efficiently.

[0012] Moreover, the ordered food and drink conveyance apparatus may include a notification means disposed in the customer seat floor and making a notification that a food and drink arrives at the lifting device. When such a notification means is disposed in the customer seat floor such as the vicinity of the entrance through which customers come in and out, it is possible to easily grasp that the food and drink has arrived at the lifting device.

[0013] In addition, the belt conveyor may include a plurality of the belt conveyors in parallel, wherein the lifting device may push up a food and drink placed as to straddle the plurality of belt conveyors from below and may separate the food and drink from the plurality of belt conveyors, and wherein when in a case where the food and drink placed as to straddle the plurality of belt conveyors, the control unit makes accept an operation for designating the predetermined location as a conveyance destination and makes move the plurality of belt conveyors synchronous, and when in a case where the food and drink does not placed as to straddle the plurality of belt conveyors, the control unit makes reject an operation for designating the predetermined location as a conveyance destination and makes move the plurality of belt conveyors asynchronous. In such an ordered food and drink conveyance apparatus, it is possible to place the food and drink on a relatively large tray or the like and convey it to the lifting device.

[Effects of the invention]

[0014] The above ordered food and drink conveyance apparatus can reduce the number of man-hours required for conveying the food and drink in a store as much as possible.

made in step S101 and an affirmative determination is made in step S106, so that the sub belt conveyor 30L is in a pitch feeding prohibition mode. As a result, since the negative determination is not made in step S102, the sub belt conveyor 30L does not perform the pitch feeding operation in a situation where there is food and drink on it which has been erroneously placed in the waiting area and regarding which the state in which it has been placed in the waiting area is unknown.

[0029] When the control device of the ordered food and drink conveyance apparatus 10 makes a negative determination in step S106, it accesses the memory in the control device and resets the flag of the pitch feeding prohibition mode and the counter value (S108). Therefore, for example, even when the food and drink is erroneously placed directly in the waiting area instead of the placement area of the sub belt conveyor 30L, the flag of the pitch feeding prohibition mode and counter value are reset when all foods and drinks are removed from the sub belt conveyor 30L, and the pitch feeding operation and the like of the step 104 can be performed again. Further, the flag of the pitch feeding prohibition mode and the counter value are reset even when the food and drink on the sub belt conveyor 30L is conveyed to the customer seats 3 by performing the conveyance start operation described later.

[0030] In addition, although a series of processes from step S101 to step S108 mentioned above are illustrated about the case of the sub belt conveyor 30L, the same applies to the sub belt conveyor 30R.

[0031] Fig. 5 is a view showing the state of pitch feeding. For example, in the state where there is not a single plate for food and drink on the sub belt conveyor 30,

relatively simple sensor configuration of the sensor S1L and the sensor S2L. The same applies to the sub belt conveyor 30R side as with the sub belt conveyor 30L.

[0034] Next, processing when a conveyance start operation is performed will be described.

[0035] <Conveyance operation>

When the conveyance start operation is performed on the operation panel provided in the vicinity of the sub belt conveyor 30, the control device of the ordered food and drink conveyance apparatus 10 operates the sub belt conveyor 30 and the main belt conveyor 20, and conveys the food and drink from the kitchen 2 to a customer seat 3 or the lifting device 40. Fig. 6 is a diagram showing an example of the screen of the operation panel.

[0036] When buttons BL1 to BL3, BR1 to BR3 and BE indicating the conveyance destination are pressed on a screen D101 of the operation panel, the control device of the ordered food and drink conveyance apparatus 10 outputs a control signal to operate the sub belt conveyor 30 and the main belt conveyor 20, and conveys a plate 4 for food and drink placed on the sub belt conveyor 30 to a location corresponding to any of the buttons BL1 to BL3, BR1 to BR3, and BE, that is, to the customer seats 3 or the lifting device 40. The button BL1 corresponds to a customer seat 3L1, the button BL2 corresponds to a customer seat 3L2, the button BL3 corresponds to a customer seat 3L3, the button BR1 corresponds to a customer seat 3R1, the button BR2 corresponds to a customer seat 3R2, the button BR3 corresponds to a customer seat 3R3, and the button BE corresponds to the lifting device 40.

[0037] Fig. 7 shows a control flow performed when the conveyance start operation is performed. The control device of the ordered food and drink conveyance apparatus 10 determines whether the buttons BL1 to BL3, BR1 to BR3

and BE have been pressed on the operation panel (S201). Then, when it is detected that the selection operation of the customer seat is performed in the process of step S201, the control device determines whether the food and drink is placed on the main belt conveyor 20 (S202). When the buttons BL1 to BL3 are pressed, the control device determines, in step S202, with the sensor S3L whether the food and drink is placed on the main belt conveyor 20L. When the buttons BR1 to BR3 are pressed, the control device determines, in step S202, with the sensor S3R whether the food and drink is placed on the main belt conveyor 20R. When the button BE is pressed, the control device determines, in step S202, with the sensor S3L and the sensor S3R whether the food and drink is placed on both the main belt conveyor 20L and the main belt conveyor 20R.

[0038] Then, when the control device makes a negative determination in the process of step S202, it activates the main belt conveyor 20 and the sub belt conveyor 30 (S203). For example, when the buttons BL1 to BL3 are pressed, the sub belt conveyor 30L and the main belt conveyor 20L are activated, when the buttons BR1 to BR3 are pressed, the sub belt conveyor 30R and the main belt conveyor 20R are activated, and when the button BE is pressed, the sub belt conveyors 30L and 30R and the main belt conveyors 20L and 20R are activated.

[0039] After performing the process of step S203, the control device determines whether all foods and drinks placed on the sub belt conveyor 30 have arrived on the main belt conveyor 20 (S204). For example, when the main belt conveyor 20L and the sub belt conveyor 30L are in operation, it is determined by the sensor S4L whether all foods and drinks placed on the sub belt conveyor 30L are on the main belt conveyor 20L. Also, for example, when the main belt

longitudinal direction of the conveyance path, and wherein

the lifting device raises the food and drink placed on the belt conveyor above an optical axis of the sensor light.

3. The ordered food and drink conveyance apparatus according to claim 1 or 2, wherein

in a state where a first food and drink conveyed to the predetermined location is raised by the lifting device to be away from the belt conveyor, the control unit operates the belt conveyor when a conveyance start operation in which a second food and drink different from the first food and drink is conveyed is performed, and starts conveying the second food and drink.

4. The ordered food and drink conveyance apparatus according to any one of claims 1 to 3, further comprising

a notification means that is disposed in the customer seat floor and makes a notification that a food and drink has arrived at the lifting device.

5. The ordered food and drink conveyance apparatus according to any one of claims 1 to 4, wherein

the belt conveyor includes a plurality of the belt conveyors in parallel, wherein

the lifting device pushes up a food and drink placed as to straddle the plurality of belt conveyors from below and separates the food and drink from the plurality of belt conveyors, and wherein

when in a case where the food and drink placed as to straddle the plurality of belt conveyors, the control unit makes accept an operation for designating the predetermined location as a conveyance destination and

makes move the plurality of belt conveyors synchronous, and

when in a case where the food and drink is not placed as to straddle the plurality of belt conveyors, the control unit makes reject an operation for designating the predetermined location as a conveyance destination and makes move the plurality of belt conveyors asynchronous.