

PAYMENT METHOD, APPARATUS, COMPUTER DEVICE AND STORAGE MEDIUM OF VENDING MACHINE

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims priority to Chinese Patent Application No. 2018100074836, entitled "PAYMENT METHOD, APPARATUS, COMPUTER DEVICE AND STORAGE MEDIUM OF VENDING MACHINE" filed January 04, 2018, the content of which is expressly incorporated by reference herein in its entirety.

TECHNICAL FIELD

[0002] The present disclosure is related to a payment method, apparatus, computer device and storage medium of a vending machine.

BACKGROUND

[0003] A vending machine refers to the machine that the customer helps him/herself to claim the goods and make the payment. The vending machines can be saw in various major malls and major public places, which have brought great convenience to people around.

[0004] However, the inventors have noticed that, in a conventional vending machine, a user can purchase only one item every time when purchasing, if the user wants to purchase several items, he or she will have to repeatedly make the payment time and time again, the workload of the vending machine in terms of collecting payment is hence increased, thereby resulting in a low operation efficiency of the vending machine.

SUMMARY

[0005] According to various embodiments of the present disclosure, a payment method of a vending machine is provided. A payment method of a vending machine includes:

[0006] receiving an unlocking request carrying user identifier and transmitted by a terminal when scanning, by the terminal, a QR code on the vending machine;

[0007] acquiring status information corresponding to the unlocking request;

[0008] generating an unlock instruction according to the unlocking request and transmitting the unlocking request to the vending machine when an status information meets an unlocking condition, the unlock instruction is configured to instruct the vending machine to unlock;

[0009] receiving current label information transmitted by the vending machine and comparing the current label information with label information of items to be sold currently stored when detecting, by the vending machine, a locking signal and label scanning is completed; and

[0010] acquiring item information corresponding to reduced label information when a number of labels corresponding to current label information is reduced in relation to a number of labels corresponding to label information of items to be sold, and generating a purchase order according to an item formation and the user identifier.

[0011] A payment apparatus of a vending machine includes:

[0012] an unlocking request receiving module configured to receive an unlocking request carrying user identifier and transmitted by a terminal when scanning, by the terminal, a QR code on the vending machine;

[0013] a status information acquiring module configured to acquire status information corresponding to the unlocking request;

[0014] an unlock instruction transmission module configured to generate an unlock instruction according to the unlocking request and transmit the unlocking request to the vending machine when an status information meets an unlocking condition, the unlock instruction is configured to instruct the vending machine to unlock;

[0015] a comparison module configured to receive current label information

transmitted by the vending machine and comparing the current label information with label information of items to be sold currently stored when detecting, by the vending machine, a locking signal and label scanning is completed; and

[0016] a purchase order generation module configured to acquire item information corresponding to reduced label information and generate a purchase order according to an item formation and the user identifier when a number of labels corresponding to current label information is reduced in relation to a number of labels corresponding to label information of items to be sold.

[0017] A computer device includes one or more processors; and a memory storing instructions, which, when executed by the one or more processors cause the one or more processors to perform steps including:

[0018] receiving an unlocking request carrying user identifier and transmitted by a terminal when scanning, by the terminal, a QR code on the vending machine;

[0019] acquiring status information corresponding to the unlocking request;

[0020] generating an unlock instruction according to the unlocking request and transmitting the unlocking request to the vending machine when an status information meets an unlocking condition, the unlock instruction is configured to instruct the vending machine to unlock;

[0021] receiving current label information transmitted by the vending machine and comparing the current label information with label information of items to be sold currently stored when detecting, by the vending machine, a locking signal and label scanning is completed; and

[0022] acquiring item information corresponding to reduced label information when a number of labels corresponding to current label information is reduced in relation to a number of labels corresponding to label information of items to be sold, and generating a purchase order according to an item formation and the user identifier.

[0023] At least one non-transitory computer-readable storage medium storing computer-readable instructions that, when executed by at least one processors, cause the at least one processor to perform steps including:

[0024] receiving an unlocking request carrying user identifier and transmitted by a terminal when scanning, by the terminal, a QR code on the vending machine;

[0025] acquiring status information corresponding to the unlocking request;

[0026] generating an unlock instruction according to the unlocking request and transmitting the unlocking request to the vending machine when an status information meets an unlocking condition, the unlock instruction is configured to instruct the vending machine to unlock;

[0027] receiving current label information transmitted by the vending machine and comparing the current label information with label information of items to be sold currently stored when detecting, by the vending machine, a locking signal and label scanning is completed; and

[0028] acquiring item information corresponding to reduced label information when a number of labels corresponding to current label information is reduced in relation to a number of labels corresponding to label information of items to be sold, and generating a purchase order according to an item formation and the user identifier.

[0029] The details of at least one embodiment of the present disclosure will be presented with reference to the following drawings and description. Other characteristic and advantages of the present disclosure will be more apparent from the specification, drawings and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0030] To illustrate the technical solutions according to the embodiments of the present disclosure more clearly, the accompanying drawings for describing the embodiments are introduced briefly in the following. Apparently, the accompanying drawings in the following description are only some embodiments of the present disclosure, and persons of ordinary skill in the art can derive other drawings from the accompanying drawings without creative efforts.

[0031] FIG. 1 is the schematic diagram of an application environment of a payment

method of a vending machine according to one or more embodiments.

[0032] FIG. 2 is a flow chart of a payment method of a vending machine according to one or more embodiments.

[0033] FIG. 3 is a flow chart of step S206 in FIG. 2 according to one or more embodiments.

[0034] FIG. 4 is a flow chart of step S206 in FIG. 2 according to another embodiment.

[0035] FIG. 5 is a flow chart of step S206 in FIG. 2 according to yet another embodiment.

[0036] FIG. 6 is a flow chart of a payment method of a vending machine according to yet another embodiment.

[0037] FIG. 7 is a block diagram of a payment apparatus of a vending machine according to one or more embodiments.

[0038] FIG. 8 is a block diagram of a computer device of a vending machine according to one or more embodiments.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0039] The present disclosure will be described in details in combination with the accompanying drawings and embodiments such that the technical solution and advantages of the present disclosure will be more apparent. It should be understood that the particular embodiments are described for the purpose of illustrating as opposed to restricting the present disclosure.

[0040] A payment method of a vending machine provided in the present disclosure can be applied in an environment shown in FIG. 1. The application environment includes: a terminal 102, a server 104, and a vending machine 106. The terminal 102 communicates with the server 104 via network, and the vending machine 106 communicates with the server 104 via network. An electronic QR code can be displayed or a paper QR code can be attached on the vending machine, the user can open the container door of the vending machine by scanning the QR code. each of

the items placed in the container of the vending machine is attached with a Radio Frequency Identification (RFID) label, an RFID reader is provided in the vending machine. After detecting the container door is locked, the vending machine automatically scans the RFID labels in the container and transmits the scanned RFID label information to the server.

[0041] It should be noted that the terminal 102 can be, but not limited to, a smart phone, a smart speaker, a smart watch, a tablet computer and portable wearable device. The server 104 can be an independent physical server or terminal, or a cluster of servers composed by a plurality of physical servers, or can be a cloud server providing cloud server, cloud database, cloud storage and CDN and other basic cloud computing services.

[0042] In one embodiment, as shown in FIG. 2, a payment method of a vending machine is provided, the method is described as being applied in, as an example, the server shown in FIG. 1, which includes the following steps:

[0043] In step 202, when a terminal scans a QR code on the vending machine, an unlocking request carrying user identifier and transmitted by the terminal is received.

[0044] Specifically, the user identifier is used for uniquely identifying the user's identity, which can be composed of a preset number of digits, letters or other specific symbols. In the present embodiment, a vending machine identifier and a server link address corresponding to the vending machine are carried in the QR code, when the user scans the QR code on the vending machine with a terminal, he can automatically login the server, and an unlocking request is transmitted to the server. A user identifier and a vending machine identifier are carried in the unlocking request.

[0045] In step 204, status information corresponding to the unlocking request is acquired.

[0046] Specifically, after the server receives the unlocking request, status information is acquired according to the user identifier carried in the unlocking request and the vending machine identifier. The status information includes status information corresponding to the user identifier and the status information of the machine corresponding to the vending machine identifier. The server determines

whether the status information meets the unlocking condition, if there is, then enters step S206, if there is not, then generates a prompt information and transmits the prompt information to the terminal corresponding to the user identifier, the terminal will display the prompt information.

[0047] In some embodiments, a plurality of unlocking conditions are preset in the server, the status information must meet all unlocking conditions to enter step S206.

[0048] In step 206, when an status information meets an unlocking condition, an unlock instruction is generated according to the unlocking request and the unlocking request is transmitted to the vending machine, the unlock instruction is configured to instruct the vending machine to unlock.

[0049] Specifically, when the status information meets the unlocking condition, the server generates an unlock instruction according to the unlocking request and transmits the unlock instruction to the vending machine corresponding to the vending machine identifier carried in the unlocking request. After receiving the unlock instruction, the vending machine performs an unlock operation, then the user can manually open the container door and select items. In the present embodiment, the vending machine transmits an unlock success signal to the server after the unlock operation is successfully implemented, and after receiving the signal, the server transmits a notification information of the successful unlocking to the terminal.

[0050] In some embodiments, when the vending machine detects that the container door is not opened in a preset time duration, then the container door is relocked, and a timeout prompt is transmitted to the server by the vending machine, and the server transmits the timeout prompt information to the terminal.

[0051] In step S208, when the vending machine detects a locking signal and completes label scanning, current label information transmitted by the vending machine is received and the current label information is compared with label information of items to be sold currently stored.

[0052] Specifically, the label refers to the radio frequency identification devices (RFID) label, the label information of items to be sold refers to the label information of the items to be sold stored in the server. In the present embodiment, after

selecting and purchasing the item, the user will close the container door, the vending machine detects whether there is any abnormal situation of the lock, when there is an abnormal situation, a warning tone will be alarmed to remind the user to re-close the container door, the abnormal situation includes two cases: one is the lock is locked while the container door is opened, and the other is the container door is closed while the lock is not locked. When the status of the lock is normal, i.e., the lock is locked and the container door is closed, the vending machine scans all RFID labels in the container via an internal RFID reader and transmits the scanned label information to the server. After receiving the label information transmitted by the vending machine, the server compares such information with its currently stored label information of the items to be sold.

[0053] In some embodiments, all of the label information stored in the server are labeled with corresponding statuses, such as, to be sold, sold, broken label etc. During the comparing, the server only compares the label information received with the label information labeled as to be sold.

[0054] In step S210, when a number of labels corresponding to current label information is reduced in relation to a number of labels corresponding to label information of items to be sold, item information corresponding to reduced label information is acquired and a purchase order is generated according to an item formation and the user identifier.

[0055] Specifically, when the number of labels corresponding to the label information transmitted by the vending machine is less than the number of labels corresponding to the label information of items to be sold stored in the server, it means that the number of items sold this time is greater than zero, the label missing in the vending machine is the label of the item sold at this time. Since an association relation is pre-established between the labels and the items, through the association relation, when a serial number corresponding to the missing label is acquired, corresponding item information can be found according to the serial number, the item information includes item name, item price and so on, the server can generate a purchase order according to the item information and the user identifier.

[0056] Furthermore, the server updates the label information of the items to be sold currently stored according to the label information transmitted by the vending machine. In some embodiments, the update of the label information of the items to be sold currently stored according to the label information transmitted by the vending machine by the server can be that the label status of the item sold this time in the label information of the items to be sold currently stored is changed as sold.

[0057] In the foregoing payment method of a vending machine, through receiving the unlocking request carrying user identifier and transmitted by the terminal, the server acquires the status information corresponding to the unlocking request, when the status information meets the unlocking condition, an unlock instruction is generated according to the unlocking request and transmitted to the vending machine corresponding to the vending machine identifier, the unlock instruction is configured to instruct the vending machine to perform unlocking, when the vending machine detects the lock signal and completed the label scanning, the current label information transmitted by the vending machine is received and being compared with the label information of the items to be sold currently stored, the item corresponding to the missing label is the sold item. In the present application, as the sold item is determined by scanning the RFID label, a purchase order can be generated with respect to a plurality of sold items in one time, which, compared with the conventional one item per purchase order, not only simplifies the operating process of the user, but also greatly reduces the workload of the server, thereby improving the operation efficiency.

[0058] Also, as the server transmits the unlock instruction to the vending machine only when the status information meets the unlocking condition, unnecessary transmissions of unlock instructions are reduced, so that the workload of the server is reduced and the operation resources are saved.

[0059] In one embodiment, as shown in FIG. 3, the step S206 in FIG. 2 includes:

[0060] In step S206A, whether there is a withholding agreement in the status information corresponding to the user identifier is determined.

[0061] In step S206B, if yes, then the status information is determined to be

meeting the unlocking condition.

[0062] Specifically, the withhold agreement refers to the contract signed between the user and the third-party payment platform and entrusting the third-party payment platform to withhold the payment as a proxy. In the present embodiment, after receiving the unlock instruction, the server determines whether there is a withholding agreement in the status information corresponding to the user identifier, if there is, then enters step S206B, if there is not, then a prompt of signing the withholding agreement is transmitted to the terminal corresponding to the user identifier, when the server received the feedback information returned from the terminal and consenting to the signing of the agreement, an agreement signing request is transmitted to the third payment organization, when the server received the feedback information of the successful signing and transmitted by the third-party payment organization, it suggests that the signing is a success.

[0063] In some embodiments, after the step S210 in FIG. 2, the method includes: the purchase order is transmitted to a third-party payment platform and a withholding request is transmitted to the third-party payment platform, and the withholding request is configured to instruct the third-party payment platform to withhold the payment according to the purchase order.

[0064] Specifically, after generating the purchase order, the server transmits the purchase order to the third-party payment platform and transmits a withholding request to the third-party payment platform which, according to the user identifier in the purchase order, withholds the amount of money corresponding to the purchase order from the account corresponding to the user identifier.

[0065] Furthermore, the third-party payment platform transmits a prompt message of the successful withholding to the server after the successful withholding.

[0066] In the foregoing embodiment, after generating the purchase order, the server transmits the purchase order information to the third-party payment platform which withholds the payment and greatly simplifies the purchase process at the vending machine.

[0067] In one embodiment, as shown in FIG. 4, the step S206 in FIG. 2 includes:

[0068] In step S206E, whether there is an unpaid purchase order in the status information corresponding to the user identifier is determined.

[0069] In step S206F, if not, then the status information is determined to be meeting the unlocking condition.

[0070] Specifically, after receiving the unlock instruction, the server determines whether there is an unpaid purchase order in the status information corresponding to the user identifier. If there is not, then the step S206F is entered, if there is, then a payment reminder notification is transmitted to the terminal corresponding to the user identifier, and the step S206F is re-entered after the user terminal completed the payment.

[0071] In some embodiments, as shown in FIG. 5, the step S206 in FIG. 2 includes:

[0072] In step S206G, whether the vending machine is occupied is determined according to the status information corresponding to the vending machine identifier.

[0073] In step S206H, if not, then the status information is determined to be meeting the unlocking condition.

[0074] Specifically, after receiving the unlock instruction, the server determines whether the vending machine is occupied according to the status information corresponding to the vending machine identifier. The vending machine is occupied in two cases: occupied by itself, or by other. When the vending machine is not occupied, the step S206H is entered, when the vending machine is occupied, the server transmits a prompt information to the terminal corresponding to the user identifier so as to prompt the user that the vending machine is occupied by another user.

[0075] In some embodiments, the foregoing method further includes: the label information of items to be sold is updated according to the increased label information when the number of labels corresponding to the current label information is increased in relation to the number of labels corresponding to the label information of items to be sold.

[0076] Specifically, when a certain number of items are sold by the vending machine, the operation personnel replenish the vending machine. When the number

of labels corresponding to the RFID label information is increased in relation to the number of labels of current items to be sold, it suggests that the vending machine is in the status of being replenished. Then the server compares the label information transmitted by the vending machine to the label information of items to be sold currently stored to acquire the newly increased label information, and updates the currently stored label information of items to be sold according to the newly increased label information.

[0077] It should be understood that, in the present embodiment, when an unlocking request is transmitted by the terminal to the server, the permission of the user is determined according to the user identifier carried in the unlocking request. The replenish procedure will only be entered when the user corresponding to the user identifier has the permission, and the labels are increased according to the replenish behavior of the user to update the label information of the current items to be sold. Otherwise the server, by default, considers the user to be an ordinary consumer and enters the consumer process.

[0078] As shown in FIG. 6, in one of the embodiments, a payment method of a vending machine is provided, the method is described as being applied in, as an example, the server in the foregoing application environment, which includes the following steps:

[0079] In step S620, when a terminal scans a QR code on the vending machine, an unlocking request carrying user identifier and vending machine identifier and transmitted by a terminal is received;

[0080] In step S630, the status information corresponding to the vending machine identifier and the status information corresponding to the user identifier are acquired, whether the vending machine is in an available status is determined according to the status information corresponding to the vending machine identifier, if yes, then step S630 is entered; if not, a prompt information is transmitted to the terminal corresponding to the user identifier.

[0081] The vending machine being unavailable includes the following situations: 1. Closed; 2. Hardware error: lock failure, network disconnected, power off, etc.; 3.

Erroneous label in the vending machine, such as a blank label, a sold label etc.

[0082] In step S640, whether the withholding is enabled is determined according to the status information corresponding to the user identifier, if yes, then step S650 is entered; if not, then a prompt information is transmitted to the terminal corresponding to the user identifier.

[0083] In step S650, whether there is an unpaid purchase order is determined according to the status information corresponding to the user identifier, if there is not, then step S660 is entered; if there is, then a prompt information is transmitted to the terminal corresponding to the user identifier.

[0084] In step S660, whether the vending machine is occupied by the current user is determined according to the status information, if yes, then a current progress information is transmitted to the terminal corresponding to the user identifier; if not, then step S670 is entered.

[0085] The current user refers to the user corresponding to the user identifier carried in the unlocking request.

[0086] In step S670, whether the vending machine is occupied by another user is determined according to the status information, if yes, then a stand by information is transmitted to the current user; if not, then step S680 is entered.

[0087] In step S680, an unlock instruction is transmitted to the vending machine.

[0088] In step S690, a feedback information from the vending machine is received and whether a lock is abnormal is determined according to the feedback information; if yes, then a prompt information is transmitted to the terminal corresponding to the user identifier; if not, then step S700 is entered.

[0089] In step S700, whether the container door is opened in a preset time duration is determined, if yes, then step S710 is entered.

[0090] In step S710, current label information transmitted by the vending machine is received and the current label information is compared with label information of items to be sold currently stored when detecting, by the vending machine, a locking signal and label scanning is completed.

[0091] In step S720, item information corresponding to reduced label information

is acquired and a purchase order is generated according to an item formation and the user identifier when a number of labels corresponding to current label information is reduced in relation to a number of labels corresponding to label information of items to be sold.

[0092] In step S730, the purchase order is transmitted to a third-party payment platform and a withholding request is transmitted to the third-party payment platform, and the withholding request is configured to instruct the third-party payment platform to withhold the payment according to the purchase order.

[0093] In step S740, a feedback information of the third-party payment platform is received and transmitted to a terminal corresponding to the user identifier. The feedback information is withhold success information or withhold failure information.

[0094] It should be understood that, although the various steps in the flow chart in FIGs. 1 to 6 are successively illustrated following the arrows, these steps do not necessarily have to be carried out according to the sequence indicated by the arrows. Unless otherwise described herein, there is no strict sequence restriction of the execution of these steps which can be executed in difference sequences. Also, at least a part of the steps in FIGs. 1 to 6 can include several sub-steps or several stages that do not necessarily have to be performed at a same time but can be performed at different moments; and the sequence of the performance of the sub-steps or stages do not necessarily have to be successively but can be performed in turn or in alternate with other steps, sub-steps, stages or at least a part thereof.

[0095] In one embodiment, as shown in FIG. 7, a payment apparatus of a vending machine is provided, which includes:

[0096] An unlocking request receiving module 702 configured to receive an unlocking request carrying user identifier and transmitted by a terminal when scanning, by the terminal, a QR code on the vending machine;

[0097] A status information acquiring module 704 configured to acquire status information corresponding to the unlocking request;

[0098] An unlock instruction transmission module 706 configured to generate an

unlock instruction according to the unlocking request and transmit the unlocking request to the vending machine when an status information meets an unlocking condition, the unlock instruction is configured to instruct the vending machine to unlock;

[0099] A comparison module 708 configured to receive current label information transmitted by the vending machine and compare the current label information with label information of items to be sold currently stored when detecting, by the vending machine, a locking signal and label scanning is completed; and

[00100] A purchase order generation module 710 configured to acquire item information corresponding to reduced label information and generate a purchase order according to an item formation and the user identifier when a number of labels corresponding to current label information is reduced in relation to a number of labels corresponding to label information of items to be sold.

[00101] In one of the embodiments, the unlocking request further carries a vending machine identifier, and the status information includes status information corresponding to the user identifier and status information corresponding to the vending machine identifier.

[00102] In one of the embodiments, the unlock instruction transmission module is configured to determine whether there is a withholding agreement in the status information corresponding to the user identifier, if yes, then the status information is determined to be meeting the unlocking condition.

[00103] In one of the embodiments, the foregoing apparatus further includes a withholding request transmission module configured to transmit the purchase order to a third-party payment platform and to transmit the withholding request to the third-party payment platform, and the withholding request is configured to instruct the third-party payment platform to withhold the payment according to the purchase order.

[00104] In one of the embodiments, the unlock instruction transmission module is configured to determine whether there is an unpaid purchase order in the status information corresponding to the user identifier, if not, then the status information is

determined to be meeting the unlocking condition.

[00105] In one of the embodiments, the unlock instruction transmission module is configured to determine whether the vending machine is occupied according to the status information corresponding to the vending machine identifier, if not, then the status information is determined to be meeting the unlocking condition.

[00106] In one of the embodiments, the foregoing apparatus further includes: a label information updating module configured to update the label information of items to be sold according to the increased label information when the number of labels corresponding to the current label information is increased in relation to the number of labels corresponding to the label information of items to be sold.

[00107] The particular limitation on the payment apparatus of a vending machine can be referred by foregoing limitations on the payment method of a vending machine and is omitted for brevity. The various modules of the foregoing payment apparatus of a vending machine can be implemented, in part or as a whole, by software, hardware or the combinations thereof. The foregoing modules can be embedded in or independent from the processor of a computer device and in the form of hardware, or be stored in a memory of the computer device and in the form of software, so as to facilitate the processor to call and execute corresponding operations of the foregoing various modules.

[00108] In some embodiments, a computer device is provided, which can be a server whose internal structure is shown in FIG. 8. The computer device includes a processor, a memory, a network interface and a database connected through the system bus. The processor of the computer device is configured to provide computation and control capability. The memory of the computer device includes non-transitory storage medium and Random Access Memory (RAM). The non-transitory storage medium has an operating system, computer-readable instructions, and a database thereon. The RAM provides an operation environment for the operating system and the computer-readable instructions in the non-transitory storage medium. The database of the computer device is configured to store status information, label information of items to be sold and other data. The network

interface is configured for communication with external terminals through network communication. The computer-readable instructions are executed by the processor to implement a payment method of a vending machine.

[00109] A person skilled in the art should understand, FIG. 8 is exemplary to show the part of the structure relevant to the embodiment of the present disclosure and does not limit the computer device where the present disclosure is applied; the particular computer device may include more or less components, be combined with other components, or have a different component arrangement.

[00110] A computer device comprising one or more processors; and a memory storing instructions, which, when executed by the one or more processors cause the one or more processors to perform steps comprising: receiving an unlocking request carrying user identifier and transmitted by a terminal when scanning, by the terminal, a QR code on the vending machine; acquiring status information corresponding to the unlocking request; generating an unlock instruction according to the unlocking request and transmitting the unlocking request to the vending machine when an status information meets an unlocking condition, the unlock instruction is configured to instruct the vending machine to unlock; receiving current label information transmitted by the vending machine and comparing the current label information with label information of items to be sold currently stored when detecting, by the vending machine, a locking signal and label scanning is completed; and acquiring item information corresponding to reduced label information when a number of labels corresponding to current label information is reduced in relation to a number of labels corresponding to label information of items to be sold, and generating a purchase order according to an item formation and the user identifier.

[00111] In one of the embodiments, the unlocking request further carries a vending machine identifier, and the status information includes status information corresponding to the user identifier and status information corresponding to the vending machine identifier.

[00112] In one of the embodiments, the computer-readable instructions are further executed by the processor to provide the step of determining whether there is a

withholding agreement in the status information corresponding to the user identifier, if yes, then the status information is determined to be meeting the unlocking condition.

[00113] In one of the embodiments, the computer-readable instructions are further executed by the processor to provide the step of transmitting the purchase order to a third-party payment platform and a withholding request is transmitted to the third-party payment platform, and the withholding request is configured to instruct the third-party payment platform to withhold the payment according to the purchase order.

[00114] In one of the embodiments, the computer-readable instructions are further executed by the processor to provide the step of determining whether there is an unpaid purchase order in the status information corresponding to the user identifier, if yes, then the status information is determined to be meeting the unlocking condition.

[00115] In one of the embodiments, the computer-readable instructions are further executed by the processor to provide the step of determining whether the vending machine is occupied according to the status information corresponding to the vending machine identifier, if not, then the status information is determined to be meeting the unlocking condition.

[00116] In one of the embodiments, the computer-readable instructions are further executed by the processor to provide the step of updating the label information of items to be sold according to the increased label information when the number of labels corresponding to the current label information is increased in relation to the number of labels corresponding to the label information of items to be sold.

[00117] One or more non-transitory storage medium storing computer-readable instructions which, when executed by the one or more processors cause the one or more processors to perform steps comprising: receiving an unlocking request carrying user identifier and transmitted by a terminal when scanning, by the terminal, a QR code on the vending machine; acquiring status information corresponding to the unlocking request; generating an unlock instruction according to the unlocking request and transmitting the unlocking request to the vending machine when an status

information meets an unlocking condition, the unlock instruction is configured to instruct the vending machine to unlock; receiving current label information transmitted by the vending machine and comparing the current label information with label information of items to be sold currently stored when detecting, by the vending machine, a locking signal and label scanning is completed; and acquiring item information corresponding to reduced label information when a number of labels corresponding to current label information is reduced in relation to a number of labels corresponding to label information of items to be sold, and generating a purchase order according to an item formation and the user identifier.

[00118] In one of the embodiments, the unlocking request further carries a vending machine identifier, and the status information includes status information corresponding to the user identifier and status information corresponding to the vending machine identifier.

[00119] In one of the embodiments, the computer-readable instructions are further executed by the processor to provide the step of determining whether there is a withholding agreement in the status information corresponding to the user identifier, if yes, then the status information is determined to be meeting the unlocking condition.

[00120] In one of the embodiments, the computer-readable instructions are further executed by the processor to provide the step of transmitting the purchase order to a third-party payment platform and a withholding request is transmitted to the third-party payment platform, and the withholding request is configured to instruct the third-party payment platform to withhold the payment according to the purchase order.

[00121] In one of the embodiments, the computer-readable instructions are further executed by the processor to provide the step of determining whether there is an unpaid purchase order in the status information corresponding to the user identifier, if not, then the status information is determined to be meeting the unlocking condition.

[00122] In one of the embodiments, the computer-readable instructions are further executed by the processor to provide the step of determining whether the vending

machine is occupied according to the status information corresponding to the vending machine identifier, if not, then the status information is determined to be meeting the unlocking condition.

[00123] In one of the embodiments, the computer-readable instructions are further executed by the processor to provide the step of updating the label information of items to be sold according to the increased label information when the number of labels corresponding to the current label information is increased in relation to the number of labels corresponding to the label information of items to be sold.

[00124] A person skilled in the art should understand that the processes of the methods in the above embodiments can be, in full or in part, implemented by computer programs instructing underlying hardware, the computer-readable instructions can be stored in a non-volatile computer-readable storage medium, the computer-readable instructions can include the processes in the embodiments of the various methods when it is being executed. Any of the references made to the memory, the storage, the database or other medium in the various embodiments provided herein can include non-transitory and/or transitory memory. The non-transitory storage medium can include Read Only Memory (ROM), Programmable Read Only Memory (PROM), Electrically Programmable Read Only Memory (EPROM), Electrically Erasable Programmable Read - Only Memory (EEPROM) or Flash Memory. The transitory storage medium includes Random Access Memory (RAM) or External High Speed Cache Memory. As an example rather than limiting thereto, the RAM can be availed in various forms, such as a Static RAM (SRAM), a Dynamic RAM (DRAM), Synchronous DRAM (SDRAM), Double Data Rate SDRAM (DDRSDRAM), Enhanced SDRAM (ESDRAM), Synchlink DRAM (SLDRAM), Rambus Direct RAM (RDRAM), Direct Rambus Dynamic Random Access Memory (DRDRAM), and Rambus Dynamic Random Access Memory (RDRAM) etc.

[00125] The foregoing respective technical features involved in the respective embodiments can be combined arbitrarily, for the purpose of brevity, not all possible combinations of the respective technical features in the foregoing embodiments are

described. However, to the extent they have no collision with each other, the combination of the respective technical features shall be considered to be within the scope of the description.

[00126] The foregoing implementations are merely specific embodiments of the present disclosure, and are not intended to limit the protection scope of the present disclosure. It should be noted that any variation or replacement readily figured out by persons skilled in the art within the technical scope disclosed in the present disclosure shall all fall within the protection scope of the present disclosure. Therefore, the protection scope of the present disclosure shall be subject to the protection scope of the claims.

What is claimed is:

1. A payment method of a vending machine, comprising:

receiving an unlocking request carrying a user identifier and transmitted by a terminal when scanning, by the terminal, a QR code on the vending machine;

acquiring status information corresponding to the unlocking request;

generating an unlock instruction according to the unlocking request and transmitting the unlocking request to the vending machine when the status information meets an unlocking condition, wherein the unlock instruction is configured to instruct the vending machine to unlock;

receiving current label information transmitted by the vending machine and comparing the current label information with label information of items to be sold currently stored when detecting, by the vending machine, a locking signal and label scanning is completed; and

acquiring item information corresponding to reduced label information when the number of labels corresponding to current label information is reduced in relation to the number of labels corresponding to label information of items to be sold, and generating a purchase order according to an item formation and the user identifier.

2. The method of claim 1, wherein the unlocking request further carries a vending machine identifier, and the status information comprises status information corresponding to the user identifier and status information corresponding to the vending machine identifier.

3. The method of claim 2, wherein when the status information meets the unlocking condition, the generating the unlock instruction according to the unlocking request and transmitting the unlocking request to the vending machine corresponding to the vending machine identifier comprises:

determining whether there is a withholding agreement in the status information corresponding to the user identifier; and

if yes, then determining that the status information meets the unlocking

condition.

4. The method of claim 3, further comprising:

transmitting the purchase order to a third-party payment platform and transmitting a withholding request to the third-party payment platform, wherein the withholding request is configured to instruct the third-party payment platform to withhold the payment according to the purchase order.

5. The method of claim 2, wherein when the status information meets the unlocking condition, the generating the unlock instruction according to the unlocking request and transmitting the unlocking request to the vending machine corresponding to the vending machine identifier comprises:

determining whether there is an unpaid purchase order in the status information corresponding to the user identifier; and

if not, then determining that the status information meets the unlocking condition.

6. The method of claim 2, wherein when the status information meets the unlocking condition, the generating the unlock instruction according to the unlocking request and transmitting the unlocking request to the vending machine corresponding to the vending machine identifier comprises:

determining whether the vending machine is occupied according to the status information corresponding to the vending machine identifier; and

if not, then determining that the status information meets the unlocking condition.

7. The method of any one of claims 1 to 5, further comprising:

updating the label information of items to be sold according to an increased label information when the number of labels corresponding to the current label information is increased in relation to the number of labels corresponding to the label information

of items to be sold.

8. The method of claim 7, wherein the unlocking request further carries user permission information.

9. The method of claim 8, wherein the updating the label information of items to be sold according to the increased label information when the number of labels corresponding to the current label information is increased in relation to the number of labels corresponding to the label information of items to be sold comprises:

determining whether a user corresponding to the user identifier has a permission to replenish according to the permission information;

if yes, then determining whether the number of labels corresponding to the current label information is increased in relation to the number of labels corresponding to the label information of items to be sold; and

updating the label information of items to be sold according to the increased label information when the number of labels corresponding to the current label information is increased in relation to the number of labels corresponding to the label information of items to be sold.

10. The method of claim 1 or 2, wherein the generating the unlock instruction according to the unlocking request and transmitting the unlocking request to the vending machine comprises:

receiving feedback information from the vending machine and determining whether a lock is abnormal according to the feedback information; and

if yes, then transmitting prompt information to the terminal corresponding to the user identifier.

11. The method of claim 1 or 2, wherein after the generating the unlock instruction according to the unlocking request and transmitting the unlocking request to the vending machine, the method further comprises:

when the vending machine detects that a container door is not opened in a preset time duration and relocked the container door, receiving a time-out notification information transmitted by the vending machine and transmitting the time-out notification information to the terminal corresponding to the user identifier.

12. The method of claim 1, wherein the label is a radio frequency identification devices (RFID) label.

13. A payment apparatus of a vending machine comprising:

- an unlocking request receiving module configured to receive an unlocking request carrying user identifier and transmitted by a terminal when a QR code on the vending machine is scanned by the terminal;

- a status information acquiring module configured to acquire status information corresponding to the unlocking request;

- an unlock instruction transmission module configured to generate an unlock instruction according to the unlocking request and transmit the unlocking request to the vending machine when an status information meets an unlocking condition, wherein the unlock instruction is configured to instruct the vending machine to unlock;

- a comparison module configured to receive current label information transmitted by the vending machine and comparing the current label information with label information of items to be sold currently stored when detecting, by the vending machine, a locking signal and label scanning is completed; and

- a purchase order generation module configured to acquire item information corresponding to reduced label information and generate a purchase order according to an item formation and the user identifier when a number of labels corresponding to current label information is reduced in relation to a number of labels corresponding to label information of items to be sold.

14. The apparatus of claim 13, wherein the unlocking request further carries a

vending machine identifier, and the status information comprises status information corresponding to the user identifier and status information corresponding to the vending machine identifier.

15. A computer device comprising one or more processors; and a memory storing instructions, which, when executed by the one or more processors cause the one or more processors to perform steps comprising:

- receiving an unlocking request carrying user identifier and transmitted by a terminal when a QR code on the vending machine is scanned by the terminal;

- acquiring status information corresponding to the unlocking request;

- generating an unlock instruction according to the unlocking request and transmitting the unlocking request to the vending machine when an status information meets an unlocking condition, wherein the unlock instruction is configured to instruct the vending machine to unlock;

- receiving current label information transmitted by the vending machine and comparing the current label information with label information of items to be sold currently stored when detecting, by the vending machine, a locking signal and label scanning is completed; and

- acquiring item information corresponding to reduced label information when a number of labels corresponding to current label information is reduced in relation to a number of labels corresponding to label information of items to be sold, and generating a purchase order according to an item formation and the user identifier.

16. The computer device of claim 15, wherein the unlocking request further carries a vending machine identifier, and the status information comprises status information corresponding to the user identifier and status information corresponding to the vending machine identifier.

17. The computer device of claim 16, wherein the one or more processors further execute the instructions to provide:

determining whether there is a withholding agreement in the status information corresponding to the user identifier; and

if yes, then determining that the status information meets the unlocking condition.

18. At least one non-transitory computer-readable storage medium storing computer-readable instructions that, when executed by one or more processors, cause the one or more processors to perform steps comprising:

receiving an unlocking request carrying user identifier and transmitted by a terminal when a QR code on the vending machine is scanned by the terminal;

acquiring status information corresponding to the unlocking request;

generating an unlock instruction according to the unlocking request and transmitting the unlocking request to the vending machine when an status information meets an unlocking condition, wherein the unlock instruction is configured to instruct the vending machine to unlock;

receiving current label information transmitted by the vending machine and comparing the current label information with label information of items to be sold currently stored when detecting, by the vending machine, a locking signal and label scanning is completed; and

acquiring item information corresponding to reduced label information when a number of labels corresponding to current label information is reduced in relation to a number of labels corresponding to label information of items to be sold, and generating a purchase order according to an item formation and the user identifier.

19. The storage medium of claim 18, wherein the unlocking request further carries a vending machine identifier, and the status information comprises status information corresponding to the user identifier and status information corresponding to the vending machine identifier.

20. The storage medium of claim 19, wherein the processor further executes the

instructions to perform steps of:

determining whether there is a withholding agreement in the status information corresponding to the user identifier; and

if yes, then determining that the status information meets the unlocking condition.