A PHARMACEUTICAL DISPENSING SYSTEM

FIELD OF THE INVENTION

This invention relates to a pharmaceutical dispensing system, and to a method of dispensing pharmaceutical products.

BACKGROUND TO THE INVENTION

A problem with current systems for dispensing pharmaceuticals is that they usually involve long waiting times, long queues, and limited clinic operating hours. As a result, traffic is driven to the accident and emergency departments of hospitals. That traffic is often unnecessary, consisting of patients that do not require attention at a clinic or hospital.

Respiratory diseases such as respiratory syncytial virus (RSV) infections, and Corona virus disease (COVID 19) appear to have become endemic in various locations and communities. This is driving a demand for self-medication to avoid physical contact with staff and personnel usually involved in the dispensation of pharmaceuticals.

There is a growing acceptance of digital tools and apparatus as a means for obtaining medical advice and pharmaceutical products. These include telemedicine, online ordering, and kiosk machines. This has led to an increased openness to, and acceptance of, self-medication.

The telemedicine online consultation and e-Pharmacy market is witnessing a very high growth rate. This appears set to continue at least over the next few years due to its increased demand by at least the people in Asia to adopt emerging technologies for ease of access to healthcare services as each clinic and/or pharmacy has limited operating hours.

An aging population, amongst other things, has created a soaring demand for fever, cough and cold medications has at pharmacies, clinics, and hospitals due to the spread and endemic nature of respiratory diseases, such as Covid 19, influenza, RSV, and common-cold related virus. It appears that these will stay for a long time. There is also a growing emergence of HealthTech and Self-service medical vending machines.

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Particularly in the First World, there is a growing aging population and a rising demand for pharmaceuticals that treat ailments such as coughs and colds. This sector of the population consumes a significant amount of medication and pharmaceuticals. This can result in a cost burden on that sector, particularly for those products that require a consultation with a medical professional.

It follows that there is a need for an efficient manner for engaging with medical professionals and for dispensing pharmaceuticals.

SUMMARY OF THE INVENTION

According to as aspect of the invention, there is provide a method of dispensing pharmaceutical products, the method comprising the steps of:

establishing a remote electronic connection between a vending machine in which the pharmaceutical products are stored and a data processing apparatus of an authorised person, the remote electronic connection being configured so that a customer at the vending machine can communicate with the authorised person via an interface of the vending machine;

establishing a remote electronic connection between the vending machine and a data processing apparatus of a financial institution to generate a payment portal such that the customer can make a payment to a predetermined recipient via the interface; and

dispensing or more of the pharmaceutical products to the customer with the vending machine, subsequent to payment.

The remote electronic connection between the vending machine and the data processing apparatus may be established via the Internet.

The step of establishing the remote electronic connection between the vending machine and the data processing apparatus may include the step of verifying an identity of the customer.

The method may include the step of generating an interactive form on the interface of the data processing apparatus of the authorised person to facilitate the creation of a medical prescription by the authorised person for transmission to the vending machine.

The method may include the step of communicating information relating to prescribed pharmaceutical or medicinal products to the vending machine for display on the interface of the vending machine.

The method may include the step of displaying a summary of the pharmaceutical products and information relating to the dispensed pharmaceutical products on the interface of the vending machine and facilitating, via the interface of the vending machine, communication between the customer and the authorised person in connection with the dispensed products.

The step of establishing the remote connection between the vending machine and the data processing apparatus of the financial institution may take place after the step of facilitating communication between the customer and the authorised person in connection with the dispensed products.

The step of dispensing one or more of the pharmaceutical products to the customer may include the step of feeding the products to a collection bin of the vending machine and, once the products are in the collection bin, providing access to the collection bin so that the customer can collect the dispensed products.

The step of dispensing one or more of the pharmaceutical products to the customer may include the step of sensing the products as they are fed to the collection bin and communicating sensing data to the data processing apparatus of the authorised person for validation of the products.

The method may include the step of detecting the removal of the pharmaceutical products from the collection bin, and closing the collection bin once the products are removed.

The method may include the step of conveying uncollected pharmaceutical products to a further bin box for subsequent disposal.

According to an aspect of the invention, there is provided a software product that, when executed by a data processing apparatus causes the data processing apparatus to carry out the steps of:

establishing a remote electronic connection between a vending machine in which pharmaceutical products are stored and a data processing apparatus of an authorised person, such that the remote electronic connection is configured so that a customer at the vending machine can communicate with the authorised person via an interface of the vending machine;

establishing a remote electronic connection between the vending machine and a data processing apparatus of a financial institution to generate a payment portal

such that the customer can make a payment to a predetermined recipient via the interface; and

causing the vending machine to dispense one or more pharmaceutical products to the customer, after payment.

According to an aspect of the invention, there is provided a system of dispensing pharmaceutical products, the system comprising:

a vending machine that is configured for:

establishing a remote electronic connection with a data processing apparatus of an authorised person, the remote electronic connection being configured so that a customer at the vending machine can communicate with the authorised person via an interface of the vending machine;

establishing of a remote electronic connection with a data processing apparatus of a financial institution to generate a payment portal such that the customer can make a payment to a predetermined recipient via the interface; and

dispensing one or more of the pharmaceutical products to the customer with the vending machine, after payment.

The vending machine may be configured for remote electronic connection with the data processing apparatus of the authorised person and the financial institution via the Internet.

The data processing apparatus may be configured for remote electronic connection with a server that is programmed with the software product described above.

The vending machine may include a storage apparatus for storing the pharmaceutical products to be dispensed by the vending machine, a collection bin from which the products can be retrieved, and a conveying apparatus for conveying the pharmaceutical products from the storage apparatus to the collection bin.

The vending machine may include cameras to capture images of the products within the vending machine for transmission to the data processing apparatus of the authorised person so that the products can be validated by the authorised person.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows an embodiment of a system for dispensing pharmaceuticals, in accordance with an aspect of the invention.

Figure 2 shows a schematic layout of a vending machine for use with the system of figure 1.

Figures 3A and 3B show a flowchart of one embodiment of a process of dispensing pharmaceuticals, in accordance with an aspect of the invention.

Figure 4 shows an interface of the system displaying a language selection form.

Figure 5 shows the interface displaying a form for data use permission.

Figure 6 shows the interface displaying a form for selection of an authorised person.

Figure 7 shows the interface displaying a form for customer identity verification.

Figure 8 shows the interface configured for a consultation between an authorised person and a customer.

Figure 9 shows the interface displaying a form for the acceptance of an order summary.

Figure 10 shows the interface displaying a form for selecting a payment method.

Figure 11 shows the interface displaying a payment result.

Figure 12 shows the interface displaying a collection status.

DETAILED DESCRIPTION

In Figure 1, reference numeral 10 generally indicates an embodiment of a system for dispensing pharmaceutical products, in accordance with the invention.

The system 10 includes a kiosk or vending machine 12. A schematic layout of the vending machine 12 is shown in figure 2. The vending machine 12 is connected to the Internet 14.

The system 10 includes a server 16 for executing an embodiment of a software product to carry out an embodiment of a method for dispensing pharmaceutical products, in accordance with the invention. The server 16 can be a single data

processing apparatus or can be a networked system including a number of data processing apparatus.

A data processing apparatus 18, such as a PC or notebook, of an authorised person can be connected to the vending machine 12 and the sever 16 via the Internet 14. The vending machine 12 is configured to establish a secure connection with a financial institution, such as a bank 20, via the Internet 14.

The vending machine 12 includes a gateway device 22, such as a modem or router, or both, or any other gateway device that facilitates connection to the Internet 14. The gateway device 22 is connected to controller circuitry, in the form of a controller 24. The controller 24 is configured to facilitate a remote electronic connection between an interface 26 and the server 16, the data processing apparatus 18, and the bank 20 via the Internet 14. The interface 26 is configured to facilitate communication between a customer or patient 28 and authorised person 30 (figure 1), such as a doctor or pharmacist. In this embodiment, the interface 26 is an interactive touch display.

The controller 24 is connected to a storage apparatus 36 for storing pharmaceutical or medicinal products to be dispensed by the vending machine 12. A conveying apparatus 38 is interposed between the storage apparatus 36 and a collection bin 32. The conveying apparatus 38 is connected to the controller 24 so that the controller 24 can control conveyance of the products from the storage apparatus 36 to the collection bin 32. The controller 24 is connected to a dispensing sensor 35 so that products being conveyed from the storage apparatus 36 can be recorded and associated data sent to the data processing apparatus 18. The sensor 35 can represent several sensors, depending on the configuration of the vending machine 12, and other requirements. The sensor 35 can be a camera(s) so that the authorised person 30 can view the products for validation purposes. The controller 24 is connected to a collection sensor 34, such as a camera, that is positioned to record the products within the bin 32, for further validation, and for checking whether products have been collected from the bin 32. It will be appreciated that the collection sensor 34 can take different forms or can include devices in addition to the camera. These could include mass sensors, for example. The sensor 34 can represent several sensors, depending on the configuration of the vending machine 12, and other requirements. Further sensors such as cameras can be positioned within the vending machine 12 to sense the products within the vending machine and to provide feedback to the authorised user 30.

A further conveying apparatus 40 is interposed between the collection bin 32 and an uncollected bin 42. The further conveying apparatus 40 is connected to the controller 24 so that the conveying apparatus 40 can convey uncollected products from the collection bin 32 to the uncollected bin 42 under control of the controller 24. An uncollected product sensor 44, such as a camera, is positioned to record whether products have been collected from the bin 42. It will be appreciated that the sensor 44 can take different forms or can include devices in addition to the camera. These could include mass sensors, for example.

Broadly, the system and method of embodiments of the invention allow the customer or patient 28 to have a remote meeting with the authorised person 30, electronically and in real-time. To that end, the interface 26 can include a headset or handheld audio device to facilitate clear communications. The embodiments of the invention have application to systems in which authorised persons, such as healthcare professionals, doctors, and pharmacists, prescribe or dispense medication.

For example, the system 10 is configured to allow a pharmacist to escalate to a doctor to continue the consultation process if the required services are beyond the scope of services that can be provided by a pharmacist. This provides the customer with flexibility without the need for repeating rounds of registration.

The following is an overview of the categories of products that may be dispensed using the embodiments of the invention:

Types of Products	**Description**	**Issued by Doctor?**	**Issued by Pharmacist?**
POM	Prescription only medicines	YES	NO
PMed	Pharmacy only medicines	YES	YES
OTC	Over the counter products	YES	YES

The types of licensing from the respective regulatory authority are as follows:

Type	**Description**	**Regulatory Authority**
Telemedicine	Teleconsultation by a Doctor	Ministry of Health

Telepharmacy	Teleconsultation by a Pharmacist	Health Science Authority of Singapore

The various embodiments of the system and method of the invention target the following, non-limited, class of ailments and is not meant to dispense pharmaceutical products that may be used for life-threatening types of illnesses. Set out below is an example of several types of indications targeted by the embodiments of the system and method.

Type of Ailments	**Indications**
Cough & Cold	Chesty cough, Dry cough, Fever, Headache, Migraine, Nasal, Congestion, Pharyngitis, Phlegm, Sinusitis
Gastrointestinal	Abdominal Cramps, Bloated stomach, Constipation, Dehydration, Diarrhoea, Food poisoning, GERD, Indigestion, Nausea, Vomiting.
Muscle Related	Gouty arthritis, Joint Pain & Inflammation, Muscle ache, Osteoarthritis, Period pain, Pre-menstrual syndrome
Skin Related	Atopic dermatitis, Cold sore, Eczema, Fungal Infections, Skin Inflammation, Skin Itch, Oral Ulcers
Allergy	Allergic conjunctivitis, Allergic rhinitis, Urticaria

The vending machine 12 is of the type used to vend or dispense products. The vending machine 12 is configured to combine part of the services of a clinic and a pharmacy into a single platform.

There is an ability to collect medication immediately, without the need to visit a clinic or a pharmacy.

The authorised person 30 can be consulted remotely.

Embodiments of the method include issuing an e-medical certificate that can be sent to a customer or patient 28 via email or other electronic means.

Receipts can be issued by email or with a QR Code. The customer 28 can scan the QR code that is displayed on the screen of the vending machine to download the e-receipt immediately to a mobile device.

All products (POM, PMed, and OTC) are pre-labelled with medication dosage instructions.

Dosage instructions can be sent electronically to the customer 28, for example, by email. These instructions can include advice that they are to supersede the standard instructions on the packaging of the products. The dosage instructions may include a picture for each medication and the dosage instructions for that medication such that the customer 28 is given visibility and clarity on the instructions that supersede those on the packaging.

The embodiments of the system 10 and method operate using an on-demand model. Thus, the authorised person 30 who has subscribed to the system 10 and who accepts a call from the system 10 first is assigned the associated task.

A useful feature of embodiments of the system 10 is that it can offer both medical and pharmacy services via a single vending machine or kiosk. Furthermore, existing vending machines or kiosks in Singapore only dispense OTC products. Embodiments of the system 10 are capable of dispensing or supplying POM, Pmed, and OTC products. These are all referred to as pharmaceutical products in this specification, for convenience. This is facilitated by the establishment of a remote electronic connection between the vending machine 12 and the data processing apparatus 18 of the authorised person 30, such as a doctor or pharmacist, such that the customer 28 can communicate with the authorised person 30 via the interface 26 of the vending machine 12. The remote electronic connection is also established between the server 16, the data processing apparatus 18, and the vending machine 12. Thus, execution of an embodiment of a software product, in accordance with the invention can be by the server 16 for the purpose of administering the system 10, including broader functions, such as recordal of stock levels, accounting, and customer relations management. It follows that a vendor of the system 10 can control operation of the server 16 to provide the services of the system 10 to the authorised person 30, via the Internet 14.

The operation of an embodiment of the method and system is set out in the flowchart shown in figures 3A and 3B. The process or method carried out by the system 10 is carried out when the server 16 executes an embodiment of the software product of

the invention. It follows that the data processing apparatus 18 and the vending machine 12 can be a thin client of the server 16.

At 50 the system 10 generates a form on the interface 26 that allows the customer 28 to select a language (figure 4). At 52 the system 10 generates a personal data disclosure form on the interface 26 (figure 5). The form is configured so that the customer 28 can input his or her consent to the system 10 collecting and using personal data for the purposes of conducting the teleconsultation service.

At 54 the system 10 queries whether consent has been received. If no, the system 10 reverts to the start 50. If yes, the system queries, at 56, via a form (figure 6) shown on the interface 26, whether the customer 28 requires a doctor or a pharmacist. Depending on the selection, the system 10 can display the name and profile of the authorised person 30 on the interface 26.

At 58, the system 10 carries out a verification of an identity of the customer 28. This can be done in various ways. For example, in Singapore, the customer 28 can be taken through a log in process using SINGPASS, which is a nationally certified e-identity application for Singaporeans and permanent residents of Singapore. This is the first of its kind as all medical vending machines require some form of specified user ID or NRIC (national identity card number), which needs to be registered first before the customer can start using the services.

This SINGPASS approach eliminates the needs for pre-registration for identity validation as all Banks and Government agencies and financial institutions in Singapore recognize SINGPASS as a secured medium for users' identity validation.

The system 10 is configured so that the SINGPASS system can be used by the customer 28 with the interface 26. Thus, the system 10 can generate a QR code (figure 7) to be displayed on the interface. The QR code can be scanned with a communications device of the customer 28.

In other embodiments, the identity details can be input via the interface 26. This can include scanning the National Registration Identity Card (NRIC) or some other form of identification. These details can be communicated to the data processing apparatus of the authorised person.

It will be appreciated that other forms of identity verification can be used. For example, the system 10 may generate a form on the interface 26 to facilitate the input of information such as:

- Customer full name
- Customer email address
- Customer mobile phone number
- Customer gender

Once the identity of the customer 28 has been verified, the system facilitates connection to the authorised person 30, via the interface 26 at 60. This can include the initiation of a video conference at 62 that can show the face of the pharmacist or doctor (figure 8).

In some embodiments, the pharmacist or doctor can carry out the customer identity validation process by verifying the image of the NRIC by checking the number, name, and physical appearance of the customer.

After validation, the authorised person 30 can start the consultation process at 62 to assess the customer's conditions and input the findings into the system 10. Figure 8 shows the interface 26 displaying a video of the authorised person 30 to facilitate the consultation process. The system 10 generates a form on the interface of the data processing apparatus 18 that allows the authorised person 30 to enter prescribed or recommended products. The system 10 displays these together with their costs and dosage on the interface 26 for viewing by the customer 28.

Several standard questions can be asked to initiate the assessment process, such as:

a. What are your symptoms?
b. Who is suffering from these symptoms you described?
c. For how long have you had these symptoms?
d. Are your symptoms improving or getting worse?
e. Do you have any drug allergies?
f. Do you have any medical conditions?
g. Are you taking any other medications, health, or herbal supplements?

The authorised person 30 can offer to recommend or prescribe products to treat the specific ailments.

The system 10 generates a form (figure 9) showing prescribed/recommended products and their prices and facilitating cancellation or agreement to pay by the customer 28. Thus, the customer 28 can agree or disagree with the authorised

person 30 and can make use of the interface 26 to add, change, or delete the medications or products as required.

At 66 the system 10 queries whether the customer 28 has agreed to the order summary. If no, the system reverts to step 62 to continue the consultation process. If yes, the system 10 displays payment instructions at 68. The customer 28 can then proceed with payment using a payment portal of the bank 20 with which the vending machine 12 has established a remote electronic connection at 70. Payment instructions are shown on the interface 26 to guide the customer to make payment. To that end, the system 10 generates a form (figure 10) that facilitates the selection of a payment method. These can include tapping or inserting a card to pay, or making use of a mobile communications device, such as a phone, to make the payment.

At 72, the system 10 queries whether the payment is authorised. If yes, a notification of successful payment status is shown on the interface 26 (figure 11) and a receipt is sent to the customer via email. Customers can also opt to scan a QR code to download the receipt into their mobile device. If no, the process can be terminated or can revert to step 62.

Upon successful payment, the system 10 dispenses the products by initiating a dispensing process at 74. The products are dispensed one at a time based on the selected product that the authorised person 30 has recommended or prescribed. At 78, the system 10 conveys the products from the storage apparatus 36 to the collection bin 32 with the conveying apparatus 38. The products being dispensed are recorded or sensed at 76 by the sensor 35 as they are conveyed from the storage apparatus 36. The collection bin 32 may represent several bins at respective locations to facilitate validation and retrieval of the products individually. Recordal or sensing at 76 can take the form of capturing an image of the respective products with a camera of the sensor 35 and communicating the images to the data processing apparatus 18 of the authorised person for validation and checking. To that end, the system 10 can generate a form on an interface of the data processing apparatus 18 so that the authorised person 30 can select a “validated” option on the form for each product as it is dispensed from the storage apparatus 36. The system 10 executes step 78 once the authorised person 30 validates the products individually.

At 80, the system 10 facilitates the validation of the products in the collection bin 32. This is done using the collection sensor 34 that can record images of the products in the collection bin 32. The system 10 communicates those images to the data

processing apparatus of the authorised person so that the authorised person can validate the dispensed products. At this stage, the system 10 records a deduction of stock in the server 16.

At 82, the system 10 queries whether all the dispensed products have been validated. If no, the process can revert to step 62. If yes, the system 10 can display, on the interface 26, information relating to the status of the dispensing process, for example, as shown in figure 12. At 84, once a final validation has been done by the authorised person, the authorised person can use an interactive form on the interface of the data processing apparatus 18 to open a door of the collection bin 32, via the controller 24. At that stage, the interface 26 displays information, such as that shown in figure 13, advising the customer 28 that the products can be collected once the door is open.

After the customer 28 collects all the products from the collection bin 32, the collection door is closed. Closure can be by the authorised person 30 using an interactive form on the interface of the data processing apparatus 18, via the controller 24. Alternatively, the system is configured to close the collection door automatically after a period of 30 seconds, or some other appropriate extent of time, from the products being dispensed.

At 86, the system 10 queries whether all the prescribed or recommended products have been collected. If no, at 88 the system 10 moves any uncollected products to the uncollected bin 42 with the conveying apparatus 40. The uncollected sensor 44 can sense products in the bin 42 and provide appropriate feedback to the server 16, and the process ends at 90. If yes, the process ends at 90. At that stage, the system 10 reinitiates itself for a new session.

The software product of the invention is configured so that all personal data is encrypted. The system 10 also makes use of various data and network security features so at to comply with cybersecurity and date protection needs. The vending machine 12 is tamper-proof and includes an anti-hand trapping mechanism. The collection door of the bin 32 is sufficiently robust to inhibit damage. In addition to the sensors 34, 44, the vending machine 12 includes various further sensors to facilitate validation and accurate dispensing of products. These further sensors can include further cameras within the machine 12 to capture images for the pharmacist or doctor to verify that the dispensed products are the correct products.

The products stored in the storage apparatus 36 are pre-labelled with information such as product information, batch number, expiration date, and dosage instructions. An instruction-to-use document can also be sent to the customer 28 if the authorised person wishes to override the pre-labelled instructions.

The system 10 is configured so that the collection door will not open and the vending machine 12 will be put into maintenance mode if the correct products are not delivered. In that case, the system 10 can generate an alert for a support team.

Throughout this specification, the term “pharmaceutical product” shall be understood to mean any product that would usually be recommended or prescribed by a pharmacist or a doctor. The term is not limited to prescription medications.

Throughout this specification, the words “patient” and “customer” are interchangeable and are generically described as an “authorised person”.

Throughout this specification, the term “data processing apparatus" refers to any one or more devices or machines that can perform computational tasks, such as server(s).

The appended claims are to be considered as incorporated into the above description.

Throughout this specification, reference to any advantages, promises, objects or the like should not be regarded as cumulative, composite, and/or collective and should be regarded as preferable or desirable rather than stated as a warranty.

Throughout this specification, unless otherwise indicated, "comprise," "comprises," and "comprising," (and variants thereof) or related terms such as "includes" (and variants thereof)," are used inclusively rather than exclusively, so that a stated integer or group of integers may include one or more other non-stated integers or groups of integers.

Features which are described in the context of separate aspects and embodiments of the invention may be used together and/or be interchangeable. Similarly, features described in the context of a single embodiment may also be provided separately or in any suitable sub-combination.

It is to be understood that the terminology employed above is for the purpose of description and should not be regarded as limiting. The described embodiments are intended to be illustrative of the invention, without limiting the scope thereof. The

invention is capable of being practised with various modifications and additions as will readily occur to those skilled in the art.

CLAIMS

1. A method of dispensing pharmaceutical products, the method comprising the steps of:

establishing a remote electronic connection between a vending machine in which the pharmaceutical products are stored and a data processing apparatus of an authorised person, the remote electronic connection being configured so that a customer at the vending machine can communicate with the authorised person via an interface of the vending machine;

establishing a remote electronic connection between the vending machine and a data processing apparatus of a financial institution to generate a payment portal such that the customer can make a payment to a predetermined recipient via the interface; and

dispensing one or more of the pharmaceutical products to the customer with the vending machine, after payment.

2. The method as claimed in claim 1, wherein the remote electronic connection between the vending machine and the data processing apparatus is established via the Internet.

3. The method as claimed in claim 1, wherein the step of establishing the remote electronic connection between the vending machine and the data processing apparatus includes the step of verifying an identity of the customer.

4. The method as claimed in claim 1, which includes the step of generating an interactive form on the interface of the data processing apparatus of the authorised person to facilitate the creation of a medical prescription by the authorised person for transmission to the vending machine.

5. The method as claimed in claim 4, which includes the step of communicating information relating to prescribed pharmaceutical or medicinal products to the vending machine for display on the interface of the vending machine.

6. The method as claimed in claim 1, which includes the step of displaying a summary of the pharmaceutical products and information relating to the dispensed pharmaceutical products on the interface of the vending machine and facilitating, via the interface of the vending machine, communication between the customer and the authorised person in connection with the dispensed products.

7. The method as claimed in claim 6, wherein the step of establishing the remote connection between the vending machine and the data processing apparatus of the financial institution takes place after the step of facilitating communication between the customer and the authorised person in connection with the dispensed products.

8. The method as claimed in claim 7, wherein the step of dispensing one or more of the pharmaceutical products to the customer includes the step of feeding the products to a collection bin of the vending machine and, once the products are in the collection bin, providing access to the collection bin so that the customer can collect the dispensed products.

9. The method as claimed in claim 8, wherein the step of dispensing one or more of the pharmaceutical products to the customer includes the step of sensing the products as they are fed to the collection bin and communicating sensing data to the data processing apparatus of the authorised person for validation of the products.

10. The method as claimed in claim 8, which includes the step of sensing the products in the collection bin and communicating sensing data to the data processing apparatus of the authorised person.

11. The method as claimed in claim 8, which includes the step of detecting the removal of the pharmaceutical products from the collection bin, and closing the collection bin once the products are removed.

12. The method as claimed in claim 8, which includes the step of conveying uncollected pharmaceutical products to a further bin box for subsequent disposal.

13. A software product that, when executed by a data processing apparatus, causes the data processing apparatus to carry out the steps of:

establishing a remote electronic connection between a vending machine in which pharmaceuticals are stored and a data processing apparatus of an authorised person, such that the remote electronic connection is configured so that a customer at the vending machine can communicate with the authorised person via an interface of the vending machine;

establishing a remote electronic connection between the vending machine and a data processing apparatus of a financial institution to generate a payment portal such that the customer can make a payment to a predetermined recipient via the interface; and

causing the vending machine to dispense one or more pharmaceutical products to the customer, after payment.

14. A system for dispensing pharmaceutical products, the system comprising:

a vending machine that is configured for:

establishing a remote electronic connection with a data processing apparatus of an authorised person, the remote electronic connection being configured so that a customer at the vending machine can communicate with the authorised person via an interface of the vending machine;

establishing a remote electronic connection with a data processing apparatus of a financial institution to generate a payment portal such that the customer can make a payment to a predetermined recipient via the interface; and

dispensing one or more of the pharmaceutical products to the customer with the vending machine, after payment.

15. The system as claimed in claim 14, wherein the vending machine is configured for remote electronic connection with the data processing apparatus of the authorised person and the financial institution via the Internet.

16. The system as claimed in claim 14, wherein the data processing apparatus is configured for remote electronic connection with a server that is programmed with the software product as claimed in claim 13.

17. The system as claimed in claim 14, wherein the vending machine includes a storage apparatus for storing the pharmaceutical products to be dispensed by the vending machine, a collection bin from which the products can be retrieved, and a conveying apparatus for conveying the pharmaceutical products from the storage apparatus to the collection bin.

18. The system as claimed in claim 14, wherein the vending machine includes sensors to sense the products within the vending machine, the vending machine being configured for sending sense data to the data processing apparatus of the authorised person so that the products can be validated by the authorised person.