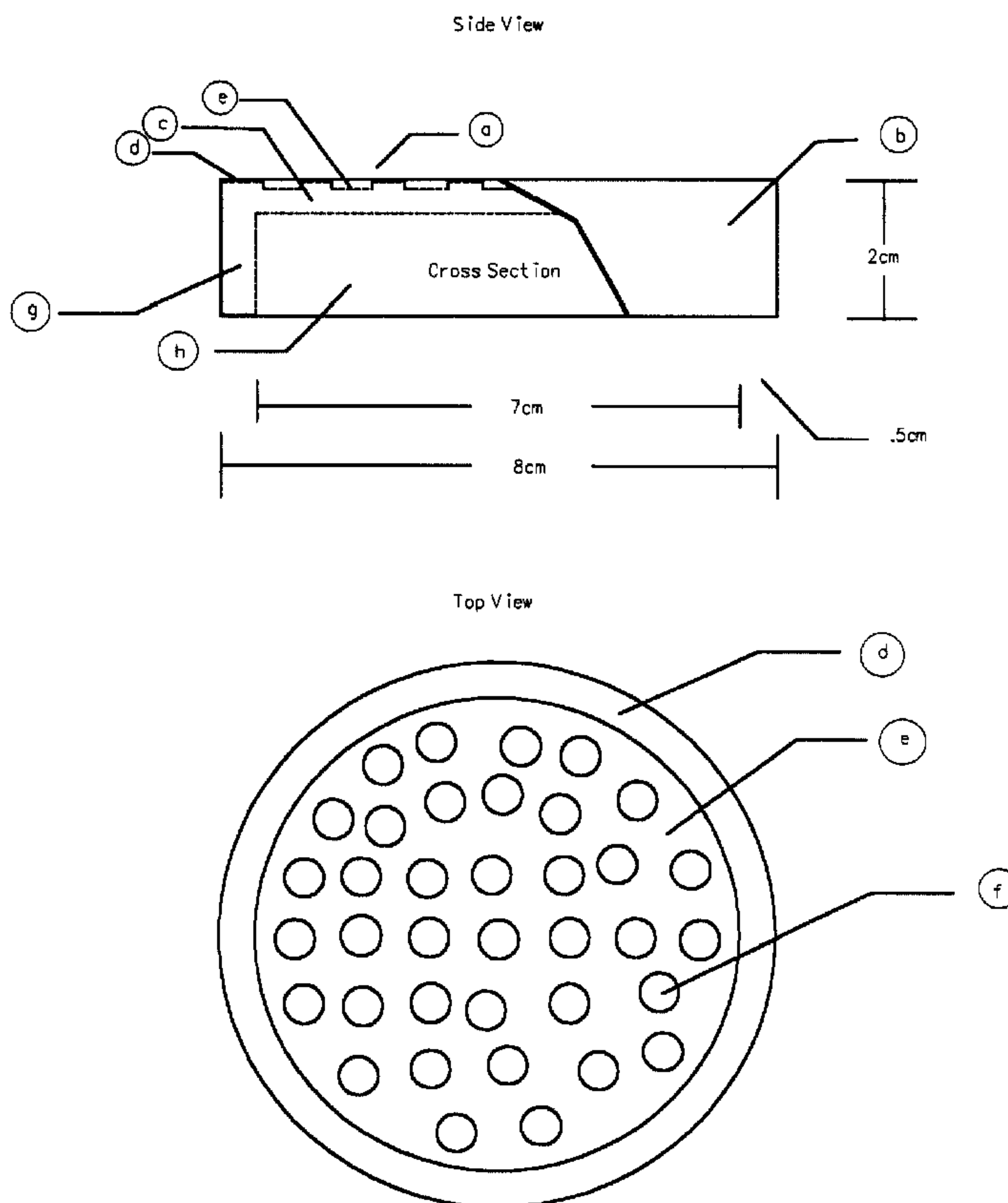




(22) Date de dépôt/Filing Date: 2000/03/24
(41) Mise à la disp. pub./Open to Public Insp.: 2001/09/24

(51) Cl.Int.⁷/Int.Cl.⁷ E01F 9/053
(71) Demandeur/Applicant:
CLEMENT, PAUL RIEL, CA
(72) Inventeur/Inventor:
CLEMENT, PAUL RIEL, CA

(54) Titre : MARQUEUR DE CAOUTCHOUC REFLECTEUR
(54) Title: REFLECTIVE RUBBER MARKER



(57) Abrégé/Abstract:

Apparatus that would serve as a marking unit embedded in the surface of the asphalt or cement. This apparatus would be of a material that would reflect when a beam of light is projecting towards this apparatus. This apparatus would be made of compounds consisting of reflective materials such as micro-beads or reflective paint mostly incorporated in the injection procedure.

Abstract

Apparatus that would serve as a marking unit embedded in the surface of the asphalt or cement. This apparatus would be of a material that would reflect when a beam of light is projecting towards this apparatus. This apparatus would be made of compounds consisting of reflective materials such as micro-beads or reflective paint mostly incorporated in the injection procedure.

Field of the invention

This invention relates to pavement markings added to the road surface. This apparatus would be installed into the surface of the road. This apparatus is best suited to the snow belt regions as to not impede with snow clearing machinery. Pending on the testing this apparatus would probably be a cost effective replacement to the better known reflectors called the cats eyes. In some cases these markers could even replace the line painting altogether.

The need for constant line painting might be reduced dramatically as the marker keep the visibility of the road division clearly visible.

The markers could be made two tone and placed on the roadway to indicate different allowable uses, for instance the marker could be white on the side of vehicles with a clear view of oncoming traffic thus indicating safe passing of another vehicle. The other side of the marker could be coloured in red to indicate no passing from that side of the marker.

It is very common to see reflectors on the pavement in the southern United States. These reflectors are installed on the surface of the pavement angled toward the oncoming traffic. A raised reflector could not be installed in the snow belt regions without being removed on the first day of snow by snow clearing manoeuvres. Installations of a same type of reflectors on

roadways by first digging a trench into the asphalt, this is done by grinding approximately 400 cm long and 2 cm deep. The trench is deep enough to compromise the operation of a motorcycle while taking a turn, the vehicle would shimmy if not totally loose control. The same could be said for any motor vehicle taking a sharp turn this trench puts air under the tires and vibrations.

This trench is filled immediately in winter by cross winds blowing snow into the trench making the reflector impossible to see. Being a trench the snow accumulates and freezes to then turn to ice. This ice can only be removed by applying calcium or more common road salt. The road salt creates a dust in the trench that prohibits the reflector to reflect.

Another problem is that the trench accumulates water, this trench while full of water prohibits the reflector to reflect the light because the beam reflects off the top of the water and not the reflector.

The trench also creates a weak spot in the middle of the traffic lanes, these traffic lanes are usually separated by a flaw in the pavement created by constant heaving due to the weight of the vehicles. This trench makes the pavement even weaker by removing some of the pavement.

This invention would greatly improve on the commonly used product by not having a trench. This apparatus would be installed at the same level of the surface. It would not leave any crevice of hole to accumulate water or to impede with motorcycle operation.

This invention would reflect lights especially well when wet but would not create a puddle of water nor would it weaken the centre of the roadway.

The invention would not need to erode the existing roadway, making a trench takes away some of the mass at the centre thus creating a weak area. This area cracks and lets water access to the lower level, this water expands by freezing and lifts the top layer of asphalt.

This invention could also incorporate a chip or a apparatus to communicate with vehicles. The chip or apparatus would emit a signal telling the driver of an oncoming impediment. This could also be related to mapping or guidance with the vehicle computers.

Background of the Invention

The use of these devices are well known to people who travel south of the border along the Interstates. The reason being that snow clearing equipment in North America would remove any markers now in use in most of the United States. The conventional marker is more like a wedged block that is affixed to the top of the asphalt or cement surface. A conventional snow removing equipment would remove this block from the surface at the first snow fall.

There is another method which consists of digging into the surface in elongated trench of approximately one inch in depth, and placing a reflector at the end of this trench, so that trench acts as a guard for the reflector and gives notice to the driver that he or she is divvying from their lane with a vibration in the steering wheel.

There is a need for the north American roadways to be more visible to the driver, because the application of painted lines is not enough in many cases. The result is fatal crashes in which a vehicle crosses the painted lines because the driver cannot see it, or because he or she just didn't pay attention to the road for a brief

moment and without a vibration or a noise to tell them they are going out of their lane. This is the type of accident that this apparatus can avoid or reduce considerably in North America or other countries with the climate that requires snow clearing, the result is head-on collisions, with very few survivors can be reduced considerably.

There is also another benefit to this apparatus, and that is, it is made of rubber or neoprene, or any other suitable substance which is flexible. This makes the apparatus, if removed or loosened from the surface, not dangerous to motorist, or others, because it is made of flexible materials.

Furthermore, this would be easier to install than the traditional markers. This apparatus is made into a circle. This would require a corer of approximately 3 inches in diameter and would core the centre approximately 3/8 of an inch. A bounding agent would be applied in the cored hole to then install the reflector. This would be a simple operation and one that does not require to position the marker in a special direction, because the apparatus is identical in all directions and can reflect in every position.

There is a great need for devices to help the drivers stay in their lane especially at night and in rainy conditions.

This apparatus differs from other apparatus because its main purpose is to allow all of the benefactors of the other devices and can be used in snow bound regions. other materials would make this marker glow in the dark. This apparatus would be made in a round form as to be installed as a disc flush with the asphalt. This apparatus would also be made of a flexible material, in some cases a rubber compound comprising of different types of neoprene and rubber composites, in a lot of cases this apparatus would be made of neoprene. Other materials could be used in this apparatus, aluminium or iron with a reflective coating painted or glued to the surface would also be possible. Some materials would be mixed together incorporating the reflective substance with the plastic and the rubber. This could be attained by adding microspheres having refractive qualities. This apparatus would be adhered into its prepared road surface. This apparatus would allow the occupants of motor vehicles to see the markings at night and in extreme driving conditions.

This apparatus would also allow snow removal equipment to be operated without concern of removing this apparatus. This apparatus would also help the operators of motor vehicles to stay in there lanes by creating a buzz type sound when they are passing over the said apparatus.

Summary of the Invention

In the accompanying drawings,

Side view of the apparatus with a cut away cross section.

Top view of the apparatus shows a cylindrical shape with small nipples in the centre.

Detailed Description of the Invention

The embodiment as shown Fig A is a cross section view of the marker , these grooves provide a multitude of surfaces that would reflect light from oncoming traffic. These nipples are held in place by a layer seen in Fig C , the layer is adhered directly on the asphalt cupped by Fig G.

Figure B is a side view of the embodiment of the invention, this view shows the side wall as a puck like shape with the hollow interior Fig H. These walls are important to the idea as to prevent the edges from lifting.

Fig D is the rim of the invention, this rim as a collar reinforcing the top of the apparatus. Fig E is the bed with nipples Fig F attached to Fig E .

Claim

1. An apparatus that would allow to visibly reflect lights from motor vehicle in any direction.
2. An apparatus that would allow a micro chip or other to be installed on the surface of the road.
3. An apparatus that would be coloured to indicate oncoming impediments.
4. An Apparatus that would allow snow clearing equipment to clean the surface of the road without removing the apparatus.
5. An apparatus that would allow motorist to hear that they are crossing or riding along the centre or other guidelines.
6. An apparatus that would vibrate the motor vehicle wheels by creating a cavity under the tire.
7. An apparatus that would be easily installed on any highway or roadway.
8. An apparatus that would be easily removed when the road is resurfaced. The apparatus would simply be picked up by the grinder with the surface asphalt being removed.

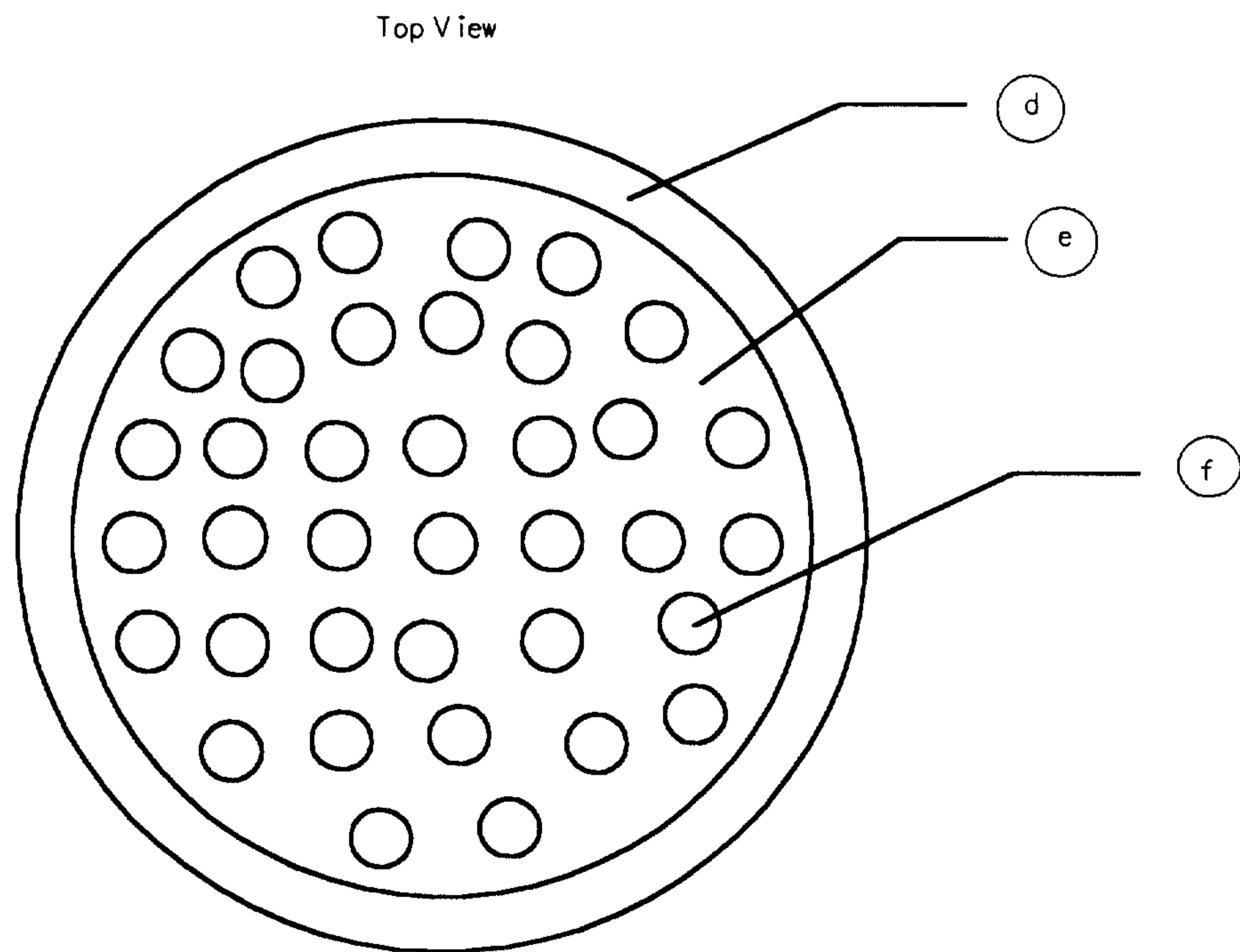
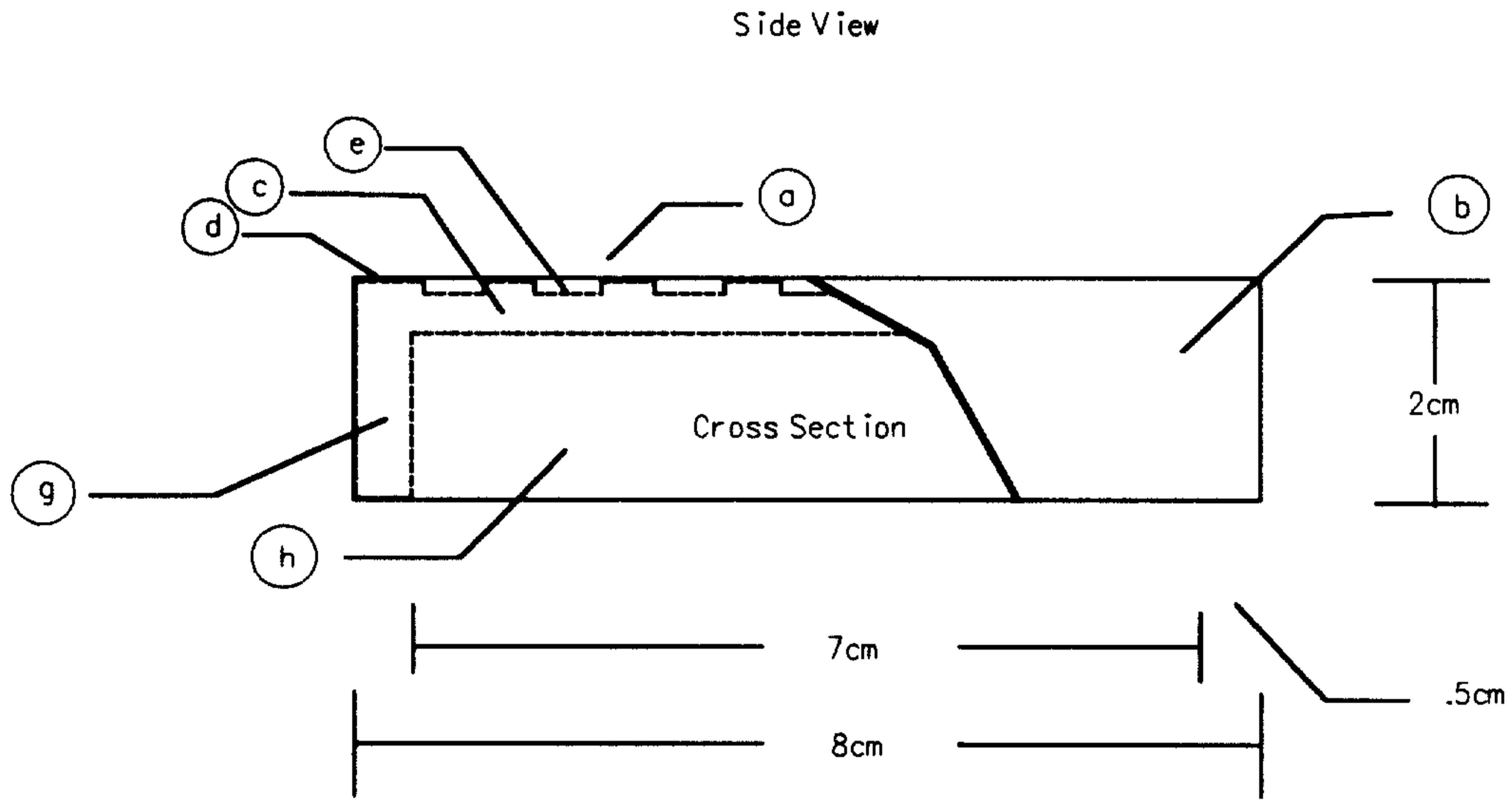
9. An apparatus that would not be dangerous to motorist if it ever got pulled out of its excavated hole. The reason being that the marker is made of flexible rubber only and that it is made round so it would simply roll off the street..

10 An apparatus that would incorporate reflective material for the use of motor vehicle.

11 An apparatus that would not impede with the control of a motorcycle.

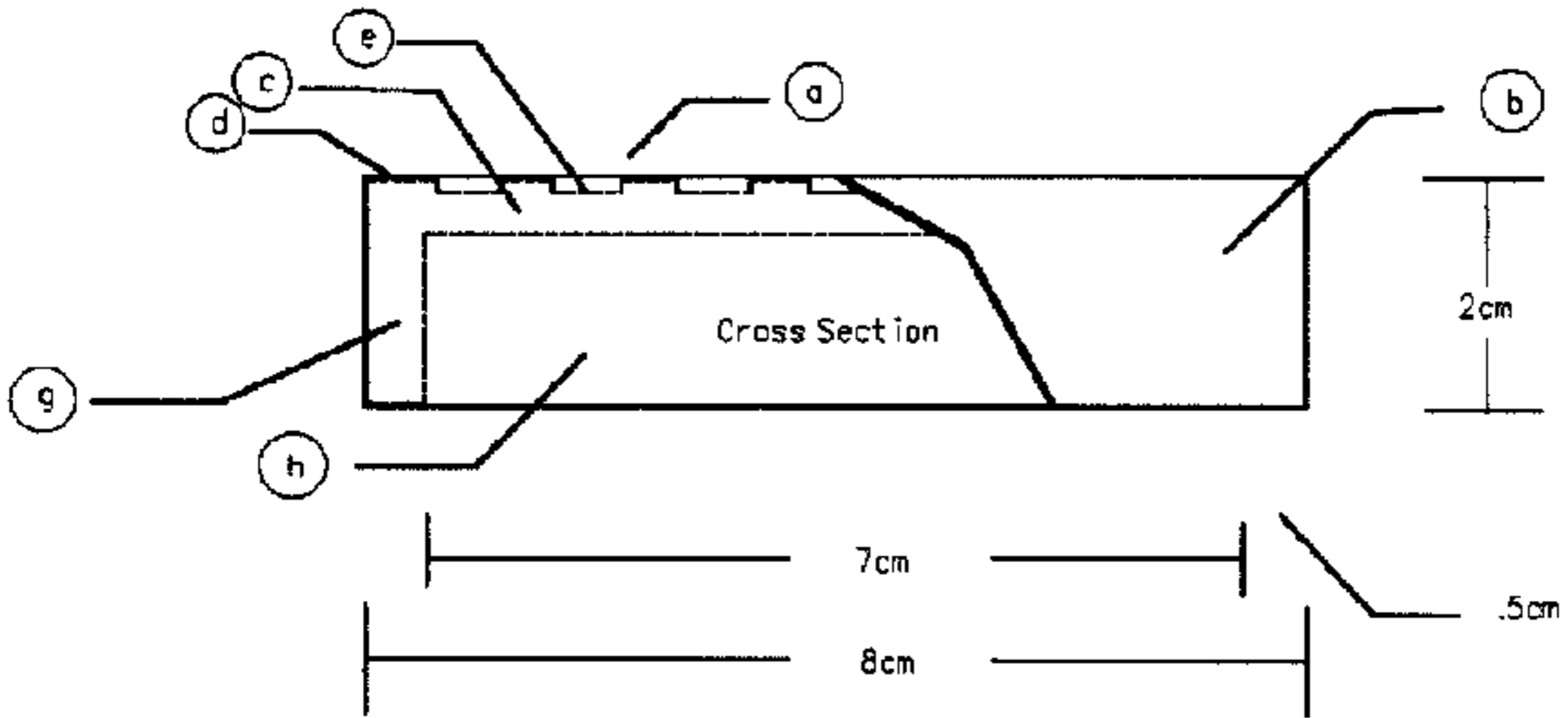
12 An apparatus that would not weaken the road surface.

13 An apparatus that would last longer then a traditionally used painted line.



Drawing of Reflective Marker
Paul Riel Clément
Patent Application Date

Side View



Top View

