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54 **Passenger car transport device and method for packaging cars for transport.**

57 Passenger car transport device, which device is substantially box shaped, having a bottom, top and sides, wherein the bottom comprises at least two first cross bars between the sides and at least one driving surface extending in a length direction of the bottom, which driving surface lies at least partly below an upper surface of at least one and preferably at least two of the first cross bars and/or of lower length beams of the device in sides thereof, wherein near the top at least two second cross bars are provided between the sides, wherein at least one end of the device provides an in-ride and/or exit opening for passenger cars driving over the at least one driving surface.

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Dit octrooi is verleend ongeacht het bijgevoegde resultaat van het onderzoek naar de stand van de techniek en schriftelijke opinie. Het octrooischrift komt overeen met de oorspronkelijk ingediende stukken.

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Title: Passenger car transport device and method for packaging cars for transport

The invention relates to a passenger car transport device. The invention further relates to methods for packaging passenger cars for transport.

For transporting cars overseas, for example from a manufacturing site to retail areas, it is commonly known to use for example Roll-on Roll-off (Ro-Ro) ships. These have a number of decks onto which cars can be driven individually and secured in their places by suitable securing means, if desired. For each car this means that a designated driver has to collect the car from a quay side parking area, drive the car to the ship and onto the desired deck, secure the car and then walk back to the parking area to collect a next car. Disembarking the cars leads to the same method, in reverse order. Use of RoRo ships for this purpose is therefore very labour intensive, time consuming and thus costly. Moreover the risk of driving and parking accidents is substantial, potentially leading to material damage to the cars and/or personal injury to the designated drivers and further personnel.

It is known to transport passenger cars, especially luxury cars, in closed containers, dedicated for such transport. For example in US2005/0006261 a container is disclosed in which a number of passenger cars can be transported. To this end the container is provided with support structures and guide elements to load the desired number of cars into the container. The structure and guide elements comprise support structures for suspending some of the cars at an angle relative to the floor of the container, in such a position that another car can be placed on the floor, at least partly below the suspended car. The container comprising for example six passenger cars can then be handled as one unit, for example on a truck or

rail way cart. Sides of the container have to be reinforced at least partly in order to be able to carry the weight of the suspended cars.

Positioning the cars into the containers is again time consuming and has to be performed with utmost care, not to damage the cars.

5 Moreover, the cars have to be stacked securely and accurately, in order to prevent contact between the cars. Furthermore, for drivers getting into and/or out of the cars in the container can be very difficult, if not impossible, due to the limited width of the internal space of the container.

The present disclosure aims at providing an alternative device for
10 transporting cars, especially passenger cars.

Another aim of the present disclosure is to provide for a device for transporting passenger cars, which allows including the devices into regular container freight systems, such as container ships and loading systems.

Another aim of the present disclosure is to provide for a device for
15 transporting a series of passenger cars, which cars can be handled with the device as one unit.

In an aspect a set of two passenger car transportation devices can be characterised in that the devices can be stacked, that is the one placed on top of the other, the stacked devices together having outer dimensions of
20 which at least the outer width and the outer length are corresponding with the sizes and dimensions of a standard freight container of 20 or 40 foot. A relevant norm would for example be an ISO standard, such as ISO R668 or equivalent standards. Preferably, the two stacked devices can then together be handled as one standard freight container, for instance as if it were a
25 High Cube (HC) container having an outer height of 9 feet and 6 inches (about 2.9 m), or a higher container. Further, the height of two stacked device may be such that, when the two stacked devices are placed onto a standard container trailer, the trailer including the two stacked devices still meets maximum height requirements for road transport. For example, the
30 height of two stacked devices may be less than 3.20 m, less than 3.15 m, less

than 10 feet or about 10 feet. The total height of the trailer and the two stacked devices may be less than 4.20 m or less than 4.0 m measured from a road surface. Furthermore, the outer height of the two devices stacked on top of each other preferably corresponds with the height of a standard
5 freight container of 20 or 40 foot, such as a High Cube (HC) container or an ISO R668 container. The devices preferably have a substantially open top side, more preferably a substantially open top side and sides. Standard corner fittings can be provided in each corner of each of the devices, for stacking and handling.

10 In an aspect a passenger car transport device can be characterised in that it is substantially box shaped, having a bottom, top and sides, wherein the bottom comprises at least two first cross bars between the sides and at least one driving surface extending in a length direction of the bottom. The driving surface lies at least partly below an upper surface of at
15 least one and preferably at least two of the first cross bars. Near the top at least two second cross bars can be provided between the sides. At least one end of the device provides an in-ride and/or exit opening for passenger cars driving over the at least one driving surface. Preferably the top side, and more preferably the top side and the sides are substantially open. Preferably
20 the top side comprises two parallel beams at either side of the device, between which a space is provided into which a part of a roof of a passenger car parked on the at least one driving surface can extend.

In an aspect a passenger car transport device has a maximum outside height of 1.6 meter or less, preferably 1550 mm or less, such as for
25 example 1448 mm or less, wherein a height measured between the at least one driving surface side facing inward and a side of a second cross bar facing the driving surface is less than 1.5 m, preferably less than 1450 mm, such as 1348 mm or less, wherein the device preferably has a maximum outside width of between 2.3 and 2.5 m, more preferably between 2.4 and 2.5 m, for
30 example about 2438 mm, wherein the device preferably has a frame opening

width of less than 2200 mm, more preferably between 2200 and 2000 mm, more preferably between 2100 and 2150 mm.

In an aspect a method can be provided for packaging passenger cars for transport, wherein at least one passenger car is driven onto at least one and preferably onto two adjacent driving surfaces, over part of at least one cross bar between sides of a transport device, through an in-ride opening. Before driving the car onto said at least one driving surface at least one cross bar is at least partly removed from the in-ride opening, temporarily increasing the height of the in-ride opening, wherein said cross bar is replaced between the sides after driving the vehicle in or out of the transport device, preferably such that at least part of at least part of at least one car on the or each driving surface extends between the sides and between at least two cross bars, wherein at least two devices comprising cars are stacked on top of each other, forming a unit, the unit preferably being a unit having an outer width and an outer length corresponding with an ISO freight container and more preferably being an ISO freight container sized unit, the unit having ISO corner fittings for freight containers. The cars shall preferably not extend above the top of the device.

In further elucidation of the present invention embodiments of a transport device, method and set shall be discussed hereafter, with reference to the drawings, which are shown by way of example only and should in no way be explained as limiting the scope of the present invention in any way. These drawings show:

Fig. 1 a view of two devices stacked one on top of the other, seen from an end;

Fig. 1A schematically a first cross bar between two sides of the device;

Fig. 1B an end view of a device of the present disclosure;

Fig. 2 in front and side view schematically part of two devices stacked one on top of the other;

Fig. 3 is a partial side view of a device with a passenger car in the device, on the driving surfaces;

Fig. 4 a cross sectional view along the line IV - IV in fig. 2 of a device, showing driving surfaces;

5 Fig. 5 a cross sectional view along the line V - V in fig. 2 of a device;

Fig. 6 a front and cross sectional side view a device, in an alternative embodiment;

10 Fig. 7 schematically a detail view of a cross beam with connection thereof in the device;

Fig. 8 schematically a detail view of a lock beam with connection thereof in the device; and

Fig. 9 schematically a number of cars in a device of the present invention.

15 Fig. 10 - 12 show an alternative embodiment of a device for transporting cars; and

Fig. 13 and 14 show in side view a still further embodiment of a device for transporting cars.

In this description and drawings the same or similar elements
20 will have the same or similar reference signs. The drawings are provided by way of examples only and should be understood as such. Passenger cars has to be understood as automobiles or luxury cars, limousines, town cars and the like, intended for transport of passengers, especially cars for one to about six occupants. Transport and shipping should be understood as
25 including but not limited to movement of the devices with cars position therein, by ship over water such as but not limited seas or oceans, and/or by road or rail. Freight containers has to be understood as including but not limited to containers according to for example ISO R688 and/or including High Cube (HC) containers, the containers preferably having corner fittings
30 according to ISO R1161.

Fig. 1 shows an end view of an embodiment of two devices 1 of the present disclosure, stacked one on top of the other. Each of the devices can be a car transport device 1 which is substantially box shaped. Each device 1 has a bottom 2, a top 3 and sides 4. The bottom 2 comprises at least two first cross bars 5 between the sides 4 and at least one driving surface 6 extending in a length direction L of the bottom 2. The devices have a width W, measured perpendicular to the length or length direction L, and a height H measured perpendicular to the length L and width W.

In the embodiment as shown in fig. 1 two parallel driving surfaces 6 are shown, spaced apart over a distance W1. The or each driving surface 6 preferably lies at least partly below an upper surface 7 of at least one and preferably at least two of the first cross bars 5. Near the top 3 of the device 1 at least two second cross bars 8 are provided between the sides 4. At least one end 9, 10 of the device 1 provides an in-ride and/or exit opening 11 for passenger cars 12 driving over the at least one driving surface 6.

In the embodiment shown in fig. 1 and 2 there are three second cross bars 8 between the sides, preferably spaced substantially evenly. A second cross beam positioned near a middle of the device, seen in length direction L, can be mounted permanently to the sides, for example by welding, bolting or the like. The other two second cross beams 8 are positioned at the two opposite ends 9, 10 and at least one thereof and preferably both can be connected to at least one of the sides 4 such that it or they can at least partly be removed, for example by dismounting or by swivelling, in order to open up the full height of the respective end 9, 10 above the driving surface or driving surfaces 6, between the sides 4.

As can be seen in the drawings the driving surface or surfaces 6 are formed by substantially plate shaped elements 13 having a thickness T measured in the height direction of the device of a few millimetres, for example between 2 and 10 mm, such as but not limited to about 3 to 5 mm. In the embodiment shown the thickness T can be about 4 mm. The or each

driving surface 6 preferably forms part of a bottom support structure, together with or as part of the first cross bars 5. The first cross bars 5 can have a significantly greater thickness T_b , measure in the height direction H of the device, for example a few centimetres or more. In an embodiment the thickness T_b can be between 1 and 20 cm, preferably between 1 and 15 cm, more preferably between 5 and 15 cm, such as but not limited to about 12 cm. The first cross bars 5 can for example be formed from tubes, which can have a square or rectangular cross section. In an embodiment there can for example be two of such cross beams 5 spaced apart from each other and from the ends 9, 10, whereas further cross beams 14 can be provided in between these two first cross bars 5, for example again regularly spaced, having a smaller dimensions, for example a lower height or thickness.

In this description a first cross bar 5 can be formed as schematically shown in fig. 1A. A first cross bar 5 can be an element or series of interconnecting elements extending by itself or together between the sides 4 of the device 1, near or in a bottom 2 thereof, and can include a cross sectional part of a driving surface or driving surfaces 6. In the embodiment of fig. 1A a first cross bar 5 comprises from left to right in the drawing an end 15 connected to first side 4 and a second end 16 connected to the opposite side 4 of the device 1. These connections can be made in any suitable way, for example by welding, bolting or hooking. The bar 5 comprises a first end portion 17, a second end portion 18 and an intermediate portion 19, each having a thickness T_b as indicated before. The first end portion 17 comprises the first end 15 and an opposite end 20. The second end portion 18 comprises the second end 16 and an opposite end 21. The intermediate portion 19 comprises two opposite ends 22, 23.

The driving surfaces 6 are provided by substantially U shaped profiles 24, extending over substantially the length L of the device 1. The actual driving surface 6 is preferably formed by substantially horizontal portions 25 thereof, a flange 26 being provided on either side thereof. The

horizontal portions can be provided with draining provisions. These portions can be made of e.g. perforated plate, tear plate, corrugated plate or the like. The flanges have a height H_f above the surface of the driving surfaces 6 which can be about comparable to the thickness T_b of the bar 5 as defined before, i.e. of the first, second and/or intermediate parts 17, 18, 19. Facing ends 20, 22 of the first end portion 17 and the intermediate portion 19 are connected to opposite flanges 26 of one of the driving surfaces 6, preferably opposite each other. Similarly the facing ends 21, 23 of the second end portion 18 and the intermediate portion 19 are connected to the opposite flanges 26 of the other driving surface 6, again preferably opposite each other. The ends 15, 20, 22, 23, 21 and 16 may be positioned on a substantially straight line, such line preferably extending substantially perpendicular to the sides 4. The portions 17, 18, 19 and the driving surfaces 6, especially the profiles 24, more specifically the flanges 26 can be connected in any suitable way, such as but not limited to welding, forging, bolting, riveting, gluing, hooking or combinations thereof. Preferably the cross bars 5 thus form part of a bottom support structure.

Alternatively the profiles 25 can for example be connected directly to the sides 4, only the intermediate portions 19 being provided.

As can be seen in the drawings, each of the cross bars 5 or portions thereof has an upper surface 27 spaced above the driving surface 6, especially above the surface thereof. The arrangement is preferably such that when a passenger car 12 is driven onto the driving surfaces 6, left wheels 12A on one and right wheels 12B in the other of the driving surface 6, there is clearance C between the bottom of the car 12 and the top surfaces of the first cross bars 5 and beams 15. Preferably the upper surface 27 is between about 110 and 140 mm above the surface 6, more preferably between about 110 and 130 mm, such as for example about 120 mm.

In advantageous embodiments a device 1 can have a maximum outside height H of 1.6 meter or less, preferably 1550 mm or less. In

embodiments, the height H can for instance be about 1448 mm or less, for instance such that the combined height of two of such devices stacked on top of each other can correspond with a standard height of a High Cube (HC) container. A height H_i measured between the surface of the at least one driving surface 6 facing inward and a side 28 of a second cross bar 8 facing the driving surface 6 can be less than 1.5 m, such as less than 1450 mm, preferably between 1380 and 1450 mm. The device 1 preferably has a maximum outside width W of between 2.3 and 2.5 m, more preferably between 2.4 and 2.5 m, for example about 2438 mm. The device 1 preferably has a frame opening width W_i of less than 2200 mm, more preferably between 2200 and 2000 mm, more preferably between 2100 and 2150 mm. Frame opening width W_i has to be understood as the minimal clearance between the sides 4, at least at the ends 9, 10 and preferably over the full length L of the device 1.

Devices 1 as here described are stackable on top of each other, wherein two devices stacked on top of each other may have outer dimensions complying with ISO-R-688. Two devices 1 stacked, one on top of the other can comply with comparable norms for freight container dimensions, especially sea freight containers, preferably standardised dimensions and strength and weight regulations, more preferably for 40 feet (12.19 m) standardised freight containers. Alternatively they can comply with standardised 20 feet (6.1 m) freight containers.

Two devices 1 stacked on top of each other may be connected to each other. For example, upper corner fittings of a lower one of the devices can be connected with lower corner fittings of an upper one of the devices, for instance by using corner fitting connectors such as “stackers” and/or twistlocks.

It is noted that both a single device as well as a unit formed by two devices stacked on top of each other may comply with ISO R-688 for all specifications but the height specifications. Additionally, the single device or

the unit may comply with the height specifications as well. Further, the passenger car transport device may be arranged such that the unit formed of two stacked devices complies with ISO-R-688 for all specifications but the height specifications or for all specifications. For example, the device 1 can have a height of about 1.54 m and the unit of two stacked devices including connectors can have a height of about 3.11 m. The total height of a container trailer and the unit placed onto the trailer can then for instance be lower than 4.2 m, 4.1m or 4.0 m. The total height of the trailer and the unit of two stacked devices 1 can then comply with road transport specifications, such as for instance laid down in national or regional regulations. The unit of two stacked devices 1 can then be transported relatively easily by a trailer. For example, special permits may not be needed.

In embodiments, the sides 4 of the device 1 can be substantially open. The device 1 can comprise two lower length beams 30 and two upper length beams 31, one of each in each side 4 of the device 1. Support beams 32 can extend in each side 4 between the lower 30 and upper length beams 31. The lower length beams 30 can have an upper surface above a level defined by the at least one driving surface 6, especially the top side thereof. The or each driving surface 6 can be defined by a substantially plate shaped element 25 having a thickness T which is small compared to the height H_{sb} of at least the lower length beams 30 and is mounted near a lower side 33 of the lower length beams 30. Two substantially parallel driving surfaces 6 can be provided, one near each of the lower length beams 30, wherein each of the driving surfaces 6 can be provided, at least at a side facing away from the adjacent lower length beam 30, with a flange 26 forming a guard rail extending over at least part of the length L of the relevant driving surface 6. Between these guard rails 26 one or more connecting elements 34 can be provided, preferably connecting upper sides 35 of the guard rails 26 as shown in fig. 6, such that a wheel 12A, B of a passenger car 12 can drive on one of the driving surfaces 6 between the relevant lower length beam 30 and

the adjacent guard rail 26, prevented from rolling off side ways by at least the guard rail 26. The connecting elements 34 can for example be beams, such as schematically shown in fig. 4 and 5, or near the two opposite ends 9, 10 the elements 34 can be plate shaped, closing off a gap between the driving surfaces 6 near said ends, and providing space between the driving surfaces 6, open towards a lower device 1. Below said element 34 extra height for a device there below can be created.

Preferably the driving surfaces 6, as described before and as shown in fig. 1A, are positioned such that a second guard rail or flange 26 is provided at a side of the surface 6 facing outward, spaced from the adjacent side 4 over such distance that a side of a car 12 on the driving surfaces cannot touch the side 4 because the wheels will be prevented from approaching the side 4 further than the relevant guard rail 26.

At each end 9, 10 end posts 36 can be provided between a relevant lower 30 and upper length beam 31, preferably substantially vertically when the device 1 is placed on a flat horizontal floor. At each corner of the device 1 a standardised corner fitting 37 can be provided. The corner fittings 37 can be connected to and can form the connecting between a relevant lower or upper length beam 30, 31 respectively and a post 36. The corner fittings are preferably permanently connected to the posts 36 and length beams 30, 31, for example by welding or forging. Corner fittings 37 are preferably according to international standards for such fittings for freight containers, such as for example defined in ISO R-1161 or similar standards. The corner fittings 37 are preferably provided such that two devices 1 can be interconnected by or through such fittings 37 and/or such that two stacked devices 1, as for example shown in fig. 1, can be picked up and handled as a standardised freight container, such as a standard ISO R-668 freight container or a High Cube container, and/or as a container of about 10 feet high and can be handled by equipment suitable for such freight containers,

such as container cranes, and/or can be shipped in transport devices such as container ships adapted for such standard freight containers.

As can be seen by way of example in fig. 7 a second cross bar 8 in or at least at an end 9, 10 can be provided between sides 4, especially
5 between ends of the upper length beams 31 or upper corner fittings 37, such that said second cross bar 8 can be removed temporarily from the said end, for example by completely removing the cross bar 8, or by releasing one end 38 of the cross bar 8 from the relevant beam 31 or fitting 37, and swivelling the bar around the opposite end 39 of said bar 8. By at least partly removing
10 the upper second cross bar 8 from the relevant end 9, 10 from above the driving surface 6, the height H_i can be increased above the driving surface 6, to at least about the full height H of the device minus the thickness T of the driving surface or surfaces 6, or even further. By increasing the height H_i cars 12 can be driven onto the or each driving surface which have a
15 height H_c larger than the height H_i between the surface of the driving surface(s) 6 and the lower side of the relevant second cross bar 8 facing the driving surface(s) 6.

In embodiments all second cross bars 15 can be provided such that they can be removed or at least displaced for increasing the passing
20 height H_i between the sides 4. In preferred embodiments the top 3 of the device 1 is substantially open, especially between the sides 4, such as between the upper length beams 31, such that the roof 40 of a car 12 standing on the driving surface or surfaces 6 can extend between the upper length beams 31 and/or second cross bars 8, as is schematically shown in
25 fig. 1B and 3. This extra height provides for sufficient height to fit most existing passenger cars 12 in a device 1 according to the description.

A closing element 42 could be provided on the top side 2, level with or on top of the top side 43 of the upper length beams 31. The element 42 can for example be a plate, such as a metal or, preferably, plastic plate,
30 for example a transparent or semi transparent plate such as acrylic plate, or

an opaque plate, or combinations thereof. The thickness of the element 42 is preferably small, for example comparable to or smaller than the thickness T of the driving surfaces 6. This can have the advantage that debris falling from a device 1 or container above the relevant device 1 shall not fall on top of cars 12 in the lower device 1, whereas the element 42 does not prevent the devices 1 from being stacked in the desired formation. Preferably the element 42 or elements 42 do not extend above the corner fittings 37 at the top 2 of the device 1.

At least at one longitudinal end 9 or 10 and preferable at both opposite longitudinal ends 9, 10 of the device 1 a third cross bar 43 can be provided, spaced apart from the top 3 and bottom 2 of the device 1, extending between opposite sides 4 of the device 1 and at least partly detachable from the device 1, preferably removable and/or pivotally mounted to one or both sides 4 of the device 1. Such third bar 43 can prevent cars 12 from driving off the driving surface(s) 6 unintended, whereas these can also be used for locking in the cars 12 inside the device 1, for example by providing locking means locking the bar 43 in place, which can for example only be opened by using an appropriate key, code or other dedicated unlocking device. Alternatively or additionally a lock beam 44 can be provided at an end 9, 10 of at least one and preferably all of the driving surfaces, extending above the surface thereof, as schematically shown in fig. 8. These beams 44 can for example extend between guard rails or flanges 26 and can be partly and/or entirely pivotally or detachably mounted, similar to the cross bars discussed before. These lock beams 44 can again prevent cars 12 from driving on or off the driving surface(s) 6 unintendedly. Similar lock beams 44 can be provided in other positions too or alternatively, above the surface 6 between guide rails and/or flanges 26 and/or between guide rail or flange 26 and lower length beam 30.

Preferably in embodiments of a device 1 two parallel drive surfaces 6 are provided, extending in length direction of the device 1, spaced

apart in the width direction of the device. Between facing sides of the driving surfaces a distance can be provided of between 1500 and 900 mm, preferably between 1150 and 900 mm, especially between 1100 and 1000 mm. Each driving surface 6 can have a width W_{dr} , for example a width W_{dr} 5 between 300 and 500 mm, preferably about 400 mm, measured between longitudinal sides or flanges or guide rails 26 thereof, or between a side, flange or guide rail and an adjacent lower length beam 30 to which the driving surface 6 is attached. Such arrangement can easily accommodate the wheels of passenger cars.

10 For aspects of the present application it has been recognised that the majority of cars, especially passenger cars have a maximum height H_c of 1.5 m or less, of which a significant number has a height H_c between 1.4 and 1.5 m. By providing a device 1 according to aspects of the invention it may be possible to drive all of these cars 12 in such device 1 and store two 15 layers of such cars in the space of a standard 20 or 40 foot freight container such as a High Cube or in a space that can be transported using a conventional road trailer, by stacking two such devices 1 as described. Each device 1 can be placed on the ground first, for driving in a car or cars, and then be placed on top of another such device, a container, a track or other 20 suitable position. Using a device 1 or stacked devices 1 it is possible to ship cars to almost any port or harbour, even smaller ports or harbours where the large Ro-Ro ships cannot or will not land, for example for reasons of limited volumes, insufficient capacity of the port or harbour or waterways leading to and from it, insufficient landing area or other such reasons. By 25 providing devices 1 that can be handled as standard freight containers, such objections and restrictions can easily be overcome. The devices 1 can easily be handled, by standard container cranes, container loading and unloading vehicles and even by fork lift trucks and the like. The devices containing one or more cars 12 can be loaded onto a truck or rail car for further transport, 30 similar to standard freight containers.

Fig. 9 shows three cars 12 driven onto driving surfaces 6 of a device 1, behind each other, such that these three cars 12 can be handled, stored and shipped simultaneously. Loading and unloading of the cars can therefore be done faster and possibly safer than with Ro-Ro ships.

5 In the embodiment of fig. 10-12 the same elements as discussed in respect to for example fig. 4-6 are provided with the same reference signs. This embodiment shall only be discussed as far as necessary to understand the difference with the embodiments discussed before, as for example shown in fig. 4-6.

10 In fig. 11 a side view is shown, in fig. 12 a cross section through a vertical mid plane. In this embodiment the vertical posts 32A and posts 32B extending at an angle α relative to the vertical posts 32A are placed such that cars 12 can be placed such that for most models of cars at least a driver side front door can be opened when in the device 1. In the embodiment
15 shown for vertical posts 32A are provided, placed at regular intervals, wherein each angled post 32B extends at a relatively acute angle α , such that at an upper end of the vertical post 32A they are joined to the post 32A, whereas at the opposite lower ends 32II they are spaced apart from the vertical post as well as from each other, for example spaced relative to each
20 other over a distance L_p which is about half the distance L_v between two adjacent vertical posts 32A. Surprisingly this will still lead to a sufficiently strong device 1 and provide for ample space for opening car doors.

 In a preferred embodiment, the device 1 does not comprise any angled posts 32B or angled beams, but vertical posts 32A or vertical beams
25 as support posts 32 or support beams only. As a result, doors of cars placed in the device 1 may be opened relatively easily. It is noted that the device 1 does thus not need to comprise any angled posts 32B or angled beams. Each of the embodiments shown in any of figs. 1, 2, 3, 5, 6, 11 and/or 12 may alternatively be provided without angled posts 32B or angled beams.

30 Alternatively or additionally, one or more of the features described in

combination with one or more of the embodiments shown in any of figs. 1, 2, 3, 5, 6, 11 and/or 12 may be incorporated in an embodiment of a device 1 having no angled posts 32B or angled beams and/or in an embodiment of a device 1 as shown in any of figs. 7, 8, 9, 13 and/or 14.

5 In this embodiment at opposite longitudinal ends of the device 1 extensions 100 are provided, which can be removably attached to the device 1. At each end in this embodiment two extensions are provided, one at each side, for protecting a nose or rear of a car extending partly from the device. The extensions 100 may be pivotably connected, or be detachable. The
10 overall extended length of the device 1 in this embodiment will be the length L , augmented with twice the length L_{ex} of the extension s . The length L_{ex} of the extensions 100 is preferably such that the overall length is substantially equal to the length of a standard extended length container as known in the art.

15 Extensions 100 can be left out in the embodiment of fig. 10-12, and/or could also be used with a device as shown in the other figures and/or as described in the description.

 In fig. 13 a further embodiment of a device 1 is shown, in side view, similar to the devices described previously, wherein only vertical
20 beams 32 are provided in the sides of the device 1. In this embodiment one vertical beam 32 is provided in the longitudinal middle of the device 1, spaced apart from both longitudinal ends of the device 1 over the same distance. At both longitudinal ends a further beam or post 36 is provided. Moreover in between the beam or post 36 at the end and the beam 32 in the
25 middle a still further vertical beam 32A or post is provided, relatively close to the beam or post 36 at the end. Between the post or beam 36 at the end and the adjacent beam or post 32A, the top and bottom a substantially square open space 50 can be enclosed. Each corner 51 of said square space is reinforced by reinforcements 52, for example by welding or otherwise
30 mounting a plate in said corner, connected to the relevant beam or post 36,

32A and the relevant upper or lower longitudinal beam 30, 31. The plates can for example be substantially isosceles triangular with legs along the beam or post 36, 32A and the beams 30, 31 which have a length such that the plates 52 are spaced apart over a distance which can for example be
5 about half the length of the sides of the square space 50.

In an exemplary embodiment of a device having an outer length and an outer width as discussed before and preferably an outer height as discussed before, the sides of the square space 50 can for example be between 80 and 180 cm, for example between 80 and 160 cm, such as for
10 example about 120 cm. The sides of the reinforcing plates can for example be between 20 and 50 cm, for example between 25 and 40 cm, such as for example 30 cm.

As can be seen in fig. 14 about three cars of standard midsize range can fit behind each other in the device 1. Of the first and last car 12 a
15 driver side door can easily be opened either through said space 50 or at the opposite side of the beam 32A, such that a driver can easily get in and out of the car 12 through the side of the device 1.

With a device 1 or a series of devices 1 a method for packaging passenger cars for transport can be performed, wherein at least one
20 passenger car 12 is driven onto at least one and preferably onto two adjacent driving surfaces 6, over part of at least one cross bar 5 or a portion 19 thereof, between sides 4 of a transport device 1. The cars 12 are driven through an in-ride opening at an end 9, 10 of the device. Before driving the car or cars 12 onto said at least one driving surface 6 at least one cross bar
25 15, 43, 44 is at least partly removed from the in-ride opening, temporarily increasing the height of the in-ride opening. Said cross bar 15, 43, 44 is replaced between the sides 4 after the car or cars are driven onto or off the transport device 1. Cars 12 can be positioned in the device 1 such that at least part of at least one car 12 on the or each driving surface 6 extends
30 between the sides 4 and between at least two second cross bars 15. At least

two devices 1 comprising cars 12 can be stacked on top of each other, forming a unit 100 having ISO corner fittings 37 for freight containers, the unit having a width and height of an ISO freight container and preferably having a height of an ISO freight container and/or a High Cube container.

5 The unit 100 can then be handled as if it were a freight container, such as an ISO R-668 freight container, such as a 20 or 40 feet container.

The present invention is by no means limited to the embodiments specifically shown and discussed here above. These are only shown by way of examples. Many adaptations and modifications are possible within the

10 scope of the invention, especially as defined by the appending claims.

In the present disclosure all combinations of parts of the disclosed embodiments are also considered to have been disclosed, for example combinations of different configurations of sides and cross bars, driving surfaces and flanges or guard rails. In the embodiments shown in the

15 drawings sides 4 and bottom 2 are substantially open, as are the ends 9, 10 and the top 3. One or more of the sides 4, top 3, bottom 2 and/or ends 9, 10 can also be covered by covers such as plates or cloth, for closing them off against entry of debris. Preferably such covers are provided on an outer side of the relevant part of the device, preferably removably and sufficiently thin

20 to keep the outer dimensions of the device 1 such that two of such devices stacked form a covered unit 100 having a standard freight container width and length and preferably a standard freight container height. Lower first cross bars 5 can be integrated in a bottom frame construction, such that they are not separate entities, as long as the bottom frame construction

25 complies with requirements for support of the car. Preferably the construction also complies with requirements of standards for freight containers concerning load bearing capacities of the device when stacked with other devices and/or other such freight containers. Different parts of the presently disclosed devices can also be replaced with equivalent parts.

These and similar amendments are considered also to have been disclosed in the present description and drawings.

Conclusies

1. Personenauto-transportinrichting, welke inrichting hoofdzakelijk doosvormig is en een bodem, bovenkant en zijkanten heeft, waarbij de bodem ten minste twee eerste dwarsbalken tussen de zijkanten omvat en tenminste één rijoppervlak omvat dat zich uitstrekt in een lengterichting
5 van de bodem, welk rijoppervlak ten minste gedeeltelijk onder een bovenoppervlak van ten minste één en bij voorkeur ten minste twee van de eerste dwarsbalken en/of zich in zijkanten van de inrichting bevindende onderste langs balken van de inrichting ligt, waarbij nabij de bovenkant ten minste twee tweede dwarsbalken zijn voorzien tussen de zijkanten, waarbij
10 ten minste één uiteinde van de inrichting een inrijd- en/of uitrijdopening verschaft voor personenauto's die over het ten minste ene rijoppervlak rijden.
2. Personenauto-transportinrichting volgens conclusie 1, waarbij het ten minste ene rijoppervlak deel uitmaakt van een bodemdraagconstructie.
- 15 3. Personenauto-transportinrichting volgens één der voorgaande conclusies, waarbij de eerste dwarsbalken ten minste een deel van de of elk rijoppervlak omvatten, waarbij bij voorkeur twee in hoofdzaak parallelle rijoppervlakken zijn voorzien, welke in een breedterichting van de inrichting gezien op afstand van elkaar zijn geplaatst, waarbij dwarsbalken
20 of delen daarvan zich uitstrekken tussen de rijoppervlakken en tussen de rijoppervlakken een bovenoppervlak hebben dat zich op een hoger niveau bevindt dan de rijoppervlakken.
4. Personenauto-transportinrichting volgens één der voorgaande conclusies, waarbij het of elk rijoppervlak zich uitstrekt in een
25 lengterichting van de inrichting, van nabij een eerste uiteinde daarvan tot

nabij een tegenoverliggend tweede uiteinde en waarbij de bovenkant van de inrichting bij voorkeur hoofdzakelijk open is.

5. Personenauto-transportinrichting volgens één der voorgaande conclusies, waarbij ten minste één van de tweede dwarsbalken is voorzien
5 aan of nabij een eerste of tweede longitudinaal uiteinde van de inrichting en ten minste gedeeltelijk losneembaar is, bij voorkeur wegneembaar is en/of zwenkbaar bevestigd is aan één of beide zijkanten van de inrichting.

6. Personenauto-transportinrichting, bij voorkeur volgens één der voorgaande conclusies, waarbij de inrichting een maximale buitenhoogte
10 heeft van 1,6 meter of minder, bij voorkeur 1550 mm of minder, waarbij een hoogte gemeten tussen de ten minste ene naar binnen gerichte rijoppervlak-zijde en een zijde van een naar het rijoppervlak gerichte tweede dwarsbalk minder is dan 1,5 m, bij voorkeur minder dan 1450 mm, waarbij de inrichting bij voorkeur een maximale buitenbreedte heeft tussen 2,3 en 2,5
15 m, bij grotere voorkeur tussen 2,4 en 2,5 m, bijvoorbeeld ongeveer 2438 mm, waarbij de inrichting bij voorkeur een frame-openingsbreedte heeft van minder dan 2200 mm, bij grotere voorkeur tussen 2200 en 2000 mm, bij grotere voorkeur tussen 2100 en 2150 mm.

7. Personenauto-transportinrichting volgens één der voorgaande
20 conclusies, waarbij acht hoeken van de inrichting zijn voorzien of zijn gevormd door hoekstukken, in het bijzonder ISO-hoekstukken, waarbij in een hoogterichting tussen de hoekstukken hoekstijlen zijn voorzien.

8. Personenauto-transportinrichting volgens één der voorgaande conclusies, waarbij de inrichtingen op elkaar stapelbaar zijn, waarbij twee
25 op elkaar gestapelde inrichtingen buitenafmetingen hebben waarvan ten minste de breedte en de lengte voldoen aan ISO-R-688 en/of aan vergelijkbare normen voor vrachtcontainer-afmetingen, in het bijzonder van zeevrachtcontainers, bij grotere voorkeur voor 20 voet of 40 voet (12,19 m) gestandaardiseerde vrachtcontainers.

9. Personenauto-transportinrichting volgens één der voorgaande conclusies, waarbij de inrichting voldoet aan ISO-R-688 voor alle specificaties behalve de hoogtespecificaties.
10. Personenauto-transportinrichting volgens één der voorgaande conclusies, waarbij de inrichting is ingericht zodanig dat een eenheid gevormd door twee op elkaar gestapelde inrichtingen voldoet aan ISO-R-688 voor alle specificaties behalve de hoogtespecificaties.
11. Personenauto-transportinrichting volgens één der voorgaande conclusies, waarbij de inrichting ten minste een onderste en een bovenste langsbalk omvat in elke zijkant van de inrichting, waarbij draagbalken zich in elke zijkant uitstrekken tussen de onderste en bovenste balken, waarbij de onderste langsbalken een bovenoppervlak hebben boven een niveau dat wordt gedefinieerd door het ten minste ene rijoppervlak, waarbij het of elk rijoppervlak wordt gedefinieerd door een in hoofdzaak plaatvormig element met een dikte die klein is in vergelijking met de hoogte van ten minste de onderste langsbalken en is aangebracht nabij een onderzijde van de onderste langsbalken.
12. Personenauto-transportinrichting volgens conclusie 11, waarbij twee in hoofdzaak parallelle rijoppervlakken zijn voorzien, één nabij elk van de onderste langsbalken, waarbij elk van de rijoppervlakken aan een van de nabij gelegen onderste langsbalk afgekeerde zijkant is voorzien van een reling die zich over tenminste een deel van de lengte van het betreffende rijoppervlak uitstrekt, waarbij tussen de relingen één of meer verbindingselementen zijn voorzien, welke bij voorkeur bovenkanten van de relingen verbinden, zodanig dat een wiel van een personenauto op één van de rijoppervlakken tussen de betreffende onderste langsbalk en de nabij gelegen reling kan rijden, waarbij ten minste door de vangrail wordt verhinderd dat deze zijwaarts wegrolt.

13. Personenauto-transportinrichting volgens één der voorgaande conclusies, waarbij ten minste aan één longitudinaal uiteinde en bij voorkeur aan beide tegenoverliggende longitudinale uiteinden van de inrichting een derde dwarsbalk is voorzien welke op afstand is geplaatst van de boven- en onderkant van de inrichting en welke zich uitstrekt tussen 5 de tegenoverliggende zijkanen van de inrichting en welke ten minste gedeeltelijk van de inrichting losneembaar is, bij voorkeur wegneembaar is en/of zwenkbaar bevestigd is aan één of beide zijkantkanen van de inrichting.
- 10 14. Personenauto-transportinrichting volgens één der voorgaande conclusies, waarbij twee parallelle rijoppervlakken voorzien zijn die zich in lengterichting van de inrichting uitstrekken en in de breedterichting van de inrichting op afstand zijn gezet, waarbij tussen naar elkaar gerichte 15 zijkanen van de rijoppervlakken een afstand is voorzien van 1500 tot 900 mm, bij voorkeur van 1150 tot 900 mm, in heb bijzonder van 1100 tot 1000 mm, terwijl de genoemde naar elkaar gerichte zijkanen over tenminste een deel van hun lengte van een reling zijn voorzien, welke zich uitstrekt boven de rijoppervlakken over een hoogte, welke hoogte bij voorkeur tussen 100 en 140 mm is, bij grotere voorkeur tussen 110 en 130 mm.
- 20 15. Personenauto-transportinrichting volgens conclusie 14, waarbij elk rijoppervlak een breedte heeft tussen 300 en 500 mm, bij voorkeur van ongeveer 400 mm.
- 25 16. Werkwijze voor het verpakken van personenauto's voor transport, waarbij ten minste één personenauto, door een inrijdopening op ten minste één en bij voorkeur op twee naast elkaar gelegen oprijoppervlakken wordt gereden over een deel van tenminste één zich tussen zijkanen van een transportinrichting bevindende dwarsbalk, door een inrijdopening waarbij, voorafgaand aan het de auto op het genoemde ten minste ene rijoppervlak rijden, tenminste één dwarsbalk tenminste gedeeltelijk van de inrijdopening

wordt weggenomen, waardoor tijdelijk de hoogte van de inrijopening wordt verhoogd, waarbij de genoemde dwarsbalk tussen de zijkanten wordt teruggeplaatst nadat de of elke auto op of van de transportinrichting is gereden, bij voorkeur zodanig dat tenminste een deel van tenminste één
5 auto op de of elk rijoppervlak zich uitstrekt tussen de zijkanten en tussen ten minste twee dwarsbalken.

17. Werkwijze volgens conclusie 16, waarbij twee inrichtingen, welke bij voorkeur auto's omvatten, op elkaar gestapeld worden.

18. Werkwijze volgens conclusie 17, waarbij de twee gestapelde
10 inrichtingen met elkaar verbonden worden, bij voorkeur door bovenste hoekstukken van een onderste inrichting te verbinden met onderste hoekstukken van een bovenste inrichting, bij grotere voorkeur met behulp van hoekstukverbindingsmiddelen, bij voorkeur twistlocks.

19. Werkwijze volgens conclusie 17 of 18, waarbij twee gestapelde
15 inrichtingen een eenheid vormen, bij voorkeur een eenheid die een buitenbreedte en een buitenlengte heeft die corresponderen met ISO-668, en die bij voorkeur hoekstukken heeft volgens ISO-R1161.

20. Werkwijze volgens één van de conclusies 17-19, waarbij de twee
20 inrichtingen welke een eenheid vormen worden behandeld als één vrachtcontainer.

21. Werkwijze volgens één der conclusies 16-20, waarbij de transportinrichting en/of de eenheid voldoet aan alle specificaties van ISO-R-688 behoudens de hoogtespecificaties.

22. Set van twee personenauto-transportinrichtingen, bij voorkeur
25 volgens één der conclusies 1-15, waarbij de twee inrichtingen, indien op elkaar gestapeld, de buitenlengte en -breedte en bij voorkeur de buitenhoogte en configuratie hebben van een standaard vrachtcontainer, bij voorkeur een ISO-20 of een 40 voet vrachtcontainer en/of een high-cube

container, en bij voorkeur als zodanig kunnen worden behandeld voor opslag en verscheping, terwijl ze ook afzonderlijk kunnen worden vervoerd.

23. Set volgens conclusie 22, waarbij de twee inrichtingen, indien op elkaar gestapeld, een eenheid vormen, waarbij de eenheid bij voorkeur
- 5 voldoet aan ISO-R-688 voor alle specificaties behalve de hoogtespecificaties.

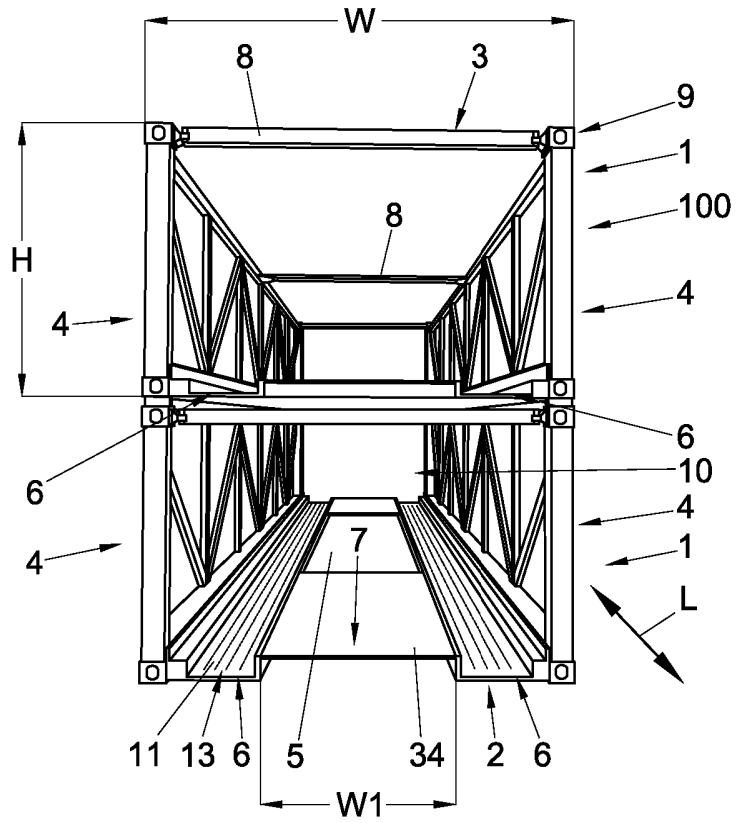


Fig. 1

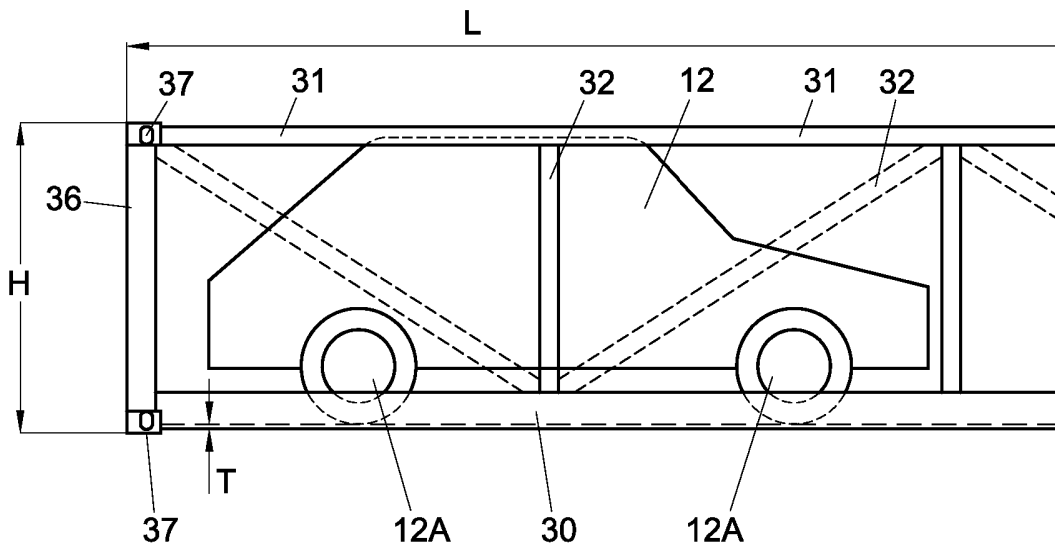


Fig. 3

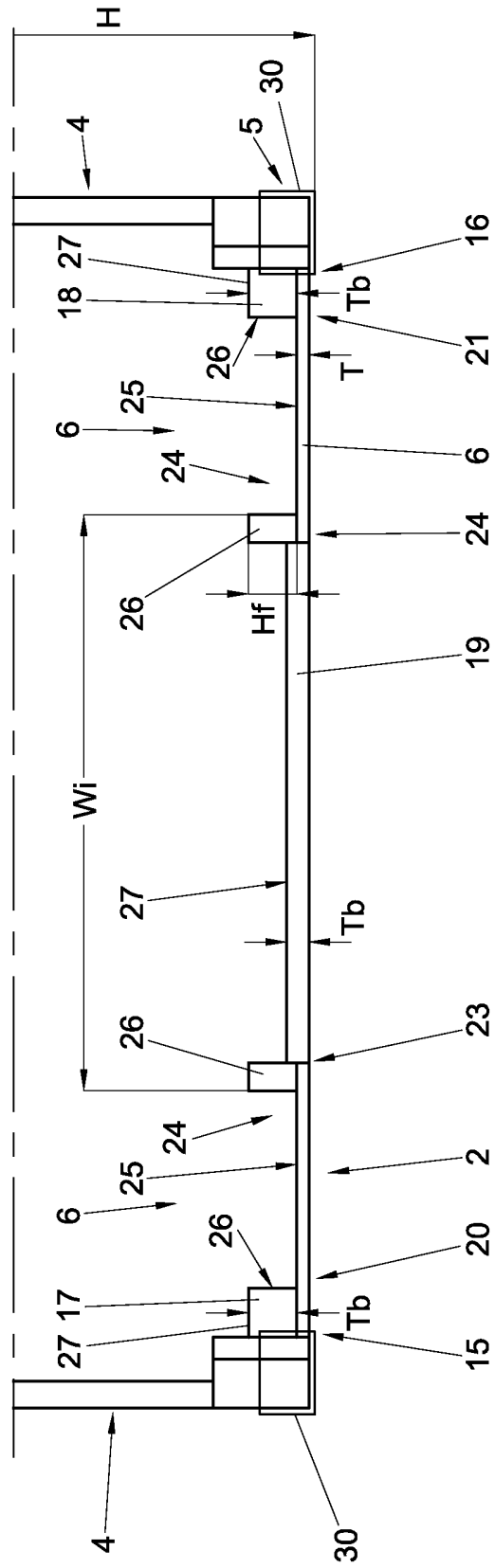


Fig. 1A

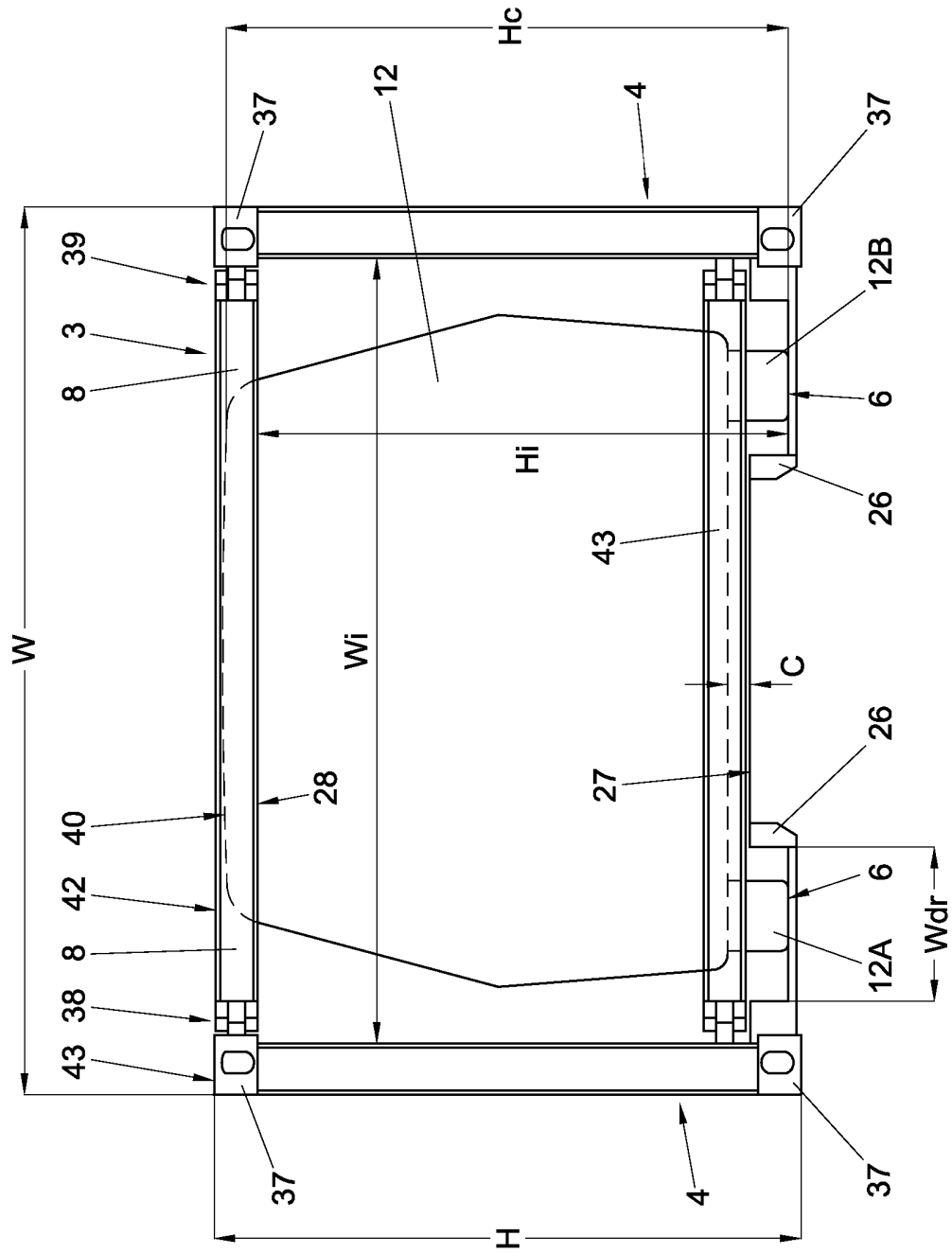


Fig. 1B

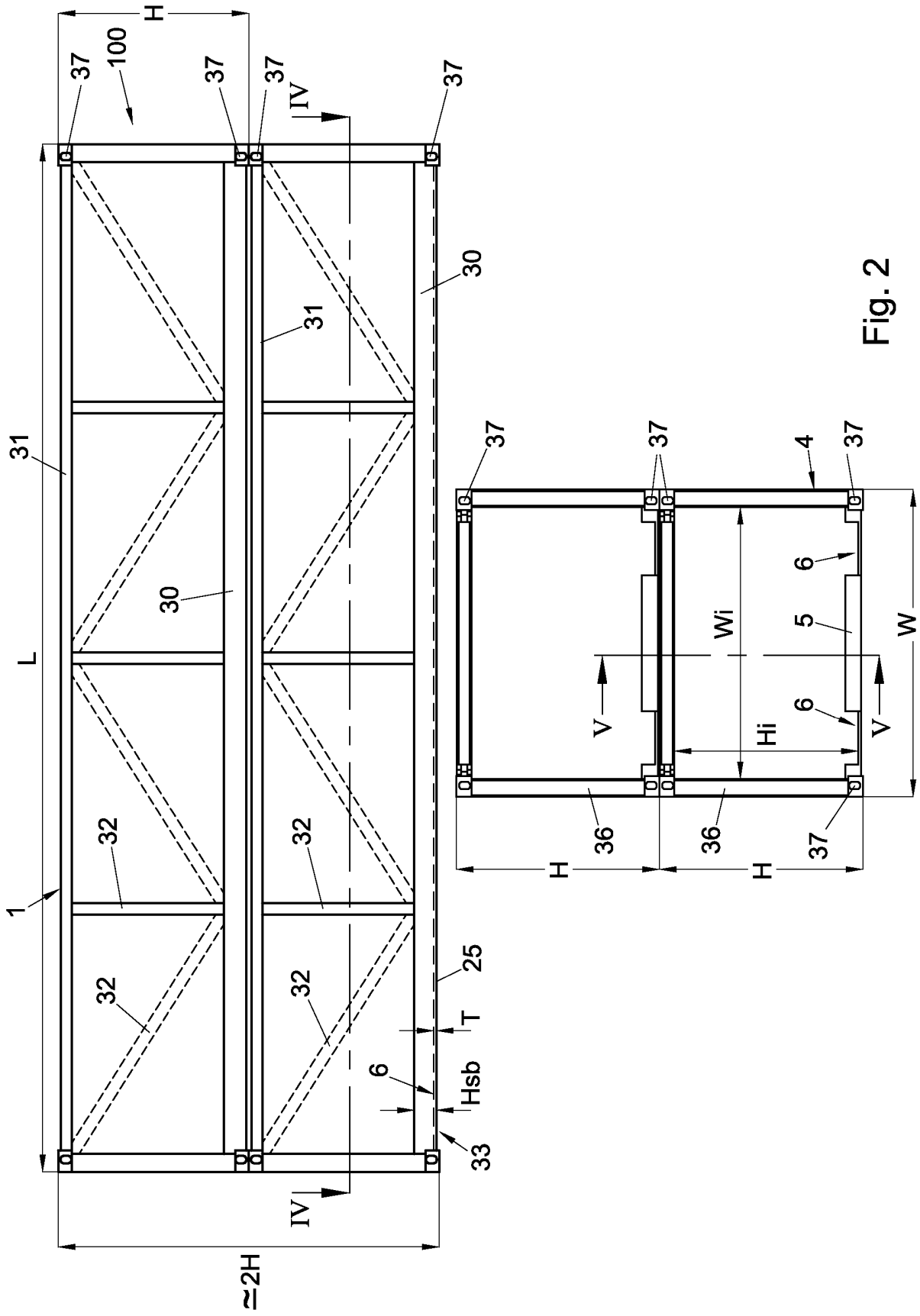


Fig. 2

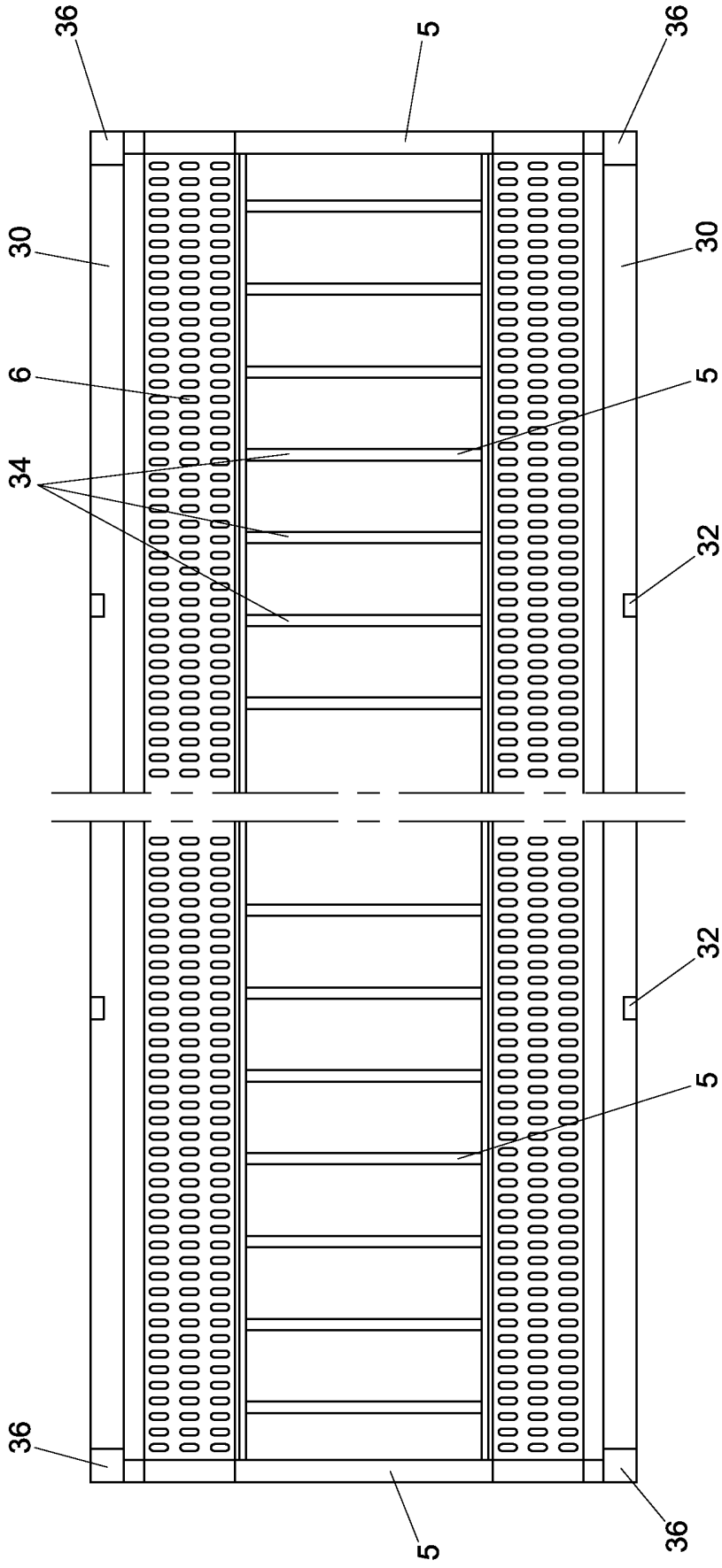


Fig. 4

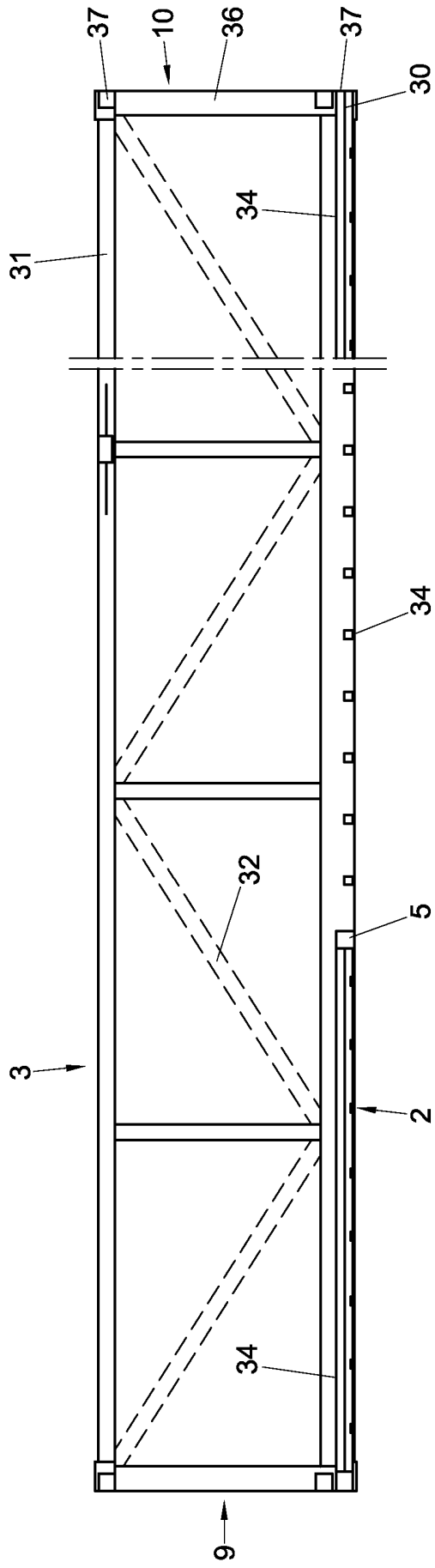


Fig. 6

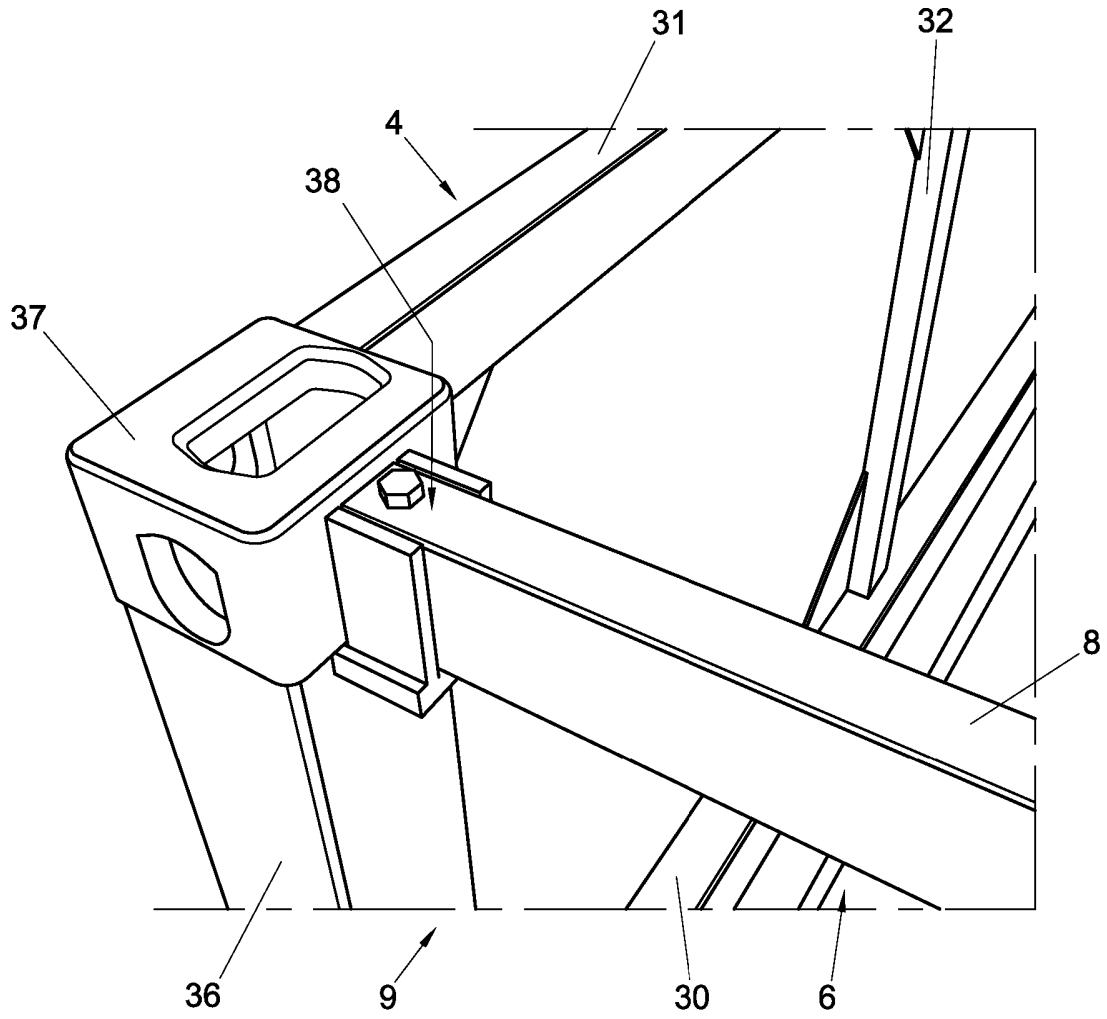


Fig. 7

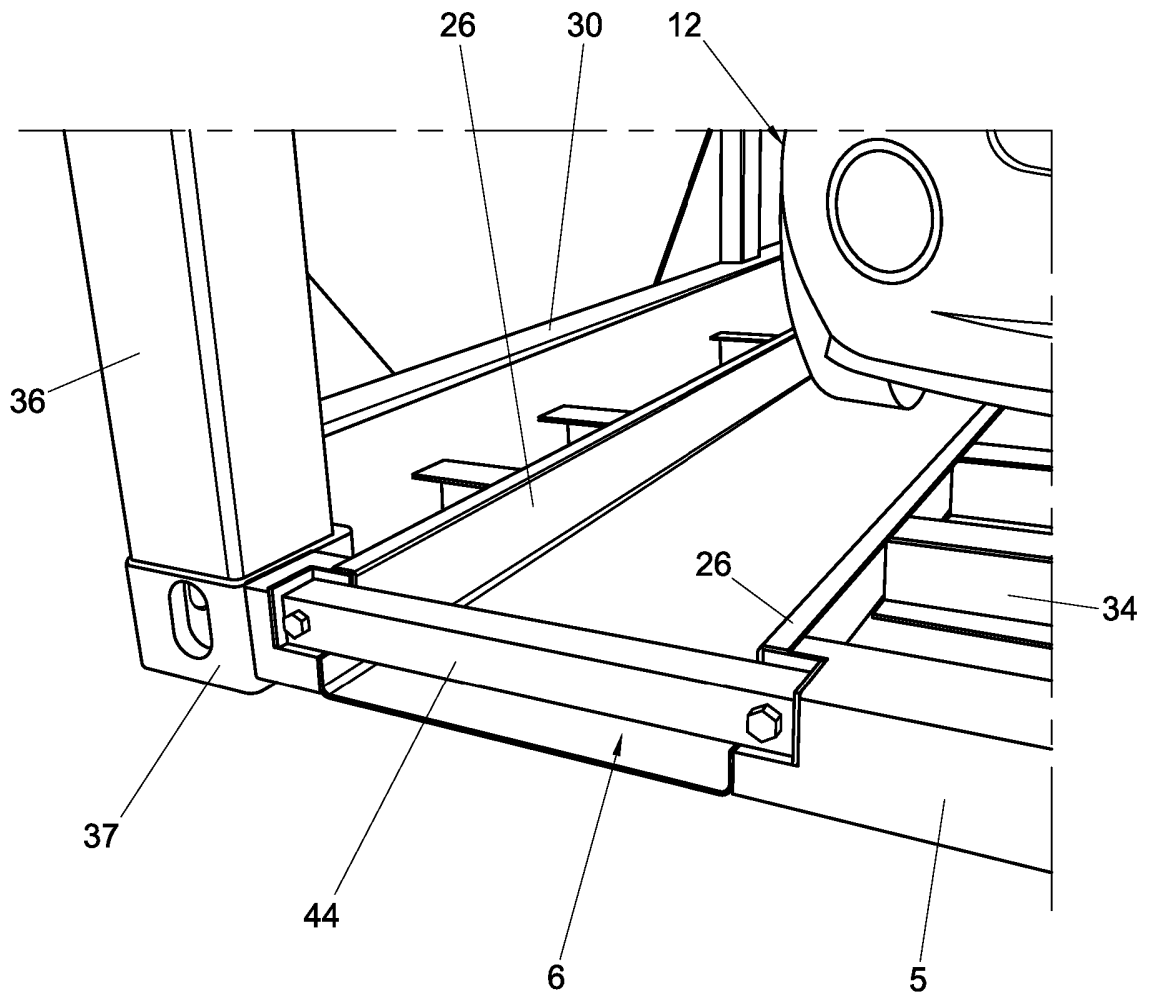


Fig. 8

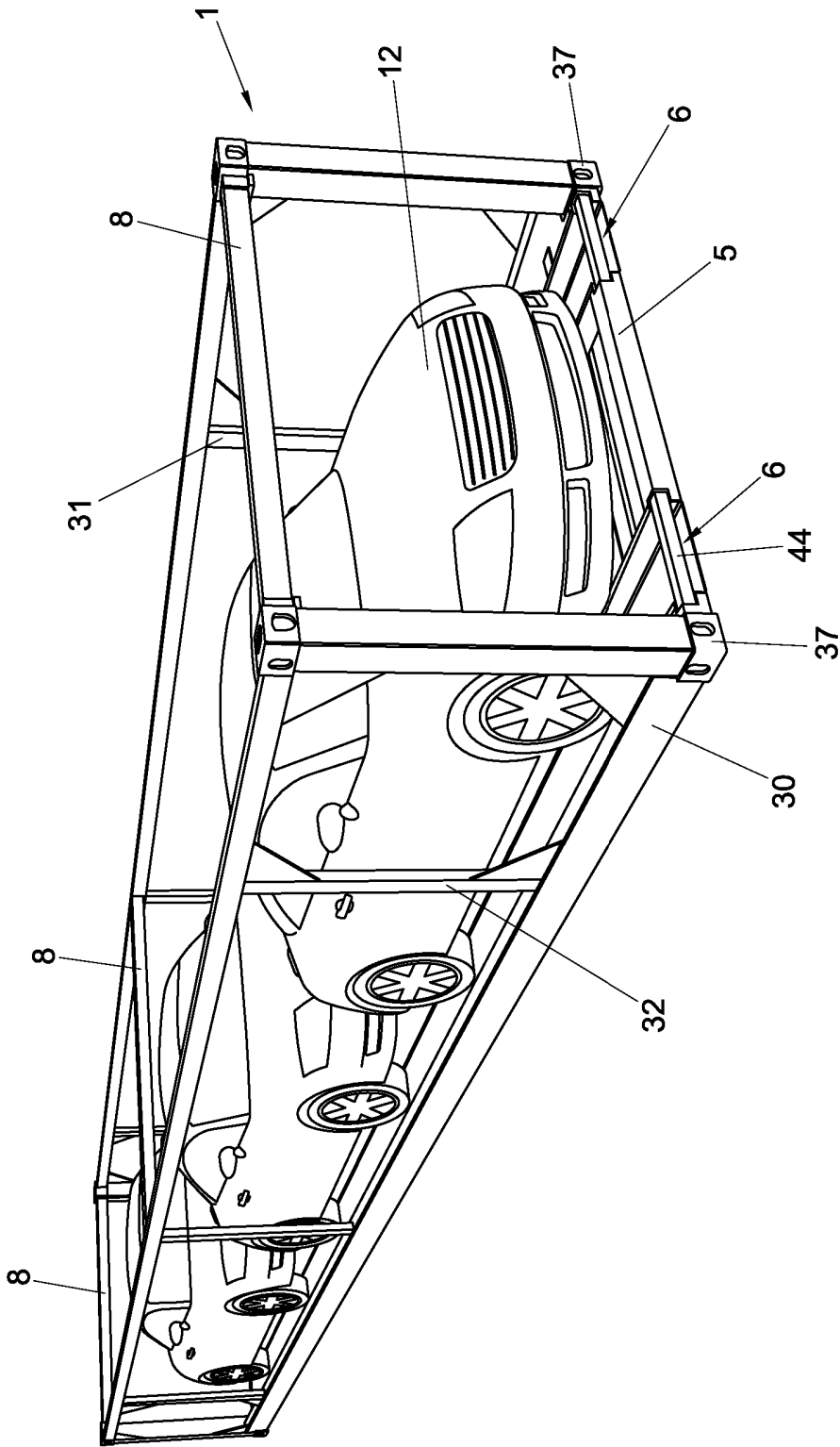


Fig. 9

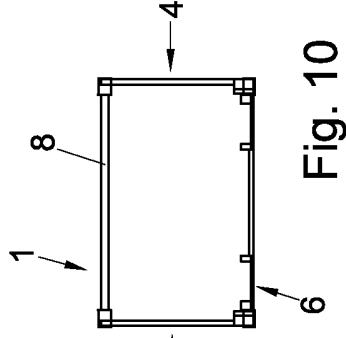
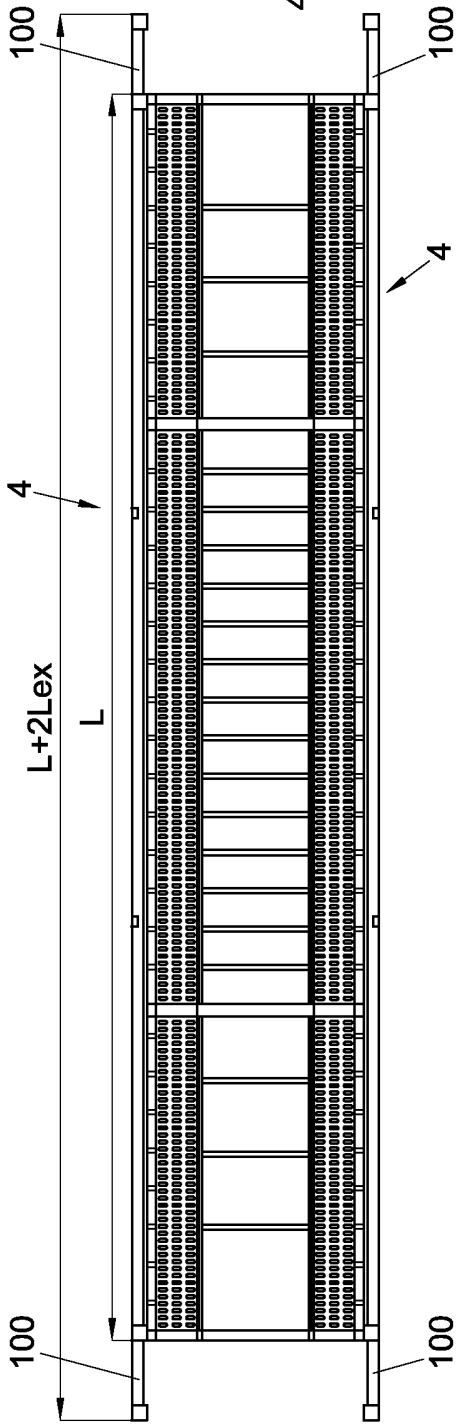


Fig. 10

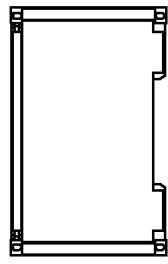
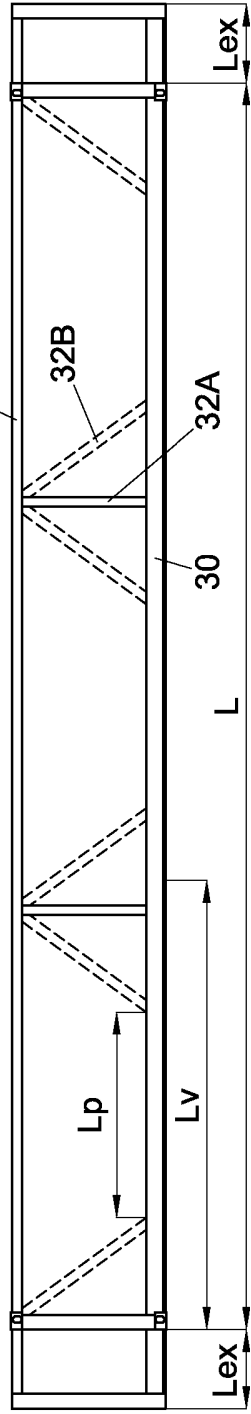


Fig. 11

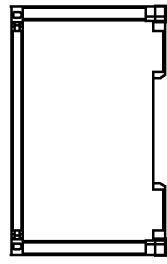
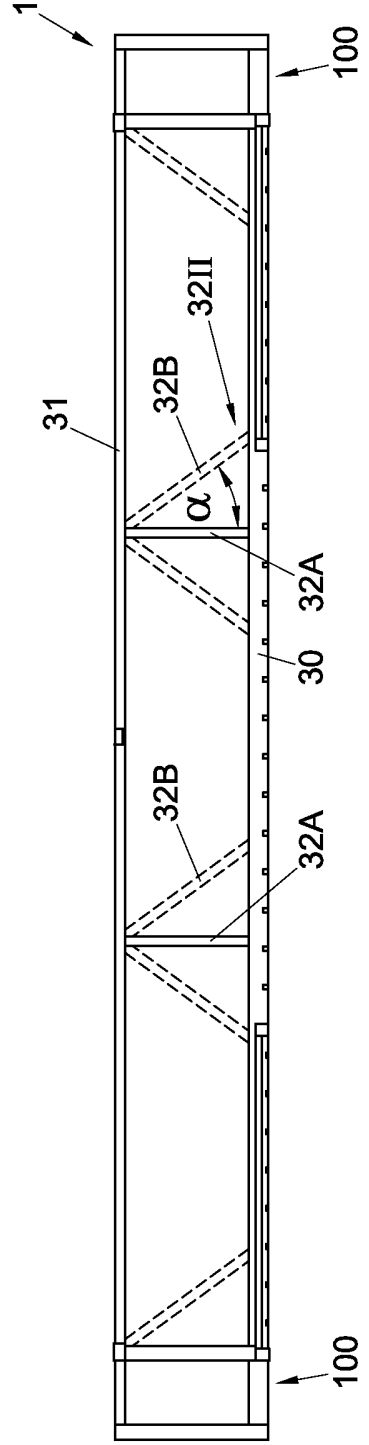


Fig. 12

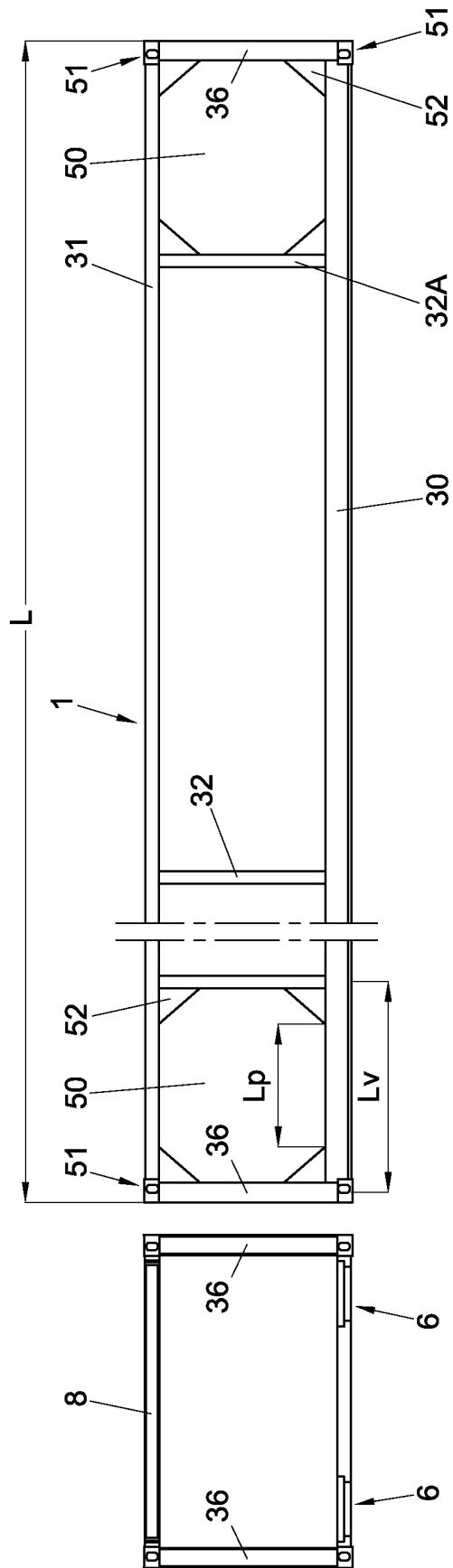


Fig. 13

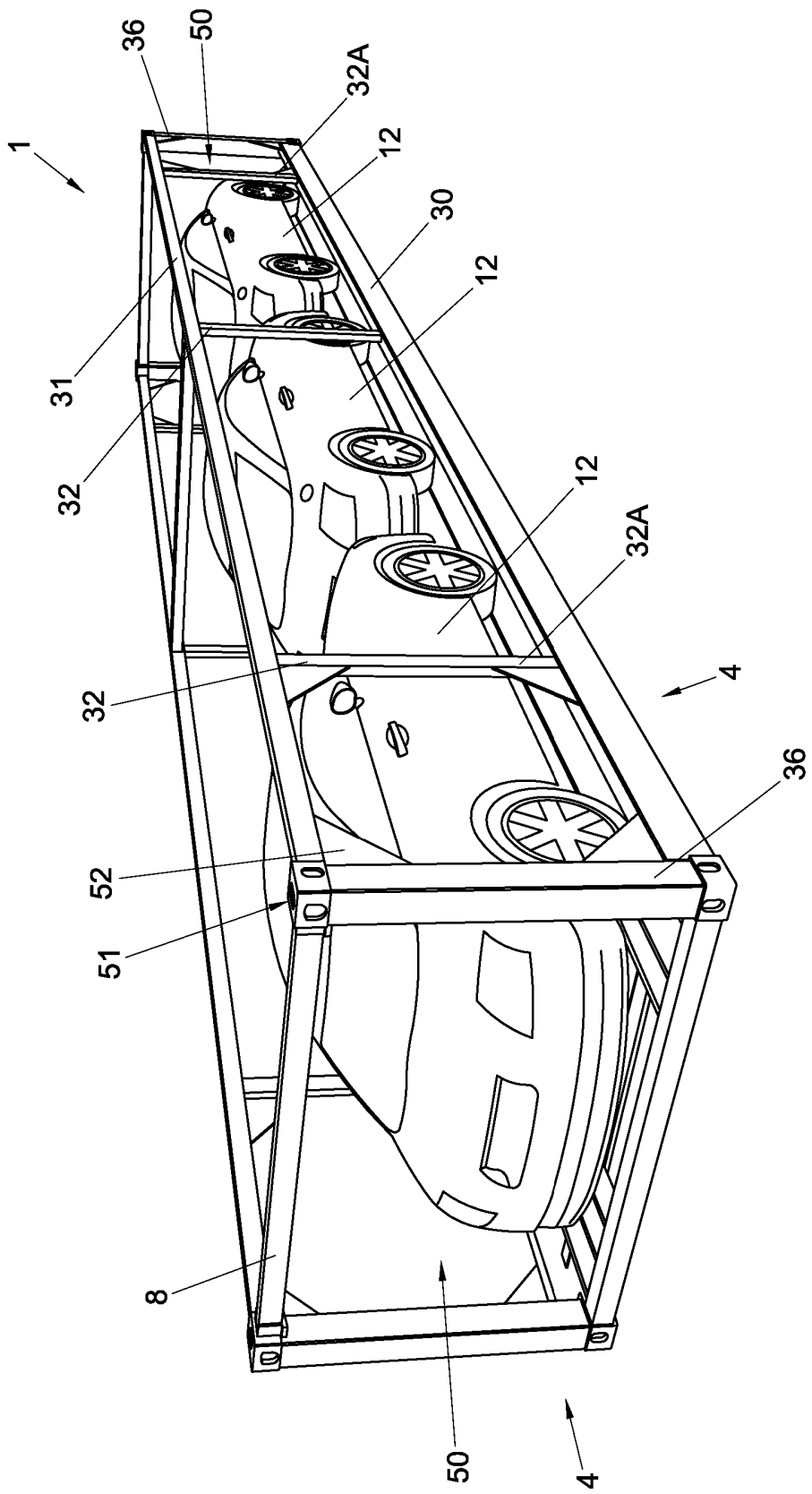


Fig. 14



ONDERZOEKSRAPPORT

BETREFFENDE HET RESULTAAT VAN HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK

RELEVANTE LITERATUUR			
Categorie ¹	Literatuur met, voor zover nodig, aanduiding van speciaal van belang zijnde tekstgedeelten of figuren.	Van belang voor conclusie(s) nr:	Classificatie (IPC)
	<p>EENHEID VAN UITVINDING ONTBREEKT zie aanvullingsblad B -----</p>		INV. B65D85/68
X	<p>WO 90/01007 A1 (FURUKAWA SHIGENOBU [JP]) 8 februari 1990 (1990-02-08) * samenvatting; figuren 1,7-12,30 *</p>	1-8,11, 14,15	
X	<p>EP 0 808 780 A1 (OGLIO LUIGI [IT]) 26 november 1997 (1997-11-26) * kolom 3, regels 11-47 * * kolom 4, regels 6-18; figuren 1-7 *</p>	1,2,4, 11,12, 14,15	
A	<p>EP 0 297 081 A2 (AUSTRIA METALL [AT]) 28 december 1988 (1988-12-28) * het gehele document *</p>	1	
Indien gewijzigde conclusies zijn ingediend, heeft dit rapport betrekking op de conclusies ingediend op:			Onderzochte gebieden van de techniek
			B65D
Plaats van onderzoek:	Datum waarop het onderzoek werd voltooid:	Bevoegd ambtenaar:	
München	22 mei 2013	Leijten, René	
<p>¹ <u>CATEGORIE VAN DE VERMELDE LITERATUUR</u></p> <p>X: de conclusie wordt als niet nieuw of niet inventief beschouwd ten opzichte van deze literatuur Y: de conclusie wordt als niet inventief beschouwd ten opzichte van de combinatie van deze literatuur met andere geciteerde literatuur van dezelfde categorie, waarbij de combinatie voor de vakman voor de hand liggend wordt geacht A: niet tot de categorie X of Y behorende literatuur die de stand van de techniek beschrijft O: niet-schriftelijke stand van de techniek P: tussen de voorangsdatum en de indieningsdatum gepubliceerde literatuur</p> <p>T: na de indieningsdatum of de voorangsdatum gepubliceerde literatuur die niet bezwarend is voor de octrooiaanvraag, maar wordt vermeld ter verheldering van de theorie of het principe dat ten grondslag ligt aan de uitvinding E: eerdere octrooi(aanvraag), gepubliceerd op of na de indieningsdatum, waarin dezelfde uitvinding wordt beschreven D: in de octrooiaanvraag vermeld L: om andere redenen vermelde literatuur &: lid van dezelfde octrooifamilie of overeenkomstige octrooi-publicatie</p>			

GEBREK AAN EENHEID VAN UITVINDING

Octrooiaanvraag Nr.:

NO 138496
NL 2009309

AANVULLINGSBLAD B

De Instantie belast met het uitvoeren van het onderzoek naar de stand van de techniek heeft vastgesteld dat deze aanvraag meerdere uitvindingen bevat, te weten:

1. conclusies: 1-15

Passenger car transport device having a driving surface positioned below an upper surface of a cross bar or length beam.

2. conclusies: 16-23

Method of packing passenger cars for transport comprising the step of stacking two transport devices and a set of stacked transport devices.

Het vooronderzoek werd tot het eerste onderwerp beperkt.

**AANHANGSEL BEHORENDE BIJ HET RAPPORT BETREFFENDE
HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK,
UITGEVOERD IN DE OCTROOIAANVRAGE NR.**

NO 138496
NL 2009309

Het aanhangsel bevat een opgave van elders gepubliceerde octrooiaanvragen of octrooien (zogenaamde leden van dezelfde octroofamilie), die overeenkomen met octrooischriften genoemd in het rapport.

De opgave is samengesteld aan de hand van gegevens uit het computerbestand van het Europees Octrooibureau per

De juistheid en volledigheid van deze opgave wordt noch door het Europees Octrooibureau, noch door het Bureau voor de Industriële eigendom gegarandeerd; de gegevens worden verstrekt voor informatiedoeleinden.

22-05-2013

In het rapport genoemd octrooigeschrift		Datum van publicatie	Overeenkomend(e) geschrift(en)	Datum van publicatie
WO 9001007	A1	08-02-1990	GEEN	
EP 0808780	A1	26-11-1997	EP 0808780 A1 IT MI961022 A1 PL 320078 A1	26-11-1997 21-11-1997 24-11-1997
EP 0297081	A2	28-12-1988	AT 388720 B DK 341588 A EP 0297081 A2 YU 119888 A	25-08-1989 24-12-1988 28-12-1988 30-04-1990

SCHRIFTELIJKE OPINIE

DOSSIER NUMMER NO138496	INDIENINGSDATUM 09.08.2012	VOORRANGSDATUM	AANVRAAGNUMMER NL2009309
CLASSIFICATIE INV. B65D85/68			
AANVRAGER van Uden Finance B.V.			

Deze schriftelijke opinie bevat een toelichting op de volgende onderdelen:

- Onderdeel I Basis van de schriftelijke opinie
- Onderdeel II Voorrang
- Onderdeel III Vaststelling nieuwheid, inventiviteit en industriële toepasbaarheid niet mogelijk
- Onderdeel IV De aanvraag heeft betrekking op meer dan één uitvinding
- Onderdeel V Gemotiveerde verklaring ten aanzien van nieuwheid, inventiviteit en industriële toepasbaarheid
- Onderdeel VI Andere geciteerde documenten
- Onderdeel VII Overige gebreken
- Onderdeel VIII Overige opmerkingen

	DE BEVOEGDE AMBTENAAR Leijten, René
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Onderdeel I Basis van de Schriftelijke Opinie

1. Deze schriftelijke opinie is opgesteld op basis van de meest recente conclusies ingediend voor aanvang van het onderzoek.
2. Met betrekking tot **nucleotide en/of aminozuur sequenties** die genoemd worden in de aanvraag en relevant zijn voor de uitvinding zoals beschreven in de conclusies, is dit onderzoek gedaan op basis van:
 - a. type materiaal:
 - sequentie opsomming
 - tabel met betrekking tot de sequentie lijst
 - b. vorm van het materiaal:
 - op papier
 - in elektronische vorm
 - c. moment van indiening/aanlevering:
 - opgenomen in de aanvraag zoals ingediend
 - samen met de aanvraag elektronisch ingediend
 - later aangeleverd voor het onderzoek
3. In geval er meer dan één versie of kopie van een sequentie opsomming of tabel met betrekking op een sequentie is ingediend of aangeleverd, zijn de benodigde verklaringen ingediend dat de informatie in de latere of additionele kopieën identiek is aan de aanvraag zoals ingediend of niet meer informatie bevatten dan de aanvraag zoals oorspronkelijk werd ingediend.
4. Overige opmerkingen:

Onderdeel III Vaststelling nieuwheid, inventiviteit en industriële toepasbaarheid niet mogelijk

De vraag of de uitvinding in de aanvraag nieuw, inventief en industrieel toepasbaar is, wordt niet behandeld in deze schriftelijke opinie met betrekking tot:

- de gehele aanvraag
- conclusies 16-23

omdat:

- deze aanvraag of deze conclusies , betrekking hebben op materie waarvoor het niet zinvol is een schriftelijke opinie op te stellen.
- de beschrijving, figuren of deze conclusies , , zo onduidelijk zijn dat het niet zinvol is een schriftelijke opinie op te stellen.
- deze conclusies , onvoldoende steun vinden in de beschrijving waardoor het niet zinvol is een schriftelijke opinie op te stellen.
- geen onderzoek naar de stand van de techniek is uitgevoerd voor deze conclusies 16-23.
- een zinvolle schriftelijke opinie niet opgesteld kon worden omdat de sequentie opsomming niet beschikbaar was in het juiste formaat, of in het geheel niet beschikbaar was (WIPO ST25).
- een zinvolle schriftelijke opinie niet opgesteld kon worden zonder de tabellen met betrekking tot de sequentie opsommingen; of deze tabellen waren niet beschikbaar in elektronische vorm.
- Zie aparte bladzijde

Onderdeel IV De aanvraag heeft betrekking op meer dan één uitvinding

1. Vastgesteld is dat de octrooiaanvraag betrekking heeft op meer dan één uitvinding.

Zie aparte bladzijde

2. Het onderzoek naar de stand van de techniek is beperkt tot de eerstgenoemde uitvinding in de conclusies en betreft:

- alle conclusies
- conclusies: (zie nieuwheidsrapport)

SCHRIFTELIJKE OPINIE

Aanvraag nr.:
NL2009309

Onderdeel V Gemotiveerde verklaring ten aanzien van nieuwheid, inventiviteit en industriële toepasbaarheid

1. Verklaring

Nieuwheid	Ja: Conclusies 9, 10, 13-15 Nee: Conclusies 1-8, 11, 12
Inventiviteit	Ja: Conclusies 9, 10, 13 Nee: Conclusies 1-8, 11, 12, 14, 15
Industriële toepasbaarheid	Ja: Conclusies 1-15 Nee: Conclusies

2. Citaties en toelichting:

Zie aparte bladzijde

Re Item IV.

The Searching Authority found multiple (groups of) inventions in the application, as follows:

1. Claims 1-15

1 Passenger car transport device having a driving surface positioned below an upper surface of a cross bar or length beam.

2. Claims 16-23

Method of packing passenger cars for transport comprising the step of stacking two transport devices and a set of stacked transport devices.

The common technical features between group of inventions 1 (claims 1-15) and group of inventions 2 (claims 16 and 23) are:

Personenauto-transportinrichting met een inrijdopening, ten minste één rijoppervlak en ten minste één zich tussen de zijkanten van de transportinrichting bevindende dwarsbalk.

These common technical features are known in the prior art, see for example WO 90/01007 or EP 0 808 780 A1 in the Search Report (additionally see any other document in the Search Report).

The potential special technical features of the group of inventions 1 (claims 1-15) are: none (the subject-matter of claim 1 is disclosed in WO 90/01007 and EP 0 808 780 A1)

The potential special technical features of the group of inventions 2 (claims 16-23) are: *werkwijze omvattende de stap dat voorafgaand aan het de auto op het genoemde rijoppervlak rijden, ten minste één dwarsbalk tenminste gedeeltelijk van de inrijdopening wordt weggenomen, waardoor tijdelijk de hoogte van de inrijdopening*

wordt verhoogd, waarbij de genoemde dwarsbalk tussen de zijkanten wordt teruggeplaatst nadat de auto op of van de transportinrichting is gereden (the other features of claim 16 and of claim 22 are disclosed in WO 90/01007)

It is obvious that these potential special technical features are neither the same nor corresponding and that the group of inventions 1 and 2 are not so linked as to form a single general inventive concept as required.

Since the different potentially special technical features of groups of inventions 1 and 2 solve several different problems (group 1: none; group 2: how to create a passenger car transport device with an external height which is the same as the height of the car), they cannot be considered as being the same or corresponding technical features as required.

Therefore group of inventions 1 (claims 1-15) and group of inventions 2 (claims 16-23) do not form unity of invention.

Re Item V.

1 Reference is made to the following documents:

D1 WO 90/01007 A1

D2 EP 0 808 780 A1

2 LACK OF CLARITY

Claims 9 and 10 are not clear, because the features of claims 9 and 10 are based on a ISO standard. Firstly, the subject-matter of the claims should be self-contained. Secondly, the mentioned ISO standard is not provided with a date, meaning that a future revision could have different contents than the current ISO standard. It is therefore not clear which technical features are comprised in claims 9 and 10.

3 INDEPENDENT CLAIM 1

The present application does not meet the criteria of patentability, because the subject-matter of claim 1 is not new.

Document D1 discloses (the references in parentheses applying to this document):

Personenauto-transportinrichting (fig. 1), welke inrichting hoofdzakelijk doosvormig is en een bodem, bovenkant en zijkanten heeft, waarbij de bodem ten minste twee eerste dwarsbalken (14) tussen de zijkanten omvat en tenminste één rijoppervlak (13) omvat dat zich uitstrekt in een lengterichting van de bodem, welk rijoppervlak ten minste gedeeltelijk onder een bovenoppervlak van ten minste één van de eerste dwarsbalken en/of zich in zijkanten van de inrichting bevindende onderste langs balken (11) van de inrichting ligt, waarbij nabij de bovenkant ten minste twee tweede dwarsbalken (4) zijn voorzien tussen de zijkanten, waarbij ten minste één uiteinde van de inrichting een inrijd- en/of uitrijdopening verschaft voor personenauto's die over het ten minste ene rijoppervlak rijden. (abstract; fig. 1, 7-12 and 30)

For the sake of completeness, it is pointed out that document D2 also discloses the subject-matter of claim 1.

4 DEPENDENT CLAIMS 2-4, 6-8, 11, 12, 14 and 15

Dependent claims 2-4, 6-8, 11, 12, 14 and 15 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements in respect of novelty (2-4 and 7, 8, 11 and 12) or inventive step (6, 14 and 15, see documents D1 and D2).

5 DEPENDENT CLAIMS 5 and 13

Dependent claims 5 and 13 meet the requirements in respect of novelty and inventive step, because none of the prior art documents appears to suggest a *"ten minste gedeeltelijk van de inrichting losneembare, zich aan het uiteinde van de inrichting bevindende derde dwarsbalk"*.