CLAIMS

1. An item picking method, implementable by a picking management device, the method comprising:

obtaining one or more picking tasks respectively corresponding to one or more picking areas;

determining an arrangement order of the one or more picking tasks based on a completion progress of each of one or more item carrying apparatuses, wherein the completion progress of each item carrying apparatus comprises a ratio of a quantity of items that are placed in the item carrying apparatus to a quantity of items of a picking task associated with the item carrying apparatus;

determining a drive apparatus for each of the one or more picking tasks based on the arrangement order of the one or more picking tasks, and sending, to the drive apparatus, movement data generated according to the each picking task, causing the drive apparatus to move an item carrying apparatus to a target picking area corresponding to the picking task; and

sending the each picking task to a picking device corresponding to the target picking area, causing the picking device to complete the picking task in the target picking area.

2. The item picking method according to claim 1, further comprising:

establishing a correspondence between the one or more picking tasks and the moved item carrying apparatus.

3. The item picking method according to claim 2, wherein the obtaining one or more picking tasks comprises:

obtaining a picking list, wherein the picking list comprises a total picking task of picking items located in the one or more picking areas; and

dividing the total picking task into the one or more picking tasks according to the one or more picking areas.

4. The item picking method according to any one of the preceding claims, wherein:

the determining an arrangement order of the one or more picking tasks comprises: determining the arrangement order of the one or more picking tasks further according to load

states of the picking areas, wherein the determining an arrangement order of the one or more picking tasks further comprises determining that a duration of completing picking tasks corresponding to the determined arrangement order satisfies a preset duration condition; and

a load state of each picking area comprises at least one of: a completion progress of one or more picking tasks corresponding to the picking area, a duration needed to complete the one or more picking tasks corresponding to the picking area, a quantity of the one or more picking tasks corresponding to the picking area, or a picking capability corresponding to the picking area.

5. The item picking method according to any one of the preceding claims, wherein the determining a drive apparatus for each of the one or more picking tasks comprises:

determining the drive apparatus for the each of the one or more picking tasks according to at least one of a travel cost of the drive apparatus or a waiting cost of the one or more item carrying apparatuses.

6. The item picking method according to any one of the preceding claims, wherein the sending, to the drive apparatus, movement data generated according to the each picking task comprises:

using a position of the item carrying apparatus as a start point position, and using a position of the target picking area corresponding to the picking task as an end point position; and

generating the movement data according to the start point position and the end point position, and sending the movement data to the drive apparatus.

7. The item picking method according to claim 6, wherein the generating the movement data according to the start point position and the end point position comprises:

using the start point position and the end point position as the movement data.

8. The item picking method according to claim 6, wherein the generating the movement data according to the start point position and the end point position comprises:

planning a movement route from the start point position to the end point position according to a spatial layout of storage spaces of the one or more picking areas, and using the movement route as the movement data.

9. The item picking method according to any one of the preceding claims, wherein the sending the each picking task to a picking device corresponding to the target picking area comprises:

sending the each picking task to the item carrying apparatus, wherein the each picking task is sent, after the item carrying apparatus is moved to the target picking area corresponding to the each picking task, by the item carrying apparatus to the picking device corresponding to the target picking area.

10. The item picking method according to any one of the preceding claims, wherein the picking task comprises: picking an item based on at least one of an identifier of the item or an identifier of the item carrying apparatus moved to the target picking area.

11. The item picking method according to any one of the preceding claims, wherein one or more storage containers are disposed on the item carrying apparatus moved to the target picking area, and the each picking task comprises: picking an item based on at least one of an identifier of item, an identifier of the item carrying apparatus moved to the target picking area, or an identifier of at least one of the one or more storage containers.

12. The item picking method according to claim 11, further comprising:

sending a storage container layout of the item carrying apparatus to the item carrying apparatus moved to the target picking area or the picking device, wherein the storage container layout represents positions of the storage containers on the item carrying apparatus, and the storage container layout is displayed on the item carrying apparatus or the picking device correspondingly.

13. A picking management device, comprising:

a processor configured to:

obtain one or more picking tasks respectively corresponding to one or more picking areas;

determine an arrangement order of the one or more picking tasks based on a completion progress of each of one or more item carrymg apparatuses, wherein the completion progress of each item carrying apparatus comprises a ratio of a quantity of items

that are placed in the item carrymg apparatus to a quantity of items of a picking task associated with the item carrying apparatus;

determine a drive apparatus for each of the one or more picking tasks based on the arrangement order of the one or more picking tasks; and

generate movement data according to the picking task; and

a communication interface configured to:

send the movement data to the drive apparatus, wherein the movement data is used by the drive apparatus to move an item carrying apparatus to a target picking area corresponding to the picking task; and

send the each picking task to a picking device corresponding to the target picking area, to instruct the picking device to complete the picking task in the target picking area.

14. The picking management device according to claim 13, wherein to obtain the one or more picking tasks, the processor is configured to:

obtain a picking list, wherein the picking list comprises a total picking task of picking items located in the one or more picking areas; and

divide the total picking task into the one or more picking tasks according to the one or more picking areas.

15. The picking management device according to claim 13 or claim 14, wherein to determine the arrangement order of the one or more picking tasks, the processor is configured to: determine the arrangement order of the one or more picking tasks further according to load states of the picking areas, wherein the determining an arrangement order of the one or more picking tasks further comprises determining that a duration of completing picking tasks corresponding to the determined arrangement order satisfies a preset duration condition, wherein a load state of each picking area comprises at least one of: a completion progress of the one or more picking tasks corresponding to the picking area, a duration needed to complete the one or more picking tasks corresponding to the picking area, a quantity of the one or more picking tasks corresponding to the picking area, or a picking capability corresponding to the picking area.

16. The picking management device according to any one of the preceding claim 13 to

15, wherein to determine the drive apparatus for each of the one or more picking tasks, the processor is configured to:

determine the drive apparatus for the each of the one or more picking tasks according to at least one of a travel cost of the drive apparatus or a waiting cost of the one or more item carrying apparatuses.

17. The picking management device according to any one of the preceding claims 13 to 16, wherein to generate the movement data according to the picking task, the processor is configured to:

use a position of the item carrying apparatus as a start point position, and use a position of the target picking area corresponding to the picking task as an end point position; and

generate the movement data according to the start point position and the end point position.

18. The picking management device according to claim 17, wherein to generate the movement data according to the start point position and the end point position, the processor is configured to use the start point position and the end point position as the movement data.

19. The picking management device according to claim 17, wherein to generate the movement data according to the start point position and the end point position, the processor is configured to: plan a movement route from the start point position to the end point position according to a spatial layout of storage spaces of the one or more picking areas, and use the movement route as the movement data.

20. The picking management device according to any one of the preceding claims 13 to 19, wherein to send the picking task to the picking device corresponding to the target picking area, the communication interface is configured to:

send the each picking task to the item carrying apparatus, wherein the each picking task is sent, after the item carrying apparatus is moved to the target picking area corresponding to the each picking task, by the item carrying apparatus to the picking device corresponding to the target picking area.

21. The picking management device according to any one of the preceding claims 13 to 20, wherein the picking task comprises: picking an item based on at least one of an identifier of the item or an identifier of the item carrying apparatus moved to the target picking area.

22. The picking management device according to any one of the preceding claims 13 to 21, wherein one or more storage containers are disposed on the item carrying apparatus moved to the target picking area, and the each picking task comprises: picking an item based on at least one of an identifier of the item, an identifier of the item carrying apparatus moved to the target picking area, or an identifier of at least one of the one or more storage container.

23. The picking management device according to claim 22, wherein:

the processor is further configured to obtain a storage container layout of the item carrying apparatus; and

the communication interface is further configured to send the storage container layout of the item carrying apparatus to the item carrying apparatus or the picking device, wherein the storage container layout represents positions of the storage containers on the item carrying apparatus moved to the target picking area, and the storage container layout is displayed on the item carrying apparatus or the picking device correspondingly.

24. An item picking system, comprising:

a picking management device configured to: obtain one or more picking tasks respectively corresponding to one or more picking areas; determine an arrangement order of the one or more picking tasks based on a completion progress of each of one or more item carrying apparatuses wherein the completion progress of each item carrying apparatus comprises a ratio of a quantity of items that are placed in the item carrying apparatus to a quantity of items of a picking task associated with the item carrying apparatus; determine a drive apparatus for each of the one or more picking tasks based on the arrangement order of the one or more picking tasks; send, to the drive apparatus, movement data generated according to the picking task; and send the each each picking task to a picking device corresponding to a target picking area corresponding to the picking task;

the drive apparatus configured to move an item carrying apparatus according to the movement data to the target picking area; and

the picking device configured to complete the picking task in the target picking area.