an on-cage rail 3a. This shift amount is 80 mm or more for example.

As a result, a part of the weight side (e.g., the on-cage rail 3a) of the jumped cage 3 may interfere with a part of the pallet 10.

[0016]

Embodiments of the present invention provide a mechanical parking device and a method for controlling the same in which a pallet can smoothly traverse with the four corners of a cage suspended by cord members without being affected by a weight difference between the front and rear of a vehicle.

Embodiments of the present invention provide a mechanical parking device and a method for controlling the same in which it is possible to prevent the jumping of the cage just after all the traversing rollers on one side of the front and rear move onto a shelf and one of the traversing rollers on the other side remains on the cage due to the difference between the traverse direction positions of the traversing rollers of the pallet at the front and rear of the vehicle.

Solution to Problem

[0017]

According to a first aspect of the present invention, there is provided a mechanical parking device including storage shelfs that are provided along a hoistway, a cage

that is suspended by cord members and moves up and down the hoistway, and a lifting control device that controls lifting of the cord members. The mechanical parking device causes a pallet to traverse across a boundary portion between the cage and the storage shelf. The pallet includes or the cage and the storage shelf include a plurality of traversing rollers for traversing that are provided at both ends in a longitudinal direction thereof, traverse direction distances of the traversing rollers up to the boundary portion are different between front and rear of a vehicle, and a horizontal distance difference thereof is equal to or greater than a first threshold value. The lifting control device implements re-leveling at the front and rear of the vehicle to correct pallet support heights of the cage by lifting and lowering the cage during traversing.

[0018]

According to a second aspect of the present invention, there is provided a control method of the mechanical parking device including implementing, by the lifting control device, the re-leveling during traversing so that a difference between pallet support heights of the cage and the storage shelf falls within a second threshold value when each of pallet support points at the front and rear of the vehicle crosses the boundary portion.

Advantageous Effects of Invention