.

[0010] In another aspect, the present invention is a traffic control device including a mat for placement on a roadway, the mat having at least one visually perceptible feature simulating the appearance of a pothole applied thereon.

[0011] In another aspect, the present invention is a method of controlling vehicle speed along a roadway. The method preferably includes applying a traffic control device to a roadway, wherein the traffic control device has at least one visually perceptible feature applied thereon, the at least one visually perceptible feature simulating the appearance of a pothole to oncoming traffic.

[0012] These and other objects, features and advantages of the present invention are described in greater detail herein with reference to example embodiments.

BRIEF DESCRIPTION OF THE FIGURES

[0013] **FIG. 1** is a perspective view of a traffic control device according to an example form of the present invention.

[0014] **FIG. 2** is a side cross-sectional view of a traffic control device according to another example form of the present invention.

[0015] **FIG. 3** is a side cross-sectional view of a traffic control device according to another example form of the present invention.

[0016] **FIG. 4** is a perspective view of a traffic control device according to another example form of the present invention.

DETAILED DESCRIPTION

[0017] Referring now to the drawing figures, wherein like reference numerals represent like parts throughout, example forms of the present invention will now be described. As seen best with reference to **FIGS. 1-3**, one form of the invention is a simulated or optically enhanced speed bump **10** provided on a roadway **12**.

[0018] The simulated or optically enhanced speed bump **10** preferably comprises at least one visually perceptible feature **14** applied on a portion of the roadway, whereby the at least one visually perceptible feature simulates the appearance of a speed bump traffic impediment to oncoming traffic,

or enhances the appearance of an actual speed bump of the roadway. The visually perceptible feature **14** can take a number of forms, such as for example: a portion of the roadway painted to create the optical illusion of a speed bump in the roadway where none actually exists; a painted or printed image applied to an actual speed bump to create the illusion of a speed bump of greater size or steeper impact surface; a decal or printed panel applied to the roadway to simulate or optically enhance an actual speed bump; and/or a laser-generated holographic image simulating or enhancing an actual speed bump. In an example embodiment, the visually perceptible feature(s) **14** is/are printed or otherwise applied on the top surface of a rubber or plastic mat that is placed across the roadway to create the optical illusion of a speed bump. The simulation or enhancement of an actual speed bump can be effected by appropriate selection of the coloring, shading, placement and geometric shapes and sizes of elements of the visually perceptible features **14**, much in the manner of commonly known optical illusions.

[**0019**] In one embodiment of the invention, the one or more visually perceptible features **14** are applied to a generally flat portion of a roadway, and the entire speed control device is optically simulated (i.e., there is no real speed bump). In another embodiment, the one or more visually perceptible features **14** are applied to a portion of the road comprising an elevated portion **16** having a first height, such as a relatively small actual speed bump, and the visually perceptible features optically enhance the bump to create the appearance of a larger speed bump having a second height greater than the first height or a speed bump having a more steeply inclined impact surface (i.e., a nastier speed bump). In still another embodiment, the one or more visually perceptible features **14** are applied to an irregular roadway surface, such as a "rumble strip", which generates some sound and vibration as the vehicle passes over.

[**0020**] The simulated or optically enhanced speed bump **10** preferably presents the appearance of a speed bump (or a nastier speed bump) to oncoming traffic approaching from a first direction along the roadway **12**. More preferably, the simulated or optically enhanced speed bump **10** presents the appearance of a speed bump (or a nastier speed bump) to oncoming traffic approaching from a first direction along the roadway **12** and also from a second direction opposite the first direction. This "two-way" simulation or enhancement is preferably effected by applying the visually perceptible features **14** to opposite first and second faces **20***a*, **20***b* on either side of one or more ridges **20** formed in or on the roadway **12**, as seen with reference to **FIG. 2**. In this manner, traffic approaching the speed bump **10** from a direction facing faces **20***a* will observe the one or more visually perceptible features **14** applied to faces **20***a*, and traffic approaching the speed bump **10** from a direction facing faces **20***b* will observe the one or more visually perceptible features **14** applied to faces **20***b*. Alternatively, two way simulation or enhancement is effected by applying visually perceptible features **14** to first faces of one or more ridges **20** facing in opposed directions, as seen with reference to **FIG. 3**.

[**0021**] In a further preferred and optional embodiment, and with particular reference to **FIG. 3**, a lenticular surface **30** is applied over the one or more visually perceptible features **14** to enhance the image produced thereby. For example, a generally transparent polymeric surface coating comprising hemi-cylindrical or otherwise curved external surfaces are applied over ridges **20** bearing the one or more visually perceptible features **14**, functioning as optical lenses to magnify or otherwise enhance the viewed image of the visually perceptible features.

[**0022**] The invention further comprises a method of controlling vehicle speed along a roadway. The method preferably comprises providing a plurality of speed control devices at spaced apart locations along a roadway. For example, a series of speed control devices can be placed along a roadway, with each speed control device spaced approximately 100 feet from an adjacent speed control device. At least one of the speed control devices in the series of devices is a simulated or optically enhanced speed control device **10**, substantially as described above, comprising at least one visually perceptible feature applied to the roadway. More preferably, the series of devices also includes at least one actual speed bump(s). The actual speed bump(s) and simulated/enhanced speed bumps are preferably intermixed with one another in a random distribution, whereby unfamiliar drivers will not know which are real and therefore will slow down for all of them. The simulated/enhanced speed bumps are most preferably configured to create a similar appearance to that of the real speed bumps. A "bump" sign or other indicator means **40** can be placed on or adjacent the simulated/enhanced speed bump(s) to further enhance the illusion of a real speed bump.

[**0023**] **FIG. 4** shows another embodiment of the invention, wherein the traffic control device **110** simulates the appearance of a pothole or chuckhole **112** forming an impediment to traffic along a roadway **120**. The traffic control device can comprise a portion of the roadway **120** painted to create the optical illusion of a pothole **112** in the roadway; a decal or printed panel applied to the roadway to simulate the appearance of a pothole; a laser-generated holographic image of a pothole projected on the roadway; a photographic image or artistic rendering of a pothole printed, painted or otherwise applied on a rubber or plastic sheet or mat **114** that is placed across the roadway, or any other means of simulating the appearance of an actual pothole in the roadway. The simulation of an actual pothole can be effected by appropriate selection of the coloring, shading, placement and geometric shapes and sizes of elements of the visually perceptible features of the device, much in the manner of commonly known optical illusions.

[**0024**] The simulated pothole is preferably located at a position in the roadway where one or more wheels of a vehicle traversing the roadway will intersect at least a portion of the simulated pothole, and where it would be difficult for drivers to avoid hitting the simulated pothole. For example, the simulated pothole may be located at a position generally between the middle and edge of a designated lane of traffic on the roadway. Drivers of vehicles approaching a pothole in the roadway typically slow down reflexively to minimize impact with the pothole, particularly if the pothole is located in a position where it cannot easily be maneuvered around. Accordingly, this embodiment of the invention, like the speed bump embodiment, takes advantage of drivers' reflexive reaction to slow down upon observing what they believe is an actual traffic impediment. Drivers familiar with the neighborhood, who are more likely to be driving in a safe manner, will learn that the impediment is simulated, and not be inconvenienced thereby. Cut-

through drivers speeding unsafely through a neighborhood are less likely to be familiar with the roadway, and will slow down believing it to be an actual impediment.

[0025] In one form of the invention, the simulated pothole is applied to a generally smooth and even portion of a roadway, and the entire effect of the traffic control device is optically generated (i.e., there is no irregular surface, and the effect on traffic results entirely from the optical illusion of a traffic impediment). In another form of the invention, the simulated pothole is applied to an uneven portion of the roadway, and/or at least a portion of the traffic control device itself has sufficient thickness above the roadway and/or one or more ridges formed therein extending crosswise to the direction of traffic, such that an actual bump is sensed as the vehicle traverses the device, thereby reinforcing the illusion with the sensation of sound and impact.

[0026] The above description and appended drawings are representative of example embodiments of the present invention. The full spirit and scope of the invention, however, is not limited to any particular embodiment or embodiments. Thus, it will be readily apparent to those of ordinary skill in the art that many additions, modifications and deletions can be made to the described embodiments without departing from the spirit and scope of the invention.

What is claimed is:

1. A traffic control device comprising a portion of a roadway having at least one visually perceptible feature applied thereon, said at least one visually perceptible feature simulating the appearance of a pothole.

2. The traffic control device of claim 1, wherein the at least one visually perceptible feature simulating the appearance of a pothole is painted on the roadway.

3. The traffic control device of claim 1, wherein the at least one visually perceptible feature simulating the appearance of a pothole is applied on a mat for placement on the roadway.

4. The traffic control device of claim 1, wherein the at least one visually perceptible feature simulating the appearance of a pothole is applied between a middle portion and an edge portion of a designated lane of traffic on the roadway.

5. A traffic control device comprising a mat for placement on a roadway, said mat having at least one visually perceptible feature simulating the appearance of a pothole applied thereon.

6. The traffic control device of claim 5, wherein at least a portion of said mat has a thickness sufficient to cause the sensation of a bump as a vehicle traverses the device.

7. The traffic control device of claim 5, wherein the at least one visually perceptible feature simulating the appearance of a pothole comprises a photographic image of an actual pothole applied on said mat.

8. A method of controlling vehicle speed along a roadway, said method comprising applying a traffic control device to a roadway, wherein the traffic control device comprises at least one visually perceptible feature applied thereon, said at least one visually perceptible feature simulating the appearance of a pothole to oncoming traffic.

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