CLAIMS

1. An ingredient delivery system, comprising at least one delivery unit, characterized in that each delivery unit comprises:

a first storage portion configured to store foodstuff to be delivered,

the first storage portion comprising:

a frame having a front and a back that are disposed oppositely;

slideways arranged within the frame and extending between the front and back of the frame, the number of the slideways being at least two, a position of an end of each slideway at the back of the frame being higher than a position of an end of the slideway at the front of the frame, and the at least two slideways being distributed laterally and/or longitudinally within the frame;

a movable tray located at a front side of the frame and capable of moving at least in a longitudinal direction, a front end of the movable tray being inclined downwards; and

a first stopper member located at a front end of each slideway and having a front side stopper and a rear side stopper, and in an extending direction of the slideway, the front side stopper being closer to the front of the frame than the rear side stopper, the front side stopper blocking a front side of the foodstuff to be delivered, and the rear side stopper blocking a front of another foodstuff to be delivered at a rear side of the foodstuff to be delivered.

2. The ingredient delivery system according to claim 1, wherein,

when the front side stopper is in an open state, the rear side stopper is in a closed state.

3. The ingredient delivery system according to claim 2, wherein,

when the front side stopper is in a closed state or an open state, the front side stopper enters a space above the slideways or retreats to a side of a space above the slideways,

and when the rear side stopper is in a closed state or an open state, the rear side stopper enters the space above the slideways or retreats to the side of the space above the slideways.

4. The ingredient delivery system according to claim 2, wherein,

the first stopper member further comprises a connection portion connected between the front side stopper and the rear side stopper,

wherein the connection portion rotates around a shaft extending longitudinally, and when

the front side stopper is in an open state, the rear side stopper is in a closed state, and when the front side stopper is in a closed state, the rear side stopper is in an open state.

5. The ingredient delivery system according to claim 2, wherein,

the first storage portion further comprises:

a controller configured to control movement of the movable tray, and control a front side stopper of the first stopper member of a target slideway to be open in a case where the movable tray moves to a front side of the target slideway.

6. The ingredient delivery system according to claim 5, wherein,

the movable tray comprises a first extension slideway laterally aligned with the slideway, the first extension slideway being parallel with the slideway,

and a second stopper member is provided at a front side of the first extension slideway.

7. The ingredient delivery system according to claim 6, wherein,

the first storage portion further comprises:

a housing accommodating the frame, the movable tray and the first stopper member; and

an output end tray extending from an interior of the housing to a front side of a window in a front of the housing,

and when the movable tray moves to a rear side of the output end tray, the controller controls the second stopper member of the first extension slideway to be in an open state.

8. The ingredient delivery system according to claim 7, wherein,

the second stopper member moves in the longitudinal direction,

when the second stopper member is in the open state, the second stopper member moves downwards from a retraction window at the front side of the first extension slideway to below the first extension slideway,

and when the second stopper member is in the closed state, the second stopper member moves upwards from below the retraction window at the front side of the first extension slideway and is exposed from a surface of the first extension slideway.

9. The ingredient delivery system according to claim 7, wherein,

the output end tray comprises a second extension slideway laterally aligned with the first extension slideway, the second extension slideway extending in a fore-and-aft direction,

and the second extension slideway is provided with a sensor, the sensor detecting

whether the foodstuff to be delivered stays on the second extension slideway and whether the foodstuff to be delivered on the second extension slideway is removed.

10. The ingredient delivery system according to claim 9, wherein,

the front end of the output end tray is further provided with a blocking bar,

the foodstuff to be delivered that slides out of the window and slides forward along the second extension slideway is blocked by the blocking bar.

~~10~~11. The ingredient delivery system according to claim 7, wherein the ingredient delivery system further comprises:

a first display configured to display a correspondence relationship between foodstuff to be delivered in a current order and the first storage portion; and

a first output control switch configured to control whether to allow the first display to display information on a next order.

~~11~~12. The ingredient delivery system according to claim ~~10~~11, wherein the delivery unit further comprises:

a second display configured to display a type of the foodstuff to be delivered in the current order, a serial number of the first storage portion where the foodstuff to be delivered is located, a serial number of the second extension slideway and a location of the foodstuff to be delivered in the tray; and

a second output control switch configured to control whether to allow the second display to display the information on the next order.

~~12~~13. The ingredient delivery system according to claim ~~11~~12, wherein,

the second display highlights the following: a type of the foodstuff to be delivered in the current order outputted by the first storage portion of the delivery unit, a serial number of the foodstuff to be delivered on the second extension slideway and a placement location of the foodstuff to be delivered in a tray.

~~13~~14. The ingredient delivery system according to claim ~~11~~12, wherein,

the second display further displays a serial number of a next first storage portion for outputting the foodstuff to be delivered in the current order.

~~14~~15. The ingredient delivery system according to claim 1, wherein,

the delivery unit further comprises:

a reading device configured to read information on the foodstuff to be delivered; and

first indicator lights disposed on the back of the frame, the number of the first indicator lights being identical to the number of the slideways, and locations of the first indicator lights corresponding to locations of the slideways,

and the controller is connected to the first indicator lights and is in communication with the reading device, and the controller controls a lighting mode of the first indicator lights according to the information on the foodstuff to be delivered read by the reading device.

~~15~~16. The ingredient delivery system according to claim 1, wherein,

the first storage portion further comprises:

a second indicator light, when the controller determines that a shelf life of the foodstuff to be delivered has expired according to the information on the foodstuff to be delivered read by the reading device, the controller controls the second indicator light to light up; and/or

a third indicator light, when the reading device is unable to correctly read the information on the foodstuff to be delivered, the controller controls the third indicator light to light up; and/or

a fourth indicator light, when the controller determines that the information on the foodstuff to be delivered read by the reading device is unable to match information in a database, the controller controls the fourth indicator light to light up; and/or

a fifth indicator light, when a sensor provided in the slideway in the first storage portion fails or a time when the sensor is triggered exceeds a predetermined time, the controller controls the fifth indicator light to light up.

~~16~~17. The ingredient delivery system according to claim 1, wherein,

the ingredient delivery system further comprises:

a foodstuff replenishment indicating device in communication with the controller, a first display area of the foodstuff replenishment indicating device displaying a quantity of foodstuff to be delivered in each first storage portion that needs to be replenished, wherein a display mode of a sub-display area corresponding to the foodstuff to be delivered corresponds to the quantity of the foodstuff to be delivered that needs to be replenished.

~~17~~18. A method for controlling an ingredient delivery system, wherein the ingredient delivery system comprises at least one delivery unit, characterized in that each delivery unit

comprises:

a first storage portion configured to store foodstuff to be delivered,

the first storage portion comprising:

a frame having a front and a back that are disposed oppositely;

slideways arranged within the frame and extending between the front and back of the frame, the number of the slideways being at least two, a position of an end of each slideway at the back of the frame being higher than a position of an end of the slideway at the front of the frame, and the at least two slideways being distributed laterally and/or longitudinally within the frame;

a movable tray located at a front side of the frame and capable of moving at least in a longitudinal direction, a front end of the movable tray being inclined downwards; and

a first stopper member located at a front end of each slideway and having a front side stopper and a rear side stopper, and in an extending direction of the slideway, the front side stopper being closer to the front of the frame than the rear side stopper, the front side stopper blocking a front side of the foodstuff to be delivered, and the rear side stopper blocking a front of another foodstuff to be delivered at a rear side of the foodstuff to be delivered,

and the control method comprises:

controlling a moving position of the movable tray; and

controlling a front side stopper of a first stopper member of a target slideway to be open in a case where the movable tray moves to a front side of the target slideway.