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(54) **Cash dispensing system**

(57) An ATM is described. The ATM is embodied as a secure safe and is readily exchangeable for refilling and servicing at a service location. The ATM is provided with a minimal user interface. Interaction with the ATM may take place using the keypad and screen of a mobile telephone. The ATM comprises a position determining device (22) and a wireless communication device (20) for reporting the position to a remote location.

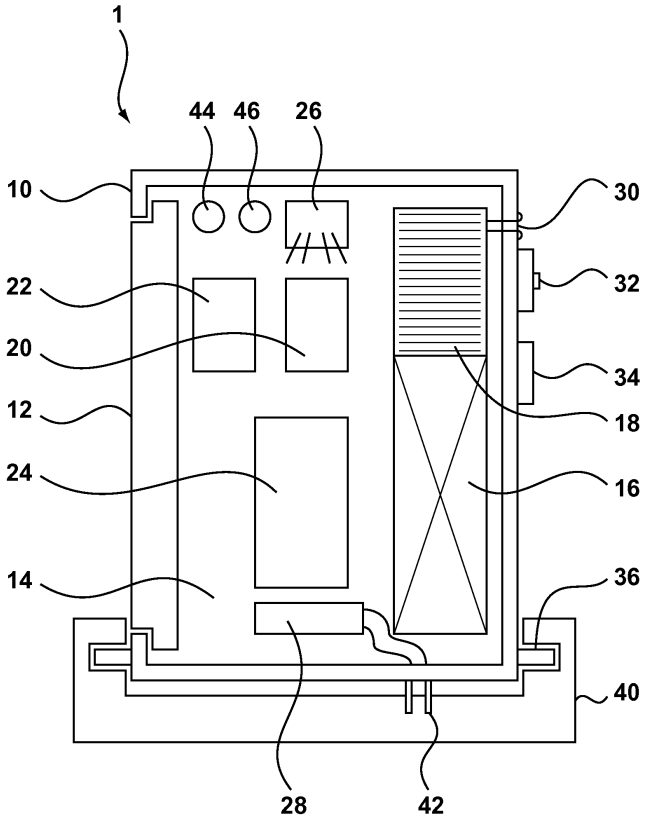

Figure 1

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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The invention relates generally to cash dispensing devices, often known as automatic teller machines and in hereinafter referred to as ATMs. The invention further relates to methods of operating and servicing such devices.

2. Description of the Related Art

[0002] ATMs are presently commonplace in most countries and are used to gain access to a customer's bank account, generally for the purpose of withdrawing cash in the form of bank notes. They can also be used for depositing money and also for other services such as requesting information regarding the account. On most modem ATMs, the customer identifies him or herself by inserting a plastic card with a magnetic strip or a plastic smartcard with a chip into a card reader. The card contains his or her card or account number and further security information, such as an expiration date. The customer then verifies their identity by entering a passcode, often referred to as a PIN (Personal Identification Number) of four or more digits. Upon successful entry of the PIN and authorisation by the bank, the customer may perform a transaction. After the transaction is complete, a transaction record may be printed, usually consisting of the action taken, date and time, location, any applicable fees, and available balance. Prior art ATMs generally also have a high definition screen providing information to the user. The presence of interface devices such as the card reader, printer and screen make conventional ATMs generally vulnerable to vandalism

[0003] Although many purchase transactions are now performed directly by card payment without cash, the amount of cash dispensed by ATMs is still significant and continues to increase. A single ATM may hold around € 150 000 and this must be replenished on a regular basis. Refilling of an ATM requires cash delivery by a security service and the actual opening and replenishing of the machine must take place under careful guard. Such operations are extremely vulnerable to robbery and consequently the operational cost is extremely high. There are currently believed to be more than 1 million ATMs worldwide and this number is also increasing.

[0004] Not only is the transport of cash and replenishment of the machine a cause for concern. ATMs themselves are also extremely vulnerable to robbery and vandalism and must generally be located at secure locations. Nevertheless, robbers are prepared to go to great lengths to gain access to ATMs and have even been known to ram-raid buildings with bulldozers in order to extract the loot. Other forms of robbery and fraud have been documented. In certain cases, thieves have used false card readers to collect customers' cards together with their PINS. The cards can then be used to withdraw funds from the customers' accounts. It has also become commonplace for thieves to spy on or physically rob customers at the point of transaction as they concentrate on the withdrawal procedure. For these reasons, ATMs must be securely located, usually in a secure vault or within a secure building and must be well maintained and monitored. Even then, this does not protect an ATM from vandalism. ATMs are regularly out of service due to such actions and this leads to consumer dissatisfaction with their bank for failing to allow adequate access to their accounts.

[0005] As a result of such security measures, the total cost of operation of an ATM may be as much as €25 000 per year in 2006. For this reason, placement of new ATMs, especially in outlying districts is often uneconomical. Due to the high cost of operation, a conventional ATM needs to perform around 150 transactions a day to be economical.

BRIEF SUMMARY OF THE INVENTION

[0006] The present invention seeks to address these problems by providing an ATM that is exchangeable for the purpose of refilling and servicing but does not require location within secure premises. Unlike prior ATMs which are generally securely fixed at the dispensing location and refilled in situ, the complete unit is relatively easily displaceable to a service location where refilling and service can take place quickly and efficiently in a secure environment. Transport to the secure location may moreover take place without compromising the security of the ATM.

[0007] According to the invention, the ATM comprises a safe having a lockable closure. A dispensing mechanism is located at least partially within the safe, for receiving a stock of cash and for dispensing a predetermined quantity of the cash from the safe, with the dispensing mechanism being accessible through the closure for replenishing the stock of cash when required. The ATM further comprises a wireless communication device for receiving signals from a remote location and a position determining device for determining the position of the ATM. The position determining device may in fact be part of the communication device or may be a distinct feature. The ATM is arranged to be transported to a service location for replenishing the stock of cash. This may be achieved by ensuring that the closure may only be unlocked when the ATM is actually present at the service location. Since the closure of the safe remains securely closed until the ATM arrives at the service location, the security required for transport may be reduced. The position determining device may be based on the Global Positioning System (GPS) or other satellite or beacon based location systems and is preferably also redundantly implemented. The presence of a position determining device significantly reduces the desire to steal such an

ATM, since it will continue to report its position until the position determining device is disabled. The resistance of the safe to break-in will delay such disablement. The wireless communication device will preferably be a redundantly implemented GSM (Global System for Mobile Communications) based device and may use conventional cryptography to encode communication to or from the ATM. Other forms of communication will be readily apparent to the skilled person including long range wireless communication systems such as UMTS, GPRS and the like. In the following, reference to GSM is intended to include such alternative communication systems. The remote location that communicates signals to the ATM may be the same as the service location or may alternatively be a distinct location. Thus the remote location may be a part of a telecommunications system which in turn may receive its signals from a communication exchange by Short Message Service (SMS) or the like. The communication device is also preferably implemented to provide a second level of position determination using feedback from the GSM grid.

[0008] According to a preferred embodiment of the invention, the ATM may further comprise locking elements for securely engaging the safe at a dispensing location and for subsequently releasing the safe for transport of the ATM. The dispensing location may comprise a recess in a wall or building into which the ATM is fitted. Alternatively, it may comprise a free-standing pedestal onto which the ATM is placed. By locking it in this manner, physical removal of the ATM is precluded until the ATM is unlocked. The locking elements may comprise standard bolts of the type used for securing safe deposit boxes or the like. Actuated locking elements forming part of the ATM may engage with appropriate locking recesses at the dispensing location or vice-versa. Locking elements may also be provided for securing the ATM to a truck or lorry during transport to and from the service location.

[0009] According to a further feature of the invention the locking elements are responsive to the communication device to release the safe at least partially in response to the signal received from the remote location. It is thus not possible for the safe to be removed or exchanged until an appropriate authorization signal is received from the remote location.

[0010] In order to further enhance security, the ATM according to one embodiment may further comprise a cash destruction or marking device for rendering invalid or otherwise indelibly marking the stock of cash. This may be initiated in response to a destruction signal, received e.g. from the remote location. The position determining device of the ATM may produce a combination of signals relating to its precise position (GPS) and its rough position (GSM). It is also in constant communication with the remote location. A failure based on one of these signals will cause the ATM to assume an alert status. In the alert status, movement and heat detectors will be placed on a higher degree of sensitivity. A positive signal from such sensors may then set off the destruction signal. The ATM may also cause operation of the cash destruction device in response to an absence of a signal or other communication from the remote location. In this manner, thieves who attempt to steal the ATM will be unable to make use of the cash even if they can open the safe to disable the position determining device.

[0011] According to an important aspect of one embodiment of the present invention the dispensing mechanism is responsive to the communication device to dispense the predetermined quantity of cash at least partially in response to the signal received from the remote location. The ATM may further comprise a verification device for verifying an identity of a person at the ATM prior to dispensing the predetermined quantity of cash. The verification device may verify the identity by comparing it with the signal received from the remote location. Various verification devices may be used, including but not limited to identity card readers, biometric devices, short range signal reception e.g. blue tooth and the like. According to an important advantage of the invention, the verification device may comprise only a keypad for entry of a code and the ATM may then dispense with a card reader. Most preferably, the ATM has a restricted physical customer interface, comprising only a keypad and indicator means to indicate functioning or to acknowledge input. The indicator may comprise a small LCD/LED display or lights or may alternatively or additionally comprise an audible message system. While the indicator may be located on the ATM, it is also possible that the indication may be provided directly on the screen of a user's telephone. By avoiding further interface elements such as screens, printers, card readers and the like, the ATM may be made smaller, cheaper, more easily exchangeable, less susceptible to pass fraud and vandalism and will have lower maintenance costs and other operating costs. In general the cost of ownership may then be considerably lower. As will be described hereinafter the primary customer interface may then be an electronic interface via the wireless communication device.

[0012] The invention also relates to a cash dispensing system comprising a plurality of ATMs as described herein and further comprising a service location for service and replenishment of the ATMs, a transport system for transport of ATMs to and from the service location and a communication exchange for communicating with the communication devices of the ATMs. As described above, because the ATMs are able to report their position and may also have cash destructing devices, the transport system may comprise generally conventional vehicles which are considerably cheaper than security vehicles and can be operated by a single operator.

[0013] The cash dispensing system preferably comprises at least one mobile telephone, the mobile telephone comprising application software for communication with the communication exchange for requesting the predetermined quantity of cash to be dispensed. By using a mobile telephone, a customer may communicate with the exchange to arrange for the cash withdrawal to be

prepared. The application software may comprise a module for identification of the mobile telephone and its user to the communication exchange. The communication exchange may comprise account software for accessing a bank account related to the identity of the mobile telephone. The account software may interact with the conventional banking systems used for money exchange in order to determine whether sufficient funds are available. If the user has a plurality of bank accounts, the application software may provide a choice of accounts from which money may be withdrawn. Clearly, a sufficient level of security and encryption must be installed in both the application software and account software to deny undesired access to the accounts or interception of signals. Although reference is made in the following to a mobile telephone, it should be understood that this is intended to refer to any suitable personal communication device for communicating with the cash dispensing system and that while mobility is preferred, it may not be essential for all functions described below.

[0014] The invention also relates to a method of operating and servicing an ATM system comprising providing a first ATM at a dispensing location, providing a second ATM, the second ATM being filled with a stock of cash, exchanging the second ATM for the first ATM, transporting the first ATM to a service location, refilling the first ATM with a further stock of cash at the service location. As a result of this method, all refilling operations take place at the service location which may be highly secure. There is thus no longer a necessity of providing refilling facilities and the required security at the location of use of the ATM.

[0015] Preferably, the method comprises monitoring a position of the first ATM and placing the ATM on an alert status if the position differs from an agreed position. The monitoring of the ATM may take place both during its use at the dispensing location and also during transport. Any unauthorized deviation from its agreed position may then be used to activate the alert status. Monitoring of the position preferably takes place using conventional GPS systems and the grid of the GSM system. Other actions may of course lead directly to an alarm, including vibration due to drilling, heat, unauthorized movement and other attempts at theft. The method may further comprise at least partially invalidating the cash within the ATM in response to the alarm e.g. by marking, shredding or burning the cash.

[0016] According to one embodiment the method may further comprise locking the ATM at the dispensing location or locking it to the truck or vehicle used for transport. This may act as a further deterrent against theft or vandalism. Locking and subsequent unlocking of the ATM from the dispensing location or vehicle may take place in response to a signal sent from a remote location.

[0017] According to a preferred method of operation, dispensing takes place by sending a signal to the ATM to authorize dispensing of a predetermined quantity of cash in response to receipt by the ATM of a verification signal. The verification signal may be based on a form of recognition of the identity of a person approaching the ATM to receive the cash. Preferably and most simply, the verification signal may comprise keypad input of a transaction code directly at the ATM. The transaction code may be sent to a mobile telephone or similar communication device belonging to the person desiring to withdraw cash. This person would then submit the verification signal to the ATM as an acknowledgement of identity.

[0018] The invention also relates to a method of cash transaction at an ATM, comprising performing an identification protocol between a personal device and a communication exchange, sending a transaction request from the personal device to the communication exchange for a transaction relating to a predetermined quantity of cash, sending an authorisation signal from the communication exchange to the ATM to authorize the transaction of the predetermined quantity of cash in response to receipt by the ATM of a verification signal, sending a transaction code to the personal device or to a further personal device, providing the verification signal to the ATM in response to receipt of the transaction code and performing the transaction. This principle of operation may be used both for depositing and withdrawing cash and also for transferring cash to third parties e.g. in a foreign country, who may be provided with the transaction code based on a transaction request in a country of origin.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] Further features and advantages of the invention will be appreciated upon reference to the following drawings, in which:

[0020] FIG. 1 is a schematic view of an embodiment of the ATM according to the invention; and

[0021] FIG. 2 is a schematic view of a cash dispensing system according to the invention.

DESCRIPTION OF ILLUSTRATIVE EMBODIMENTS

[0022] The following is a description of certain embodiments of the invention, given by way of example only and with reference to the drawings. Referring to Figure 1, there is shown an ATM 1 according to the present invention. The ATM 1 comprises a safe 10 with a strength in accordance with EN 1143-1 (dispensing machines) or EN 1143-2 (Depositing machines). The actual resistance grade according to EN 1143-1 table 2 will be determined by local circumstances but reference in the following to a safe is intended to refer to a secure encasement of class 1 or higher, preferably class 3 or higher. The allowed exceptions to this norm for apertures will not apply to the present ATM, making the present ATM even safer with respect to the norm.. The safe 10 has a secure closure 12 that may be locked to the same degree of security as the safe 10. Closure 12 provides access to an interior

14 of the safe as will be further described below.

[0023] Within the interior 14 of the safe 10 there is provided a cash dispensing mechanism 16, having a stock of cash 18 a cash destruction device 26, a battery 28 and heat and movement sensors 44, 46. The cash dispensing mechanism 16 may be a standard device as used in present systems and will not be described in further detail. Alternatively, it may be a specially developed model for ease of exchange through closure 12 and e.g. having a smaller capacity for use in a reduced scale safe 10. Destruction device 26 comprises a perforator and ink spray which operate to perforate the stock of cash 18 and mark it with indelible ink on receipt of an appropriate signal.

[0024] A wireless communication device 20, position determining device 22, and microprocessor 24 are also located within interior 14. Although these are shown in Figure 1 as separate items, they may be combined as a single device. Communication device 20 is based on mobile phone technology, operating over the GSM system. It is redundantly implemented to ensure secure and reliable communication. The skilled person will of course understand that other communication systems and protocols may also be used to similar effect. The position determining device 22 is a redundantly implemented GPS system. This can ensure accurate location of the ATM 1 to at least 5 meters. The microprocessor 24 controls operation of the ATM 1, and contains the necessary software for performing its functions as will be described below. In particular, it includes a communication encryption application for the communication device 20 ensuring that messages sent and received are sufficiently encrypted to avoid interception. It also includes a cash management application to control the dispensing (and receipt) of cash.

[0025] The exterior of the safe 10 is provided with a dispensing slot 30 leading from the dispensing mechanism 16, a keypad 32 and a display 34. Locking elements 36 are also provided for locking the ATM 1 to a base 40 on which is provided power supply 42. The locking elements 36 are operated from the interior 14 of the safe 10 and are shown extending into base 40. The skilled person will be well aware of alternative constructions and that pins may be provided on the base that extend into the interior 14 of the safe 10. The locking elements 36 may then be located completely within the safe 10. Power supply 42 is optional and serves to keep battery 28 charged. The battery 28 is sufficiently large to power the ATM 1 during its normal period of operation which may be as much as one month. Further back up batteries may be provided to ensure ongoing communication thereafter. Although not shown, there may also be provided appropriate handles or other lifting aids to allow easy displacement of the safe 10 e.g. by a lifting arm or hoist. Also provided on the exterior of the safe are suitably protected antennae (not shown) for the communication device 20 and position determining device 22.

[0026] Figure 2 shows a general overview of a complete cash dispensing system 100. Central to the cash dispensing system 100 is the communication exchange 110, which coordinates all communication within the cash dispensing system 100 over the GSM network and other appropriate communication channels. The communication exchange comprises a database 112 including all customer data necessary to operate the system 100 and all data related to ATMs 1 within the system 100. The cash dispensing system 100 also includes a dispensing location 120, a service location 130, a transport system 140, a banking system 150 and a personal communication system 160.

[0027] An ATM 1 is located at the dispensing location 120. ATM 1 is as described in Figure 1 and is identified by an ATM number 122. Dispensing location 120 may be located outside or inside and the ATM 1 may be free-standing or located in a recess in a wall as desired. Further ATMs 1 are also shown at service location 130. Service location 130 comprises a secure perimeter 132 and is a maximum security location adapted for handling of large quantities of cash. Service location also comprises a replenishing station 134 and a cleaning and repair station 136. Transport system 140, comprises a truck 142 having a hoist 144 for handling ATMs 1. The truck 142 is generally conventional but is provided with a loading bed 146 having locking locations 148 for receipt of the locking elements 36 of an ATM 1. It is also provided with direct communication with service location 130 and further security options such as an automatic fuel cut-off (not shown) that may be remotely activated if necessary.

[0028] Banking system 150 comprises the existing banking and financial exchanges system as currently used by the banking service sectors. It comprises accounts 152 A, B, C related to individual users of the banking system. As it is believed that this system is generally conventional, it will not be further described at present. Personal communication system 160 comprises a mobile telephone 162 including a SIM (subscriber identity module) card 164 and ATM application software 166. It may also include a personal computer 168.

[0029] Operation of the cash dispensing system 100 will now be described with reference to Figures 1 and 2. In order to use the system, a customer must first download or otherwise be provided with application software 166 installed on mobile telephone 162. The application software 166 may also be installed on personal computer 168, allowing further opportunities for the customer to interact and set up the application from their home. In the present case, the customer has three bank accounts 152 A, B, C which are associated with the system 100. A personal identification (PIN) code gives access to these accounts via the application software 166. On setting up the application software 166, the customer provides details of the number of mobile telephone 162 to the communication exchange 114, which incorporates the data in its database 112. The mobile telephone 162 also transmits details regarding its SIM card 164 and the International Mobile Equipment Identity (IMEI) of the mobile tel-

ephone 162. In an alternative lower security version, the IMEI code may be omitted, allowing easier application set up and shorter transmission times.

[0030] In order to initiate a cash withdrawal, the customer accesses the application software 166 via their mobile telephone 162 using their PIN. They may then request withdrawal from one of their accounts 152 by identifying it A, B or C and by keying in the ATM number 122 of the ATM 1 at a nearby dispensing location 120, where they wish to receive the cash. Further optional details may also be provided e.g. which denomination notes, whether an acknowledgement receipt is required, by email, SMS or the like. Alternatively, the exchange 110 may suggest a convenient dispensing location 120.

[0031] On receipt of a withdrawal request, communication exchange 110 performs an identification protocol with the mobile telephone 162 and checks its identity via database 112. If the GSM subscriber number or IMEI number does not correspond to that recorded in the database 112, a return message will be sent to the GSM number associated with the customer. Exchange 110 then requests approval for the withdrawal from banking system 150. On approval, the exchange 110 sends an SMS to the mobile telephone 162 containing a transaction number for performing the withdrawal. The exchange 110 also sends a message to the communication device 20 of ATM 1 at dispensing location 120 including the transaction number, the PIN of the customer and the amount of cash to be dispensed. If no approval is given, an appropriate notification is sent by SMS. If the chosen ATM is not available or has an insufficient stock of cash 18, the exchange may suggest an alternative dispensing location 120.

[0032] The customer then has a limited time to approach the ATM 1 and perform the withdrawal. This takes place by entering the PIN number, followed by the transaction code using keypad 32. The requested cash is dispensed by dispensing mechanism 16 through dispensing slot 30. If the cash is not dispensed within a given time, it is recredited to the customer's account 152A and the transaction cancelled. This enhances security, since a customer desiring to withdraw cash may choose only to approach the ATM 1 if they feel secure. They may also cancel the transaction by incorrectly entering their PIN number or may proceed with the transaction while including a further alarm code to notify the authorities. While the ATM 1 and transaction has been described using keypad 32 to verify the identify of the customer, it will be understood that many other forms of verification may also be used, including conventional card based systems and also biometric devices such as iris scanners and fingerprint devices. Using the blue tooth or infrared communication devices of mobile telephone 162, this may form both a display and keyboard for interaction with the ATM 1. A further security enhancement is provided by the association of the SIM card 164 (and its IMEI number) with the account. Should the telephone 162 or SIM card 164 be stolen, its location will always be available to the authorities via the GSM system and withdrawal from an account 152 is not possible without giving away details of the user's location.

[0033] The cash dispensing system 100 may also be used to authorise withdrawal at a different remote location from that of the mobile telephone 162. In this manner, cash may be transferred to a third party e.g. in a foreign country. On setting up the transaction, the customer provides details of the required dispensing location 120. On receipt of the transaction code, this may be provided to the third party, together with a temporary PIN code in order to withdraw the required cash.

[0034] Service and replenishing of the ATM 1 takes place as follows. A replacement ATM 1 is prepared at the service location 130. The ATM 1 is filled with a given quantity and selection of cash at replenishing station 134 and the details are noted and recorded in an appropriate part of database 112. Alternatively or additionally, this data may be recorded and monitored within banking system 150. Any cleaning, maintenance or further servicing required by the ATM 1 will be undertaken by cleaning and repair station 136. A fully charged battery 28 is installed. Once ready for transport, closure 12 will be securely locked and the ATM 1 is released to transport system 140.

[0035] The ATM 1 is loaded onto truck 142 using hoist 144. The ATM 1 may have a weight of between 500 and 1000 kg depending on model and is therefore sufficiently heavy to avoid unauthorised movement without use of a hoist even without locking elements 36. The ATM 1 is locked onto the loading base 146 at locking location 148. Locking is controlled by command from the exchange 110 directly to the ATM 1. Once loaded, truck 142 proceeds to the dispensing location 120 along a predetermined route. Exchange 110 continuously monitors the position of the ATM 1 along the route using the position determining device 22. Once the truck arrives at the dispensing location 120, the ATM 1 present at the dispensing location is removed and the refilled ATM 1 is replaced. Unlocking of both ATMs from their respective bases 40, 146 is again controlled by signals from the exchange 110 to the respective ATM 1. The exchange 110 recognises correct placement of the replenished ATM and authorises it for operation. During transport and loading and unloading of the ATMs 1, movement sensor 44 is set to reduced sensitivity to avoid false alarms.

[0036] The security of the personnel operating the truck 142 is ensured by the fact that they have no access to the money in the ATM 1. They are unable to open the closure 12. This may only be opened at the service location 130 by an appropriate signal from the exchange 110 in combination with a hardware key (not shown) physically present at the service location 130. Removal of the ATM 1 from the truck 142 is controlled remotely by signal from the exchange 110 to the ATM 1 based on arrival at the dispensing location 120, as determined by the position determining device 22. The actual exchange of the ATMs 1 may in fact be completely controlled e.g.

robotically from the exchange and/or from the service location 130. Even were thieves to steal the truck 142 or an ATM 1, there would be no need for the personnel to give resistance. The safe 10 itself is sufficiently robust to avoid unauthorised entry using conventional methods. Any movement of the ATM 1 away from its agreed location would be reported to the exchange 110 by position determining device 22. This would put the ATM into its state of alert in which the heat and movement sensors 44, 46 are set to a more sensitive level and continuously monitored. Any attempt to break into the safe or otherwise damage the ATM 1 would be detected by the movement and heat sensors 44, 46 or other appropriate sensors (not shown). The ATM 1 reports all such activities to the exchange 110 using communication device 20, the exchange 110 can then determine whether or not to activate the cash destruction device 26 to destroy the stock of cash 18 within the ATM 1. Should thieves attempt to steal the ATM 1 by blocking all communication from communication device 20, the microprocessor 24 can take over and automatically actuate cash destruction device 26 if signals from the exchange 110 are not received within a given period of time and if the heat and movement sensors 44, 46 indicate tampering.

[0037] The ATM 1 may also be used for money deposits in a similar manner. As above, the transaction is prepared on the mobile telephone 162, by specifying the account 152 to which the money should be applied, the intended amount of the deposit and the intended ATM number 122. The customer then proceeds to the dispensing location and after identification using a transaction code received from the exchange, proceeds to insert the cash for deposit into dispensing slot 30. The ATM 1 is provided with hardware (not shown) for checking for counterfeiting and damage. The ATM 1 either accepts or refuses notes and report back via communication device 20 regarding the quantity of cash actually received. A statement is sent to the email address of the customer.

[0038] Thus, the invention has been described by reference to certain embodiments discussed above. It will be recognized that these embodiments are susceptible to various modifications and alternative forms well known to those of skill in the art without departing from the spirit and scope of the invention. Accordingly, although specific embodiments have been described, these are examples only and are not limiting upon the scope of the invention.

Claims

1. An exchangeable ATM comprising:

a safe having a lockable closure;
a dispensing mechanism, located at least partially within the safe, for receiving a stock of cash and for dispensing a predetermined quantity of the cash from the safe, the dispensing mechanism being accessible through the closure for replenishing the stock of cash;
a position determining device for determining a position of the safe; and
a wireless communication device for receiving a signal from a remote location and reporting the position to the remote location, such that the ATM may be securely transportable to a service location for replenishing the stock of cash..

2. The ATM according to claim 1, further comprising locking elements for securely engaging the safe at a dispensing location and for subsequently releasing the safe for transport of the ATM.

3. The ATM according to claim 2, wherein the locking elements are responsive to the communication device to release the safe at least partially in response to the signal received from the remote location.

4. The ATM according to any preceding claim, further comprising a cash destruction device for rendering invalid the stock of cash in response to a destruction signal.

5. The ATM according to any preceding claim, wherein the dispensing mechanism is responsive to the communication device to dispense the predetermined quantity of cash at least partially in response to the signal received from the remote location.

6. The ATM according to any preceding claim, further comprising a verification device for verifying the identity of a person at the ATM prior to dispensing the predetermined quantity of cash.

7. The ATM according to any preceding claim, further comprising a battery for operation of the ATM during a period of operation.

8. A cash dispensing system comprising a plurality of ATMs according to any of claims 1 to 7, and further comprising:

a service location for service and replenishment of the ATMs;
a transport system for transport of ATMs to and from the service location; and
a communication exchange for communicating with the communication devices of the ATMs.

9. The cash dispensing system according to claim 8, further comprising at least one mobile telephone, the mobile telephone comprising application software for communication with the communication exchange for requesting the predetermined quantity of cash to be dispensed.

10. The cash dispensing system according to claim 8 or

claim 9, wherein the application software comprises a module for identification of the mobile telephone to the communication exchange and the communication exchange comprises account software for accessing a cash account related to the identification of the mobile telephone.

11. A method of operating and servicing an ATM system comprising:

providing a first ATM at a dispensing location;
providing a second ATM, the second ATM being filled with a stock of cash;
exchanging the second ATM for the first ATM;
transporting the first ATM to a service location;
refilling the first ATM with a further stock of cash at the service location.

12. The method according to claim 11, further comprising monitoring a position of the first ATM and placing the system in an alert mode if the position differs from an agreed position.

13. The method according to claim 11 or claim 12, further comprising monitoring temperature or movement of the first ATM and initiating an alarm if excess temperature or movement is detected.

14. The method according to claim 13, further comprising at least partially invalidating the cash within the ATM in response to the alarm.

15. The method according to any of claims 11 to 14, further comprising locking the second ATM at the dispensing location.

16. The method according to claim 15, wherein locking and subsequent unlocking of the second ATM takes place in response to a signal sent from a remote location.

17. The method according to any of claims 11 to 16, further comprising sending a signal to the second ATM to authorize dispensing of a predetermined quantity of cash in response to receipt by the second ATM of a verification signal.

18. The method according to claim 17, wherein the verification signal comprises keypad input of a transaction code at the second ATM.

19. The method according to claim 17 or claim 18, further comprising sending a transaction code to a mobile telephone and submitting the verification signal to the second ATM in response to receipt of the transaction code.

20. The method according to any of claims 11 to 19, further comprising performing maintenance on the first ATM at the service location.

21. A method of cash transaction at an ATM, comprising:

performing an identification protocol between a personal device and a communication exchange;
sending a transaction request from the personal device to the communication exchange for a transaction relating to a predetermined quantity of cash;
sending an authorisation signal from the communication exchange to the ATM to authorize the transaction of the predetermined quantity of cash in response to receipt by the ATM of a verification signal;
sending a transaction code to the personal device or to a further personal device;
providing the verification signal to the ATM in response to receipt of the transaction code;
performing the transaction.

22. The method according to claim 21, wherein the transaction comprises dispensing cash from the ATM.

23. The method according to claim 21, wherein the transaction comprises depositing cash into the ATM.

24. The method according to any of claims 21 to 23, wherein the verification signal comprises the transaction code and a PIN code provided by a user at the ATM.

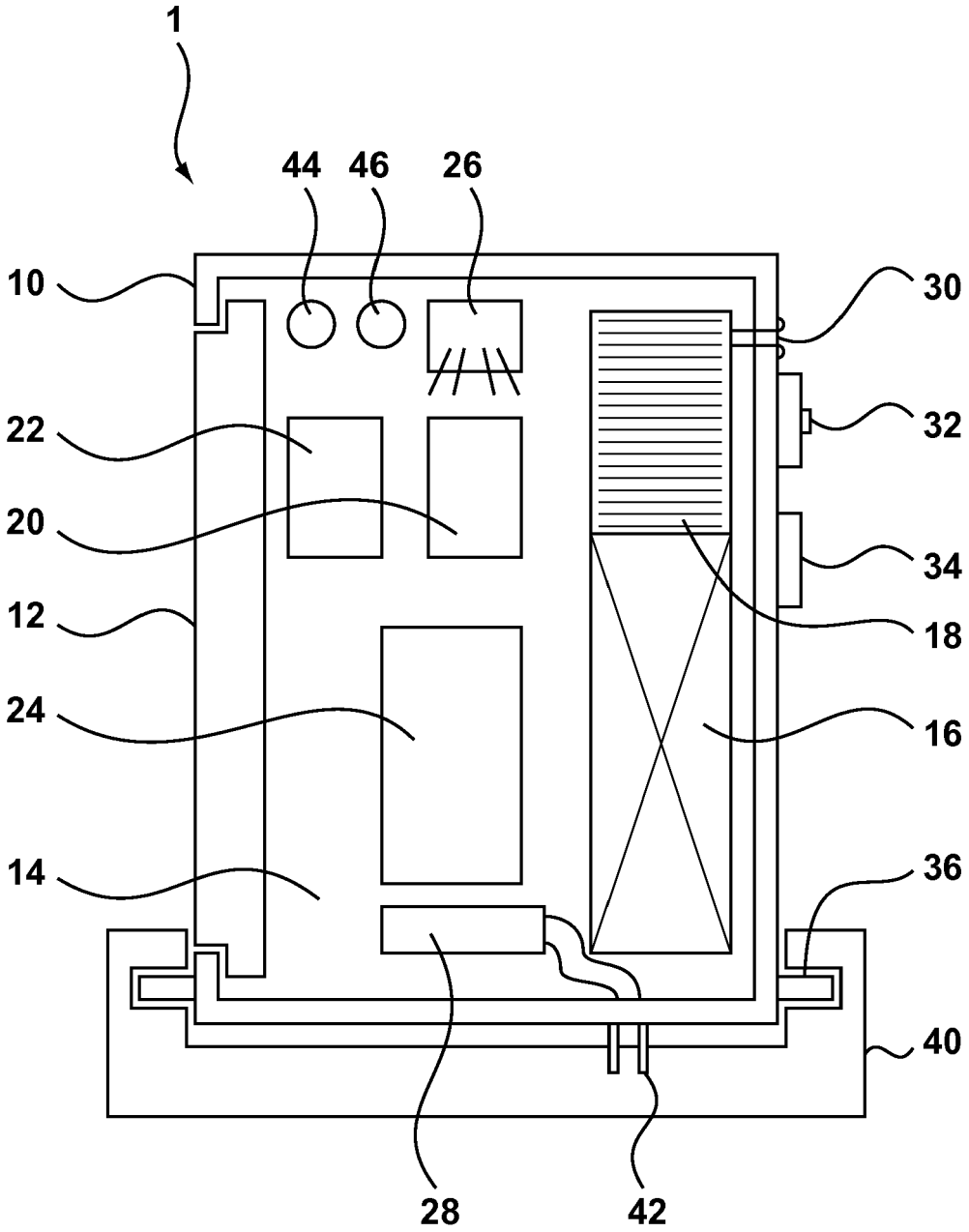

Figure 1

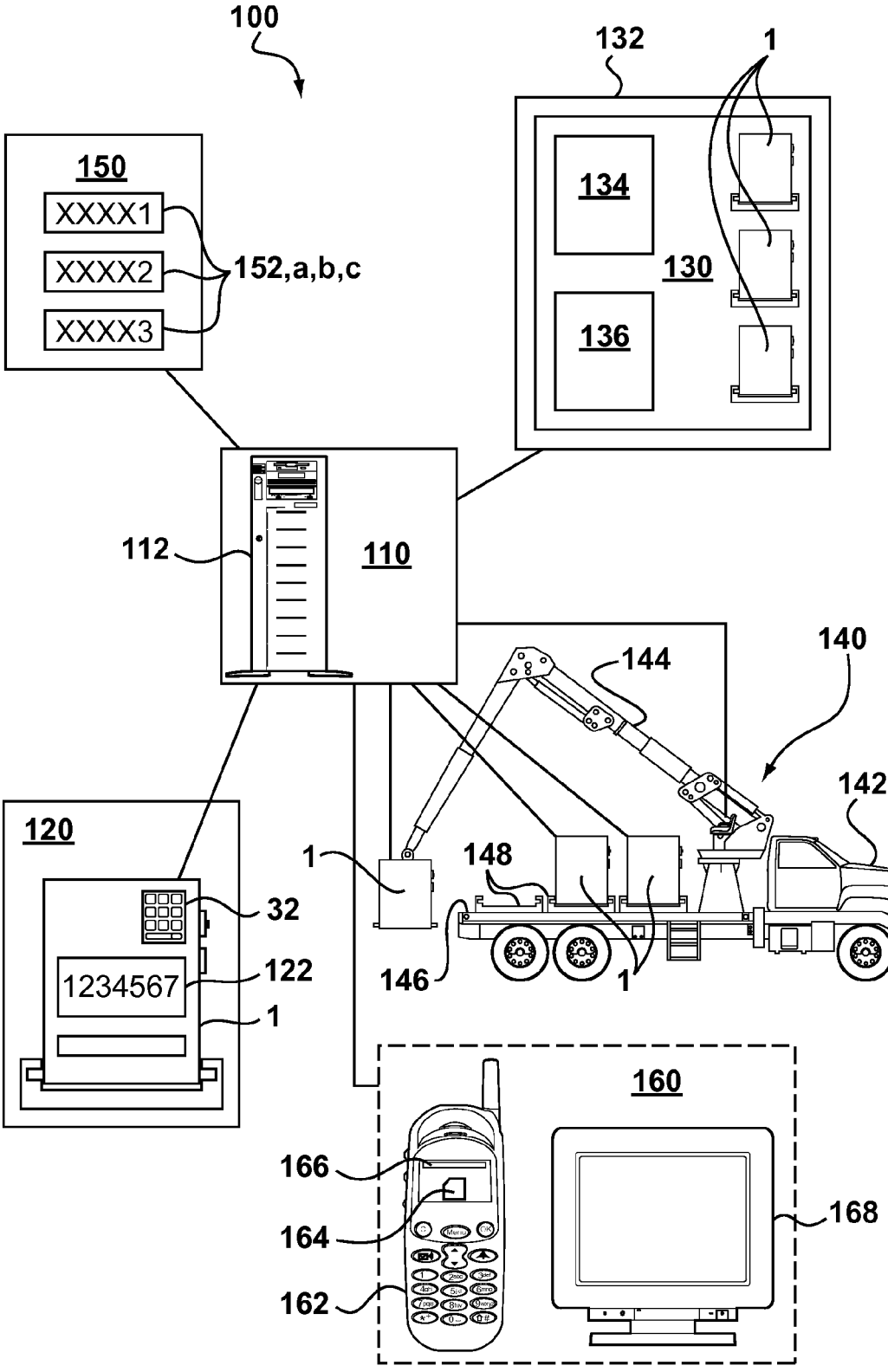
100
132
1
150
XXXX1
XXXX2
XXXX3
152,a,b,c
134
130
136
112
110
144
140
142
120
1
148
32
1234567
122
1
146
1
160
166
164
162
168

Figure 2