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(54) Title: A SMART DEVICE HOLDER AND TABLE APPARATUS WHICH CAN BE INTEGRATED TO THE LADDER OF THE VEHICLE

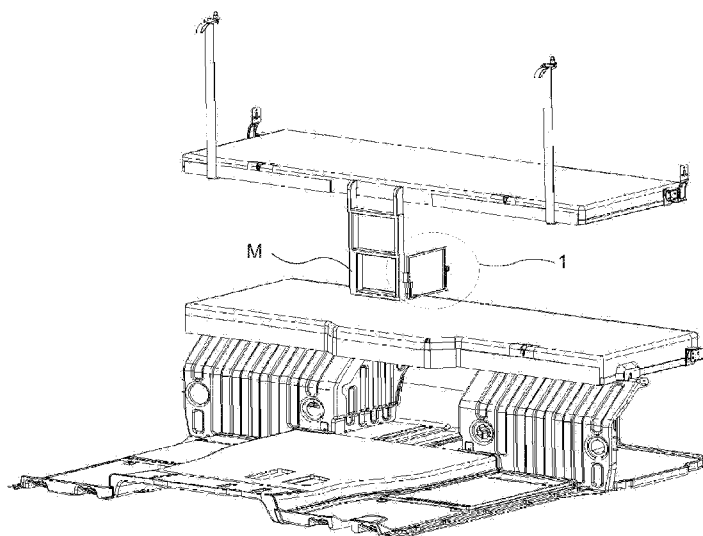


Figure 1

(57) Abstract: The present invention relates to a smart device holder and table apparatus (1) which can be integrated to the ladder (M) of the vehicle, which is integrated to the ladder that is mounted to the berth of the vehicle, which performs the duty of a smart device holder for the users of the upper berth and the lower berth, which, when preferred, can be used as a table as well, which provides the opportunity to be used independent to the berths being in opened state or in closed state.



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**A SMART DEVICE HOLDER AND TABLE APPARATUS WHICH CAN  
BE INTEGRATED TO THE LADDER OF THE VEHICLE**

**SPECIFICATIONS**

**5 Field of the Invention**

The present invention relates to a smart device holder and table apparatus which can be integrated to the ladder of the vehicle, which is integrated to the ladder that is mounted to the berth of the vehicle, which performs the duty of a smart device  
10 holder for the users of the upper berth and the lower berth, which, when preferred, can be used as a table as well, which provides the opportunity to be used independent to the berths being in opened state or in closed state.

**Background of the Invention**

15

The drivers of the heavy commercial vehicles drive the vehicle on long trips by making stops or taking turns with another driver. In the heavy commercial vehicles berth systems, which the drivers can use for resting whenever it is necessary, are present. The berth system can include multiple berths as well as a single berth. The  
20 double berth systems are located in the vehicle like bunks as they take up less space. In the bunk type berth systems, there is a ladder present to enable the user to reach the top berth.

When they are going to rest in the berths that are present in the vehicle, or when  
25 they are going to rest, the users need apparatuses, to which they can fix the smart devices they have and use them, or which they can utilize as a table when they are eating.

In the state of the art, some apparatuses which can be utilized by the users of the  
30 vehicle for fixing their smart devices inside the vehicle, and which have a flat surface that can be used as a table for eating or various needs are present. These kinds of apparatuses are generally developed for a single purpose and they have

only one purpose such as being only a table or only a smart device holder. The apparatuses that are presently used are designed so that they are fixed to the window of the vehicle, to the seat of the driver or the passenger, to the middle console between the seats. These presently used apparatuses are in such a structure that the driver can use them while driving or while resting in the cabin. When these apparatuses are fixed inside the vehicle in the said manner, they take up space inside the vehicle. In the present applications, it is not possible to mount these apparatuses in the berths, ladders inside the drivers' resting cabin in a manner that they do not take up space and they are easy to use.

10

The presently used smart device holding apparatuses are generally fixed to a single point, and they only have the ability to move in a single axis. The users cannot move them in a preferred angle according to the sitting/lying positions of theirs.

15 Some applications in the field of the art are as follows.

The Japanese patent document numbered JP2015085772 in the background of the invention discloses an apparatus which is integrated to the seat of the vehicle inside the vehicle. The most important difference between the said patent document and the invention that is the subject matter of application is that the invention that is the subject matter of the application is of a structure that can be integrated to the ladder of the berth. The invention that is the subject matter of the application can be moved in different axes and angles according to the area in which the user is present. Whereas the invention that is the subject matter of the application allows the smart devices to be fixed to the resting area of the driver, and in the case where preferred, it allows the same apparatus to be used as a table. The invention that is the subject matter of the application is mounted to the ladder, and when not used, it can be folded towards the ladder and hence prevents occupying space.

25  
30 The international patent document numbered WO2012160209 in the background of the invention discloses a smart device holder which can be positioned on the seat

of the vehicle. The said invention is in such shape that the connection of which can be made to the seat of the vehicle. It is not possible for making the mounting of this invention to the elements such as the seat that is present in the resting cabin, berth etc. except the seat of the vehicle. The most important difference between the said patent document and the invention that is the subject matter of application is that the invention that is the subject matter of the application is of a structure that can be integrated to the ladder of the berth. The invention that is the subject matter of the application can be moved in different axes and angles according to the area in which the user is present. The invention that is mentioned in the said patent document is only used as a tablet computer holder. Whereas the invention that is the subject matter of the application allows the smart devices to be fixed and to be used in a preferred direction and angle, and in the case where preferred, it can be used as a table. The invention that is the subject matter of the application is mounted to the ladder, and when not used, it can be folded towards the ladder and hence prevents occupying space.

The Canadian patent document numbered CA2849541 in the background of the invention discloses a smart device holder which is integrated to the pocket of the seat of the vehicle. The said invention is mounted to the seat of the vehicle and it carries the smart device which is placed on it. The most important difference between the said patent document and the invention that is the subject matter of application is that the invention that is the subject matter of the application is of a structure that can be integrated to the ladder of the berth. The invention that is the subject matter of the application can be moved in different axes and angles according to the area in which the user is present. The invention that is mentioned in the said patent document is only used as a tablet computer holder. Whereas the invention that is the subject matter of the application allows the smart devices to be fixed and to be used in a preferred direction and angle, and in the case where preferred, it can be used as a table. The invention that is the subject matter of the application is mounted to the ladder, and when not used, it can be folded towards the ladder and hence prevents occupying space.

In the present, in the vehicles that have berths, an apparatus which the user can use while lying down or sitting, without needing any extra equipment, which can be integrated to the ladder of the vehicle, which can be used, according to the needs of the user, both as a smart device holder, and at the same time as a table by creating a flat surface with the help of the curtain that is inside it, is not present.

## 10 **Objects of the Invention**

The object of the invention is related to a smart device holder and table apparatus which can be integrated to the ladders of the berths that are present in the heavy vehicles, and which provides the user with more than one usage alternatives.

15

Another object of the invention is related to a smart device holder and table apparatus to which the smart device that is wanted to be used is fixed inside the vehicle, and in the preferred state, which can be used as a table.

20 Yet another object of the invention is related to a smart device holder and table apparatus which can be used independently from the upper berth and lower berth being in the opened state or closed state.

25 Yet another object of the invention is related to a smart device holder and table apparatus which can move in different axes and in different angles.

## **Short Description of the Invention**

30 The smart device holder and table apparatus which can be integrated to the ladder of the vehicle defined in the first claim and the dependent claims thereof in order to realize the objects of the present invention comprises a frame. The frame is of a

rectangular and a hollow structure. When the apparatus is preferred to be used as a smart device holder, the smart device is fitted on the fitting slot that is present on the frame. While, in the case when a flat surface is needed, it is possible to use the holder as a table by opening the curtain that is present in the storing space with the help of the handle that is present on the table module. The mounting of the smart device holder and table apparatus to the ladder that is located in between the two berths of the bunk system that is present inside the vehicle is realized via a mounting piece. While the mounting of the mounting piece to the ladder is realized by the fixed piece, the moving piece enables the movement of the frame in the preferred direction and angle. By this way, the user can utilize the holder which he/she uses for fixing his/her smart device inside the resting area as a table at the same time.

### Detailed Description of the Invention

The smart device holder and table apparatus which can be integrated to the ladder of the vehicle in order to fulfill the objects of the present invention is illustrated in the attached figures, where:

**Figure 1.** Is the perspective view of the smart device holder and table apparatus in the state where it is mounted to the ladder of the vehicle.

**Figure 2.** Is the perspective view of the smart device holder and table apparatus in the state where it is mounted to the ladder of the vehicle.

**Figure 3.** Is the perspective view of the different movement ways of the frame of the smart device holder and table apparatus.

**Figure 4.** Is the perspective view of the different movement ways of the frame of the smart device holder and table apparatus.

**Figure 5.** Is the perspective view of the smart device holder and table apparatus in the state where it is not converted to a table form.

**Figure 6.** Is the perspective view of the usage of the smart device holder and table apparatus in the table form.

**Figure 7.** Is the perspective view of the usage of the smart device holder and table apparatus.

**Figure 8.** Is the perspective view of the usage of the smart device holder and table apparatus.

5

Elements shown in the figures are individually numbered, and the correspondence of these numbers are given as follows:

- 1. Smart device holder and table apparatus
- 10 2. Frame
  - 21. Fitting slot
- 3. Table module
  - 31. Storage space
  - 32. Curtain
  - 15 33. Handle
- 4. Mounting piece
  - 41. Fixed piece
  - 42. Moving piece
- 5. Tooth
- 20 M. Ladder

The smart device holder and table apparatus (1) which can be integrated to the ladder (M) of the vehicle, which is integrated to the ladder that is mounted to the berth of the vehicle, which performs the duty of a smart device holder for the users of the upper berth and the lower berth, which, when preferred, can be used as a table as well, which provides the opportunity to be used independent to the berths being in opened state or in closed state, essentially comprises;

- at least one frame (2) which is integrated to the ladder (M) and to which preferably the smart device is fixed,
- 30 - at least one table module (3) which provides the user with a flat surface when desired,

- at least one mounting piece (4) which enables the connection of the frame (2) to the ladder (M), and which enables the frame (2) to move in a preferred direction and preferred amount.

5 In an embodiment of the invention, the smart device holder and table apparatus (1) has a frame (2). The frame (2) is the component to which the smart device is fixed or, when preferred, which can be used as a table by activating the table module (3). The frame (2) is mounted on the back surface of the lowermost windows of the ladder (L). By the virtue of the sledded structure of the main connection of the ladder (M) of the bunk berth system that is present inside the vehicle, the distance  
10 between the frame (2) and the user can be adjusted according to the preferences of the user. For the closed state of the upper berth, the user who uses the lower berth can use the frame (2) independently from the upper berth being in opened/closed state. The frame (2) performs the same duty in the situation where the berth  
15 positions change. In the case when the user is at the top berth, the frame (2) can be used in the preferred way by rotating the ladder (M) 180°. There is a fitting slot (21) present on the frame (2). The fitting slot (21) is the slot to which the smart device is fitted when preferred. There are protrusions present preferably at the upper and lower sections of the fitting slot (21). These protrusions prevent the smart device  
20 that is fitted to the fitting slot (21) to dislocate from inside of the frame (2). By this way, the smart device maintains its position also in the case when the frame (2) is moving. The frame (2) can be of a preferred geometry. In an embodiment of the invention, the frame (2) is of a rectangular geometry and it is hollow.

25 In an embodiment of the invention, a table module (3) is present. The table module (3) is of a structure that it can be prepared by the user to be converted to a table when the user needs a flat surface. The table module (3) is present on the frame (2). The table module (3) has a storing space (31). The storing space (31) can be located on any preferred location on the frame (2). In the preferred embodiment of the  
30 invention the storing space (31) is located on the side of the frame (2) which is located parallel to the side where the mounting of the frame (2) to the ladder (M) is

realized. Inside of the storing space (31) the curtain (32), which is the structure that creates a flat surface in the situation where preferred, is present. The curtain (32) is stored inside of the storing space (31) in a rolled state. In the case when a flat surface is needed, the curtain (32) is opened with the help of the pulley system that is inside  
5 the storing space (31) by pulling the handle (33) that is present on the table module (3) towards the ladder (M) to which the frame (2) is mounted. The curtain (32) is fixed by engaging the handle (33) that is present on the table module (3) to the tooth (5). When the usage of the table is no longer necessary, the curtain (32) is sent to the storing space (31) by disengaging the handle (33) from the tooth (5). In an  
10 alternative embodiment of the invention, the table module (3), independent from the frame (2), is fixed on the frame in a manner that its connection is made externally.

In an embodiment of the invention, a mounting piece (4) is present. The mounting  
15 piece (4) provides the connection of the smart device holder and table apparatus (1) to the element to which it is desired to be mounted. The mounting piece (4) can be consisting of a single piece or multiple pieces. In the preferred embodiment of the invention, the mounting piece (4) consists of two pieces. There is a fixed piece (2) present in the mounting piece (4). The fixed piece (41) is the element of fixed  
20 structure which provides the connection of the smart device holder and table apparatus (1) to the element, preferably to the ladder (M) that is present inside the vehicle, to which it is desired to be mounted. In the mounting piece (4) there is a moving piece (42) which is mounted to the fixed piece (41) present. The moving piece (42) is the element to which the frame (2) is mounted, and which enables the  
25 frame (2) to be moved in the preferred axis and a preferred amount. According to the usage preference, the frame (2) can be used as a smart device holder by moving via the moving piece (42) or can be used as a table by making it ready to use via the table module (3). There are preferably two connection points on the moving piece (42). One of the connection points is on the surface where the moving piece (42) is  
30 connected to the fixed piece (41), and it provides bushing so that it enables the moving piece (42) to move circularly on the fixed piece (41). The other one of the

connection points is on the surface where the frame (2) is connected to the moving piece (42), and it provides bushing so that it enables the frame (2) to move in the horizontal axis with respect to the moving piece (42).

- 5 In an embodiment of the invention, a tooth (5) is present. The tooth (5) is the element to which the handle (33) on the table module (3) is engaged when the table module (3) is preferred to be used. The tooth (5) can be on the mounting piece (4) as well as it can be on the frame (2).
- 10 In the preferred embodiment of the invention, the smart device holder and table apparatus (1) which can be integrated to the ladder of the vehicle is used as follows: The frame (2) is the element to which the smart device is fixed, which has a rectangular structure and which is hollow. There is a table module (3) present on the frame (2). In the case when a flat surface is needed, the curtain (32) that is inside  
15 the storing space (31) is opened by pulling the handle (33) that is present on the table module (3) and then engaging it to the tooth (5), and thus the frame (2) can be used as a table. When the table module is no longer used, the curtain (32) is confined inside the storing space (31) by disengaging the handle (33) that is engaged to the tooth (5), from the tooth (5). When preferred, the frame (2) can be used as a smart  
20 device holder by fitting the smart device on the fitting slot (21) that is present on the frame. The smart device holder and table apparatus (1) is mounted to the ladder (M) via a mounting piece (4). In the preferred embodiment of the invention, the mounting piece (4) consists of two pieces which are the fixed piece (41) and the moving piece (42). The fixed piece (41) is the element which enables the frame (2)  
25 to be mounted to the ladder (M). The moving piece (42) is the element which rotates the frame (2) in the preferred axis and a preferred amount. By the virtue of the moving piece (42), the frame (2), meaning that the usage area, can be axially moved with respect to the ladder (M) and to the user.
- 30 By the virtue of the inventive smart device holder and table apparatus (1) which can be integrated to the ladder of the vehicle, a structure which can be used as a table

and a smart device holder by the users is obtained in the resting area. The smart device holder and table apparatus (1) can be used independently from the upper berth and lower berth being in the opened state or closed state. The smart device holder and table apparatus (1) provides the opportunity of usage in different  
5 positions during resting to the users by moving the frame (2) in different axes and different angles.

## CLAIMS

1. A smart device holder and table apparatus (1) which can be integrated to the ladder (M) in the vehicles, and which the users can use as a smart device holder and when preferred, as a table, and which can move in different axes,  
5 **characterized by**
- at least one frame (2) which is integrated to the ladder (M) and to which the smart device is fixed,
  - at least one table module (3) which provides a closed surface for the user  
10 inside the frame (2) where the smart device is placed, and which, when not used, provides an empty space on the frame (2) upon being gathered inside the storing space (31),
  - at least one mounting piece (4) which enables the connection of the frame (2) to the ladder (M), and which enables the frame (2) to move in a preferred  
15 axis with respect to the ladder (M) and to the user.
2. A smart device holder and table apparatus (1) as in Claim 1 **characterized by** the frame (2) which is mounted on the back surface of the lowermost windows of the ladder (L).  
20
3. A smart device holder and table apparatus (1) as in Claim 2 **characterized by** the frame (2) which comprises at least one fitting slot (21).
4. A smart device holder and table apparatus (1) as in Claim 3 **characterized by** the fitting slot (21) which prevents the smart device from dislocating  
25 from the frame (2) by the virtue of the protrusion that are present on the upper and lower sections.
5. A smart device holder and table apparatus (1) as in Claim 2 **characterized by** the frame (2) which is of a rectangular geometry, and which is hollow.  
30

6. A smart device holder and table apparatus (1) as in Claim 1 **characterized** by the table module (3), which is located on the frame (2), and which, when a flat surface is needed, can be converted to a table by covering the space of the frame (2).
- 5
7. A smart device holder and table apparatus (1) as in Claim 6 **characterized** by the table module (3) which comprises at least one storing space (31), at least one curtain (32) and at least one handle (33).
- 10
8. A smart device holder and table apparatus (1) as in Claim 6 **characterized** by the table module (3) having a storing space (31) inside of which the curtain (32), which is the structure that will create a flat structure is present.
- 15
9. A smart device holder and table apparatus (1) as in Claim 6 **characterized** by the curtain (32) which can be opened and closed via the pulley which is present inside of the storing space (31).
- 20
10. A smart device holder and table apparatus (1) as in Claim 6 **characterized** by the curtain (32) which enables the frame (2) to create a flat surface by covering the top or the inside of the frame (2) so that the frame (2) can be used as a table.
- 25
11. A smart device holder and table apparatus (1) as in Claim 6 **characterized** by the curtain (32) which stays inside the storing space (31) in a rolled state when not used, and preferably to one end of which a handle (33) is attached.
- 30
12. A smart device holder and table apparatus (1) as in Claim 6 **characterized** by the table module (3) which has a handle (33) which fixes the curtain (32) in the opened position.
13. A smart device holder and table apparatus (1) as in Claim 1 **characterized** by the table module (3) which is fixed on the frame (2) externally, independent from the frame (2).

- 5           **14.** A smart device holder and table apparatus (1) as in Claim 1 **characterized**  
by the mounting piece (4) which fixes the frame (2) to the ladder (M), and  
which comprises at least one fixed piece (41) and at least one moving piece  
(42).
- 10           **15.** A smart device holder and table apparatus (1) as in Claim 1 **characterized**  
by the mounting piece (4) which enables the frame (2) to be fixed on the  
ladder (M), and at the same time which enables the frame (2) to move axially  
in different positions with respect to the user.
- 15           **16.** A smart device holder and table apparatus (1) as in Claim 14 **characterized**  
by the fixed piece (41) which is an element of fixed structure and which  
enables the connection to the any surface of the ladder (M).
- 20           **17.** A smart device holder and table apparatus (1) as in Claim 14 **characterized**  
by the moving piece (42) one surface of which is present on the fixed piece  
(41) or mounted to the fixed piece (41), and on the other surface the frame  
(2) is mounted.
- 25           **18.** A smart device holder and table apparatus (1) as in Claim 14 **characterized**  
by the moving piece (42) which enables the frame (2) to move in a preferred  
axis and in a preferred amount.
- 30           **19.** A smart device holder and table apparatus (1) as in Claim 14 **characterized**  
by the moving piece (42) which has two connection points, one of the  
connection points being on the surface where the moving piece (42) is  
connected to the fixed piece (41), and providing bushing so that it enables  
the moving piece (42) to move circularly on the fixed piece (41), the other  
one of the connection points being on the surface where the frame (2) is  
connected to the moving piece (42), and providing bushing so that it enables  
the frame (2) to move in the horizontal axis with respect to the moving piece  
(42).

20. A smart device holder and table apparatus (1) as in Claim 1 **characterized** by at least one tooth (5) to which the handle (33) that is present on the table module (3) is attached.

5

21. A smart device holder and table apparatus (1) as in Claim 1 **characterized** by the tooth (5) which can be positioned on the mounting piece (4) as well as being on the frame (2).

10

Figure 1

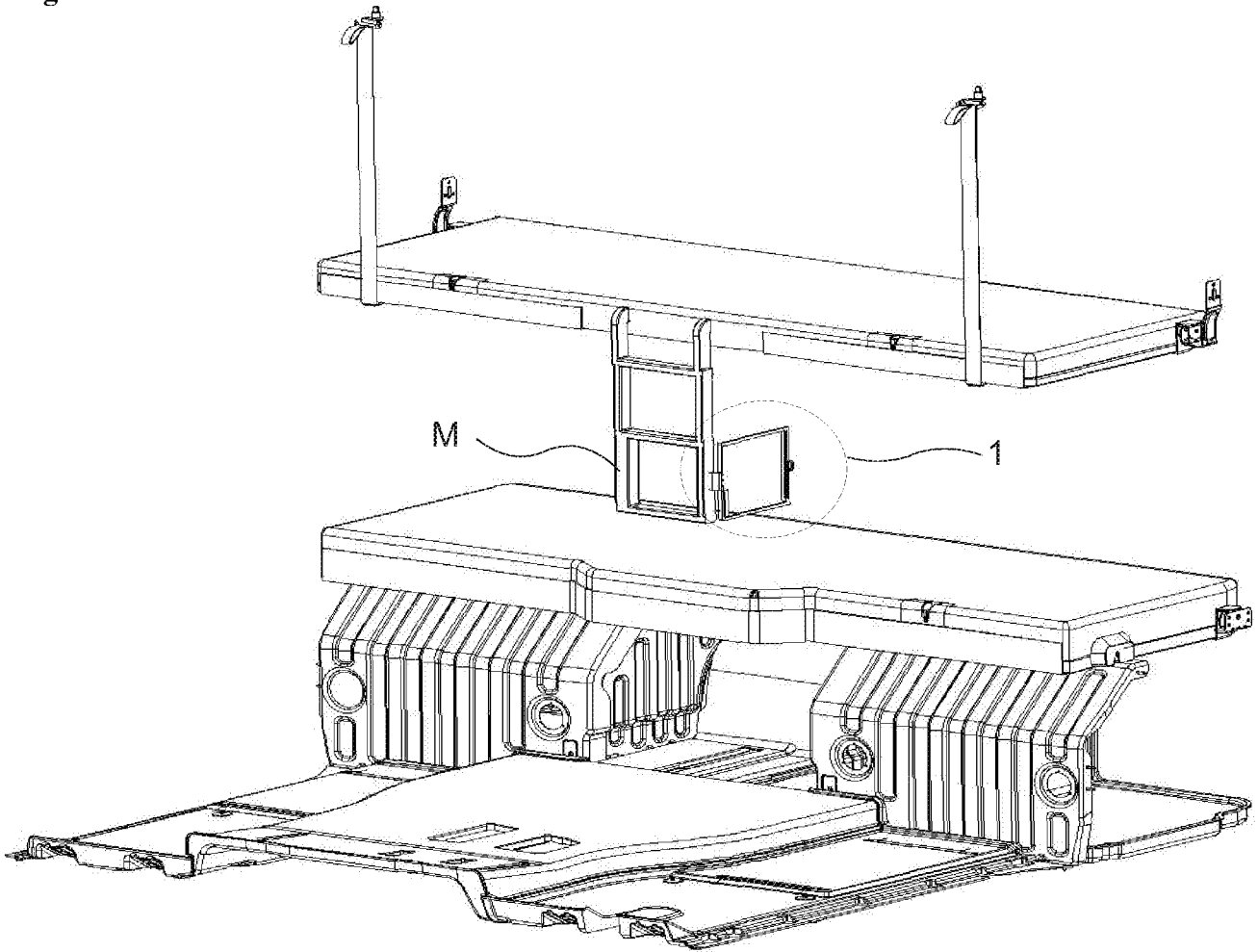


Figure 2

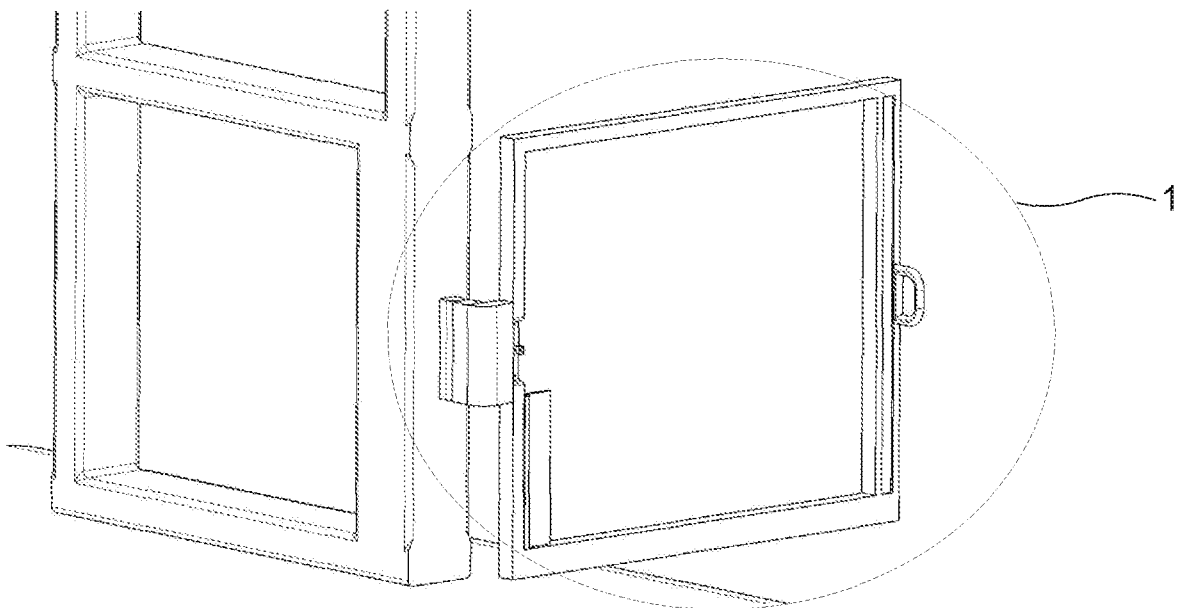


Figure 3

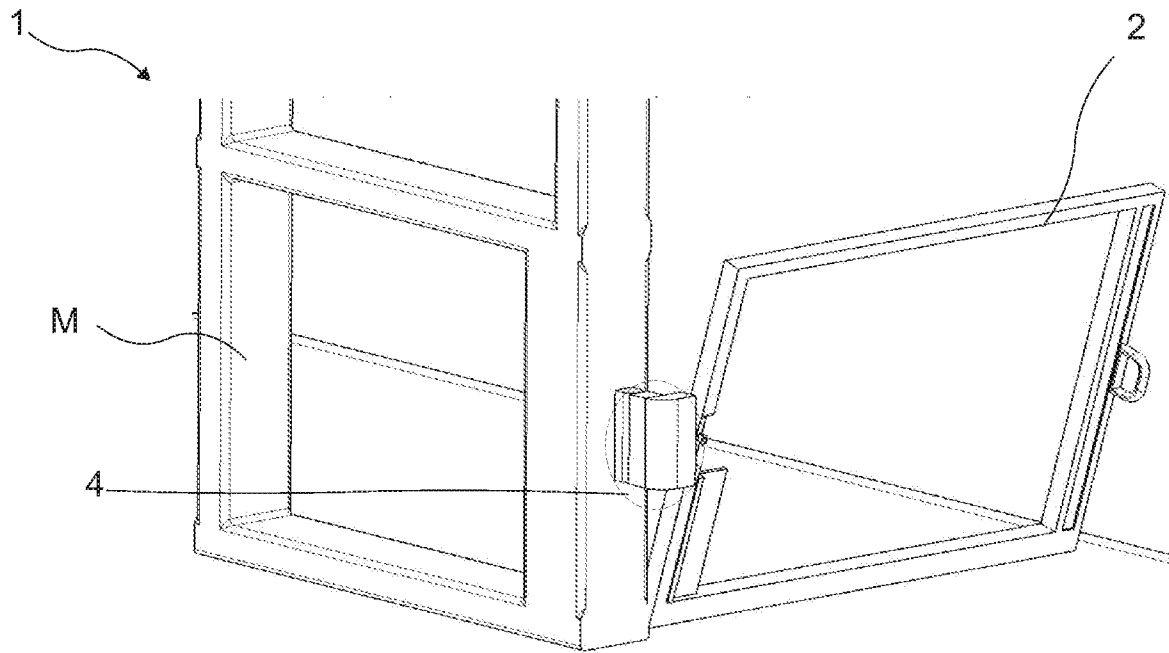


Figure 4

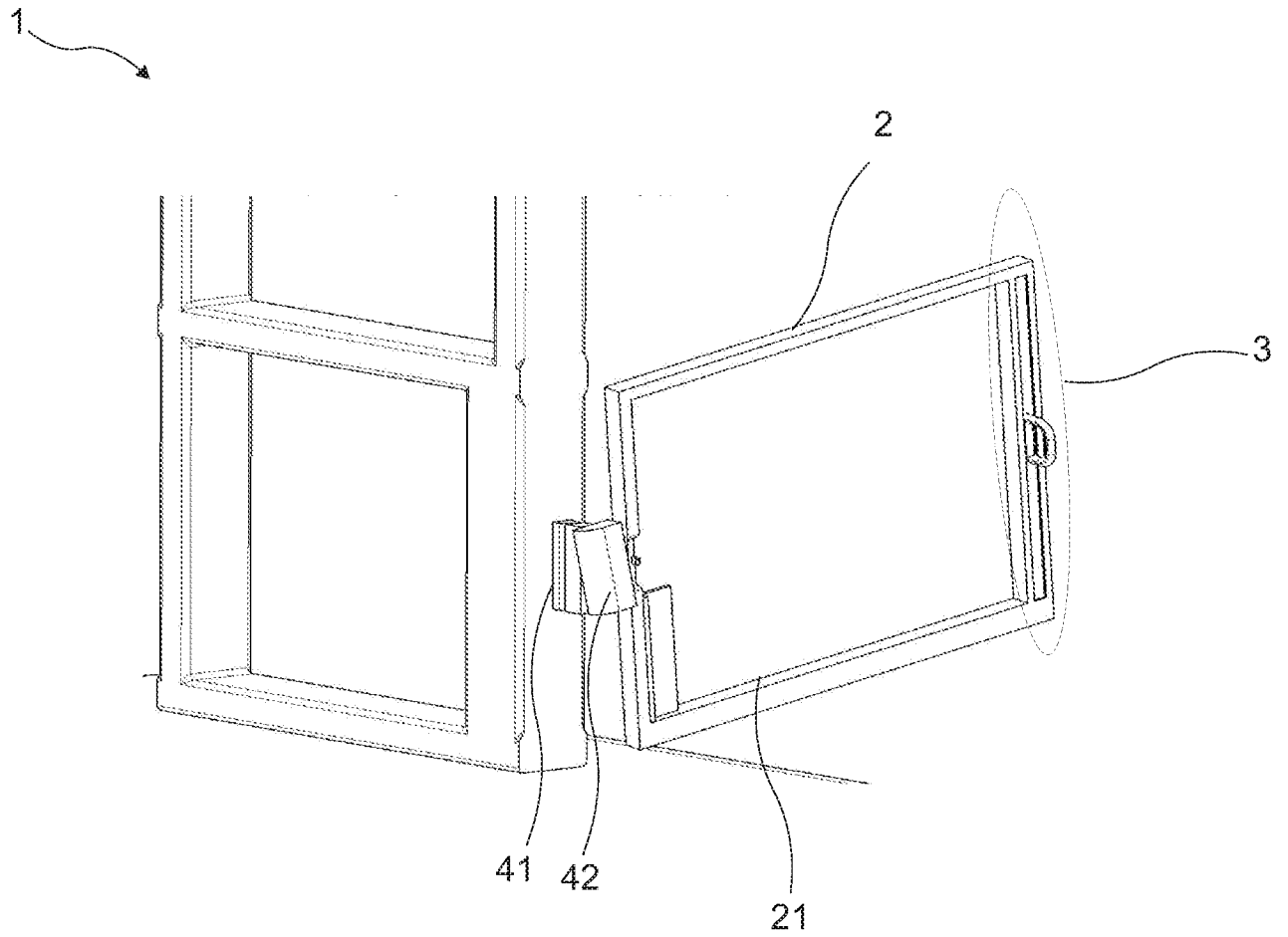


Figure 5

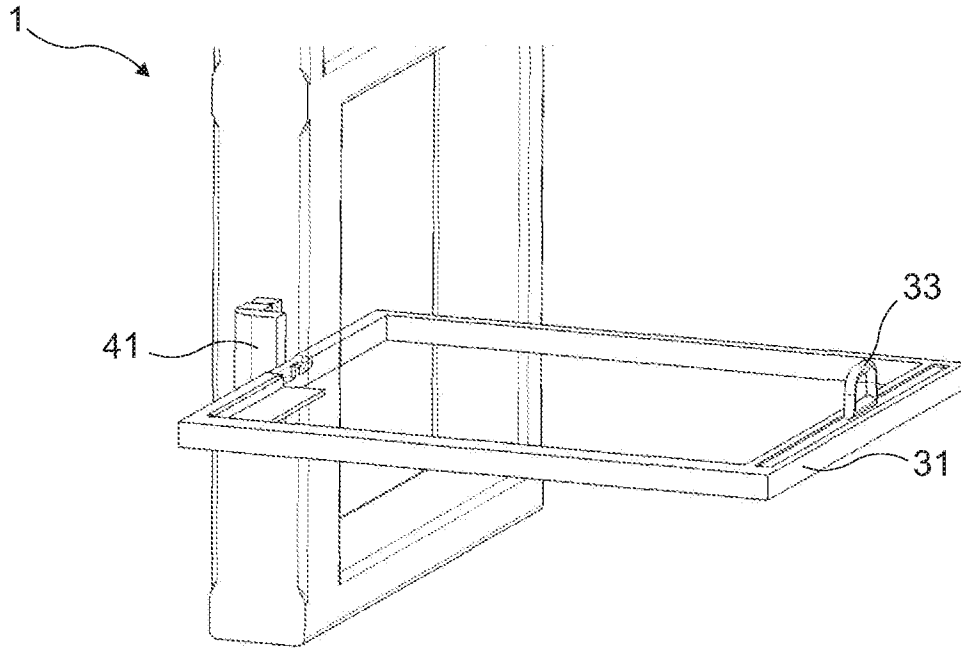


Figure 6

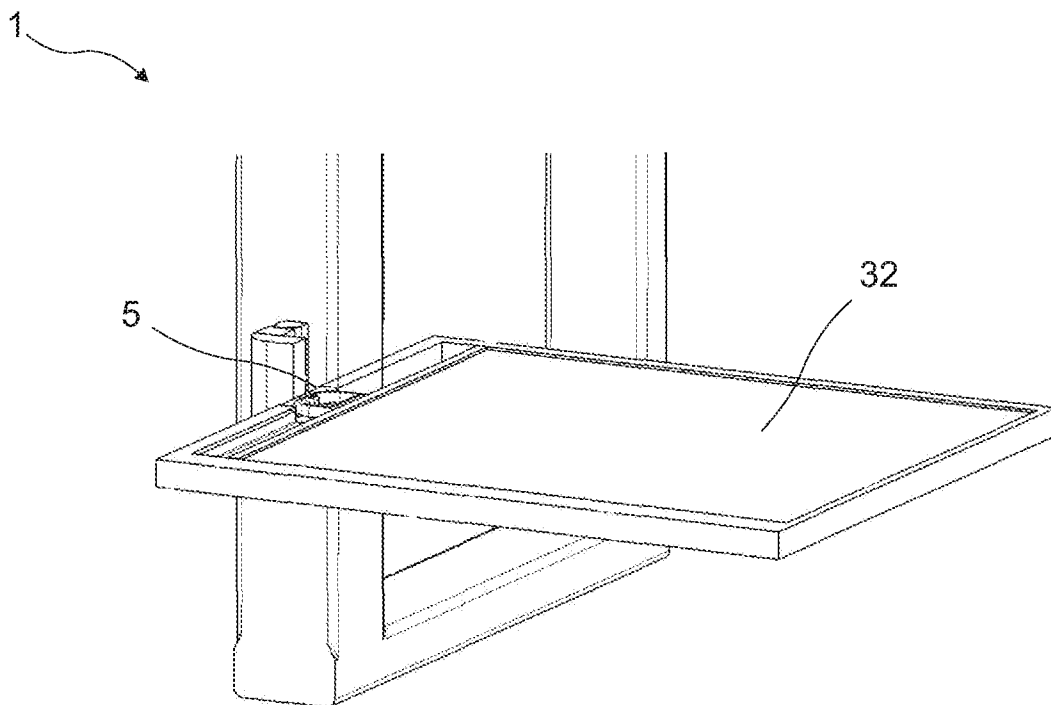


Figure 7

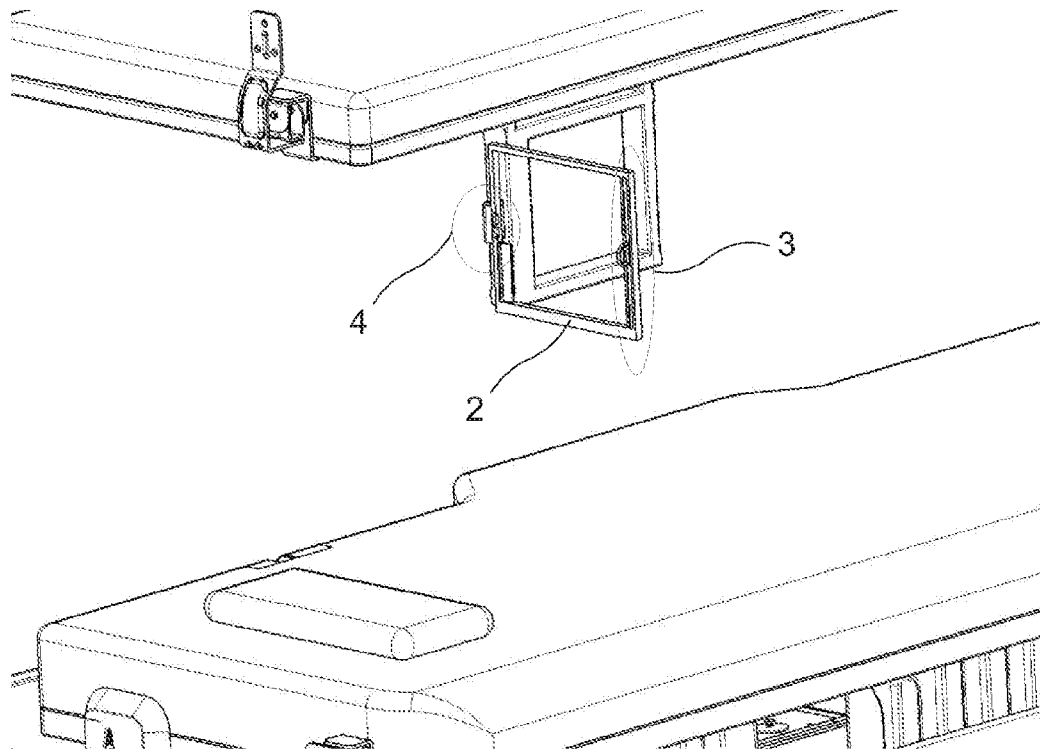
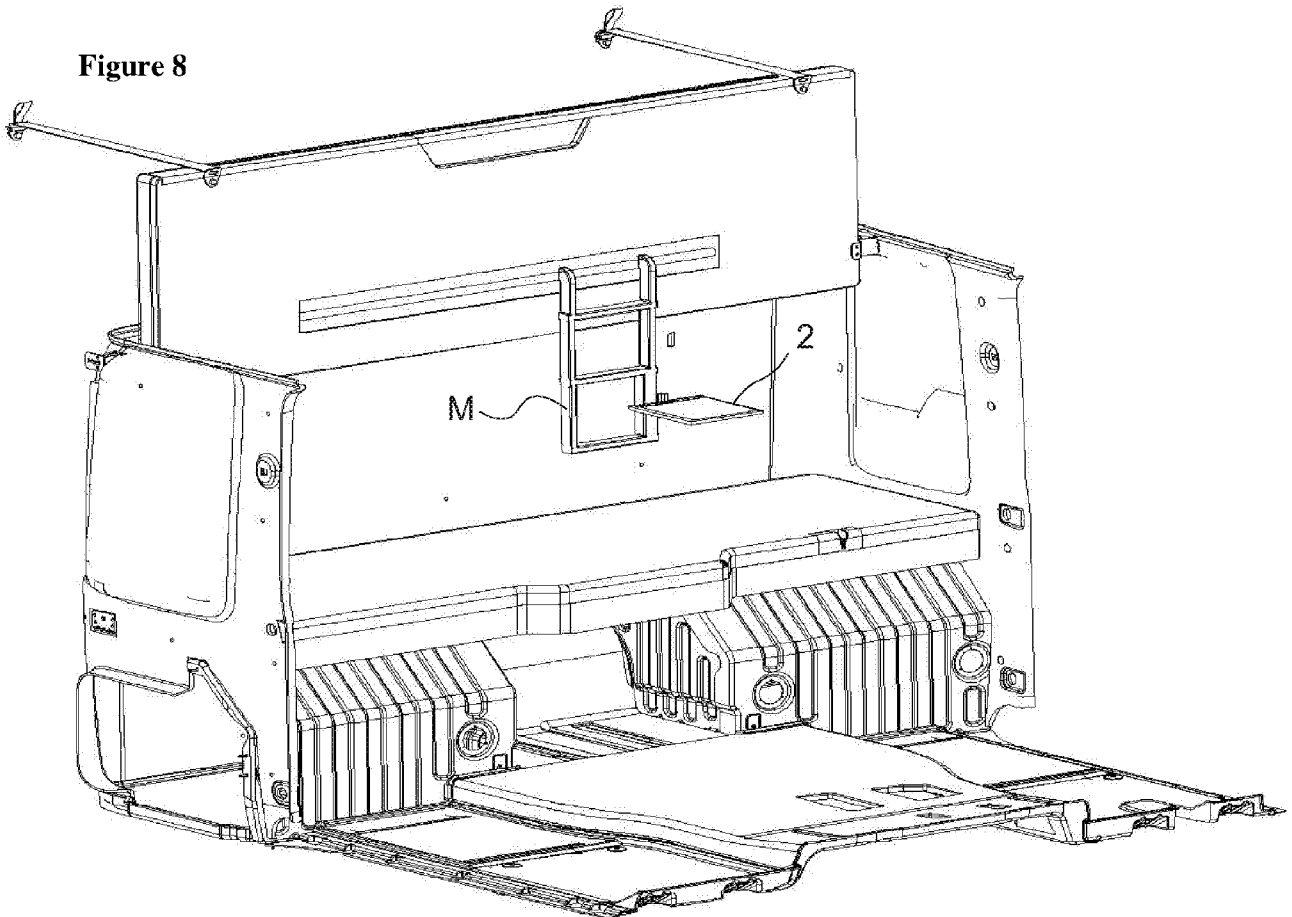


Figure 8



**INTERNATIONAL SEARCH REPORT**

International application No  
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**A. CLASSIFICATION OF SUBJECT MATTER**  
 INV. B60R11/00 B62D33/06  
 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)  
 B62D B60P B60R

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)  
 EPO-Internal, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 1 992 522 A1 (EDWARDS JOHN ANTHONY [GB]) 19 November 2008 (2008-11-19) paragraphs [0109] - [0116]; figures 15,16 -----	1-21
A,P	EP 3 006 273 A1 (MAN TRUCK & BUS AG [DE]) 13 April 2016 (2016-04-13) the whole document -----	1-21
A	EP 1 749 965 A2 (IVECO SPA [IT]) 7 February 2007 (2007-02-07) the whole document -----	1-21

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Date of the actual completion of the international search  29 March 2017	Date of mailing of the international search report  04/04/2017
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International application No

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