CLAIMS

1. A multilevel car parking device comprising a structural body in which a car parking space is arranged in multistage, a pallet accommodated in each car parking space in a retrievable manner, a lifter elevatable along the structural body, and a pallet moving device arranged on the lifter to transfer the pallet between the lifter and the car parking space; wherein

the pallet moving device includes a pair of supporting arms arranged on the lifter in an oscillating manner and a friction gear rotatably arranged at a play end of each supporting arm, the pair of supporting arms being arranged symmetrically with respect to a pallet moving direction and with the play end directed toward the car parking space side and being constantly biased in a direction of pushing the respective play ends to each other, and the friction gear being rotated with a guide plate of the pallet sandwiched with the pair of friction gears to transfer the pallet between the lifter and the car parking space.

2. The multilevel car parking device according to claim 1, wherein a horizontally movable pallet stopper is arranged at a far part of a loading/unloading port, the

pallet stopper regulating movement of the pallet to the far side by being brought into contact with the pallet arranged at the loading/unloading port from the far side or being stopped immediately before coming into contact with the pallet from the far side.

3. The multilevel car parking device according to claim 1, wherein the lifter is arranged with a locking lever pivotally supported so as to be projectable and rotatable toward an outer side from the lifter and the structural body configuring the car parking space is arranged with a stopper, the lifter lowered with the locking lever projected and rotated to the outer side of the lifter to engage the locking lever from an upper side of the stopper.

4. The multilevel car parking device according to claim 1, wherein

the lifter includes an elevatable elevating body, a trolley arranged on the elevating body and horizontally movable with the pallet moving device, and a trolley fixing device for fixing the trolley at a predetermined position on the elevating body; and

the trolley fixing device includes a pair of turning frames turnably arranged on the trolley, a pair of dog

clamp members, arranged on each turning frame, for clamping a dog arranged in a projecting manner on the elevating body from both sides in a moving direction of the trolley, a biasing means for turning the pair of turning frames in a direction of releasing the clamp by the dog clamp member, and a solenoid for turning the pair of turning frames in a direction of clamping the dog with the dog clamp members.

5. The multilevel car parking device according to claim 1, wherein the car parking space is formed in multistage on an upper side of a front open space of the loading/unloading port.

CLAIMS

1. A multilevel car parking device comprising a structural body in which a car parking space is arranged in multistage, a pallet accommodated in each car parking space in a retrievable manner, a lifter elevatable along the structural body, and a pallet moving device arranged on the lifter to transfer the pallet between the lifter and the car parking space; wherein

the pallet moving device includes a pair of supporting arms arranged on the lifter in an oscillating manner and a friction gear rotatably arranged at a play end of each supporting arm, the pair of supporting arms being arranged symmetrically with respect to a pallet moving direction and with the play end directed toward the car parking space side and being constantly biased in a direction of pushing the respective play ends to each other, and the friction gear being rotated with a guide plate of the pallet sandwiched with the pair of friction gears to transfer the pallet between the lifter and the car parking space,

wherein a horizontally movable pallet stopper is arranged at a far part of a loading/unloading port, the pallet stopper regulating movement of the pallet to the far side by being brought into contact with the pallet arranged at the loading/unloading port from the far side or being stopped immediately before coming into contact with the pallet from the far side, and

wherein the pallet stopper comprises a detection device, when the detection device detects that a distance between the pallet arranged at the loading/unloading port and the pallet stopper reaches a predetermined value, the pallet stopper is stopped.

2. The multilevel car parking device according to claim 1, wherein the lifter is arranged with a locking lever pivotally supported so as to be projectable and rotatable toward an outer side from the lifter and the structural body configuring the car parking space is arranged with a stopper, the lifter lowered with the locking lever projected and rotated to the outer side of the lifter to engage the locking lever from an upper side of the stopper.

3. The multilevel car parking device according to claim 1, wherein

the lifter includes an elevatable elevating body, a trolley arranged on the elevating body and horizontally movable with the pallet moving device, and a trolley fixing device for fixing the trolley at a predetermined position on the elevating body; and

the trolley fixing device includes a pair of turning frames turnably arranged on the trolley, a pair of dog clamp members, arranged on each turning frame, for clamping a dog arranged in a projecting manner on the elevating body from both sides in a moving direction of the trolley, a biasing means for turning the pair of turning frames in a direction of releasing the clamp by the dog clamp member, and a solenoid for turning the pair of turning frames in a direction of clamping the dog with the dog clamp members.

4. The multilevel car parking device according to claim 1, wherein the car parking space is formed in multistage on an upper side of a front open space of the loading/unloading port.