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AL LT LV MK RO SI(71) Applicant: **Gerdol, Claudio****34018 S. Dorligo della Valle (TS) (IT)**(72) Inventor: **Gerdol, Claudio****34018 S. Dorligo della Valle (TS) (IT)**(30) Priority: **11.02.1997 IT TS970001****(54) Curbstones with reflecting elements**

(57) The invention may be validly employed in the road sector.

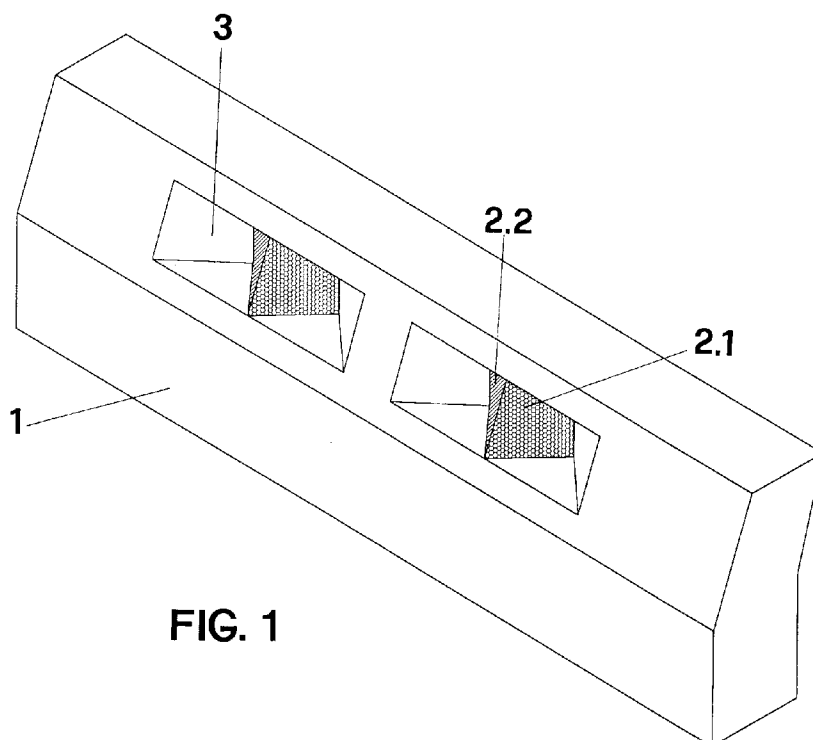
It consists of a curbstone (1) whose road side and top side have light reflecting and/or reflex reflector elements such as reflex reflector plates (2.1, 2.2).

The latter are placed in special recesses (3) and are fixed to the curbstone (1) by means of casting, screws, adhesives, fastening or other common system.

Said elements are placed in recesses (3) in order

to form a plate (2.1) which is as perpendicular as possible to the direction of light coming from the vehicles, whereas a second plate (2.2) may be turned as perpendicularly as possible to the direction of light coming from vehicles travelling in the opposite direction.

The beams of light projected by the head lamps of vehicles hit the plates (2.1) perpendicularly and are thereby reflected towards the front of the vehicle, allowing the driver to see the edge of the road clearly even under conditions of poor visibility.

**FIG. 1****EP 0 921 233 A1**

Description

Technical field

[0001] The invention consists of a curbstone that can be positioned wherever direction indications are required when visibility is low.

Background art

[0002] It is well known that visibility is greatly or altogether impaired in case of fog. Drivers of motor vehicles, motorcycles or bicycles need help to take a bearing of the edge of the road under other conditions such as rain and sleet, etc. as well.

[0003] To reduce these effects and improve drivers' visibility, manufacturers have designed a number of different types of fog lamps which, unfortunately, have yielded limited results so far.

[0004] Institutions responsible for road safety install coloured lamps (yellow or orange) and phosphorescent, reflecting or reflex reflector strips at points of intersection junctions, circles, etc.) to help drivers see the road more clearly. However, there is still the problem of stretches that are not marked with these helpful elements and, unfortunately, this is the case of most road routes. City roads have normal curbstones that simply form pavement edges and mark the bounds of the road surface. At present no curbstone is able to indicate its position under poor visibility conditions or to help in its immediate identification.

Disclosure of invention

[0005] The aim of the invention in question is to offer users a curbstone outfitted with elements to help drivers identify the edge of the road as clearly as possible, even when visibility is poor.

[0006] This aim and others are met by the invention in question which consists of a curbstone of standard or special size and shape, manufactured as a prefabricated block element using suitable material (e.g. reinforced concrete), with light reflecting and reflex reflector elements on the side facing the road and top side.

[0007] These reflex reflector and reflecting elements may be embedded in the curbstone by means of casting (during manufacture) or directly bonded to the curbstone by means of screws, adhesives, fixing or other commonly used method.

[0008] Said elements can also be inserted into special structures which in turn are attached to the curbstone by means of casting, screws, adhesives, fixing or other known method.

[0009] With the exception of casting, it is possible to extract each reflex reflector and/or reflecting element and replace it in case of breakage or wear.

[0010] These elements are fitted into special recesses in the curbstone so that they do not protrude, thereby

preventing them from being dangerous in case of accidents.

[0011] The reflex reflector and/or reflecting elements are placed in said recesses so as to form a face that is as perpendicular as possible to the direction of light emanated from vehicles. A second face should be placed as perpendicularly as possible to the light coming from vehicles driving in the opposite direction. The second face need not be present.

[0012] The number of reflex reflector and/or reflecting elements attached to each curbstone may vary; similarly, their size, shape and colour may also vary.

[0013] The very same curbstone may have reflex reflector and/or reflecting elements of different sizes which may be placed in different order.

[0014] Thanks to the light projected by the head lamps of the vehicles or street lighting which is reflected on the above mentioned elements, the curbstones described above make the edge of the road visible even in case of fog or if there is no street lighting.

Brief description of the drawings

[0015] Further characteristics and advantages of the invention will appear more clearly from the description of certain special methods of execution. These methods are preferable but by no means the sole methods applicable in the case of the curbstones in question. They have been illustrated for purely indicative purposes and not as a limitation in the following drawings in which:

- figure 1 is a perspective view of a curbstone with two refractive elements;
- Figure 2 is a front view of said curbstone;
- figure 3 illustrates a top view of the same curbstone;
- figure 4 is a side view of the same curbstone;
- figure 5 shows the front view of another curbstone based on the invention which has a greater number of reflex reflector elements than the figure above and is of different shape;
- figure 6 shows the front view of another curbstone based on the invention which has four groups of reflex reflector elements that are spaced differently and of yet another shape;
- figure 7 shows the various curbstones surrounding a median strip, one of which is rounded;
- figure 8 illustrates a reflex reflector group support;
- figure 9 illustrates another curbstone outfitted with a reflex reflector element on the top side;
- figure 10 shows the reflection of the light of the head lamps of a car on the reflex reflector elements.

Mode for carrying out the invention

[0016] More specifically, the curbstone 1 in question is equipped with reflex reflector plates 2 inserted in special recesses 3 on the side facing the road and the top side.

[0017] Each group is formed by two reflex reflector plates 2.1 and 2.2, the face of one of which 2.1 is as perpendicular as possible to the direction of the light projected by the vehicles whereas the face of the other plate 2.2 is turned in the direction of the light coming from vehicles travelling in the opposite direction. In the example in question the two plates 2.1 and 2.2 are joined together to form a "V" at as acute an angle as possible.

[0018] Said groups of reflex reflector elements 2 are embedded in the curbstone by means of casting or screwing or special structures such as those illustrated in Figure 8.

[0019] The latter consists of a quadrangular support 4 with a base 4.1 and flanges 4.2.

[0020] One group of reflex reflector plates 2 is fixed into the base 4.1, whereas the flanges 4.2 are fixed to the upper and lower sides of the recess 3 (by means of screws or adhesive).

[0021] In case of breakage or wear it is possible to extract the support 4 from the curbstone 1 and replace the damaged reflex reflector plate group 2 with a fresh piece.

[0022] A curbstone 1 may contain reflex reflector plate groups 2 of various sizes and they may be placed in different order. For example in the curbstone 1 illustrated in Fig. 6, the reflex reflector plate groups 2 are placed asymmetrically so as to indicate that an obstacle to circulation, such as a bend, crossing, etc., is about to come up on the left. The beam of light projected by the head lamps of vehicles hits the plates 2.1 almost perpendicularly and is thereby reflected towards the front of the vehicle, allowing the driver to see the edge of the road clearly.

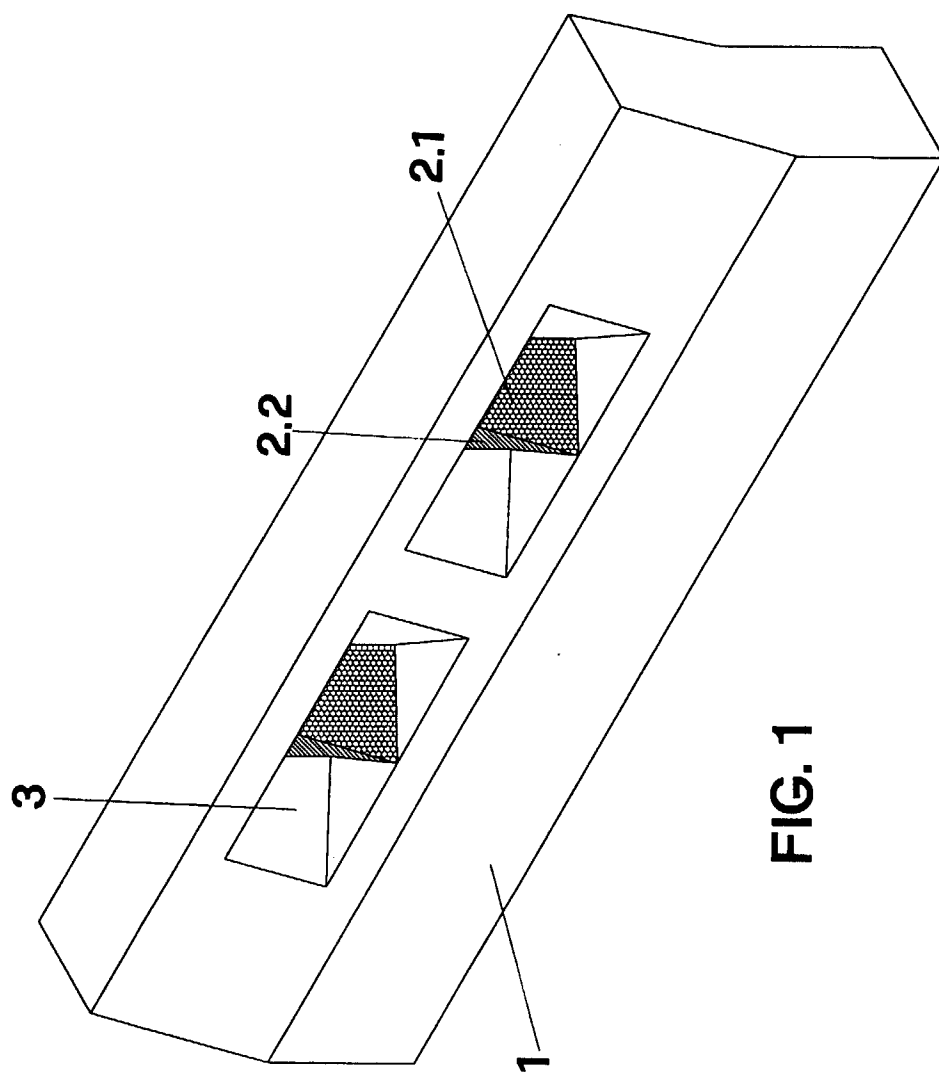
[0023] The invention thus conceived may be varied and modified in a number of ways which all, however, lie within the conceptual sphere of the invention hereof. All details may be replaced by technically equivalent solutions.

Claims

1. Curbstone equipped with reflecting elements manufactured as a prefabricated block element using suitable material, having standard or special size and shape, characterized by the fact that it consists of a curbstone (1) whose road side and/or top side have/has light reflecting and/or reflex reflector elements such as reflex reflector plates (2.1, 2.2); said light reflecting and/or reflex reflector elements are placed in special recesses (3); said reflex reflector and/or reflecting elements may be locked within the curbstone (1) by means of casting (during manufacture) or attached to said curbstone (1) by means of screws, adhesives, fixing or other usual method; said reflex reflector and/or reflecting elements may also be inserted into special structures such as supports (4) having a base (4.1) and flanges (4.2); said

supports (4) are in turn fixed to the curbstone (1) by means of casting, screws, adhesive, fixing or other known system; the reflex reflector and/or reflecting elements are positioned in the above mentioned recesses (3) in such a manner that they form a face (2.1) which is as perpendicular as possible to the direction of the light coming from vehicles, whereas a second face (2.2) may be turned as perpendicularly as possible to the direction of light coming from vehicles travelling in the opposite direction or may be absent altogether.

2. Curbstone, according to claim 1, characterized by the fact that except for the case in which fixing is carried out by casting, each reflex reflector and/or reflecting element can be extracted in order to replace it in case of damage or wear.
3. Curbstone, according to claims 1 and 2, characterized by the fact that the number of reflex reflector and/or reflecting elements can vary; similarly their shape and colour may also vary.
4. Curbstone, according to claims 1, 2 and 3, characterized by the fact that the very same curbstone may contain reflex reflector and/or reflecting elements of different sizes and that these elements can be placed in different order.



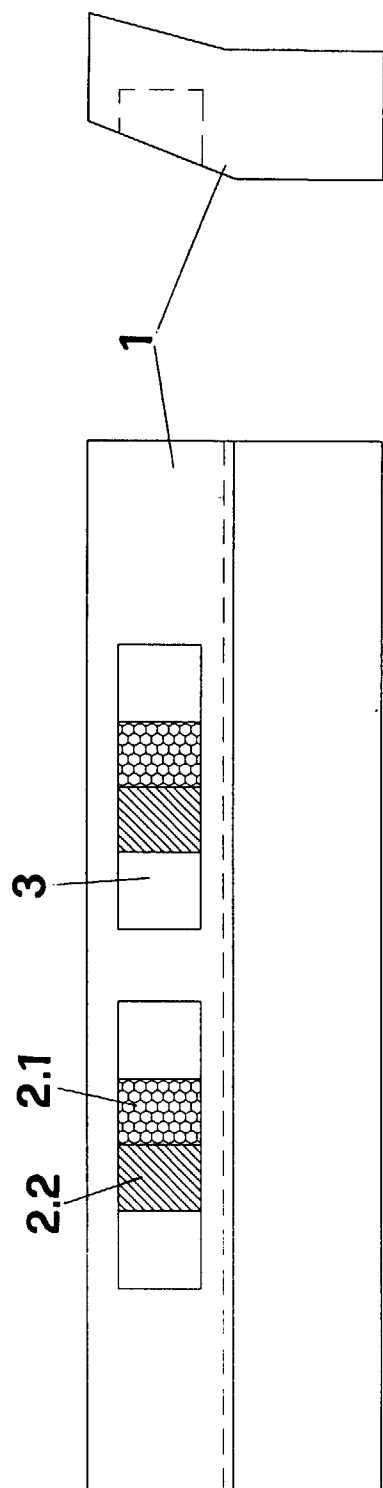


FIG. 2

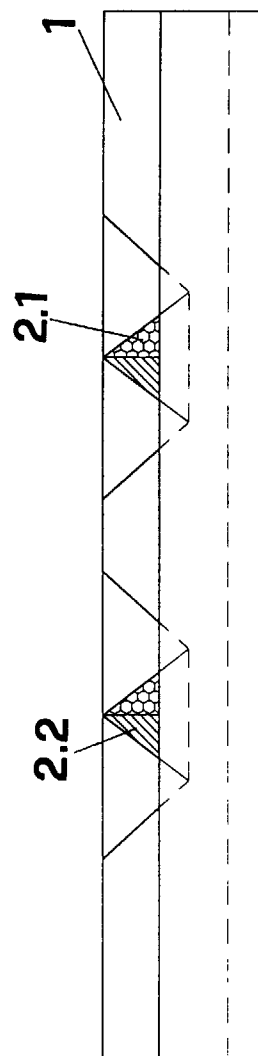


FIG. 3

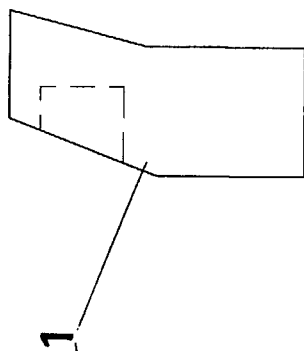


FIG. 4

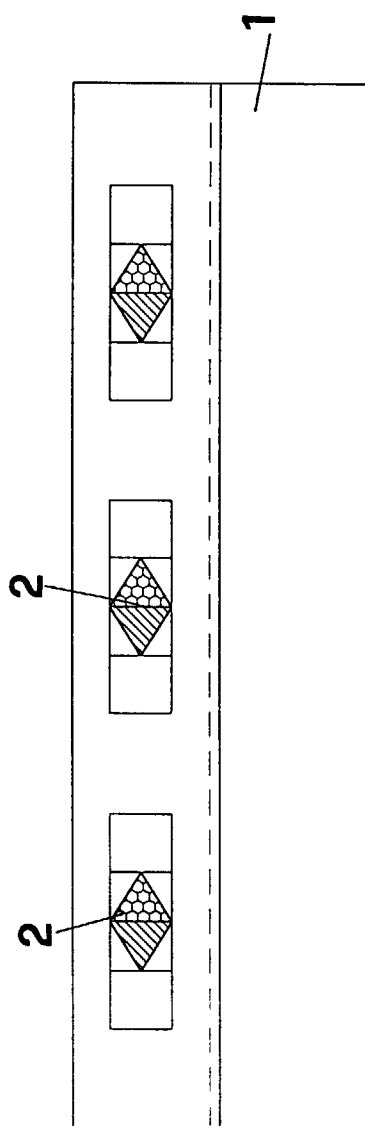


FIG. 5

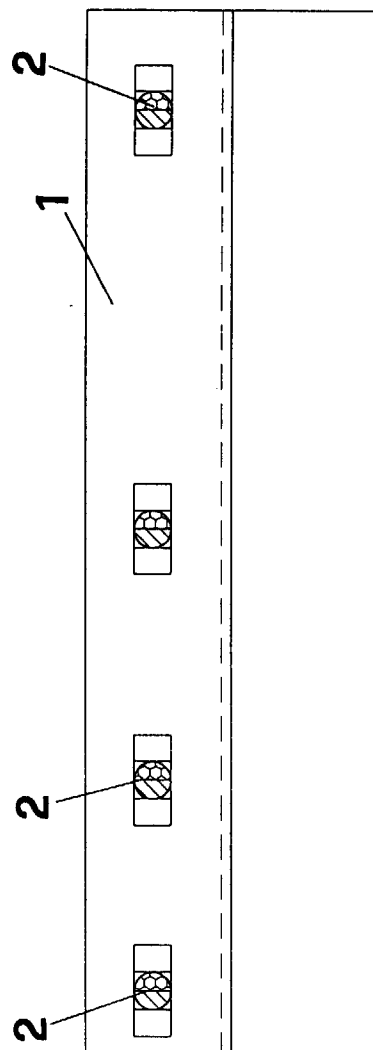


FIG. 6

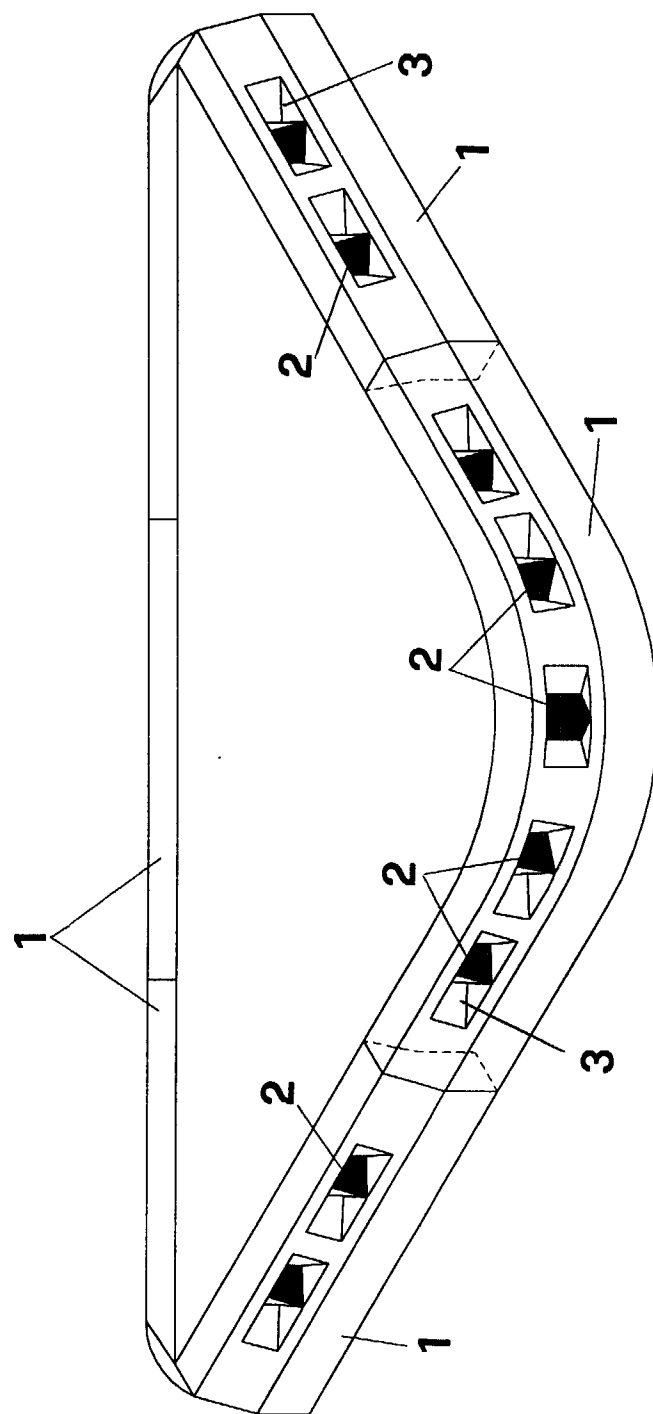
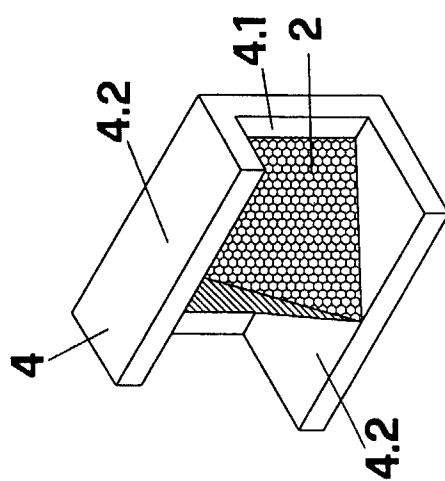
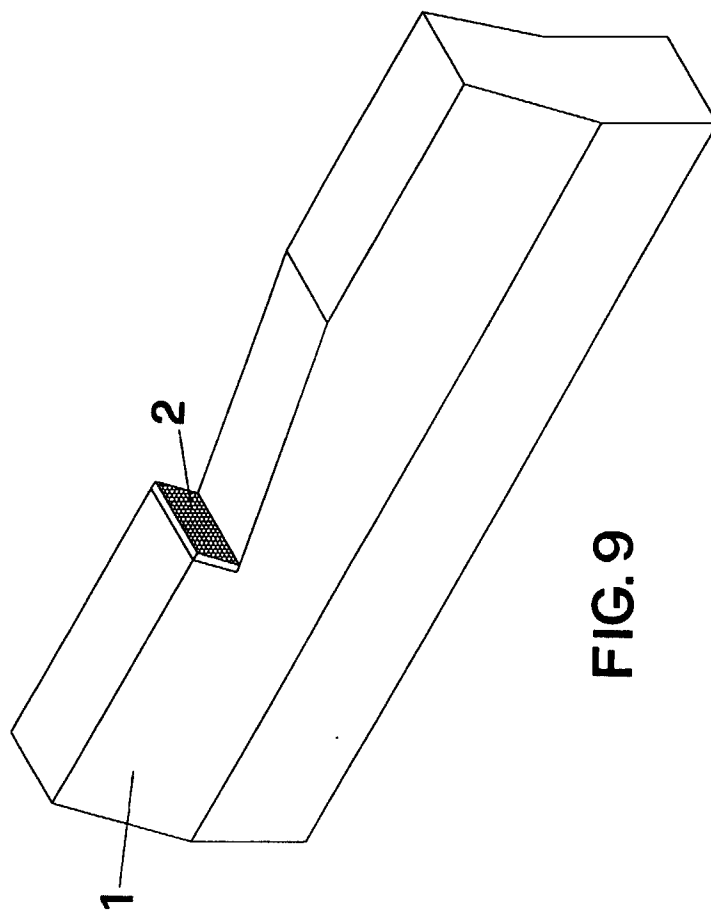


FIG. 7



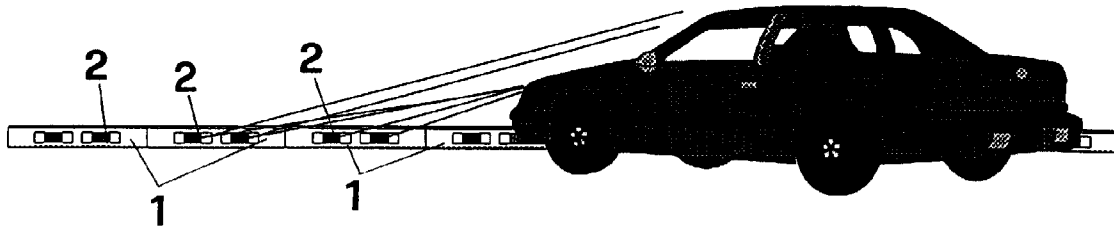


FIG. 10



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EUROPEAN SEARCH REPORT

Application Number
EP 98 83 0058

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	GB 435 804 A (S.T. BOYCE) * page 2, line 39 - line 109; figures * ---	1-4	E01F9/053
X	WO 94 03680 A (GMUNDER FERTIGTEILE) 17 February 1994 * abstract * ---	1-4	
X	GB 2 165 873 A (M. MANBY) 23 April 1986 * abstract * ---	1-4	
X	BE 487 472 A (L. REMACLE) * the whole document * -----	1-4	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			E01F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 28 May 1998	Examiner Verveer, D
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