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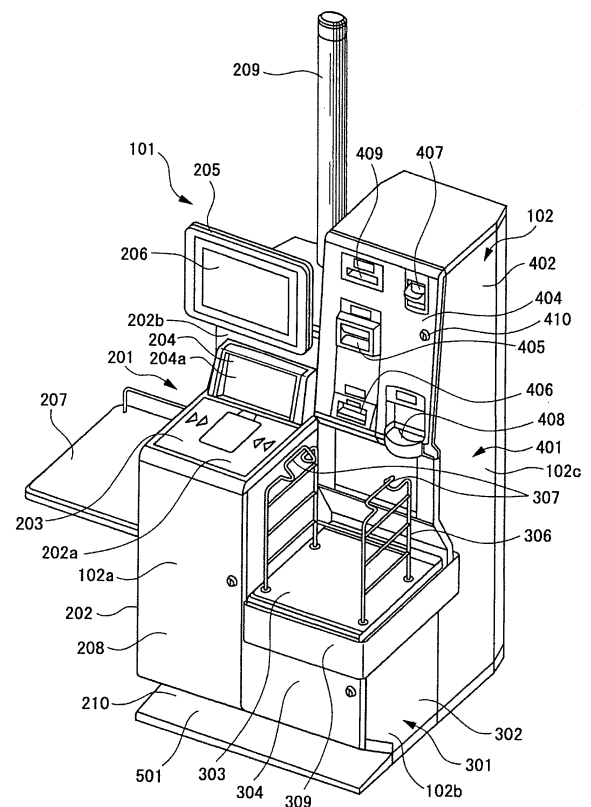
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(54) **Self-checkout terminal**

(57) A housing (102) that a first block (102a) having a shape that a width is smaller than a height and a depth, and the height of a front side is lower than that of a back side, a second block (102b) which is adjacently arranged with the first block and a height is lower than the first block, and a third block (102c), a height of which rises from a back part of the second block is taller than the first block are integrated is provided, a scanner (204) and a display (205) having a touch panel (206) are allocated to the first block, a scale device for a weight check, and having a weighing table (303) for placing an article after an article code has been read by the scanner, is housed in the second block, and a settlement device and a receipt printer are housed in the third block.

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Description

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

[0001] The present invention relates to a self-checkout terminal which enables a customer to execute a self-checkout.

DISCUSSION OF THE BACKGROUND

[0002] In recent years, a self-checkout terminal which allows a customer to execute a self-checkout has been developed. Various user interfaces for executing an article sales data processing are arranged such that an operation by a customer, information offering for the customer, and a receipt issuance are enabled (see Japanese Laid-Open Publication No. Hei 10-069574). As the various user interfaces, it is provided that an article code reader such as a barcode reader or the like, a display for displaying information, an input part for inputting information, a settlement part for enabling a settlement such as an ATM (automated teller machine) or a bank note and coin receiving/dispensing device for coins and bank notes, a receipt printer, and so on.

[0003] Further, a measurement is required to prevent a wrongdoing, that is, an article which a customer can bring home should be limited to the article, an article code of which has been read by the article code reader. In another words, the article should be limited to an article which has been purchased through an article sales data processing. As for such measurement, Japanese Laid-Open Publication No. Hei 09-245251 discloses an invention that prevents a wrongdoing by checking a weight of the article, the article code of which has been read by the article code reader. A technique of weight checking shown in Japanese Laid-Open Publication No. Hei 09-245251 is as follows:

- (1) acquiring weight data of the article from an article data file based on the article code which has been read by the article code reader.
- (2) weighing the weight of the article after an article code of which was read.
- (3) executing a weight check to check identity of the weight specified by the weight data and the weight weighed actually.

[0004] As a request when a self-checkout terminal is produced, there is realization of good operability and downsizing of whole device.

[0005] For example, a self-checkout terminal disclosed in Japanese Laid-Open Publication No. Hei 10-069574 has an ATM block which has a display for providing various information to users, and a function key. The ATM block is situated in the center, and an item bag holder for holding commodities to be purchased is

situated in front of the ATM block. A block, which has a scanner, is situated on the left-hand side, and a block, which has a coin receiving/dispensing device, is situated on the right-hand side of the ATM block. A user stands in front of the scanner and has an article to be read a barcode affixed on the article and put the read article in an item bag. At that point, the user may operate a function key as necessary according to an instruction on the display. Therefore, the user's eye and hand move disperse to right and left. What is more, there is no relationship between a movement of putting an article in the item bag, and a movement of operating the function key. This causes further lack of unity. Further more, at a settlement, because of the position of the display and the position of the coin receiving/dispensing device shift to right and left, the user's eye and hand move disperses to right and left. From the reason explained above, the self-checkout terminal disclosed in the Japanese Laid-Open Publication No. Hei 10-069574 cannot be said to have good operability.

[0006] Further, the self-checkout terminal disclosed in the Japanese Laid-Open Publication No. Hei 10-069574 has the item bag holder being situated in front of the ATM with a display, and the scanner and the coin receiving/dispensing device being situated at both sides of the ATM. This makes the device as a whole larger. What is more, to execute the weight check disclosed in the Japanese Laid-Open Publication No. Hei 09-245251, a scale device is required. Therefore, if such the scale device is disposed to the self-checkout terminal, the device as a whole becomes larger and larger.

[0007] By taking the self-checkout terminal disclosed in the Japanese Laid-Open Publication No. Hei 10-069574 as an example, it has been explained that good operability and downsizing of the whole device has not yet been realized. The self-checkout terminal above is a mere example and there is no self-checkout terminal which realizes good operability and downsizing of whole device both.

SUMMARY OF THE INVENTION

[0008] Accordingly, an object of the present invention is to realize a good operability and downsizing of a whole device.

[0009] According to a novel self-checkout terminal of the present invention, includes a scanner for optically reading a code symbol affixed on an article, a display with a touch panel for executing an information input and an information display, a scale device for a weight check, having a weighing table for placing an article after an article code is read by the scanner, a settlement device having an operation part operable by a user, and a receipt printer for printing a receipt according to a settlement by the settlement device and issuing the receipt from a receipt issuance exit, characterized in that including a housing that a first block (102a) having a shape that a width is smaller than a height and a depth, and the height

of a front side is lower than that of a back side, a second block (102b) which lines up a front surface with the first block and is adjacently arranged with the first block, and has a shape that a height and a depth are smaller than that of the first block, and a third block (102c) having a shape that rises from a back part of the second block, and a height is larger than that of at a back side of the first block, are integrally formed, wherein the scanner (204) is allocated at an upper part of a front side and at a front surface of a back side of the first block, the display with the touch panel (206, 205) is allocated at a front surface of a back side of the first block and at an upper part of the scanner, the scale device is housed in the second block and allocates the weighing table (303) at an upper surface of the second block, the settlement device allocates the operation part (405, 406, 407, 408) at a front surface of the third block and is housed in the third block, and the receipt printer allocates the receipt issuance exit (409) at a front surface of the third block and is housed in the third block.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] A more complete appreciation of the present invention and many of the attendant advantages thereof will be readily obtained as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings, wherein:

- Fig. 1 is a perspective view showing a self-checkout terminal;
- Fig. 2 is a perspective view showing a registration operation unit;
- Fig. 3 is a perspective view showing a scale unit and a settlement operation unit;
- Fig. 4 is a perspective view showing a status of two scale units being coupled and arranged;
- Fig. 5 is a perspective view of another status of two scale units being coupled and arranged; and
- Fig. 6 is a perspective view showing a status that my bag is put on the scale unit in the status of Fig. 5.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0011] An embodiment of the present invention will be explained with reference to Figs. 1 to 6.

[0012] Fig. 1 is a perspective view showing a self-checkout terminal 101. Three units put together to constitute the self-checkout terminal 101. One of the three units is a registration operation unit 201, other one is a scale unit 301, and the last one is a settlement operation unit 401. The registration operation unit 201, the scale unit 301, and the settlement operation unit 401 connect each other to form a single housing 102. To be more specific, a housing 102 is formed in such a way that a first block 102a having a shape that a width is smaller

than a height and a depth, and the height of a front side is lower than that of a back side, a second block 102b which lines up a front surface with the first block 102a and is adjacently arranged with the first block 102a, and has a shape that a height and a depth are smaller than that of the first block 102a, and a third block 102c having a shape that rises from a back part of the second block 102b, and a height is larger than that of at a back side of the first block 102a, are integrally formed.

[0013] Fig. 2 is a perspective view showing the registration operation unit 201. The registration operation unit 201 has a first housing 202, which is a rectangular parallelepiped, a width of which is small and a depth of which is large. The proportion of width to depth of the first housing 202 is approximately 1:2, and a height at a front side is lower than a height at a back side. That is, an upper surface at the front side is a flat surface 202a situated horizontally and its back part rises upward so that the height at the back side is higher than that of at the front side. The rising surface from the back part of the flat surface 202a is a front surface 202b at the back side of the first housing 202.

[0014] The registration operation unit 201 houses a scale (not shown) which locates a weighing table 203 in the flat surface 202a at the front side of the first housing 202. The scale is used for weighing weight of article which is sold by weight and placed on the weighing table 203. A scanner 204 is situated at the front surface 202b at the back side of the first housing 202. The scanner 204 has a flat glass reading surface 204a and optically reads a code symbol affixed on an article which is held over the reading surface 204a. A display 205 is further situated upper than the scanner 204 at the front surface 202b. The display 205 is a liquid crystal display device, for example, and has a touch panel 206 at its display surface.

[0015] The registration operation unit 201 provides an article placing table 207 at its left side surface. The article placing table 207 is used for placing an article to be purchased by the user.

[0016] The registration unit 201 has a door 208 at its front surface, and a closet (not shown) is provided over the door 208.

[0017] Further, an alarm pole 209 is set up at an upper surface of the higher part of the registration operation unit 201. When an error happens to the self-checkout terminal 101, the alarm pole 209 announces the error by blinking and so on.

[0018] A front surface part lower than the door 208 of the registration operation unit 201 is inclined downward such that its project area is narrowed when seen from the top of the first housing 202. Thereby, the first housing 202 is offset backward as going downward. The registration operation unit 201 provides the backward offset area as a foot space 210. The foot space 210 also functions as a foot space for a wheelchair user.

[0019] Fig. 3 is a perspective view showing the scale unit 301 and the settlement operation unit 401.

[0020] The scale unit 301 has a second housing 302

which is approximately cubic shape. The second housing 302 has approximately half depth of the depth of the first housing 202 of the registration operation unit 201. A height of the second housing 302 is approximately half of the first housing 202.

[0021] The second housing 302 of the scale unit 301 houses a scale device (not shown) on its surface, which arranges a weighing table 303. The scale device is used for weighing an article, an article code of which has been read by the scanner 204 and for determining whether or not the weight of the article accords with the article, which has been read by the scanner 204. That is, this is a scale device for a weight check.

[0022] The scale device 301 houses a computerized controller (not shown) for controlling each part of the self-checkout terminal 101. The second housing 302 of the scale unit 301 has a door 304 at its front surface and it is possible to attach/detach the controller by opening the door 304.

[0023] Here, the weighing table 303 has attachment holes 305 at its four corners. The attachment holes 305 are holes to which a bag holder 306 for setting an item bag (not shown) into which a purchased article is put (see Fig. 1) is attached. That is, as shown in Fig. 1, the bag holder 306, which is formed in such a way that a plurality of wires are bent or welded, is attached to the weighing table 303. The bag holder 306 has a hook 307 for holding an item bag with its top being open, by hanging a pair of handles (not shown) provided at upper positions of both sides of the item bag.

[0024] A front surface part lower than the door 403 of the scale unit 301 is inclined downward such that its projection area is narrowed when seen from the top of the second housing 302. Thereby, the second housing 302 is offset backward as going downward. The scale unit 301 provides the backward offset area as a foot space 308. The foot space 308 also functions as a foot space for a wheelchair user.

[0025] The settlement operation unit 401 has a third housing 402, which has a high rectangular parallelepiped. The third housing 402 has the same width as the second housing 302 of the scale unit 301, and is used by connecting a connecting surface 403 formed at its lower front part to a back surface of the scale unit 301. A depth of the third housing 402 is set such that a depth of the scale unit 301 and the settlement operation unit 401 being connected accords with the depth of the registration operation unit 201. The third housing 402 is not an exact rectangular parallelepiped and its connecting surface, which is connected to the scale device 301, is offset backward. Therefore, when the third housing 402 is arranged adjacent to the registration operation unit 201, a front panel 404 formed at an upper front surface is approximately lined up with the scanner 204 and the display 205 provided to the registration unit 201. Also, the front panel 404 is not set vertically and is inclined backward as going upward. And, the third housing 402 is set such that its height is taller than that of the back side part of the first

housing 202 of the registration operation unit 201 and is lower than that of the alarm pole 209.

[0026] The settlement operation unit 401 houses a settlement device (not shown), which is the money receiving/dispensing device, in the third housing 402. The money receiving/dispensing device includes two kinds of receiving/dispensing devices, namely, for bank notes and for coins. The money receiving/dispensing device has a bank note inlet 405, a bank note dispenser 406, a coin inlet 407, and a coin dispenser 408 at the front panel 404 as operation parts to be operated by the user for a settlement. The bank note inlet 405 is arranged at a left upper part, the bank note dispenser 406 is arranged at a left lower part, the coin inlet 407 is arranged at a right upper part, and the coin dispenser 408 is arranged at a right lower part.

[0027] The settlement operation unit 401 also houses a receipt printer (not shown) in the third housing 402. A receipt issuance exit 409 of the receipt printer is located higher than the bank note dispenser 406 at the left upper part of the front panel 404. The receipt issuance exit 409 also functions as the operation part to be operated by the user for a settlement.

[0028] Further, the front panel 404 of the settlement operation unit 401 is openable and closable. Also, a lock 410 is provided at the front panel 404 so that the front panel 404 can be locked with a not shown lock. When the front panel 404 is open, mechanics of a money receiving/dispensing device and a receipt printer (both not shown) housed in the settlement operation unit 401 are released so that maintenance can be performed easily.

[0029] Again, refer to Fig. 1. The self-checkout terminal 101 is composed of the scale unit 301 being arranged at the right side of the registration operation unit 201, and the settlement operation unit 401 being arranged behind the scale device 301. The registration operation unit 201 and the scale unit 301 are arranged to line up their front surfaces and the settlement operation unit 401 is arranged to contact its connecting surface 403 with the back surface of the scale unit 301. In this state, the registration operation unit 201, the scale unit 301, and the settlement operation unit 401 are connected and fixed by a typical connecting mechanism such as connecting tools (not shown) consisting of bolt and nut, for example. Other than that, as the connecting mechanism between the registration operation unit 201 and the scale unit 301, the foot table 501 is used. The foot table 501 is a plate member connecting the foot space 210 of the registration operation unit 201 and the foot space 308 of the scale device 308 in such a way that these foot spaces 210 and 308 are continued. The foot table 501 has a shape such that a height of front part is lower than that of back part, and the height is getting higher as going backward so as not to impair the function of the foot spaces 201 and 308. This function is that a wheelchair user can place his/her feet.

[0030] Also, a metal band-shape guard 309 surrounds an upper periphery of the scale unit 301. The guard 309

protects the scale unit 301 from an external shock as a function. As a design perspective, the guard 309 produces integrality as if the self-checkout terminal 101 is composed by a single housing 102.

[0031] As shown in Fig. 1, the self-checkout terminal 101 produces integrality as if a single housing 102 constitutes the terminal 101. In contrast, the registration operation unit 201, the scale unit 301, and the settlement operation unit 401, which constitute the self-checkout terminal 101, are originally composed from separate units. Therefore, rather free combinations can be possible. For example, the scale unit 301 and the settlement operation unit 401 can be arranged at the left side surface of the registration operation unit 201 by attaching the article table 207 to the right side surface of the registration operation unit 201 (not shown). That is, the example shown in Fig. 1 has a structure such that an article to be purchased is transferred from left to right, and an article sales data processing is executed. Contrary to that, by the layout change, it is possible to have a structure such that an article to be purchased is transferred from right to left, and an article sales data processing is executed.

[0032] Fig. 4 is a perspective view showing a status of two scale units 301 being coupled and arranged. As another layout of the registration operation unit 201, the scale unit 301, and the settlement operation unit 401, it is possible to couple and arrange two scale unit 301 shown in Fig. 4. In this case, the foot table 501 having a length which corresponds with a length in the width direction of one registration operation unit 201 and two scale units 301 is used to connect the three units. The guard 309 surrounds an upper periphery of the two scale units 301 as an integral unit.

[0033] In the example of Fig. 4, a temporary placing table 310 is provided to the scale unit 301 which is added to the layout shown in Fig. 1. The temporary placing table 310 is set up from a central back part of the weighing table 303 of the scale device (not shown) and its back part extends backward until it reaches a right side wall of the settlement operation unit 401. The temporary table 310 of such structure is used as a table on which articles such as an egg, a tofu, a piece of bread, or the like, which can be easily damaged when they are stuck, are temporarily placed. A safety guard 311 is attached to both sides and a back part of the temporary placing table 310 to prevent an article placed from dropping. The safety guard 311 is formed with a bent wire member.

[0034] Fig. 5 is a perspective view showing another status of the scale units 301 being coupled and arranged. The example of Fig. 5 also has two scale units 301 to be coupled and arranged as similar to the example of Fig. 4. As for the foot table 501 and the guard 309, the similar structure to the example of Fig. 4 is adopted. A difference from the example of Fig. 4 is that the bag holder 306 is not provided to the weighing table 303 of the scale device (not shown) of either scale unit 301. And the temporary placing table 310 is not provided to the scale unit 301 which is arranged at right-hand side. Further, as the

weighing table 303, a common single weighing table 303 is provided to scale devices (not shown) corresponding to each of the two scale units 301. It is obvious from Fig. 5 that the weighing table 303 is a single table with respect to the two scale units 301.

[0035] Fig. 6 is a perspective view showing an example of my bag being placed on the scale unit 301 in the status of Fig. 5. The structure of weighing table 303 shown in Fig. 5 and 6 supports my bag 601. My bag 601 is, for example, a box-type bag which is brought to a shop by the user, and is typically formed oblong. The length may exceed the width of the weighing table 303 of the single scale unit 301. Therefore, two scale units 301 are coupled and arranged and each weighing table 303 of the scale device (not shown) is connected with a single connecting plate 312 so as to support the oblong my bag 601. The connecting plate 312 has a structure that pins (now shown) are protruded and formed at four corners of an under surface of a flat plate, which is made of metal, for example. These pins are fit into holes 305 formed at four corners of the weighing table 303 of the scale device so that the connecting plate 312 is fixed and attached to the weighing table 303.

[0036] A safety guard 313 (see Fig. 5) for preventing a collision is attached to a left side part and a left back part of the connecting plate 312. The safety guard 313 is provided not to give shock to the registration operation unit 201 and the settlement operation unit 401 in case of the my bag 601 being slipped and colliding with them when the weighing table 303 of the two scale units 301 are coupled and arranged for my bag 601 and the single connecting plate 312 connects them. The safety guard 313 is formed with a bent wire member.

[0037] With the structure explained above, a customer as a user puts an article to be purchased into a shopping basket, for example, which is prepared by a shop, and places the shopping basket on the article placing table 207. Then, he/she executes an article registration operation at the registration operation unit 201. He/she declares a start of one transaction with the touch panel 206 according to instructions displayed on the display 205 by the controller (not shown) housed in the scale unit 301. After that, he/she takes out an article one by one from the shopping basket placed on the article placing table 207 and holds a symbol code such as a barcode and so on affixed on the article over the reading surface 204a of the scanner 204. Then, the controller executes a search process for searching a price and a weight corresponding to the article code read by the scanner 204 from the article data file (not shown) which stores a price and a weight corresponding to each article code. At this time, when an article is sold by weight, the article is placed on the weighing table 203 of scale (now shown) housed in the registration operation unit 201 and is weighed, and a price is obtained based on a price searched by the searching process and the weighed weight. Then, the controller executes a weight check process for determining whether or not the weight value output from the scale

device housed in the scale unit 301 after the article code is read by the scanner 204 accords with a weight value acquired by the search process or a weight value weighed by the scale. As a result of the weight check process, only when the controller determines there is an identity between the compared two weight values, the controller executes an article information registration process for storing article information which includes the read article code and the searched price to a memory (not shown).

[0038] When reading operations of article codes of all articles to be purchased have been finished, a termination of one transaction is declared by the touch panel 206 according to an instruction displayed on the display 205 by the controller. By this, the controller announces a settlement method in the settlement operation unit 401 on the display 205. A settlement by the settlement method in the settlement operation unit 401 is a settlement by a settlement device housed in the settlement operation unit 401, that is to say, a settlement by cash using receiving/dispensing devices for bank notes and for coins. The user performs according to a guidance displayed on the display 205 an insertion of bank notes into the bank note inlet 405, an insertion of coins into the coin inlet 407, a receipt of change from the bank note dispenser 406 or the coin dispenser 408 as necessary. Then, finally, the controller drives and controls a receipt printer housed in the settlement operation unit 401 to print a receipt and issue the receipt from the receipt issuance exit 409. The customer as the user receives the issued receipt and terminates the transaction.

[0039] Here, the self-checkout terminal 101 of the present embodiment compatibles good operability and downsizing of the whole device. Next, this point will be explained.

[0040] First of all, realization of good operability will be explained. The operations in the self-checkout terminal will be classified into an article registration operation for registering the article, and a settlement operation for a settlement. At a time of article registration operation, user's eyes and hand move required for an article registration operation can be minimized since the display 205 to which the touch panel 206 is attached is arranged at a backside of the scanner 204 when seen from the user. That is, user's eyes and hands move only when he/she takes an article placed on the article placing table 207, passes it in front of the scanner 204 and place it on the weighing table 303 of the scale unit 301. Other than that, user's eyes and hands don't move from side to side since information to the user and the operation to be performed by the user are gathered to an area of the display 205 to which the touch panel 206 is attached. Then, a settlement operation followed by the article registration operation is performed at the settlement operation unit 401 only. From the points explained above, good operability can be realized.

[0041] Next, downsizing of whole device will be explained. The scanner 204 and the display 205 to which

the touch panel 206 is attached required for an article registration operation are gathered to the registration operation unit 201, and the money receiving/dispensing devices which are the settlement device required for an settlement operation are gathered to the settlement operation unit 401. Since the registration operation unit 201 and the settlement unit 401 are adjacently arranged, the width of the registration operation unit 201 and the settlement operation unit 401 can be decreased without increasing the depth. Further, since the scale unit 301 and the settlement operation unit 401 are overlapped in the depth direction when seen from the user, whole width of the registration operation unit 201, the scale unit 301 and the settlement operation unit 401 can be decreased. From the point explained above, downsizing of the whole device can be realized.

[0042] An important point here is that good operability and downsizing of the whole device are not realized through separate structures. The kinds of user interfaces provided to each unit of the registration operation unit 201, the scale unit 301 and the settlement unit 401, and the exterior structure and the layouts are related each other. From the relationship, good operability and downsizing of the whole device can be realized.

[0043] Next, the self-checkout terminal 101 of the embodiment produces integrality as if the separate units of the registration unit 201, the scale unit 301 and the settlement unit 401 are composed of the single housing 102. This integrality is produced with the exterior forms of the separate units of the registration operation unit 201, the scale unit 301 and the settlement operation unit 401, and the layouts. According to the exterior shapes and the layouts of the separate units, the housing 102 has an appearance of single block as if the first block 102a having a shape that the width is smaller than the height and the depth, and the height of the front side is lower than that of the back side, the second block 102b which lines up its front surface with and is adjacently arranged with the first block 102a and has a shape that the height and the depth are smaller than that of the first block 102a, and the third block 102c having a shape that rises from the back part of the second block 102b, and the height is taller than that of at the backward side of the first block 102a, are integrally formed. According to this, the integrality as if the separate units are composed of the single housing 102 is produced.

[0044] Further, while the self-checkout terminal 101 of the embodiment produces integrality as if the separate units of the registration operation unit 201, the scale unit 301 and the settlement operation unit 401 are composed by the single housing 102, the separate units have high freedom of layout. That is, the self-checkout terminal 101 may have the layout structure shown in Fig. 1, may have the layout structure shown in Fig. 4, or may have the layout structure shown in Fig. 5. Alternatively, the scale unit 301 and the settlement operation unit 401 can be arranged at the left side of the registration operation unit 201 by attaching the article placing table 207 to the right

side surface of the registration operation unit 201 in any layout structure of Fig. 1, Fig. 4 and Fig. 5. That is, the example of Fig. 1, Fig. 4 and Fig. 5 have the structures in which an article to be purchased is transferred from left to right and an article registration process is executed. By contrast, by the layout change, it is possible to transfer an article to be purchased from right to left and to execute an article registration process.

[0045] Especially, in the self-checkout terminal 101 of the embodiment, the scale unit 301 which supports my bag 601 can be easily obtained by having the separate units of the registration operation unit 201, the scale unit 301 and the settlement operation unit 401 to be laid out like shown in Figs. 5 and 6. That is, when the scale unit 301 is single, it is composed to be able to support an item bag provided by the shop and commonly used by the customer. When two scale units 301 are coupled and arranged, if the layout structure shown in Fig. 4 is adopted, the scale units 301 can be composed to be able to support the above item bag. By contrast, if the two scale unit 301 are coupled and arranged and the housed weighing tables 303 of the scale devices are connected by the single connecting plate 312, it is possible to have a layout structure which support my bag 601 having a oblong length which is longer than the width of the weighing table 303 of single scale device.

[0046] Further, the front panel 404 of the settlement operation unit 401, the front surface of the third block when seen from other side, is inclined backward as going upward. Therefore, this may give less stress to the user who stands in front of the settlement operation unit 401 in contrast with the front panel 404 standing vertically.

[0047] Further more, the lower front surfaces of the registration operation unit 201 and the scale unit 301, the lower front surfaces of the first block 102a and the second block 102b when seen from other side are the foot spaces 210 and 308 which are offset backward. Therefore, when a wheelchair user comes in front of the self-checkout terminal 101, the foot spaces 210 and 308 provide the function that the user can place his/her feet, and this may further improve operability.

[0048] It is explicitly stated that all features disclosed in the description and/or the claims are intended to be disclosed separately and independently from each other for the purpose of original disclosure as well as for the purpose of restricting the claimed invention independent of the composition of the features in the embodiments and/or the claims. It is explicitly stated that all value ranges or indications of groups of entities disclose every possible intermediate value or intermediate entity for the purpose of original disclosure as well as for the purpose of restricting the claimed invention, in particular as limits of value ranges.

Claims

1. A self-checkout terminal, comprising:

a scanner for optically reading a code symbol affixed on an article;
a display with a touch panel for executing an input of information and a display of information;
a scale device for a weight check, having a weighing table for placing an article after an article code is read by the scanner;
a settlement device having an operation part operable by a user; and
a receipt printer for printing a receipt according to a settlement by the settlement device and issuing the receipt from a receipt issuance exit,

characterized in that comprising a housing that a first block (102a) having a shape that a width is smaller than a height and a depth, and the height of a front side is lower than that of a back side, a second block (102b) which lines up a front surface with the first block and is adjacently arranged with the first block, and has a shape that a height and a depth are smaller than that of the first block, and a third block (102c) having a shape that rises from a back part of the second block, and a height is larger than that of a back side of the first block, are integrally formed, wherein:

the scanner (204) is allocated at an upper part of a front side and at a front surface of a back side of the first block;
the display with the touch panel (206, 205) is allocated at a front surface of a back side of the first block and at an upper part of the scanner;
the scale device is housed in the second block and allocates the weighing table (303) at an upper surface of the second block;
the settlement device allocates the operation part (405, 406, 407, 408) at a front surface of the third block and is housed in the third block; and
the receipt printer allocates the receipt issuance exit (409) at a front surface of the third block and is housed in the third block.

2. The self-checkout terminal according to claim 1, wherein the settlement device is composed by a money receiving/dispensing device which is housed in the third block and allocates an inlet (405, 407) for receiving money and a dispenser (406, 408) for dispensing money at a front surface of the third block.
3. The self-checkout terminal according to claims 1 or 2, wherein the first block, the second block, and the third block are formed as separate units.
4. The self-checkout terminal according to claim 3, wherein:

the first block forms a registration operation unit

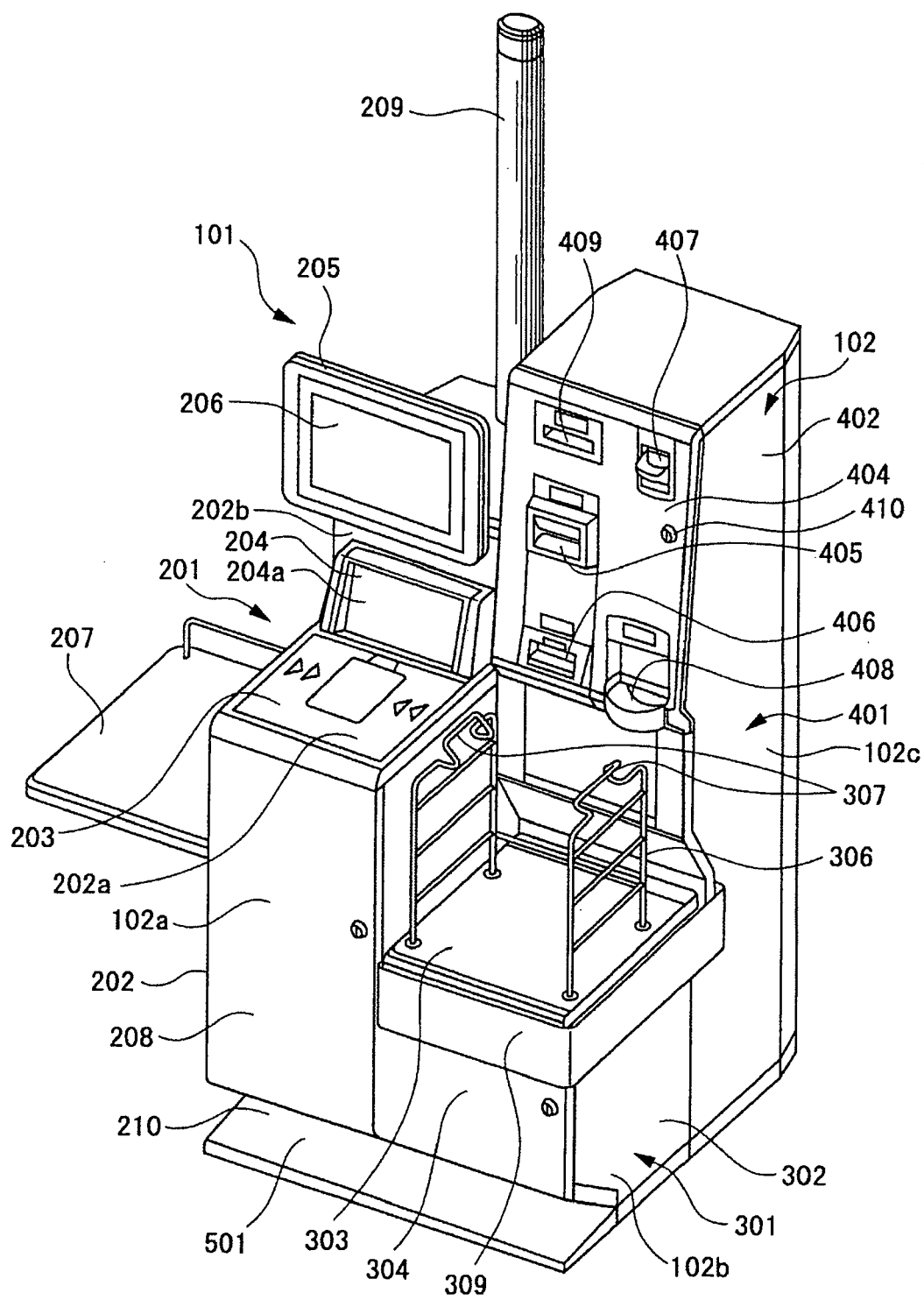
(201) which has a shape that a width is smaller than a height and a depth, and the height at a front side is lower than that of at a back side, the second block forms a scale unit (301) which is capable of being coupled and arranged with the registration operation unit side by side with lining up a front surface position to the registration operation unit, and a plurality of which are capable of being coupled and arranged side by side with lining up the front surface positions, and which has a shape that a height and a depth are smaller than the registration operation unit, and the third block forms a settlement operation unit (401) which has the same width as the scale unit and is capable of being connected and arranged behind the scale unit, and is capable of being coupled and arranged with the registration operation unit side by side, and which has a shape that a height is larger than that of at a back side of the registration operation unit.

5. The self-checkout terminal according to claim 4, wherein the two scale units are coupled and arranged side by side.
6. The self-checkout terminal according to claim 5, wherein a bag holder (306) for holding an item bag in such a way that a handle of the item bag is hung into the weighing table in a state of a top of the item bag being open is attached to the weighing table of the individual scale unit.
7. The self-checkout terminal according to claim 5, wherein the weighing tables of the individual scale units are connected by single connecting plate (312) on which an article is capable of being placed.
8. The self-checkout terminal according to claims 1, 2, 3, 4, 5, 6 or 7, wherein a front surface of the third block is inclined backward as the front surface goes upward.
9. The self-checkout terminal according to claims 1, 2, 3, 4, 5, 6, 7 or 8, wherein lower front surfaces of the first block and the second block are offset backward.

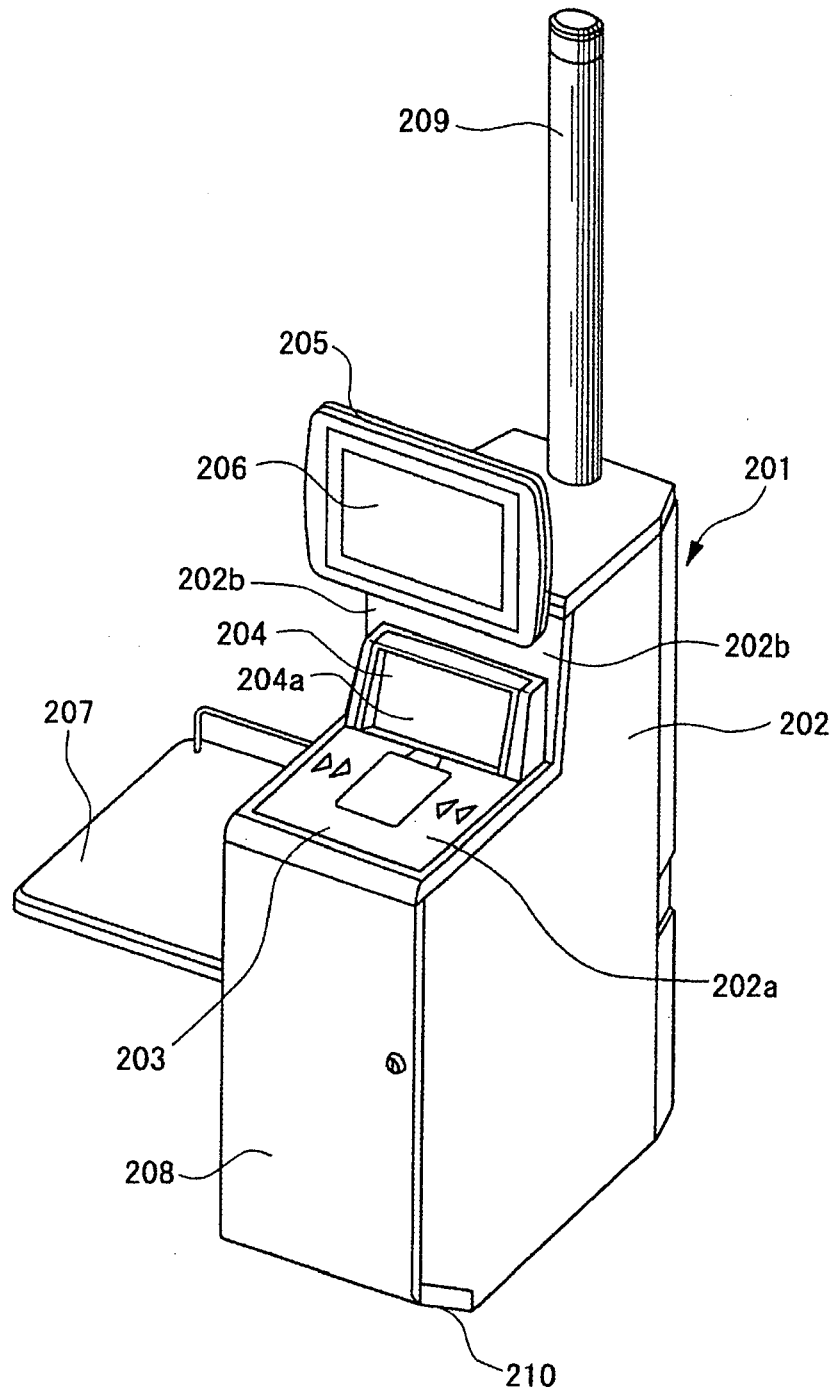
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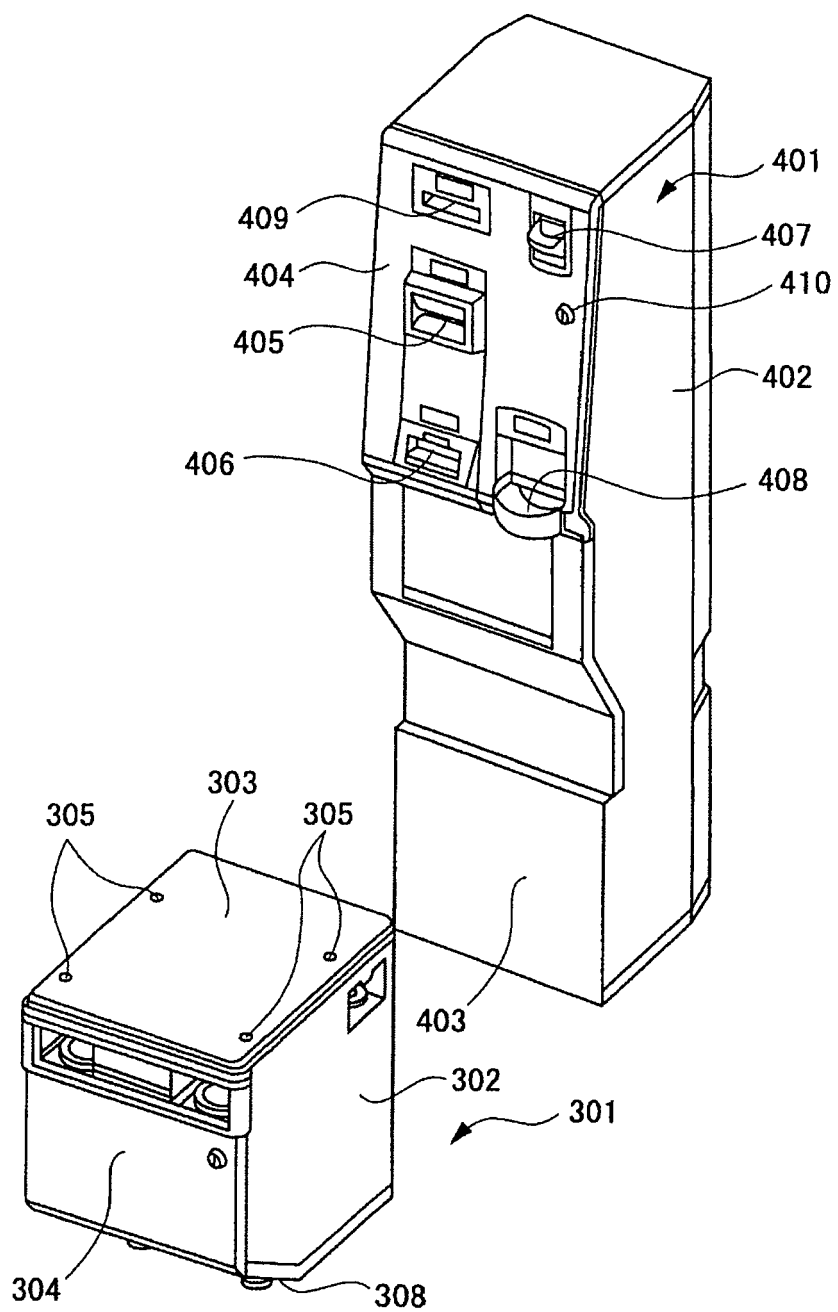
【FIG. 1】



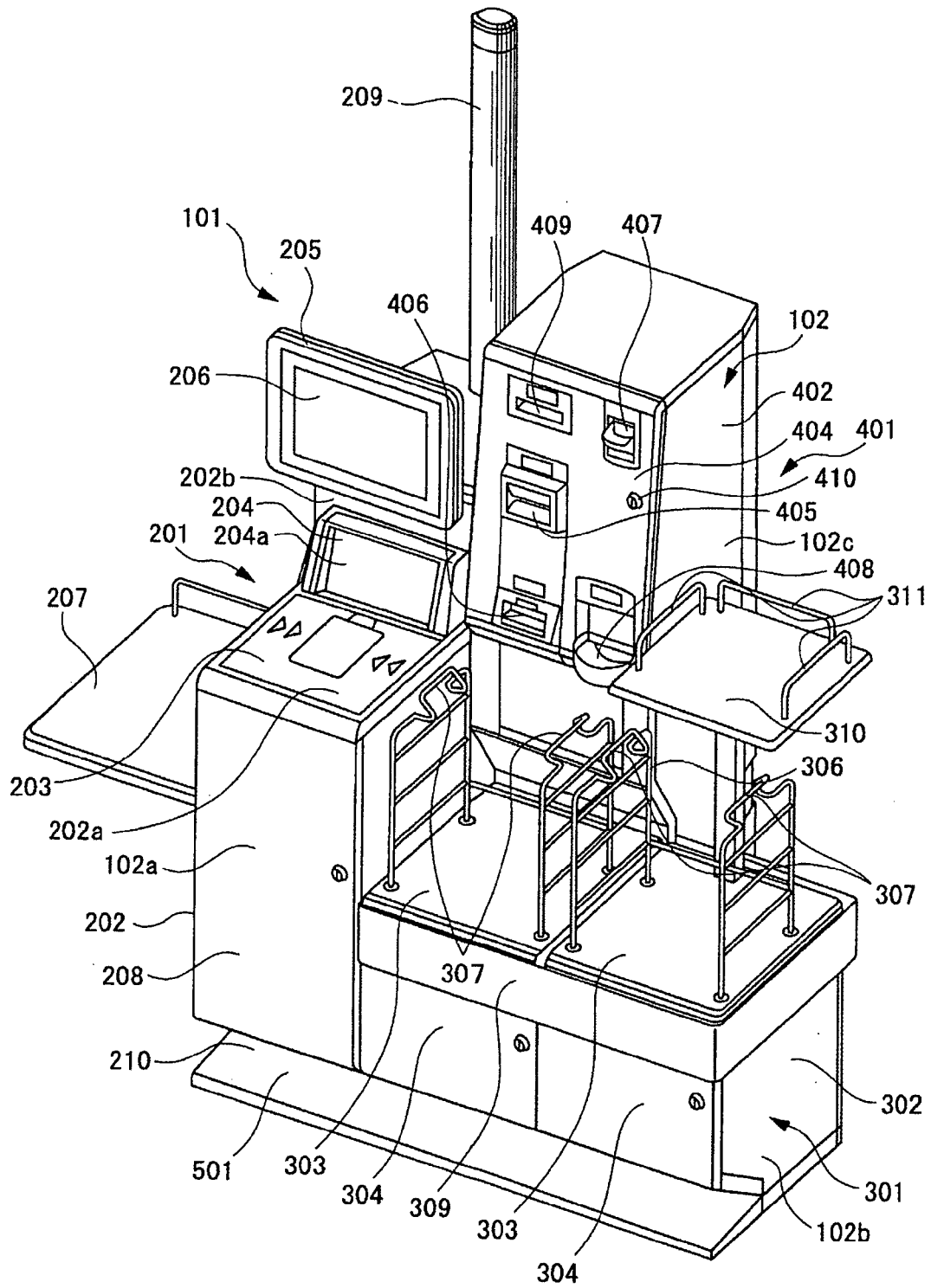
【FIG. 2】



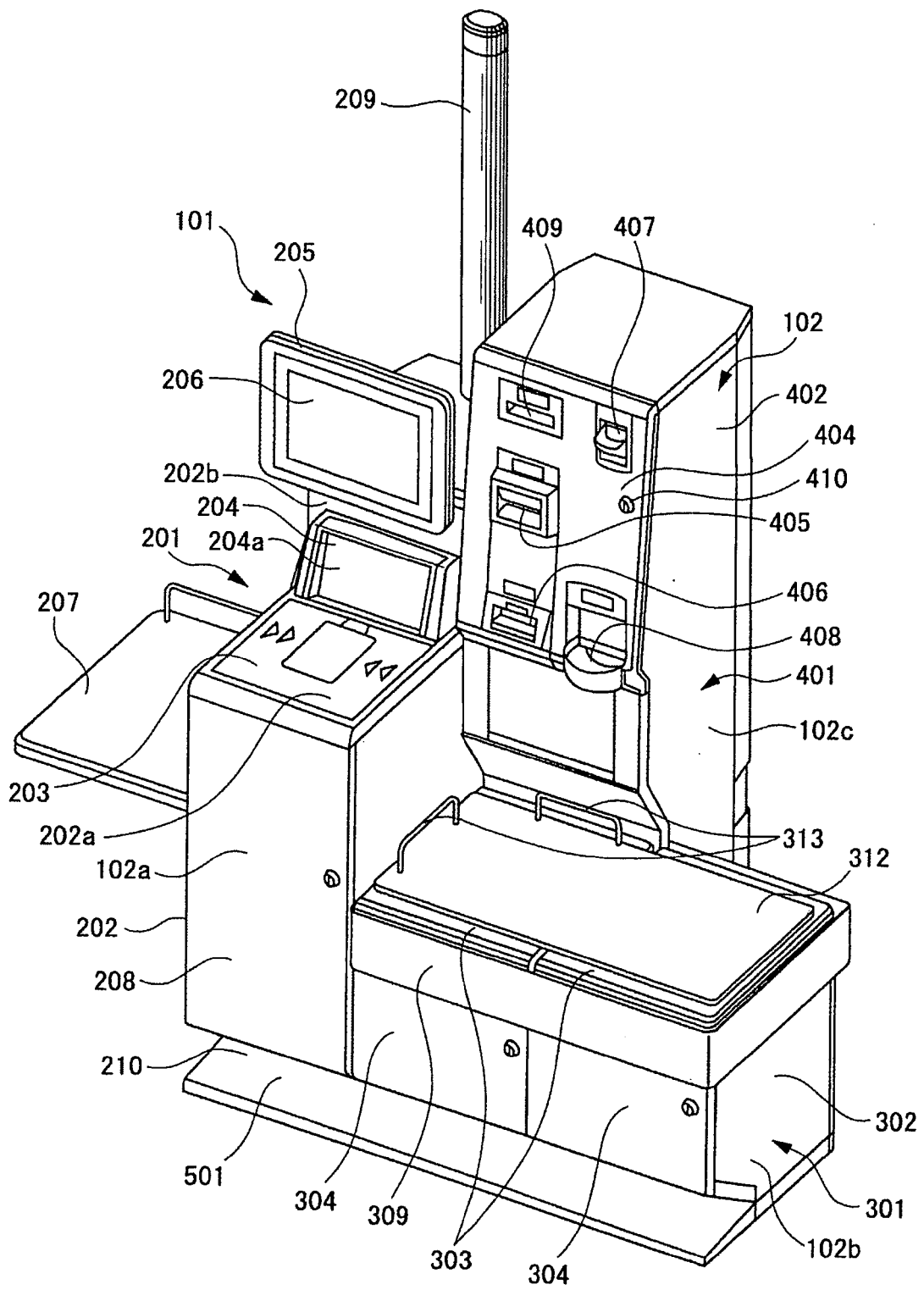
【FIG. 3】



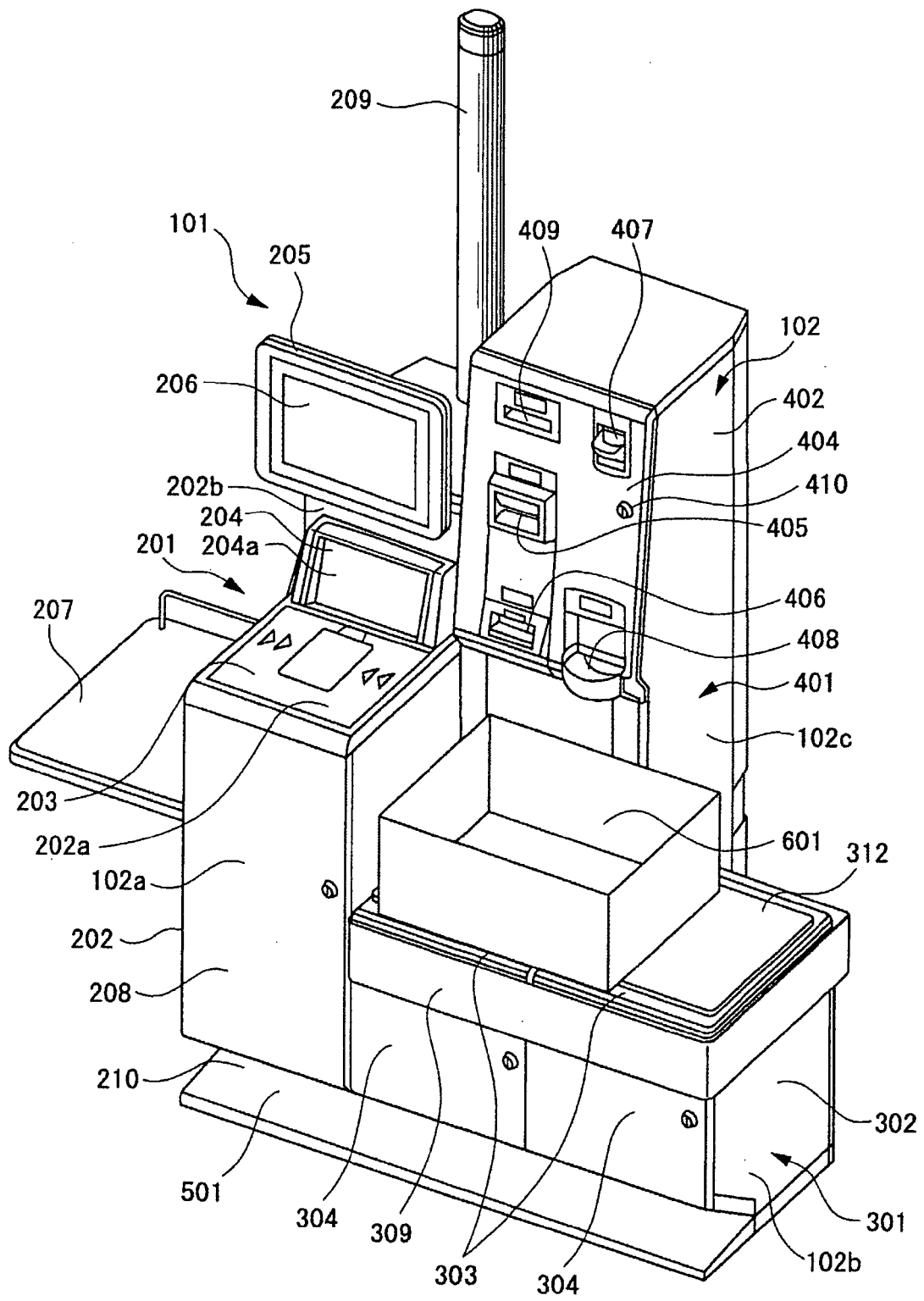
【FIG. 4】



【FIG. 5】



【FIG. 6】



REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP HEI10069574 B [0002] [0005] [0005] [0006] [0007]
- JP HEI09245251 B [0003] [0003] [0006]