Claims

**What is claimed is:**

1. A robot control system, comprising:

a storage region;

wherein the storage region comprises a loft having at least two storeys and is configured to store a container, and a passage for a self-driven robot to move through is provided on a floor of each of the at least two storeys of the loft, each of the at least two storeys of the loft is provided with at least one self-driven robot and at least one temporary storage mechanism;

a control device, wherein the control device is configured to assign a transportation task to the self-driven robot and plan a travel route on a storey where the self-driven robot is located for the self-driven robot according to the transportation task, and control the self-driven robot to travel on the storey where the self-driven robot is located according to the travel route and perform the transportation task; wherein the transportation task comprises at least one of the following: a task that the self-driven robot picks up a target container at a first target position of the storey where the self-driven robot is located, and transport the target container to the temporary storage mechanism; or, a task that the self-driven robot picks up the target container at the temporary storage mechanism and transports the target container to a second target position of the storey where the self-driven robot is located; and

a container lifting machine, wherein the container lifting machine is configured to transport the target container to a target storey corresponding to a transportation task;

wherein the temporary storage mechanism is configured to bear the target container and perform at least one of: conveying the target container to the container lifting machine; or conveying the target container out of the container lifting machine; and

wherein the control device is communicatively connected to the container lifting machine, the temporary storage mechanism, and the self-driven robot;

wherein the temporary storage mechanism is an n-layer structure, where n is a natural number and is greater than or equal to 2; and the control device is further configured to control the lifting machine to transport the target container to an idle level in the temporary storage mechanism.

2. The robot control system of claim 1, wherein the temporary storage mechanism is a roller line.

3. The robot control system of any one of claims 1 to 2, wherein the at least one temporary storage mechanism is disposed on one or both sides of the lifting machine, and the lifting machine is disposed corresponding to the at least one temporary storage mechanism.

4. The robot control system of claim 1, wherein the transportation task carries a code identifier of the target container, and

the control device is configured to control the self-driven robot to travel on the storey where the self-driven robot is located to a location of the target container according to the travel route, and control the self-driven robot to pick up the target container by recognizing the code identifier of the target container.

5. The robot control system of any one of claims 1 to 2, wherein the lifting machine further comprises a transfer mechanism and a container temporary position,

wherein the transfer mechanism is configured to perform at least one of:

loading the target container from the temporary storage mechanism onto the container temporary position; or loading the target container located on the container temporary position onto the temporary storage mechanism.

6. The robot control system of claim 5, wherein the transfer mechanism comprises a roller mechanism or a robot arm configured to endow the container with degrees of freedom in four directions comprising front, rear, left, and right in a horizontal plane.

7. The robot control system of claim 1, wherein the storage region comprises at least one storage layer and one picking layer, and the picking layer is provided with an operating station, wherein the operating station is configured to perform a task operation on the target container.

8. The robot control system of claim 7, wherein the control device is configured to control the self-driven robot to carry the target container to the operation station, and queue at the operating station to wait for the task operation; and

the control device is further configured to, after the task operation is completed, control the self-driven robot to carry the target container with which the task operation has been completed, and transport the target container to a next operating station or return the target container to a container carrier.

9. The robot control system of claim 7, wherein the control device is further configured to control the self-driven robot to transport the target container to a storage position of the operating station and pick up at least one operable container other than the target container by controlling a pickup telescopic mechanism disposed on the self-driven robot, after controlling the self-driven robot to travel to the operating station.

10. The robot control system of claim 1, wherein the control device is further configured to receive a target container code recognized by the self-driven robot and evaluate a popularity of the target container based on a popularity and a quantity of items stored in the target container; and

control the at least one self-driven robot to transport a target container with a popularity exceeding a preset threshold to a container carrier in a preset region, and record a binding relationship between the target container and the container carrier; or control the at least one self-driven robot to transport target containers to container carriers by an increasing distance from an operating station according to a descending order of the popularity of the target containers, and record the binding relationship between the target containers and the container carriers.

11. The robot control system of claim 1, wherein the at least one self-driven robot comprises a pickup telescopic mechanism, a lifting mechanism, and a robot moving chassis;

wherein the pickup telescopic mechanism is configured to pick up at least one target container;

the lifting mechanism is configured to adjust the pickup telescopic mechanism to move upwards or downwards thus allowing the pickup telescopic mechanism picks up target containers on container carriers at different heights on the target storey; and

the robot moving chassis is configured to control travelling the at least one self-driven robot on a travel passage of the target storey.

12. The robot control system of claim 1, wherein the passage configured for the at

least one self-driven robot to move through is further configured for an emergency manual operation.

13. The robot control system of claim 1, further comprising a robot lifting machine configured to dispatch the self-driven robot to a corresponding target storey according to control instructions of the control device when business volumes of different target storeys change.

14. A robot control method, applied to a robot control system, wherein the robot control system comprises a loft having at least two storeys, a passage for a self-driven robot to move through is provided on a floor of each of the at least two storeys of the loft, each of the at least two storeys of the loft is provided with at least one self-driven robot and at least one temporary storage mechanism, wherein the temporary storage mechanism is an n-layer structure, where n is a natural number and is greater than or equal to 2;

the method comprising:

assigning a transportation task to a first self-driven robot;

planning a travel route on a storey where the first self-driven robot is located corresponding to the transportation task for the first self-driven robot, controlling the first self-driven robot to move to a first target location on the storey where the first self-driven robot is located according to the travel route, pick up the target container, and transport the target container to the temporary storage mechanism;

controlling the temporary storage mechanism to transport the target container to a container lifting machine;

controlling the container lifting machine to transport the target container to a target storey where a destination of the transportation task is located;

controlling a temporary storage mechanism on a target storey where the destination of the transportation task is located to receive and temporarily store the target container from the container lifting machine; and

controlling the second self-driven robot to transport the target container to the destination of the transportation task from the temporary storage mechanism on a storey where the second self-driven robot is located.;

wherein the method further comprises: controlling the container lifting machine to transport the target container to an idle level in the temporary storage mechanism.

15. A computing device, comprising a memory, a processor, and computer instructions stored in the memory and executable by the processor, wherein the computer instructions are configured to, when executed by the processor, to be included for

assigning a transportation task to a first self-driven robot;

planning a travel route on a storey where the first self-driven robot is located corresponding to the transportation task for the first self-driven robot, controlling the first self-driven robot to move to a first target location on the storey where the first self-driven robot is located according to the travel route, pick up the target container, and transport the target container to the temporary storage mechanism;

controlling the temporary storage mechanism to transport the target container to a container lifting machine;

controlling the container lifting machine to transport the target container to a target storey where a destination of the transportation task is located;

controlling a temporary storage mechanism on a target storey where the destination of the transportation task is located to receive and temporarily store the target container from the container lifting machine; and

controlling a second self-driven robot to transport the target container to the destination of the transportation task from the temporary storage mechanism on a storey where the second self-driven robot is located;

wherein the temporary storage mechanism is an n-layer structure, where n is a natural number and is greater than or equal to 2; and

the computer instructions are further configured to, when executed by the processor, to be included for controlling the lifting machine to transport the target container to an idle level in the temporary storage mechanism.