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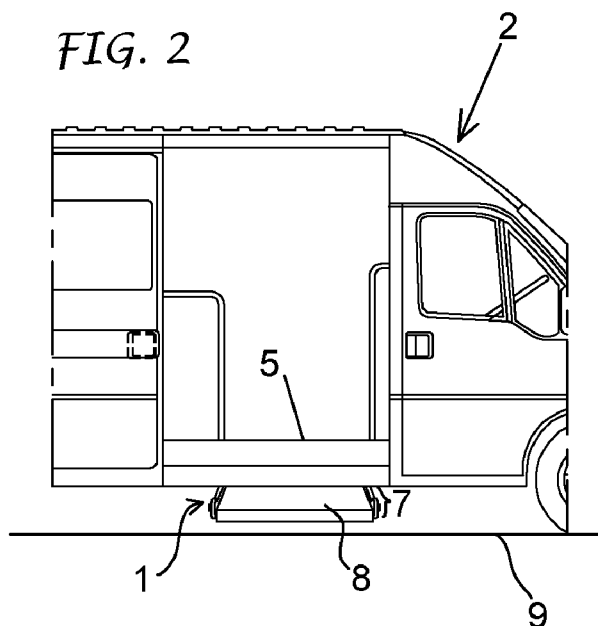
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(54) Title: METHOD FOR CONTROLLING THE AUTOMATIC SLIDING OF A TELESCOPIC RAMP, TELESCOPIC RAMP AND VEHICLE COMPRISING SUCH RAMP



(57) Abstract: In a first aspect the present invention refers to a method for controlling the automatic sliding of a telescopic ramp in a vehicle used for transporting wheelchairs for disabled and/or transporting people partially able to move, so that said telescopic ramp can partially extend for constituting an intermediate step between the floor of the vehicle and the ground, or it can fully extend to constitute a platform adapted to accommodate one of said wheelchairs for the disabled and then be lowered to the level of the ground. In a second aspect, the invention refers to the above described telescopic ramp. In a third aspect, the invention refers to a vehicle used for transporting wheelchairs for the disabled and/or transporting people partially able to move comprising a housing compartment located at the floor of the vehicle along a side adapted to accommodate the above described telescopic ramp.

METHOD FOR CONTROLLING THE AUTOMATIC SLIDING OF A TELESCOPIC RAMP, TELESCOPIC
RAMP AND VEHICLE COMPRISING SUCH RAMP

DESCRIPTION

Field of the invention

The present invention relates to a method for controlling the automatic sliding of a telescopic ramp, a telescopic ramp itself and a vehicle comprising such ramp. In particular, the present invention relates to a method for controlling the automatic sliding of a telescopic ramp having the function of facilitating the ascent and descent from a vehicle of wheelchairs for the disabled or people partially able to move, and further it refers to the telescopic ramp itself and a vehicle comprising the same.

State of the Art

Typically, the vehicles, such for example vans or the like, used for collectively transporting people not able to move (hereinafter denoted "disabled" for convenience) and wheelchairs used by the disabled themselves for the movements, are provided in their rear part with a mobile ramp. Such a ramp, when is not used for the ascent and descent of the wheelchairs, that is during the movement of the vehicle itself, is typically arranged in a housing compartment located in a floor portion in the

rear part of the vehicle. When it is used, it is automatically removed from the housing compartment, so to protrude rearward of the vehicle, it is extended in its full length to be adapted to
5 accommodate a wheelchair on it, and lowered to the level of the ground. This way the wheelchair with the disabled on board can descend from the vehicle. Similarly, the ramp is used for the ascent of the wheelchair and then it is returned in the housing
10 compartment, before closing the hatchback to allow the vehicle to leave and travel safely.

However, with this solution there is the drawback of having to follow a highly specific order in the ascent and descent operations of the
15 wheelchairs from the vehicle. In fact, since the ramp is located at the hatchback of the vehicle, due to bulk reasons of the wheelchairs themselves, the wheelchair ascended on board of the vehicle last has to descend first, exchanging the positions among
20 wheelchairs inside the vehicle, in proximity of the hatchback, not being possible at all. Further, people not needing the wheelchair to move but still having motor impairments and therefore difficulties in ascending and descending from the vehicle
25 (hereinafter denoted as "people partially able to move"), despite not needing to use the same ramp used

by the wheelchairs, still need a device facilitating their ascent and descent from the vehicle.

There is therefore a need of providing a practical system which allows, on one hand, the descent from a vehicle used for transporting the disabled and the wheelchairs they use independently from the order said disabled had been taken on board of the vehicle and, on the other hand, which facilitates the descent and the ascent from/ onto said vehicle of people partially able to move.

Summary of the invention

The Applicant observed that, prearranging a telescopic ramp at the opening/closing door on a side of the vehicle used for transporting disabled and wheelchairs used by them, the spaces inside the vehicle itself can be used at said door to be able to choose the descent order among more wheelchairs (and respective disabled occupying such wheelchairs) present inside the vehicle. Further the Applicant also observed that it is suggested providing such a vehicle with a device that facilitates the descent and ascent of people partially able to move, for whom the height difference from the floor of the vehicle to the ground is too challenging for their motor skills.

Therefore, the Applicant addressed the problem of providing a method for controlling the automatic

sliding of a single telescopic ramp adapted to solve the above mentioned problems.

Therefore, in a first aspect the present invention provides the method indicated in claim 1.

5 In particular the method according to the present invention for controlling the automatic sliding of a telescopic ramp in a vehicle used for transporting wheelchairs for the disabled and/or transporting people partially able to move, comprises
10 the steps of:

a) causing a part of said telescopic ramp to come out from a housing compartment adapted to accommodate said telescopic ramp in the resting position, said housing compartment being at the floor
15 of said vehicle along a side of the vehicle itself; and

b1) partially sliding said telescopic ramp up to a first predefined stop point, anyway corresponding to an incomplete extension of the ramp, so that the
20 ramp in said stop point is extended so to constitute an intermediate step between the floor of said vehicle and the ground on which the vehicle is rested; or, alternatively,

b2) sliding said telescopic ramp up to its full
25 extension, aligning said telescopic ramp fully extended substantially with the level of said floor of the vehicle and with the level of the ground on

which said vehicles is rested (not necessarily in this order) so that the telescopic ramp can accommodate one of said wheelchairs for the disabled and allow their ascent or descent on/from the
5 vehicle.

Advantageously the vehicle can be provided with only one telescopic ramp also acting as a concealed step along a side of the vehicle. The operator is able to choose whether to use the telescopic ramp as
10 a step to allow a more comfortable descent to people partially able to move in the first case (b1), when the extension of the telescopic ramp is interrupted at a predefined stop point so that only a portion of telescopic ramp comes out from the relevant housing
15 compartment, or as a platform wherein to locate a wheelchair for the disabled to allow their descent and ascent from the vehicle used for their transportation in the second case (b2), when the extension of the same telescopic ramp is ended as to
20 fully come out from the relevant housing compartment.

Furthermore, there is also the advantage that, being the telescopic ramp located along the side of the vehicle, at the side opening/ closing door, a space inside the vehicle can be exploited, at said
25 door, which can be reached by one of a plurality of wheelchairs on board of the vehicle. This way the descent order of the wheelchairs from the vehicle can be

be chosen, without the need of first coming out the last ascended wheelchair, as in the case of a ramp installed in proximity of the hatchback of the vehicle, where there are not maneuvering spaces.

5 With the expression "in resting position" is intended the position wherein said telescopic ramp is fully located inside said housing compartment and it is not used to facilitate the ascent and descent of the wheelchairs for the disabled from the vehicle
10 and/or the people themselves, that is, for example, during the motion of the vehicle itself.

Preferably, said coming out of said telescopic ramp from the relevant housing compartment occurs after the opening of the vehicle door.

15 More preferably, said coming out of said telescopic ramp occurs by mechanical, hydraulic or electric opening of the housing compartment and subsequent sliding of the telescopic ramp; more preferably, the opening of the housing compartment
20 and the sliding of the telescopic ramp are controlled by a device directly operated by the driver's seat of the vehicle or by a service station, for example a remote control or a keypad push-button, located in any one position inside the vehicle itself.

25 Preferably, the housing compartment adapted to house the telescopic ramp is located under the floor

of the vehicle, that is under the frame delimiting inferiorly the passenger compartment.

This way the telescopic ramp coming out from the housing compartment is already under the level of the floor of the vehicle, therefore in intermediate position between the floor itself and the ground on which the vehicle is rested, for that reason in optimal position for acting as a step adapted to facilitate the ascent and descent from the vehicle for people partially able to move which would find difficulty in covering the whole height difference between the floor of the vehicle and the ground, and vice versa, with a single step.

In one embodiment, the telescopic ramp in the resting position is accommodated inside the housing compartment in a fully extended position. This way the space occupied by the telescopic ramp in the resting condition has the smallest thickness.

In another preferred embodiment, the telescopic ramp in the resting position is accommodated inside the relevant housing compartment in bent position, for example book - like bent over position. This way the space occupied by the telescopic ramp in the resting step, still having a larger thickness than the first embodiment, occupies a space in extension reduced to 50%; the bulk size are minimized both of the telescopic ramp and, consequently, of the housing.

compartment adapted to accommodate the telescopic ramp. In this case, after fully coming out the telescopic ramp from the housing compartment, the upper part of said telescopic ramp is risen and
5 overturned in such a way to become aligned with the its lower part.

Preferably, in an embodiment of the method of the present invention, in said step b2), the fully extended telescopic ramp is aligned with the level of
10 the floor of the vehicle, staying outside of the vehicle itself, to constitute a kind of extension of the floor itself, thus facilitating the occupation of the telescopic ramp by one of the wheelchairs for the disabled which are on board of the vehicle.

15 In another embodiment of the method of the present invention, in said step b2) the fully extended telescopic ramp is slightly overlapped to a floor portion of the vehicle and it is partially positioned inside the vehicle. This way the
20 wheelchairs can occupy the platform constituted by the fully extended telescopic ramp comfortably, since the height difference between the floor of the vehicle on which the wheelchairs are rested and the telescopic ramp is the smallest. Furthermore the
25 transferring of the wheelchairs from the floor of the ramp occurs in greater safety, since the operation

occurs while the wheelchairs remain fully inside the vehicle.

Preferably, said step b2) also comprises the further step of c) prearranging a connection system
5 with the ground of said telescopic ramp. This way said connection system acts as a fall-arresting device for said wheelchairs for the disabled, giving a greater safety during the step of descent to ground of said wheelchairs.

10 Preferably, the step of c) prearranging said connection system occurs manually or automatically.

Preferably, the method of the present invention also comprises the further step of d) ascent of the telescopic ramp to the level of the floor of the
15 vehicle.

Said step d) of ascent comprises the sequential steps of: d1) removing the possible connection system, d2) positioning the wheelchair onto the telescopic ramp, d3) raising the telescopic ramp up
20 to the level of the floor of the vehicle, d4) taking the wheelchair on board of the vehicle itself, and d5) reinserting the telescopic ramp into the corresponding housing compartment.

Preferably, said step d5) of reinserting the
25 telescopic ramp into the corresponding housing compartment is subdivided into two following steps, in which initially, in the first sub-step, only a

portion of the telescopic ramp is inserted into the housing compartment, up to a predefined stop point, such that the telescopic ramp acts as an intermediate step, as well as what above described referring to the step b1). Subsequently, in the second sub-step said telescopic ramp is fully inserted into said housing compartment.

At this point the housing compartment and thus the vehicle door can be closed.

Of course, in case more than one of said wheelchairs have to be descended or ascended from/into said vehicle, the descent to ground and ascent operations of said wheelchairs are repeated as many times as the participating wheelchairs, without reinserting each time the ramp in the appropriated housing compartment.

Obviously the ramp can be used only as a concealed step or only as a platform for rising/descent of the wheelchairs, according to the choice of the operator. In a second aspect the present invention refers to a telescopic ramp such as the one illustrated in claim 11.

In particular the telescopic ramp according to the invention, installed in a vehicle used for transporting wheelchairs for the disabled and/or transporting people partially able to move, is adapted to be partially extended up to a first

predefined stop point, corresponding to an incompletely extended configuration of the ramp itself, so that the telescopic ramp constitutes an intermediate step between the floor of said vehicle and the ground on which said vehicle is rested, and/or adapted to be fully extended so to act as a platform for accommodating one of said wheelchairs for the disabled to facilitate the descent to the ground and the ascent onto said vehicle of said wheelchairs.

Advantageously the ramp is a single device having the double function of acting as a step to facilitate the descent from a vehicle, and the corresponding ascent, of people partially able to move and as a platform for accommodating one of said wheelchairs for the disabled to facilitate the descent to the ground and the ascent onto said vehicle of said wheelchairs.

Preferably, the telescopic ramp, in resting position, is adapted to be accommodated in a relevant housing compartment positioned under the floor of said vehicle.

In a third aspect the present invention refers to a vehicle as that one indicated in claim 12.

The vehicle, used for transporting wheelchairs for the disabled and/or transporting people partially able to move, comprises a housing compartment located

along a side of the vehicle itself, at the relevant floor; the housing compartment is dimensioned to accommodate a telescopic ramp adapted to be partially extended up to a first predefined stop point, 5 corresponding to an incomplete extension of the ramp, so that said telescopic ramp constitutes an intermediate step between the floor of said vehicle and the ground on which said vehicle is rested, and/or it is adapted to be fully extended in order to 10 accommodate one of said wheelchairs for the disabled to facilitate the descent to the ground and the ascent onto said vehicle of said wheelchairs.

Advantageously the vehicle is able to allow a more comfortable descent, and corresponding ascent, 15 both to people partially able to move because of the use of the telescopic ramp when it acts as a step, and to wheelchairs for the disabled when the telescopic ramp acts as a platform on which the wheelchairs are positioned.

20 Further, the vehicle also has the advantage that, since the housing compartment is adapted to accommodate the telescopic ramp located along the side of the vehicle, at the side opening/ closing door, a space inside the vehicle can be exploited, at 25 said door, which can be reached by one of a plurality of wheelchairs on board of the vehicle. This way the descent order of the wheelchairs from the vehicle can

be chosen, without the need of first coming out the last ascended wheelchair, as in the case of a ramp installed in proximity of the hatchback of the vehicle, where there are not maneuvering spaces.

5 Preferably the housing compartment of the telescopic ramp is positioned under the inner floor of said vehicle.

Further characteristics and advantages of the present invention will be more evident from a review
10 of the following specification of a preferred, but not exclusive, embodiment, shown for illustration purposes only and without limitation, with the aid of the attached drawings, in which:

- Figure 1 is a perspective view of a vehicle
15 according to the present invention, wherein the telescopic ramp is inside the housing compartment;

- Figure 2 is a view of the vehicle of Figure 1, wherein the telescopic ramp is partially out from the housing compartment;

20 - Figure 3 shows a passenger partially able to move which uses the telescopic ramp positioned as in Figure 2;

- Figure 4 shows the vehicle of Figure 1 wherein the telescopic ramp is fully out from the
25 housing compartment;

- Figure 5 shows the telescopic ramp of Figure 4, after it has been risen to the level of the floor of the vehicle;

- Figure 6 shows the telescopic ramp of Figures 4 and 5, after it has been lowered to the level of the ground;

- Figure 7 shows a wheelchair on an embodiment of the telescopic ramp to the ground;

- Figure 8 shows an ascent step of the wheelchair of Figure 7;

- Figure 9 shows the wheelchair of Figures 7 and 8 taken on board of the vehicle.

Detailed description

The following detailed description refers to a first particular embodiment of a method for controlling the automatic sliding of a telescopic ramp according to the present invention.

Referring to the Figures 1-6 the various subsequent steps of the automatic sliding of a telescopic ramp 1 of a vehicle 2 used for transporting wheelchairs for the disabled 3 and/or transporting people partially able to move, to facilitate the descent from the vehicle 2 of such wheelchairs 3 and people, can be seen.

Initially (Figure 1), the vehicle 2 has the door closed and, in the resting step, the telescopic ramp (not shown) is accommodated inside the housing

compartment 4 positioned under the floor 5 of the vehicle 2.

In Figure 2, the vehicle 2 has the door opened and the telescopic ramp 1 is partially out from the housing compartment 4, up to a predefined stop point 7; in such a position, the telescopic ramp 1 acts as a step to facilitate the descent/ascent of a person partially able to move (Figure 3).

In Figure 4 the telescopic ramp 1 is shown fully out from the housing compartment 4, in fully extended position to the level of the housing compartment 4, under the floor 5 of the vehicle 2.

In Figure 5 the same telescopic ramp 1 of Figure 4 is shown, after it has been raised so to be aligned with the level of the floor 5 of the vehicle 2, such to constitute a kind of extension of the floor 5 itself. In such a position the telescopic ramp 1 can act as a platform for accommodating the wheelchairs 3 for the disabled for the descent from the vehicle 2.

In Figure 6 the telescopic ramp 1 is shown after it has been lowered to the level of the ground 9 on which the vehicle 2 is rested; the connecting system 10 with the ground 9 of the telescopic ramp 1, acting as fall-arresting device for the wheelchair 3, is visible.

To facilitate the ascent onto the vehicle 2 of such wheelchairs 3 and people partially able to move, firstly the connection system 10 with the ground 9 of the telescopic ramp 1 is removed, then the telescopic ramp 1 is risen to the level of the floor 5 of the vehicle, so to allow the taking on board of the wheelchairs 3 onto the vehicle 2. Afterwards, the telescopic ramp 1 is lowered to the level of the housing compartment 4, positioned under the floor 5 of the vehicle. At this point, the telescopic ramp 1 is partially inserted into the housing compartment 4 up to a predefined stop point 7, such that the telescopic ramp 1 can act as an intermediate step between the floor 5 of the vehicle 2 and the ground 9 on which the vehicle 2 is rested for facilitating the ascent of people partially able to move. At last, the telescopic ramp 1 is fully inserted into the housing compartment 4, in the resting position. At this point the door of the vehicle can be closed to start a new transportation.

Referring now to the Figures 7-9 the various subsequent steps of a second embodiment of the method for controlling the automatic sliding of the telescopic ramp 1 to facilitate the ascent of a wheelchair 3 onto a vehicle 2, are shown.

In Figure 7 the telescopic ramp 1 is rested on the ground 9 and the wheelchair 3 is positioned onto

it; in Figure the telescopic ramp 2 is shown
accommodating the wheelchair 3 during the ascent, up
to slightly overlapping to the floor 5 of the vehicle
2. In Figure 9 the telescopic ramp 1 is shown which
5 is partially inserted inside the vehicle 2 over the
floor 5.

Many modifications and variations of the
preferred embodiments will be certainly evident to
those skilled in the field, without departing from
10 the scope of the invention. Therefore, the invention
is not limited to the described preferred
embodiments, shown for purposes of illustrations and
without limitation, but it is defined by the
following claims.

**"METHOD FOR CONTROLLING THE AUTOMATIC SLIDING OF
A TELESCOPIC RAMP, TELESCOPIC RAMP AND VEHICLE
COMPRISING SUCH RAMP"**

* * * *

CLAIMS

1. Method for controlling the automatic sliding of a telescopic ramp (1) in a vehicle (2) used for transporting wheelchairs (3) for the
5 disabled and/or transporting people partially able to move, comprising the steps of:

a) causing said telescopic ramp (1) to come out from a housing compartment (4) adapted to accommodate said telescopic ramp (1) in the resting
10 position, said housing compartment (4) being at the floor (5) of said vehicle (1) along a side (6) of the vehicle (1) itself; and

b1) partially sliding said telescopic ramp (1) up to a first predefined stop point (7),
15 corresponding to an incomplete extension of the telescopic ramp (1), so that said telescopic ramp (1) constitutes an intermediate step (8) between the floor (5) of said vehicle (2) and the ground (9) on which said vehicle (2) is rested; or, alternatively,

20 b2) sliding said telescopic ramp (1) up to its full extension, and

- aligning said fully extended telescopic ramp (1) with the level of said floor (5) of the

vehicle (2) so that said telescopic ramp (1) could
accommodate one of said wheelchairs (3) for the
disabled, and lowering said telescopic ramp (1) to
the level of the ground (9) on which said vehicle (2)
5 is rested, to allow the descent, or vice versa,

- lowering said telescopic ramp (1) to the
level of the ground (9) on which said vehicle (2) is
rested to accommodate one of said wheelchairs (3) for
the disabled and aligning said telescopic ramp (1)
10 with the level of said floor (5) of the vehicle (2)
to allow the going on board.

2. Method according to claim 1, wherein said
housing compartment (4) adapted to accommodate said
telescopic ramp (1) is positioned under the floor (5)
15 of said vehicle (2).

3. Method according to any one of the
preceding claims, wherein said telescopic ramp (1) in
the resting position is accommodated inside said
housing compartment (4) in a book-like bent over
20 position.

4. Method according to any one of the
preceding claims, wherein in said step b2) said fully
extended telescopic ramp (1) is aligned with the
level of said floor (5) of the vehicle (2) to form a
25 kind of extension of the floor (5) itself.

5. Method according to any one of the
preceding claims, wherein in said step b2) said fully

extended telescopic ramp (1) is slightly overlapped to a floor portion of the vehicle and it is partially positioned inside the vehicle.

6. Method according to any one of the
5 preceding claims, wherein said step b2) also comprises the further step of c) prearranging a connection system (10) with the ground (9) of said telescopic ramp (1) to act as fall-arresting device for said wheelchair (3).

10 7. Method according to any one of the preceding claims comprising the further step of d) ascent of said telescopic ramp (1) to the level of said floor (5) of the vehicle (2).

8. Method according to claim 7 wherein said
15 step d) of ascent comprises the sequential steps of:
d1) removing said possible connection system (10),
d2) positioning said wheelchair (3) onto said telescopic ramp (1), d3) raising said telescopic ramp (1) up to the level of said floor (5) of the vehicle
20 (2), d4) taking said wheelchair (3) on board of the vehicle (2) itself, and d5) reinserting said telescopic ramp (1) into said housing compartment (4).

9. Method according to claim 8, wherein said
25 step d5) of reinserting said telescopic ramp (1) into said housing compartment (4) is subdivided into two following steps, in which initially, in the first

sub-step, only a portion of said telescopic ramp (1) is inserted into said housing compartment (4), up to a predefined stop point (7), such that said telescopic ramp (1) acts as an intermediate step (8) and, subsequently, in the second sub-step said telescopic ramp (1) is fully inserted into said housing compartment (4).

10. Method according to any one of the preceding claims comprising the further step of e) re-inserting said telescopic ramp (1) inside said housing compartment (4).

11. Telescopic ramp (1) in a vehicle (2) used for transporting wheelchairs (3) for the disabled and/or transporting people partially able to move adapted to be partially extended up to a first predefined stop point (7) so that said telescopic ramp (1) constitutes an intermediate step (8) between the floor (5) of said vehicle (2) and the ground (9) on which said vehicle (2) is rested, and/or it is adapted to be fully extended in order to accommodate one of said wheelchairs (3) for the disabled to facilitate the descent to the ground (9) and the ascent onto said vehicle (2) of said wheelchairs (3).

12. Vehicle (2) used for transporting wheelchairs (3) for the disabled and/or transporting people partially able to move, comprising a housing compartment (4) located at the floor (5) of said

vehicle (2) along a side (6) of the vehicle (2) itself, said housing compartment (4) being able to accommodate a telescopic ramp (1) adapted to be partially extended up to a first predefined stop
5 point (7) so that said telescopic ramp (1) constitutes an intermediate step (8) between the floor (5) of said vehicle (2) and the ground (9) on which said vehicle (2) is rested, and/or it is adapted to be fully extended in order to accommodate
10 one of said wheelchairs (3) for the disabled to facilitate the descent to the ground and the ascent onto said vehicle (2) of said wheelchairs (3).

13. Vehicle (2) according to claim 12, wherein said housing compartment (4) adapted to accommodate
15 said telescopic ramp (1) is positioned under the inner floor (5) of said vehicle (2).

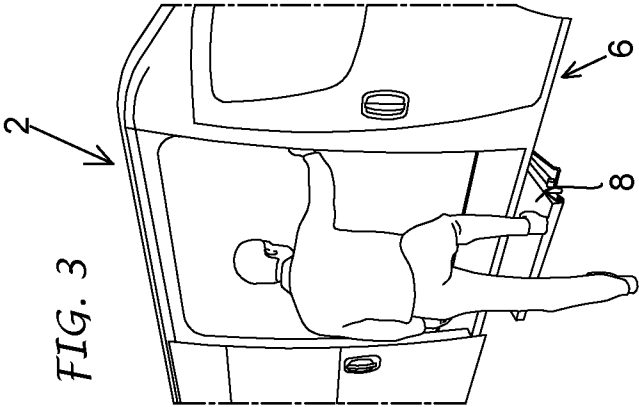
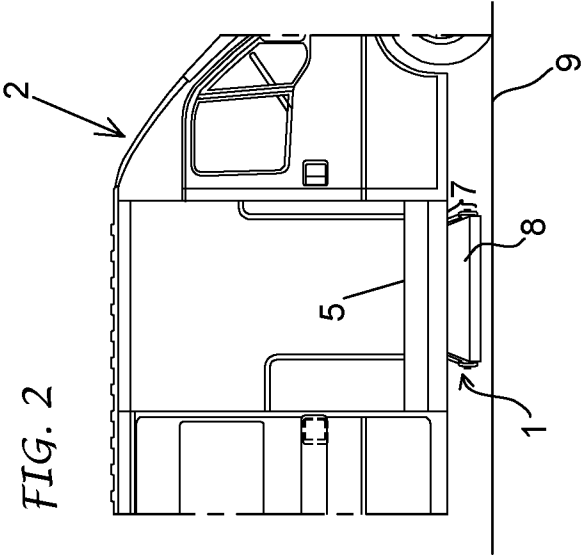
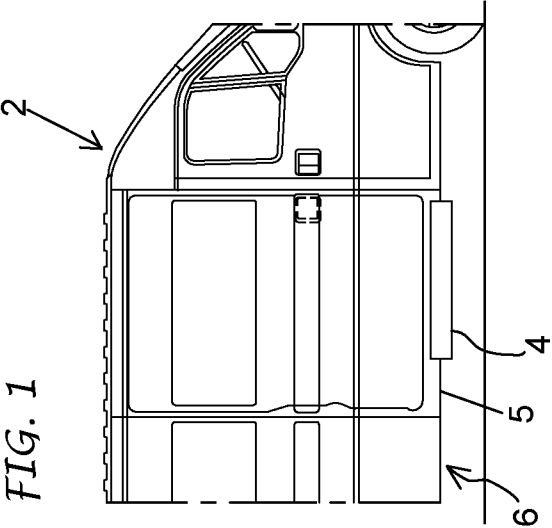


FIG. 4

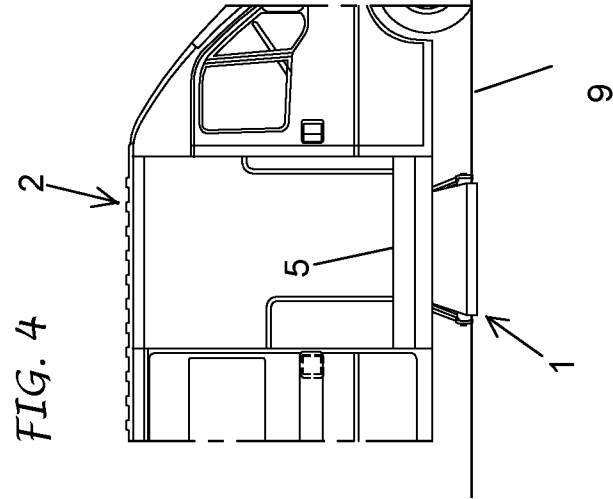


FIG. 5

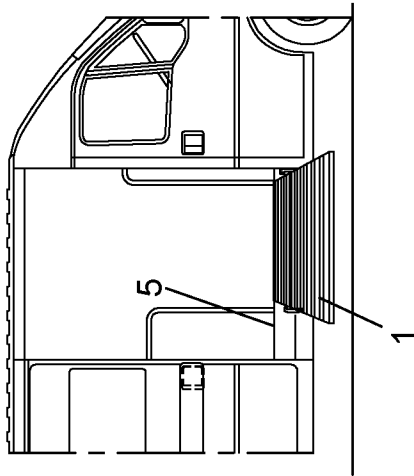
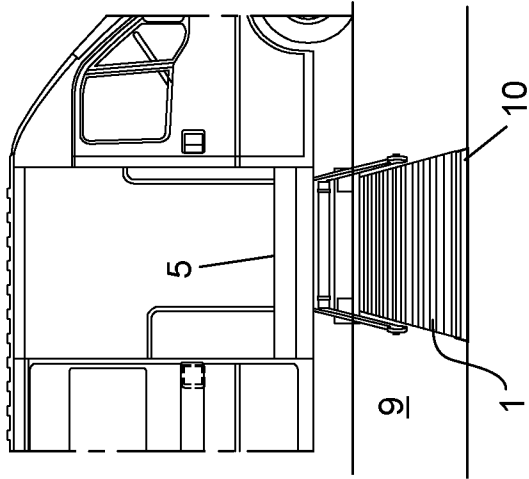
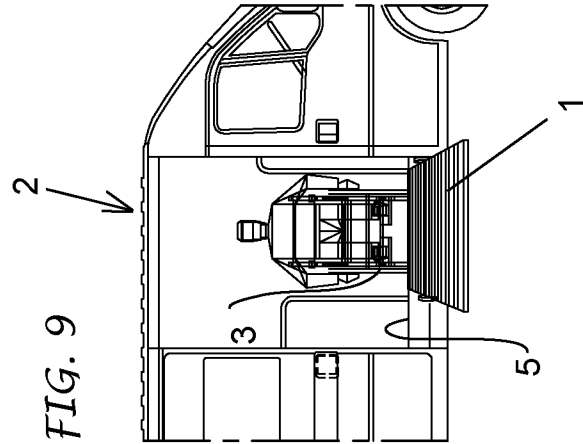
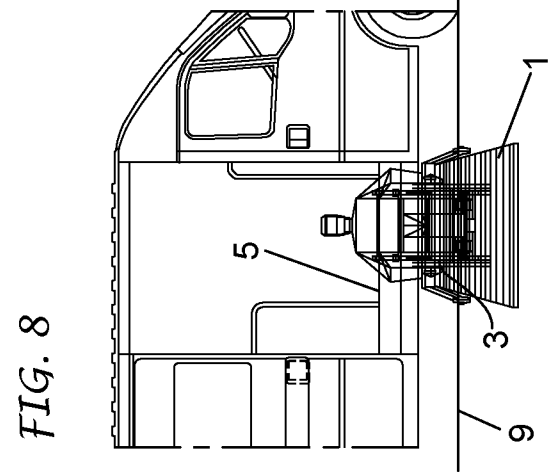
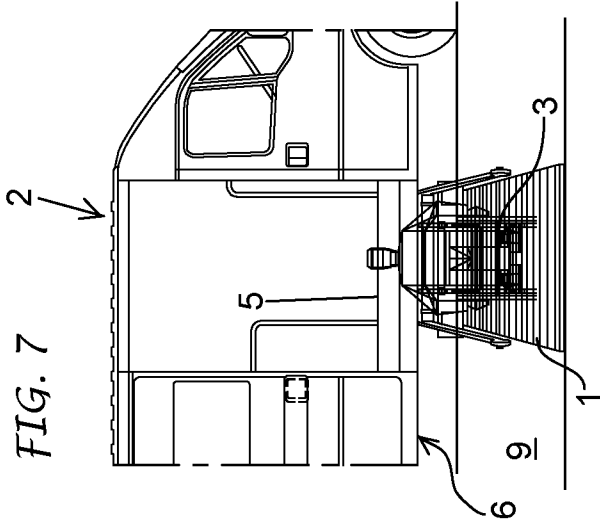


FIG. 6





INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2012/052647

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61G3/06
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A61G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 029 523 A2 (MBB LIFTSYSTEMS AG [DE]) 23 August 2000 (2000-08-23) figures 1-3 paragraph [0013] - paragraph [0017] -----	1-13
X	EP 2 260 817 A2 (MASATS S A [ES]) 15 December 2010 (2010-12-15) figures paragraph [0016] - paragraph [0023] -----	11-13

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Further documents are listed in the continuation of Box C.

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See patent family annex.

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Information on patent family members

International application No

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Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 1029523	A2	23-08-2000	DE	29902687 U1	20-05-1999
			EP	1029523 A2	23-08-2000

EP 2260817	A2	15-12-2010	EP	2260817 A2	15-12-2010
			ES	2362294 A1	01-07-2011
