Claims

What is claimed is:

1. A method comprising operations performed by a computer processor for allocating cells of a sorting apparatus, each of the cells for receiving items associated with a purchase order, the method comprising:

associating, in a database, an identifier of the sorting apparatus with an identifier of a first container storing a first item of the purchase order, the purchase order comprising a second item stored in a second container;

prior to associating the sorting apparatus with the second container, receiving an identifier of the first item;

determining, in the database using the identifier of the first item, whether any cell of the sorting apparatus is associated with the purchase order;

upon determining that no cell of the sorting apparatus is associated with the purchase order, associating, in the database, an identifier of a cell of the sorting apparatus with the identifier of the purchase order; and

transmitting a first signal to a computer associated with a worker, the first signal instructing placement of the first item in the cell.

2. The method of claim 1, wherein the sorting apparatus comprises a first row of cells and a second row of cells, and associating the identifier of the cell of the sorting apparatus with the identifier of the purchase order comprises:

associating, in the database, a first weight range with the first row and a second weight range with the second row, wherein a smallest value of the first weight range is greater than or equal to a largest value of the second weight range, and the first row is located below the second row in the sorting apparatus; and

based on a determination that a total weight of items of the purchase order is in a target weight range, associating an identifier of a cell in a target row with the identifier of the purchase order, wherein the target weight range is one of the first weight range and the second weight range, and the target row is associated with the target weight range in the database.

3. The method of claim 2, further comprising:

based on the determination that the total weight is in the target weight range and no cell of the target row is available for allocating, associating the identifier of the purchase order with an identifier of one of: a cell of a row located below the target row or a cell of a row located below the target row.

4. The method of claim 1, wherein associating the identifier of the sorting apparatus with the identifier of the first container comprises:

associating, in the database, a computing device with the worker and the sorting apparatus;

receiving the identifier of the first container by the processor from a scanning device coupled to the computing device; and

associating, in the database, the identifier of the sorting apparatus with the identifier of the first container.

5. The method of claim 4, wherein receiving the identifier of the first item comprises receiving the identifier of the first item from the scanning device coupled to the computing device.

6. The method of claim 1, further comprising:

generating, based on the first signal, at least one of a visual indicator, an acoustic indicator, or a tactile indicator by one of the computer or the sorting apparatus.

7. The method of claim 1, further comprising:

when associating the identifier of the cell with the identifier of the purchase order, starting a timer associated with the purchase order; and

based on a determination that the timer reaches a predetermined value, transmitting a second signal to a computer associated with an operator, wherein the second signal is indicative of the timer associated with the purchase order having reached the predetermined value.

8. The method of claim 7, further comprising:

generating, based on the second signal, at least one of a visual indicator, an acoustic indicator, or a tactile indicator by one of the computer associated with the operator or the sorting apparatus to indicate that the timer associated with the purchase order has reached the predetermined value.

9. The method of claim 1, further comprising:

associating, in the database, the identifier of the sorting apparatus with an identifier of the second container;

receiving, by the processor, an identifier of the second item;

determining, in the database using the identifier of the second item, whether any cell of the sorting apparatus is associated with the purchase order; and

upon determining that the cell is associated with the purchase order, transmitting a third signal to the computer associated with the

worker, the third signal instructing placement of the second item in the cell.

10. The method of claim 1, further comprising:

based on a determination that all items of the purchase order are placed in the cell, transmitting a fourth signal to the computer associated with the worker indicative of all items of the purchase order having been placed in the cell.

11. The method of claim 1, wherein the computer is coupled to the sorting apparatus using a network.

12. A non-transitory computer-readable storage medium, comprising instructions for allocating cells of a sorting apparatus, each of the cells for receiving items associated with a purchase order, which instructions, when executed by a processor, become operational with the processor to:

associate, in a database, an identifier of the sorting apparatus with an identifier of a first container storing a first item of a purchase order, wherein the purchase order comprises a second item stored in a second container;

prior to associating the sorting apparatus with the second container, receive an identifier of the first item;

determine, in the database using the identifier of the first item, whether any cell of the sorting apparatus is associated with the purchase order;

upon determining that no cell of the sorting apparatus is associated with the purchase order, associate, in the database, a cell of the sorting apparatus with the purchase order; and

transmit a first signal to a computer associated with a worker, the first signal instructing placement of placing the first item in the cell.

13. The non-transitory computer-readable storage medium of claim 12, wherein the sorting apparatus comprises a first row of cells and a second row of cells, and the instructions operational with the processor to associate the cell of the sorting apparatus with the purchase order further comprise instructions which when executed by the processor become operational with the processor to:

associate, in the database, a first weight range with the first row and a second weight range with the second row, wherein a smallest value of the first weight range is greater than or equal to a largest value of the second weight range, and the first row is located below the second row in the sorting apparatus; and

based on a determination that a total weight of items of the purchase order is in a target weight range, associate an identifier of a cell in a target row with the identifier of the purchase order, wherein the target weight range is one of the first weight range and the second weight range, and the target row is associated with the target weight range in the database.

14. The non-transitory computer-readable storage medium of claim 13, further comprising instructions which when executed by the processor become operational with the processor to:

based on the determination that the total weight is in the target weight range and no cell of the target row is available for allocating, associate the identifier of the purchase order with an identifier of one of: a cell of a row located below the target row or a cell of a row located below the target row.

15. The non-transitory computer-readable storage medium of claim 12, wherein the instructions operational with the processor to associate the sorting apparatus with the first container further comprise instructions which when executed by the processor become operational with the processor to:

associate, in the database, a computing device with the worker and the sorting apparatus;

receive the identifier of the first container from a scanning device coupled to the computing device; and

associate, in the database, the identifier of the sorting apparatus with the identifier of the first container.

16. The non-transitory computer-readable storage medium of claim 12, further comprising instructions which when executed by the processor become operational with the processor to:

when associating the identifier of the cell with the identifier of the purchase order, start a timer associated with the purchase order; and

based on a determination that the timer reaches a predetermined value, transmit a second signal to a computer associated with an operator indicative of the timer associated with the purchase order having reached the predetermined value.

17. The non-transitory computer-readable storage medium of claim 12, further comprising instructions which when executed by the processor become operational with the processor to:

associate, in the database, the identifier of the sorting apparatus with an identifier of the second container;

receive an identifier of the second item;

determine, in the database using the identifier of the second item, whether any cell of the sorting apparatus is associated with the purchase order; and

upon determining that the cell is associated with the purchase order, transmit a third signal to the computer associated with the worker indicative of placing the second item in the cell.

18. A system for allocating cells of a sorting apparatus, comprising:

a sorting apparatus, comprising a first row and a second row of one or more adjustable cells;

a computing device, associated with the sorting apparatus, the computing device comprising a scanning device configured to receive at least one of a barcode, a quick response (QR) code, or a radio-frequency identification (RFID) signal; and

a computer, coupled to the sorting apparatus using a network, comprising:

a database;

a memory storing instructions; and

at least one processor configured to execute the instructions to:

receive, from the computing device, an identifier of a first container storing a first item of a purchase order, wherein the purchase order comprises a second item stored in a second container;

associate, in the database, an identifier of the sorting apparatus with an identifier of the identifier of the first container;

prior to associating the sorting apparatus with the second container, receive an identifier of the first item from the computing device;

determine, in the database using the identifier of the first item, whether any cell of the sorting apparatus is associated with the purchase order;

upon determining that no cell of the sorting apparatus is associated with the purchase order, associate, in the database, an identifier of a cell of the sorting apparatus with an identifier of the purchase order;

transmit a first signal to the computing device instructing placement of the first item in the cell;

receive, from the computing device, an identifier of the second container;

associate, in the database, the identifier of the sorting apparatus with an identifier of the second container;

receive an identifier of the second item from the computing device;

determine, in the database using the identifier of the second item, whether any cell of the sorting apparatus is associated with the purchase order; and

upon determining that the cell is associated with the purchase order, transmit a second signal to the computer device instructing placement of the second item in the cell.

19. The system of claim 18, wherein the at least one processor configured to execute the instructions to associate the cell of the sorting apparatus with the purchase order is further configured to:

associate, in the database, a first weight range with the first row and a second weight range with the second row, wherein a smallest value of the first weight range is greater than or equal to a largest value of the second weight range, and the first row is located below the second row in the sorting apparatus;

determine a target row for the purchase order, wherein a total weight of items of the purchase order is in a target weight range associated with the target row, and the target weight range is one of the first weight range and the second weight range;

based on a determination that a cell of the target row is available for allocating, associate an identifier of the cell in the target row with the identifier of the purchase order; and

based on a determination that no cell of the target row is available for allocating, associate the identifier of the purchase order with an identifier of one of: a cell of a row located below the target row or a cell of a row located below the target row.

20. The system of claim 18, wherein the at least one processor is further configured to:

substantially concurrently with associating the identifier of the cell with the identifier of the purchase order, start a timer associated with the purchase order; and

based on a determination that the timer reaches a predetermined value, transmit a third signal to a computer associated with an operator, wherein the third signal is indicative of the timer associated with the purchase order having reached the predetermined value.