TITLE: SYSTEM AND METHOD FOR ELECTRONIC MEDICINE DISPENSING MACHINE

BACKGROUND OF THE INVENTION

The present invention is directed to an electronic medicine dispensing machine ("EMDM") that stores and dispenses medicines including health supplements in an automated fashion.

SUMMARY OF THE INVENTION

The present invention pertains to a system and method for an electronic medicine dispensing machine ("EMDM"). The present invention can be used by medical and related health care professionals to simplify the process of dispensing medicine to patients through an automated process comprising a software and hardware mechanism. The EMDM allows medicines to be dispensed at any time, which is especially useful in rural areas and places where physical clinics and doctors are not readily accessible. The present invention typically uses a touch screen, a barcode scanner, and a robotic arm to store and dispense medicines from a secured cabinet with temperature and humidity control.

The present invention can be used by scanning a QR code with a mobile device to begin the dispensing process. Once the QR code is scanned and an intelligent robotic arm enabled with prescriptive smart labeling selects the medicine(s) to be dispensed. The present invention also contains a reject process and security and safety features with video audit capabilities and medication identification and validation of dispensation of medicines. These features increase the speed of the dispensing process and reduce errors that are common with manual dispensing. The present invention has a plurality of models and can be customized to fit a desired space.

Other features and aspects of the invention will become apparent from the following detailed description, taken in conjunction with the accompanying drawings, which illustrate, by way of example, the features in accordance with embodiments of the invention. The summary is

not intended to limit the scope of the invention, which is defined solely by the claims attached hereto.

BRIEF DESCRIPTION OF THE DRAWINGS

The various embodiments are illustrated by way of example, and not by way of limitation, in the figures of the accompanying drawings. Having thus described the invention in general terms, reference will now be made to the accompanying drawings, which are not necessarily drawn to scale, and wherein:

Figures 1A-B are diagrams of the present invention in two differently sized models.
Figure 2 is a flow chart describing the dispensing process of the present invention.
Figure 3 shows the flow of information in the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Figures 1A-B are diagrams of the present invention in two differently sized models. In accordance with the preferred embodiment of the present invention, the electronic medicine dispensing machine ("EMDM") is a secured medication storage unit 100 containing a plurality of shelves 102 that store a plurality of medicines, medications, supplements, and/or other controlled substances. These shelves may be visible through a window 104. The dispensing process begins when a user scans the quick response ("QR") code 108 which provides the user with access to a virtual portal. Through this portal, the user may send a request to have at least one medicine dispensed from the EMDM. If the request is approved, a robotic arm 110 locates the correct medicine, medication, supplement, or other controlled substance that has been requested by the user and dispenses it into the collection tray 114 for the user to collect. The EMDM is also enabled with a touchscreen 106 which may be used to display the QR code and access the virtual portal. A barcode scanner 120 is also located on the EMDM which may be used for user verification, medication confirmation, and other applications.

The present invention can be designed in various sizes in order to accommodate various quantities of medications and various physical spaces. In accordance with an alternative embodiment, Figure 1B shows a large model of the present invention with a higher storage capacity than the model shown in Figure 1A. The present invention, regardless of size, contains wheels 118 for easy transportation and relocation. Every EMDM is configured with several security measures, including a security camera 116 and a secure lock on the secured medication storage unit 112 to prevent unauthorized access to the contents of the EMDM.

Figure 3 shows the flow of information in the present invention. In accordance with the preferred embodiment of the present invention, the EMDM 304 provides a user with access to a virtual portal 300 via a QR code. Through this virtual portal, the user may request for a medication, medicine, supplement, or other controlled substance to be dispensed by the EMDM 300. A database 302 containing user data, medication data, historical dispensing data, and other related data is accessed via the virtual portal to determine if the request can be approved or denied. If the request is approved, it is sent to the EMDM 300 and the correct medication, medicine, supplement, or other controlled substance is dispensed in the correct dosage.

Figure 2 is a flow chart describing the dispensing process of the present invention. In accordance with the preferred embodiment of the present invention, the dispensing process begins when a user scans a QR code located on the EMDM 200. The QR code is unique to the EMDM, and, upon scanning, redirects a user to a virtual portal 202. The user may request for their medicine, medication, supplement, or other controlled substance to be dispensed from the specific EMDM through this portal 204. If the request is approved, it is sent to the EMDM. A robotic arm then locates the correct medication, medicine, supplement, or other controlled substance as requested 206 and dispenses it in the correct dosage 208. If the request is denied for any reason 210, the user is redirected through the rejection process 212 and until the request can be approved, no dispensing occurs.

While various embodiments of the disclosed technology have been described above, it should be understood that they have been presented by way of example only, and not of

limitation. Likewise, the various diagrams may depict an example architectural or other configuration for the disclosed technology, which is done to aid in understanding the features and functionality that may be included in the disclosed technology. The disclosed technology is not restricted to the illustrated example architectures or configurations, but the desired features may be implemented using a variety of alternative architectures and configurations. Indeed, it will be apparent to one of skill in the art how alternative functional, logical or physical partitioning and configurations may be implemented to implement the desired features of the technology disclosed herein. Also, a multitude of different constituent module names other than those depicted herein may be applied to the various partitions. Additionally, with regard to flow diagrams, operational descriptions and method claims, the order in which the steps are presented herein shall not mandate that various embodiments be implemented to perform the recited functionality in the same order unless the context dictates otherwise.

Although the disclosed technology is described above in terms of various exemplary embodiments and implementations, it should be understood that the various features, aspects and functionality described in one or more of the individual embodiments are not limited in their applicability to the particular embodiment with which they are described, but instead may be applied, alone or in various combinations, to one or more of the other embodiments of the disclosed technology, whether or not such embodiments are described and whether or not such features are presented as being a part of a described embodiment. Thus, the breadth and scope of the technology disclosed herein should not be limited by any of the above-described exemplary embodiments.

Terms and phrases used in this document, and variations thereof, unless otherwise expressly stated, should be construed as open ended as opposed to limiting. As examples of the foregoing: the term “including” should be read as meaning “including, without limitation” or the like; the term “example” is used to provide exemplary instances of the item in discussion, not an exhaustive or limiting list thereof; the terms “a” or “an” should be read as meaning “at least one,” “one or more” or the like; and adjectives such as “conventional,” “traditional,” “normal,” “standard,” “known” and terms of similar meaning should not be construed as limiting the item described to a given time period or to an item available as of a given time, but instead should be

read to encompass conventional, traditional, normal, or standard technologies that may be available or known now or at any time in the future. Likewise, where this document refers to technologies that would be apparent or known to one of ordinary skill in the art, such technologies encompass those apparent or known to the skilled artisan now or at any time in the future.

CLAIMS

What is claimed is:

1. A system for dispensing medication comprising:
    a. a secured medication storage unit storing a plurality of medications, wherein each of said plurality of medications is identified via a smart label, and wherein said secured medication storage unit comprises:
        i. a robotic arm configured to identify, collect, and dispense a correct medication via smart labeling;
        ii. a secure dispensing window configured to open and enable passage of said secured medication storage unit only when said medication associated with an intended smart label is dispensed by said robotic arm; and
        iii. a displayed quick response code associated with said secured medication storage unit;
    b. a virtual portal accessible via said quick response code associated with said secured medication storage unit; and
    c. a database comprising user data, medication data, and historical dispensing data.

ABSTRACT

The present invention is an electronic medicine dispensing machine ("EMDM") capable of automatically dispensing medications and supplements to patients. The present invention can be used by medical and related healthcare professionals to simplify the process of dispensing medicine to patients through an automated and is especially useful for rural areas or other places where clinics and doctors may not be readily available for medication dispensing.