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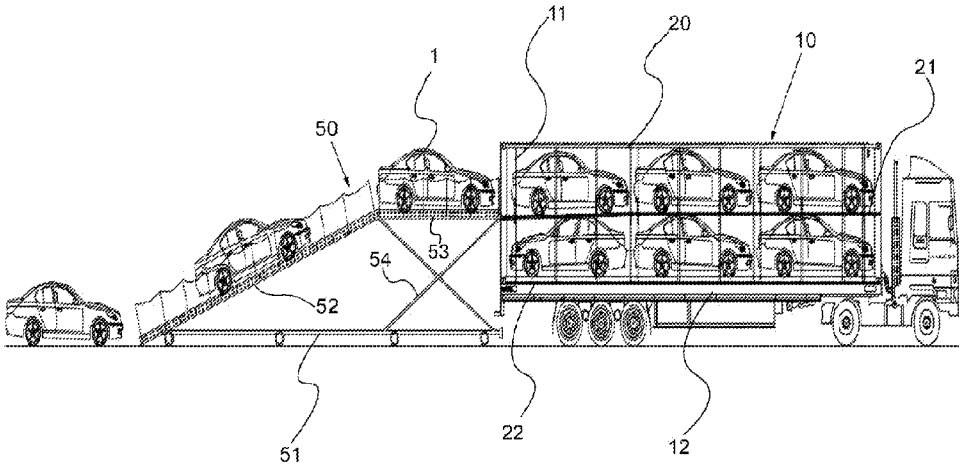


Figure 1

(57) Abstract: The present invention is a vehicle carrying system comprising at least two movable platforms (40) having a carrier platform (42) which extends between two mutual side panels (41) and wherein the vehicle (1) wheel is placed and positioned in a manner moving on the rails (30) mounted to the added mutual columns (11) of the container (10), characterized by comprising one each carrying block with bearing (401) provided on said side panel (41), at least one bearing shaft (43) connected onto the side panel (41), and at least one bearing nut with bushing (44) which at least partially encircles the bearing shaft (43) in a manner moving along said bearing shaft (43) and connected to the carrier platform (42) from one end thereof.

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A VEHICLE SYSTEM HAVING A HEIGHT ADJUSTABLE MOVABLE PLATFORM

TECHNICAL FIELD

The present invention relates to vehicle carrying systems in order to provide carrying of vehicles inside containers and in order to provide easily positioning of the vehicles inside container.

PRIOR ART

In order to transport vehicles from the factories, where they are produced, to the user, the vehicles are carried by means of various methods and they are transferred from one location to another location. In short distances, this transportation process is realized by land by means of loading of vehicles onto lorry. In order to apply this method, there are special lorry embodiments where pluralities of vehicles can be positioned in a multi-storey manner. On the other hand, the transportation of vehicles from one country to another country on long distances is generally realized by sea. In this method, the vehicles are placed into containers and they are loaded to ships and transported.

In order to minimize transportation costs, it is aimed to place as many vehicles as possible into a container. In order to provide this, vehicle carrying systems are positioned into the containers. Said vehicle carrying systems have a platform positioned inside the container. The vehicle, entering into the container, is positioned on the holder regions and afterwards, it is lifted upwardly. Afterwards, another vehicle can be placed under said vehicle. In said system, a structure is obtained which has high cost and which is difficult to install. Moreover, since said embodiment occupies a big space in the container, it is not suitable for usage with loads other than vehicles. Thus, after vehicle transportation is completed, it is not suitable for carrying products other than vehicles on the return path.

As a result, because of all of the abovementioned problems, an improvement is required in the related technical field.

BRIEF DESCRIPTION OF THE INVENTION

The present invention relates to a vehicle carrying system movable platform, for eliminating the above mentioned disadvantages and for bringing new advantages to the related technical field.

An object of the present invention is to provide a vehicle carrying system which provides loading at different heights.

Another object of the present invention is to provide a vehicle carrying system which provides adjustment of the height where the vehicles are positioned inside the container.

Another object of the present invention is to provide a vehicle carrying system where the accident risk is reduced.

Another object of the present invention is to provide a vehicle carrying system where the vehicle carrying capacity is increased during loading into the container.

Another object of the present invention is to provide a vehicle carrying system where the installation and commissioning durations are reduced.

Another object of the present invention is to provide a vehicle carrying system where the cost is reduced.

In order to realize all of the abovementioned objects and the objects which are to be deducted from the detailed description below, the present invention is a vehicle carrying system comprising at least two movable platforms having a carrier platform which extends between two mutual side panels and wherein the vehicle wheel is placed and positioned in a manner moving on the rails mounted to the added mutual columns of the container. Accordingly, the present invention is characterized by comprising one each carrying block with bearing provided on said side panel, at least one bearing shaft connected onto the side panel, and at least one bearing nut with bushing which at least partially encircles the bearing shaft in a manner moving along said bearing shaft and connected to the carrier platform from one end thereof. Thus, after the vehicles enter into the container, the heights at which the vehicles are positioned can be changed.

In a preferred embodiment of the invention, a guide shaft is provided which is placed to a guide opening embodied on the side panels.

In another preferred embodiment of the invention, said guide opening is embodied in a stepped manner.

In another preferred embodiment of the invention, the bearing shaft comprises one each shaft stoppers provided at the end sections.

In another preferred embodiment of the invention, a brake arm is provided which is positioned on said carrying block with bearing.

In another preferred embodiment of the invention, at least two carrier wheels are provided on said carrying block with bearing.

In another preferred embodiment of the invention, at least two guide wheels are provided on said carrying block with bearing.

In another preferred embodiment of the invention, at least one fixation hole is embodied on the rail.

In another preferred embodiment of the invention, said carrier body is embodied in a bulged form.

BRIEF DESCRIPTION OF THE FIGURES

In Figure 1, a representative general view of the vehicle carrying system is given.

In Figure 2, a representative view of positioning of the movable platform on the carrier unit is given.

In Figure 3, a representative view of positioning of the movable platform on the loading region is given.

In Figure 4, a representative view of the movable platform is given.

In Figure 5, a representative frontal general view of the container wherein a vehicle is placed is given.

In Figure 6, a representative view of placement of the movable platform in the rail is given.

REFERENCE NUMBERS

1 Vehicle
10 Container
11 Column
111 Column fixation hole
12 Floor

20 Carrier unit
21 Upper storey
22 Lower storey

30 Rail
31 Carrier wall
32 Base
33 Ceiling
34 Side wall
35 Channel
36 Fixation hole

40 Movable platform
41 Side panel
401 Carrying block with bearing
411 Carrier wheel
412 Guide wheel
413 Brake arm
414 Guide opening
42 Carrier platform
421 Carrier body
422 Wheel plate
43 Bearing shaft
431 Shaft stopper

44 Bearing nut with bushing
45 Guide shaft

50 Loading unit
51 Movable body
52 Ramp
53 Loading region
54 Hydraulic shear lift

DETAILED DESCRIPTION OF THE INVENTION

In this detailed description, the subject matter vehicle carrying system is explained with references to examples without forming any restrictive effect only in order to make the subject more understandable.

As can be seen in Figure 1, the subject matter vehicle carrying system has at least one carrier unit (20) provided inside the container (10) and at least one loading unit (50) in order to provide entry of the vehicle into the container (10). The carrier unit (20) comprises at least one upper storey (21) and at least one lower storey (22).

In more details, there is at least one rail (30) on said carrier unit (20) and on said loading unit (50). Said rails (30) are fixed and placed to the mutual columns (11) of the container (10) on the carrier unit (20). The rails (30) are positioned on the side edges on the loading unit (50). There are at least two movable platforms (40) placed to said rails (30) from the two ends.

In order to provide connection of the rail (30) to the column (11), there is at least one carrier wall (31) on the rail (30), and there is at least one base (32) and at least one ceiling (33) extending outwardly from the carrier wall (31). Said base (32) and said ceiling (33) essentially extend in a parallel manner to the floor (12) of the container (10). There is at least one side wall (34) provided on the other side of the base (32) and the ceiling (33). Said side wall (34) preferably extends upwardly from the base (32) and downwardly from the ceiling (33). The side wall (34) essentially extends in a parallel manner to the carrier wall (31). The rail (30) has a channel (35) formed between the carrier wall (31), the base (32) and the side wall (34).

The loading unit (50) has at least one ramp (52) provided on at least one movable body (51) and at least one loading region (53) extending at the continuation of said ramp (52). The

ramp (52) is preferably embodied in the form of pieces. Accordingly, a section of the ramp (52) can be folded and the contact with the floor can be broken. The loading region (53) provided on the movable body (51) essentially extends in a parallel manner to the floor (12). There is rail (30) along the right and left edges of the loading region (53). Moreover, hydraulic shear lift (54) is positioned between the loading region (53) and the movable body (51). Thanks to the hydraulic shear lift (54), the ramp (52) can rise to the desired height from one end and the rails (30) positioned on the loading region (53) extending at the continuation of the ramp (52) can match with the rails (30) which have been assembled on the carrier unit (20) beforehand. Thanks to this, while the vehicle (1) is on the loading region (53), it is fixed on the movable platform (40), and by means of advancing of said movable platforms (40) inside the rails (30), it can be placed into the container (10) in a rapid manner.

At the same time, thanks to the hydraulic shear lift (54), vehicles (1) with various heights can be loaded together into the same container (10), and in the next usage of the container (10), the heights of the rails (30) and of the loading region (53) are changed, and in every operation, different type of vehicles (1) can also be carried.

The movable platform (40) has at least one each side panels (41) positioned at the two edges of at least one carrier platform (42). On the side panels (41), at least one carrying block with bearing (401) is positioned. In the preferred application, two carrying blocks with bearing (401) are provided on each side panel (41). There is at least one carrier wheel (411) positioned on the carrying block with bearing (401) and there are at least two guide wheels (412) provided in the vicinity of the edge which is close to the rail (30) at the lower section of the carrying block with bearing (401). In the preferred application of the subject matter movable platform (40), there are eight guide wheels (412) and eight carrier wheels (411). Said guide wheel (412) is preferably stopped onto the side wall (34) of the rail (30) from one side. Thus, the rightward-leftward sliding of the movable platform (40) on the rails (30) is prevented and the movement capability of the system is increased.

Said carrier wheels (411) are placed to the channels (35) provided on the rails (30). Since the columns (11) of the container (10) are parallel to each other, the rails (30) are also positioned in a parallel manner to each other. Thus, the movable platform (40) seated to the rails (30) through the carrier wheels (411) is positioned in a manner moving forwardly-backwardly in the direction of the depth of the container (10). The width of the carrier platform (42) in the direction of the depth of the container (10) is such that it can be positioned at least on the two wheels of the vehicle (1). Preferably two movable platforms

(40) are provided for each vehicle (1) to be loaded such that the movable platforms (40) can move in an independent manner from each other.

The carrier platform (42) comprises a carrier body (421), and at least two wheel plates (422) provided on said carrier body (421) and whereon the wheels of the vehicle (1) are positioned. The carrier body (421) is preferably embodied in a bulged manner from the middle section towards the upper section. A bearing nut with bushing (44), wherein a bearing shaft (43) is placed, is provided at the edges of the carrier platform (42) facing the side panels (41). Said bearing nut with bushing (44) is placed onto the bearing shaft (43) in a manner realizing sliding movement vertically thereon. The bearing shaft (43) is positioned in a connected manner to the side panels (41). One each shaft stoppers (431) are embodied at the two ends of the bearing shaft (43). Thanks to this, the removal of the bearing nuts with bushing (44) from the bearing shaft (43) is prevented. On the side panel (41), a guide opening (414) is embodied wherein a guide shaft (45) moves. Said guide shaft (45) extends from the carrier body (421) towards the guide opening (414).

A brake arm (413) is positioned in the vicinity of the carrier wheels (411). Preferably the brake arm (413) is positioned at the upper side of each one of the carrier wheels (411). The side walls (34) are moreover embodied in a manner preventing rightward-leftward sliding of the carrier wheels (411) and in a manner preventing removal thereof from the channel (35).

Pluralities of fixation holes (36) are embodied on the rail (30). The fixation holes (36) are embodied on the carrier wall (31). The fixation holes (36) provide fixation of the movable platform (40) on the rails (30) by means of passing brake arm (413) through one side and at the same time, the fixation holes (36) provide fixation of the rail (30) to the carrier column (11). Since the fixation holes (36) are not provided in the channel (35), the movement of the carrier wheel (411) is facilitated.

Pluralities of fixation holes (111) are embodied on the carrier column (11). Pluralities of column fixation holes (111) are embodied vertically on the carrier column (11). The column fixation holes (111) provided on the carrier columns (11) are matched with the fixation holes (36) provided on the rails (30), and a connection element is passed through them and the assembly of the rails (30) on the carrier columns (11) is realized. By means of this, the column fixation holes (111) with different numbers and heights with respect to the floor (12) provided on the carrier columns (11) provide loading of vehicles (1) with different heights.

For the usage of the subject matter vehicle carrying system, first of all, the rails (30) shall be fixed to the container (10) columns (11) through column fixation holes (111) with height suitable to the height of the vehicle (1) to be carried. Afterwards, the movable platforms (40) are positioned on the rails (30). Afterwards, the loading unit (50) is stopped onto the inlet side where the covers of the container (10) are existing.

The hydraulic shear lift (54) rises the loading region (53) to the height where the vehicle (1) is placed inside the container (10). Thus, the ramp (52) extends from one end of the loading region (53) towards the floor at a predetermined inclination. The other end of the loading region (53) partially extends into the container (10), and it is connected to the rails (30) positioned on the loading region (53) and to the rails (30) positioned inside the container (10). Afterwards, when the vehicle (1) raised to the loading unit (50) through the ramp (52) arrives at the loading region (53), it is slowly advanced, and the front wheels of the vehicle (1) are got on the first movable platform (40). When the front wheels are got on the movable platform (40), the wheels are fixed to the first movable platform (40) by means of safety rope in a manner encircling the wheel. Afterwards, the vehicle (1) is pushed again, and the rear wheels of the vehicle (1) are got onto another movable platform (40). Afterwards, the rear wheels are also fixed on the movable platform (40). Afterwards, the vehicle (1) is continued to be pushed, and it is advanced through the loading region (53) to the location where it is to be positioned inside the container (10). The movable platforms (40), whereon the vehicle (1) is placed, are fixed onto the rails (30) by means of placement of the brake arm (413) into the fixation holes (36). Thus, the vehicle (1) locked onto the movable platform (40) is carried in a safe manner inside the container (10), and at the same time, the duration of placement of the vehicle (1) inside the container (10) is reduced.

During carrying of the vehicle (1) inside the container (10) on the movable platforms (40), the bearing nut with bushing (44) is positioned at the lower border of the bearing shaft (43) which is towards the floor. Thus, the carrier platform (42) is positioned at the lower level. After the entry of the vehicle (1) into the container (10) is completed, the bearing nuts with bushing (44) are moved towards the upper section of the bearing shaft (43) preferably in a hydraulic or manual manner, and the carrier platform (42) rises to the upper level. Since the carrier platform (42) moves upwardly-downwardly, the position of the movable platform (40) can be adjusted with respect to the inlet height of the container (10) and with respect to the vehicle (1) height. Thus, the vehicle (1) can be carried at different height levels.

Besides, vehicles (1) with different heights can be placed into the same container. Moreover, for the containers (10) with different inlet dimensions, a height adjustable movable platform

(40) provides usage facility. The movement of the bearing nuts with bushing (44) on the bearing shaft (43) can be provided automatically and/or manually.

By means of the movement of the bearing nuts with bushing (44) towards the upper section, the guide shaft (45) also moves inside the guide opening (414). The guide opening (414) is positioned such that there is one each guide opening (414) on the sides of the bearing nuts with bushing (44) and the guide opening (414) is embodied in a stepped manner. Thanks to its stepped structure, during movement of the bearing nuts with bearing (44), it provides mechanical support to the carrier platform (42) and it provides support for the horizontal balance of the carrier platform (42).

After the loading of the first vehicle (1) is completed, pluralities of vehicles (1) can be additionally loaded to the container (10) in the same manner with respect to the depth of the container (10) and with respect to the dimension of the vehicle (1). Thus, the vehicles (1) can be placed into the container (10) at a predetermined height. Accordingly, loading of other vehicles (1) to the gap provided under the loaded vehicles (1) is also possible.

When the vehicles (1) loaded to the container (10) are desired to be unloaded, the loading unit (50) is stopped to the inlet section of the container (10). Afterwards, if necessary, by means of the movement of the bearing nuts with bushing (44) onto the bearing shaft (43), the height of the movable platform (42) is adjusted such that the vehicle (1) can exit the container (10) inlet. Afterwards, the vehicle (1) is drawn towards the inlet door by means of an apparatus connected to the movable platform (40), and the movable platform (40) where the rear wheels are provided is passed to the loading region (53). The vehicle (1) is continued to be drawn, and by means of passing of the movable platform (40), where the front wheels are provided, to the loading region (53), and the vehicle (1) is removed from the container (10). Afterwards, by means of unlocking the lock of the vehicle (1) wheels on the movable platform (40), the vehicle (1) is drawn, and it is lowered onto the floor from the ramp (52).

When the loading or unloading process is completed, the contact of the ramp (52) with the floor is broken, and it can be transported to the desired location together with the movable body (51) whereon the loading unit (50) is positioned.

Thanks to said embodiments, the vehicle carrying system can be easily removed from and fixed to the container (10). Moreover, since the items provided inside the container (10) occupy less space when compared with the prior art, the container (10) is used for the other

load types except vehicle (1). This will become possible by means of containers (10) which will be specially produced, and the columns (11) will be hidden inside the container (10) such that they occupy no space inside the container (10).

The protection scope of the present invention is set forth in the annexed Claims and cannot be restricted to the illustrative disclosures given above, under the detailed description. It is because a person skilled in the relevant art can obviously produce similar embodiments under the light of the foregoing disclosures, without departing from the main principles of the present invention.

CLAIMS

1. A vehicle carrying system comprising at least two movable platforms (40) having a carrier platform (42) which extends between two mutual side panels (41) and wherein the vehicle (1) wheel is placed and positioned in a manner moving on the rails (30) mounted to the added mutual columns (11) of the container (10), **characterized** by comprising one each carrying block with bearing (401) provided on said side panel (41), at least one bearing shaft (43) connected onto the side panel (41), and at least one bearing nut with bushing (44) which at least partially encircles the bearing shaft (43) in a manner moving along said bearing shaft (43) and connected to the carrier platform (42) from one end thereof.

2. A vehicle carrying system according to claim 1, wherein a guide shaft (45) is provided which is placed to a guide opening (414) embodied on the side panels (41).

3. A vehicle carrying system according to claim 2, wherein said guide opening (414) is embodied in a stepped manner.

4. A vehicle carrying system according to claim 1, wherein the bearing shaft (43) comprises one each shaft stoppers (431) provided at the end sections.

5. A vehicle carrying system according to claim 1, wherein a brake arm (413) is provided which is positioned on said carrying block with bearing (401).

6. A vehicle carrying system according to claim 1, wherein at least two carrier wheels (411) are provided on said carrying block with bearing (401).

7. A vehicle carrying system according to claim 1, wherein at least two guide wheels (412) are provided on said carrying block with bearing (401).

8. A vehicle carrying system according to claim 1, wherein at least one fixation hole (36) is embodied on the rail (30).

9. A vehicle carrying system according to claim 1, wherein said carrier body (421) is embodied in a bulged form.

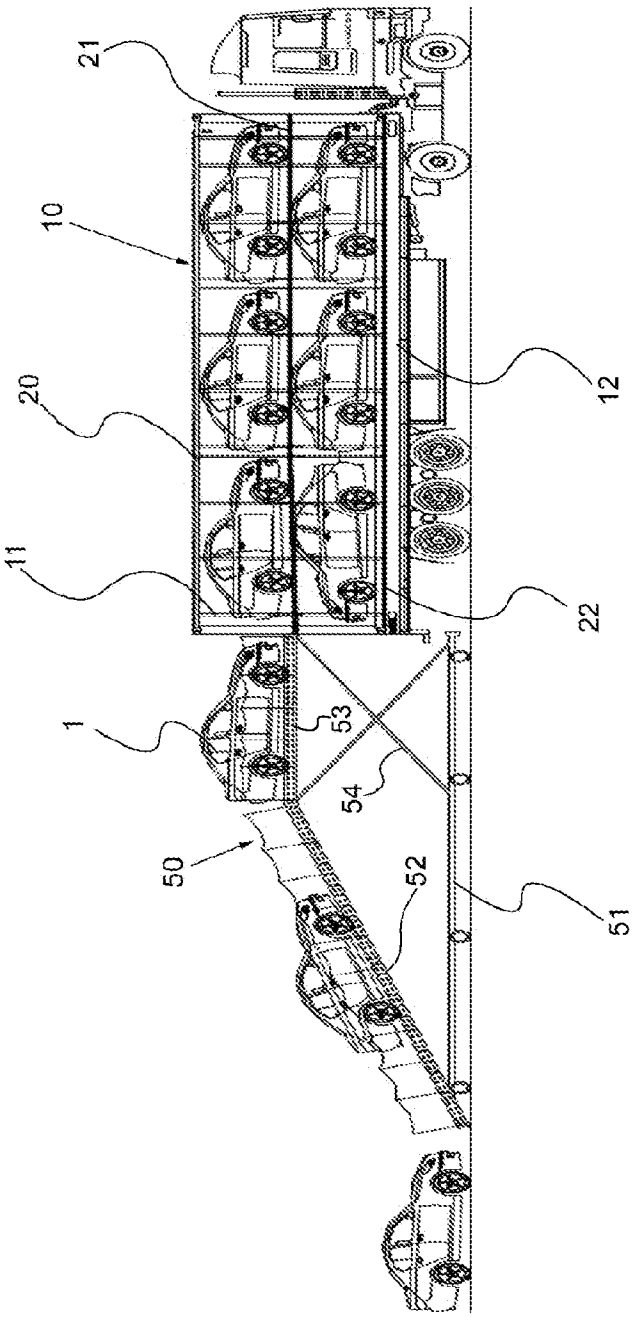


Figure 1

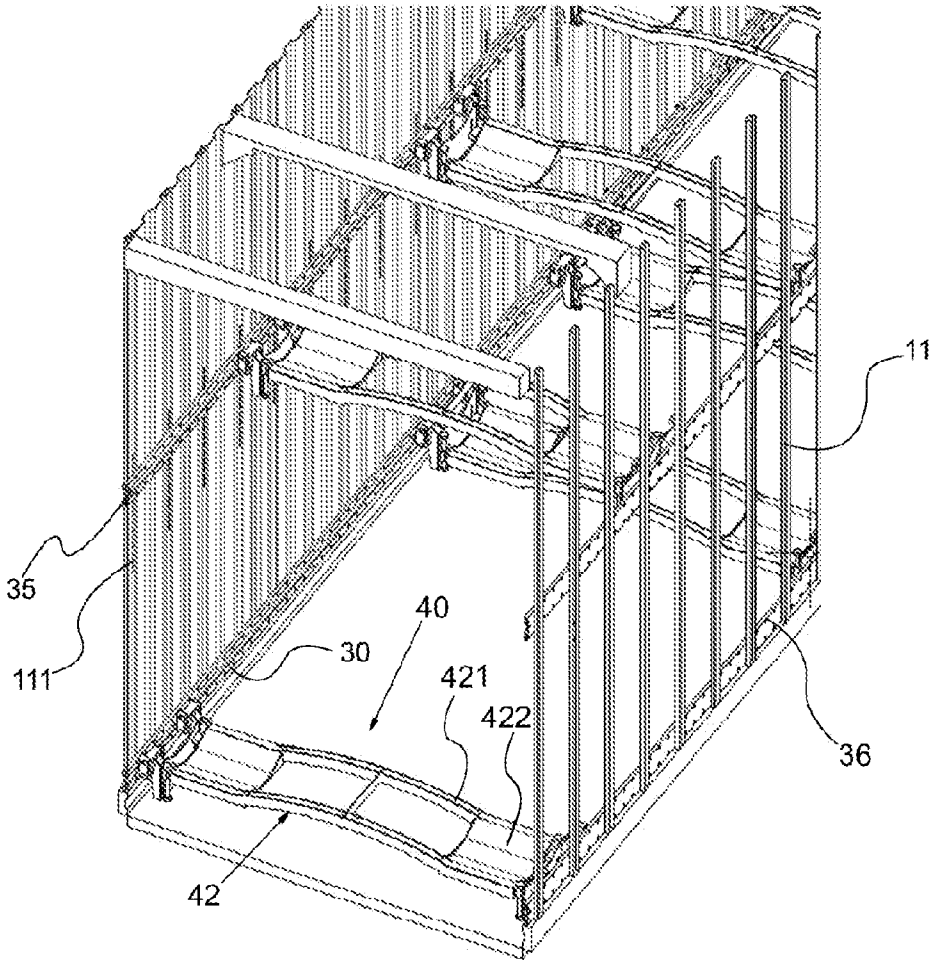


Figure 2

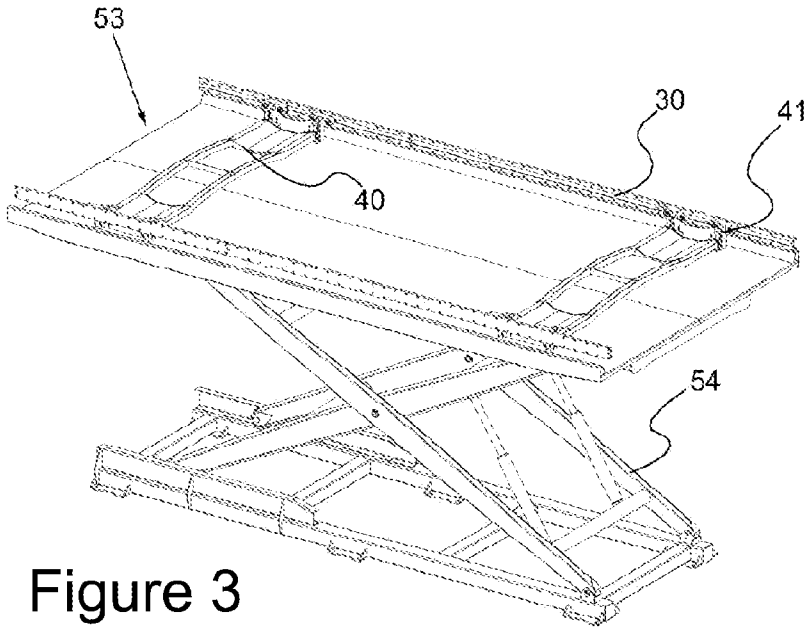


Figure 3

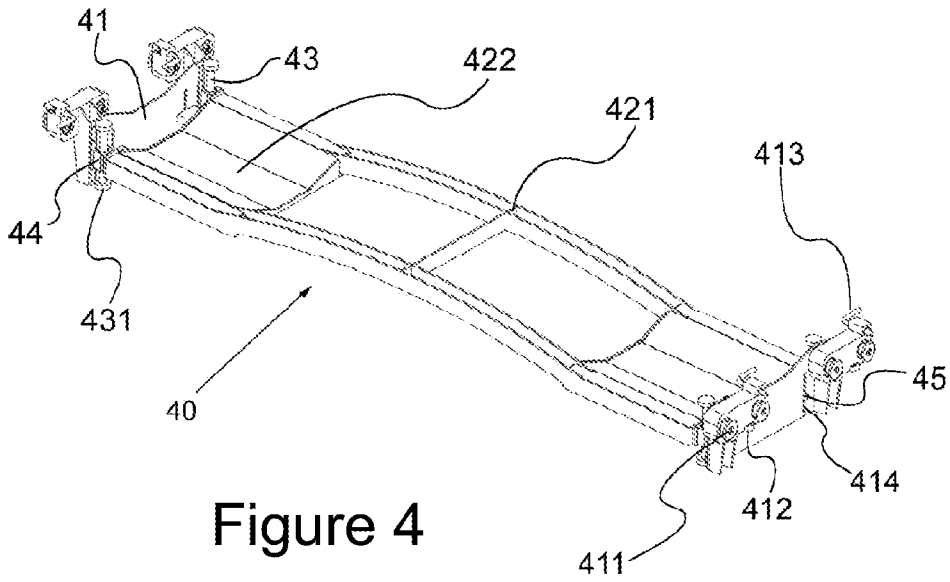


Figure 4

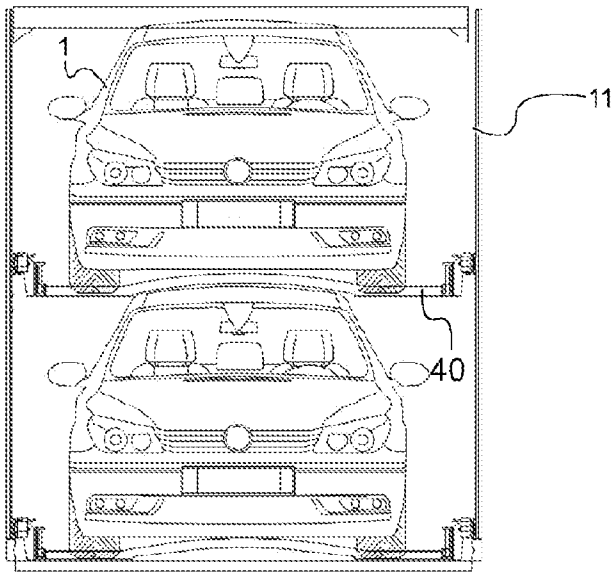


Figure 5

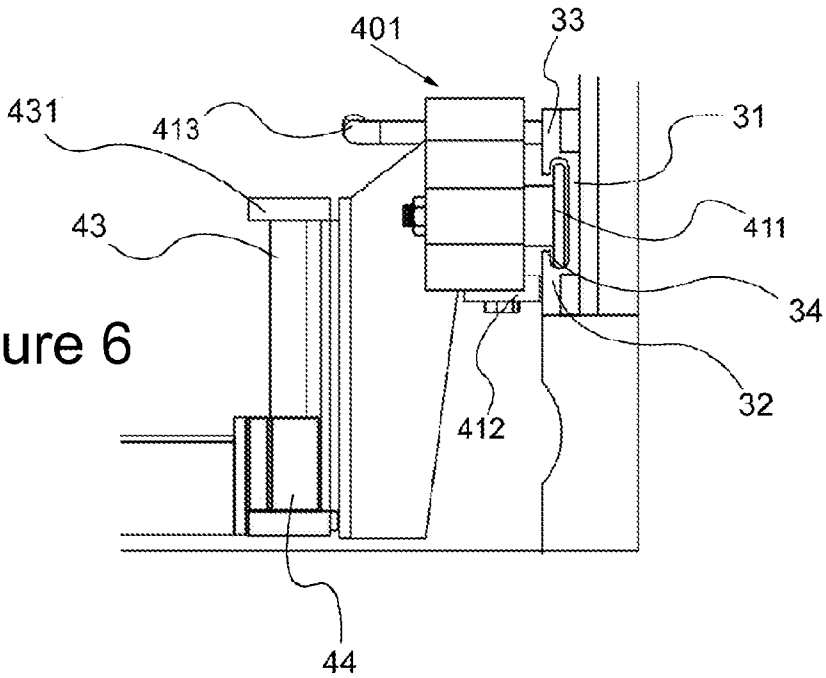


Figure 6