

**DEVICE FOR DETECTION OF OBSTACLES INWITH A HORIZONTAL
PLANE AND DETECTION METHOD IMPLEMENTING SUCH A DEVICE**

The invention relates to an obstacle detection device arranged on a mobile vehicle and applies in particular to the field of navigation. The invention
5 also relates to an obstacle detection method employing such a device.

When a mobile vehicle such as a robot is moving around, it is desirable to avoid any collision between the mobile vehicle and an obstacle situated in the environment in which the mobile vehicle is moving, for example in order not to damage the mobile vehicle and/or the obstacle.

10 For any mobile vehicle and, therefore, also for a robot able to move, it is very important to take into account the safety of the mobile vehicle and of the elements in its environment. The safety of the vehicle and of the elements in its environment notably includes detecting obstacles in the environment and avoiding collisions with these obstacles. There are various techniques for
15 avoiding collisions. Most of these techniques involve significant implementation costs and require significant computation power in order, for example, to determine the position of the robot in a certain frame of reference. Other existing techniques are very expensive and are therefore not suited to use in a robot.

20 The invention seeks to alleviate all or some of the problems mentioned hereinabove by proposing a device for detecting obstacles situated in the environment of a mobile vehicle and a method employing such a device.

To this end, one subject of the invention is an obstacle detection device intended to be fitted to a mobile vehicle able to move parallel to a reference
25 plane, characterized in that it comprises:

- a first emitter referred to as a horizontal emitter of a first horizontal electromagnetic beam extending in a first virtual plane substantially parallel to the reference plane,