Transportation vehicle elevated to allow other vehicles to pass under it

The present invention relates to a mass transportation vehicle containing a passenger compartment and rolling on a pair of rails (11,12) along a first edge of an existing road. This mass transportation vehicles can proceed above other vehicles thanks to its carrier legs (8), a rail (12) laid specially for the vehicle on a second edge of the road and a rig way (14), so that it can roll without being affected from the existing traffic and without interfering to other vehicles around it.
This invention relates to mass transportation vehicles and more particularly to such vehicles used as streetcars.

Special rail systems and different systems designed to meet special needs have been in use for railroad transportation as a mass transportation system. A basic example of prior art is semi-rail suspended systems between different heights.

Many studies and developments were conducted in the field of the present invention. For example, US 3,861,315 relates to a mass transportation system consisting of a railroad trackway designed in the form of an inverted U and high enough to allow vehicles to pass under it, which rolls by means of a device installed on said trackway. Although said system provides the advantage of space saving, it is far from being a preference as it is difficult and expensive to be built. Furthermore, it is difficult to ensure said system to be safe for operating purposes in addition to the complexity thereof.

Another similar invention is described in US 3,890,904, which relates to a mass transportation vehicle rolling on an overhead trackway elevated by means of columns and occupying no space on the ground level. However, said system is also not preferred as it is also difficult and expensive to be built. Further, the additional difficulties described for the first prior art above are valid for this reference too.

The mass transportation vehicle presented in this invention provides a new system, which advances on an overhead plane elevated from the ground by means of support legs in such a manner to move by or above other vehicles without causing any traffic congestion. Furthermore, the present invention can be put in service without having to make considerable investment and to spend considerable time for building, unlike the underground and streetcar transportation systems described in prior art and being used in the present.

The general object of this invention is to provide a mass transportation vehicle which can proceed without being affected from the existing traffic, especially in areas where traffic is heavy and congested.

Another object of the present invention is to provide a vehicle which can provide mass transportation services without interfering to the existing traffic of other vehicles thanks to the relatively small space it occupies.

Another object of the present invention is to provide a mass transportation vehicle which costs less and which is easier to be installed compared to alternatives.
A mass transportation vehicle as defined in Claim 1

3.  A mass transportation vehicle as defined in Claim 1 wherein it comprises at least one rig wheel (16) located under a rig arm (9).

4.  A mass transportation vehicle according to the present invention is able to carry passengers by a solution in which a relatively small space of existing roads is occupied by a relatively small investment program. Thus it provides an intermediary solution for critical road connections where heavy traffic is present.

5.  Thanks to its carrier leg (8) and rail system, the mass transportation vehicle which the present invention relates consists of two compartments built on top of each other. The upper compartment (4) is wider than the second compartment (5). Thus this vehicle occupies a minimum surface area on the road on the one hand, and can carry a considerable number of passengers as well in its much wider upper compartment. Since the upper compartment's (4) protrusion towards the road is higher than other vehicles such as automobiles, pickup trucks and minibuses, said vehicles will be able to pass under this mass transportation vehicle. Thus it will not have a negative impact on traffic.

6.  Provision of balance bears a special importance for the system presented in this embodiment. Balance is provided by both the lateral piston system (7) and the rig arm (9) moving on an additional rail positioned along a linear room (15) lowered at a certain alignment from the standard ground height. Said structure is of vital importance in terms of stabilization of the center of gravity and to balance lateral forces arising due to the asymmetrical structure of the car. Rail systems to be used for this embodiment can be equipped with rig ends moving on a groove of the road as in traditional railroad systems.

Claims

1.  A mass transportation vehicle containing a base compartment (5) moving on at least one rail (12) laid along a first edge of a road for vehicle traffic characterized in that said mass transportation vehicle comprises:

   a. an upper compartment (4) larger than said base compartment (5) in volume and integrated thereto,
   b. at least one carrier leg (8) moving simultaneously with said base compartment (5) on a rail (12) laid along a second road edge and connected to said upper compartment (4), and
   c. at least one rig arm (9) moving along an underground groove (15) on said at least one rail system (12).

2.  As shown in Figure 3, barriers (3) are installed at the right side of the carrier wheels (1) and left side of the second compartment (5) along the rails (12, 11) at approximately the same height as a sidewalk. Thus other vehicles are prevented from gaining access to the road used by the mass transportation vehicle. Said barriers can made of round iron bars laid at intervals or of curved steel plates.

3.  The engine of the mass transportation vehicle can be either installed in the second compartment (5) or in the upper compartment (4), so that the driving force thereof can be transferred to the front or rear set of wheels.

4.  The left-hand row of the wheels (2) driving the mass transportation vehicle as shown in Figure 5 might be wheels rolling on a rail (11) or directly on the paved surface of a road.

5.  Thanks to its carrier leg (8) and rail system, the mass transportation vehicle which the present invention relates consists of two compartments built on top of each other. The upper compartment (4) is wider than the second compartment (5). Thus this vehicle occupies a minimum surface area on the road on the one hand, and can carry a considerable number of passengers as well in its much wider upper compartment. Since the upper compartment's (4) protrusion towards the road is higher than other vehicles such as automobiles, pickup trucks and minibuses, said vehicles will be able to pass under this mass transportation vehicle. Thus it will not have a negative impact on traffic.

6.  Provision of balance bears a special importance for the system presented in this embodiment. Balance is provided by both the lateral piston system (7) and the rig arm (9) moving on an additional rail positioned along a linear room (15) lowered at a certain alignment from the standard ground height. Said structure is of vital importance in terms of stabilization of the center of gravity and to balance lateral forces arising due to the asymmetrical structure of the car. Rail systems to be used for this embodiment can be equipped with rig ends moving on a groove of the road as in traditional railroad systems.

7.  A mass transportation vehicle containing a base compartment (5) moving on at least one rail (12) laid along a first edge of a road for vehicle traffic characterized in that said mass transportation vehicle comprises:

   a. an upper compartment (4) larger than said base compartment (5) in volume and integrated thereto,
   b. at least one carrier leg (8) moving simultaneously with said base compartment (5) on a rail (12) laid along a second road edge and connected to said upper compartment (4), and
   c. at least one rig arm (9) moving along an underground groove (15) on said at least one rail system (12).
4. A mass transportation vehicle as defined in Claim 1 wherein it comprises a sleeper (13) in which said rig wheel (16) move.

5. A mass transportation vehicle as defined in Claim 1 wherein it comprises at least one connection arrangement between an additional upper passenger compartment and the main upper passenger compartment (4) by way of opening the covers (17) for operation in the form of a train.

6. A mass transportation vehicle as defined in Claim 1 wherein it comprises barriers (3) installed around said rails in order to prevent other vehicles from proceeding in alignment with the rail system of this mass transportation vehicle.

7. A mass transportation vehicle as defined in Claim 6 wherein said barriers (3) are made of round iron bars laid at intervals or curved steel plates.

8. A mass transportation vehicle as defined in Claim 1 wherein it comprises wheels (2) providing movement and connected to the passenger compartment (5).

9. A mass transportation vehicle as defined in Claim 8 wherein said wheels (2) are designed to roll on a rail or directly on the paved surface of a road.

10. A mass transportation vehicle as defined in Claim 1 wherein it contains at least one piston (7) connecting said upper compartment (4) with said carrier leg (8) in order to ensure the vehicle to adapt to widening or narrowing roads, and a piston rod (6) providing balance.

11. A mass transportation vehicle as defined in Claim 1 wherein the second compartment (5) or the upper compartment (4) houses an engine providing driving force for this mass transportation vehicle and transferring its driving force to the front or rear set of wheels.
### DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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**TECHNICAL FIELDS SEARCHED (IPC)**

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The present search report has been drawn up for all claims.
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For more details about this annex: see Official Journal of the European Patent Office, No. 12/82
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