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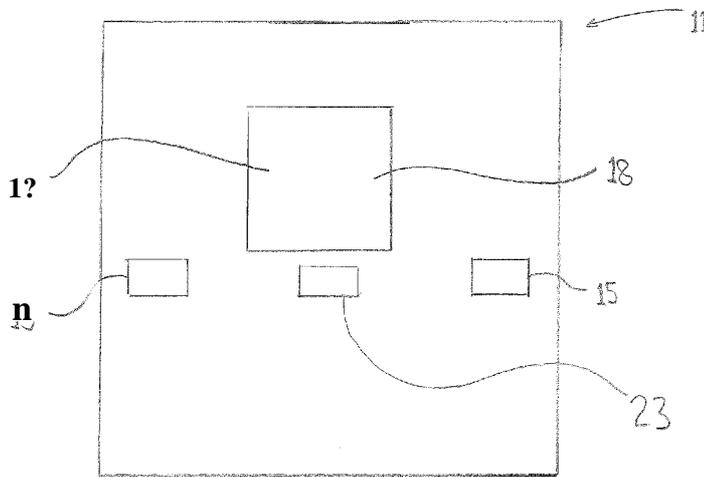


Fig. 1

(57) Abstract: A currency exchange machine is provided, including a currency input arranged to receive at least a first currency; a currency output arranged to issue at least a second currency that is different from the first currency; a user input arranged to receive inputs from a user of the currency exchange machine and a user output arranged to provide information to the user of the currency exchange machine. Embodiments of the currency exchange machine may include additional components such as a camera or a scanner, arranged to enable the currency exchange machine to collect or verify information relating to a user of the currency exchange machine; a debit card dispenser and a debit card activator arranged to dispense an activated debit card for use by the user; and/or a SIM card dispenser and a SIM card activator arranged to dispense an activated SIM card for use by the user.



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Currency Exchange Machine

The invention relates to a currency exchange machine. In particular, it relates to a self-service currency exchange machine arranged to facilitate a plurality of user operations
5 such as dispensing, activation and/or registration of a SIM card, debit card, credit card or pre-paid payment card; conversion of a first currency into a second currency; and/or identification, verification or authentication of a user.

Currency exchange machines are machines which allow a user to exchange one currency
10 for another. Typically, a currency exchange machine will accept notes and/or coins of a first currency and issue notes and/or coins of a second currency in exchange. Such machines can be placed in areas where travellers are likely to need or expect to be able to obtain currency exchange services, such as airports, railway stations, bus stations and other transport hubs; large shopping centres; car parks; and entertainment venues.

15 Currency exchange machines can be advantageous over traditional bureaux de change, as they can reduce - in some cases to approximately zero - the number of staff hours required to provide a currency exchange service. This typically means that currency exchange machines can provide longer hours of service than traditional bureaux de
20 change, e.g. by operating throughout the day and the night without stopping providing the currency exchange service.

According to a first embodiment of the invention, there is provided a currency exchange machine including: a currency input arranged to receive at least a first currency; a currency
25 output arranged to issue at least a second currency that is different from the first currency; a user input arranged to receive inputs from a user of the currency exchange machine; a user output arranged to provide information to the user of the currency exchange machine; at least one of a camera and a scanner, arranged to enable the currency exchange machine to collect or verify information relating to a user of the currency exchange
30 machine; a debit card dispenser and a debit card activator arranged to dispense an activated debit card for use by the user; and a SIM card dispenser and a SIM card activator arranged to dispense an activated SIM card for use by the user, wherein one of the first currency and the second currency is a cryptocurrency.

According to a second embodiment of the invention, there is provided a currency exchange machine including: a currency input arranged to receive at least a first currency; a currency output arranged to issue at least a second currency that is different from the first currency; a user input arranged to receive inputs from a user of the currency exchange machine; a user output arranged to provide information to the user of the currency exchange machine; and a debit card dispenser and a debit card activator arranged to dispense an activated debit card for use by the user.

According to a third embodiment of the invention, there is provided a currency exchange machine including: a currency input arranged to receive at least a first currency; a currency output arranged to issue at least a second currency that is different from the first currency; a user input arranged to receive inputs from a user of the currency exchange machine; a user output arranged to provide information to the user of the currency exchange machine; and a SIM card dispenser and a SIM card activator arranged to dispense an activated SIM card for use by the user.

According to a fourth embodiment of the invention, there is provided a currency exchange machine including: a currency input arranged to receive at least a first currency; a currency output arranged to issue a second currency that is different from the first currency; a user input arranged to receive inputs from a user of the currency exchange machine; and a user output arranged to provide information to the user of the currency exchange machine, wherein at least one of the first currency and the second currency is a cryptocurrency.

Advantageously, a currency exchange machine according to the first embodiment may be able to determine, using the at least one of the camera and the scanner, whether a user of the currency exchange machine is authorised to use the currency exchange machine. Additionally, a currency exchange machine according to the first embodiment including a camera may be able to determine or estimate, using the camera, a characteristic of a person within a predetermined distance of the machine. This may enable the currency exchange machine to perform certain tasks automatically, e.g. without input from the person. For example, in response to determining that a person within the predetermined distance of the machine has a particular characteristic, the machine may be able to carry out an operation, such as preparing to dispense a particular set of notes and/or coins of one or more currencies that has been ordered by a person with the determined characteristic (e.g. online, remotely), or playing audio or video that may be of particular

interest to a person with the determined characteristic. A currency exchange machine according to the first embodiment may therefore be able to operate more efficiently and/or more effectively than conventional currency exchange machines.

5 Advantageously, a currency exchange machine according to the second or third embodiment of the invention may be able to provide to a user one or more different types of activated card for use by the user, such as a SIM card, a debit card, a credit card or a pre-paid payment card. This may enable a user of the machine who has just purchased a SIM card (for example, using a machine according to the third embodiment) from the machine to activate the SIM card with a mobile phone network operator, at the machine.
10 The user may be able to obtain from the machine a pre-ordered card. A currency exchange machine according to the second or third embodiment may therefore be able to alleviate a burden on a user and/or to provide additional functionality to the user relative to conventional currency exchange machines.

15 Advantageously, a currency exchange machine according to the fourth embodiment of the invention may be able to provide to a user a facility to exchange traditional currencies (such as pounds sterling, US dollars or euro) and cryptocurrencies (such as a blockchain-based, decentralized currency like Bitcoin or Ethereum). A currency exchange machine according to the fourth embodiment of the invention may additionally or alternatively
20 enable a user of the machine to exchange a cryptocurrency for goods or services (such as an activated debit card, an activated credit card or an activated SIM card, with or without credit loaded onto the card).

25 Although some features are described and claimed in the context of the first embodiment only, they may apply also the second, third and fourth embodiments.

Specific embodiments of the invention will now be described by way of non-limiting examples, in which:

30 Figure 1 schematically illustrates a currency exchange machine in accordance with an embodiment of the invention;

35 Figure 2 schematically illustrates a currency exchange machine in accordance with an embodiment of the invention;

Figure 3 schematically illustrates a currency exchange machine in accordance with an embodiment of the invention;

- 5 Figure 4 schematically illustrates a currency exchange machine in accordance with an embodiment of the invention.

The present embodiments represent the best ways currently known to the applicant of putting the invention into practice, but they are not the only ways in which this can be
10 achieved. They are illustrated, and they will now be described, by way of example only.

With reference to Figure 1, a currency exchange machine 11 is schematically illustrated. The currency exchange machine 11 includes a currency input 13 arranged to receive at least a first currency. The currency input 13 may for example include a note slot and/or a
15 coin slot. The currency input 13 may include apparatus for imaging, measuring a dimension of, weighing or otherwise analysing a note or a coin. The machine 11 and/or the currency input 13 may include software for detecting which of a plurality of currencies and/or denominations of note and/or coin has been inserted. The currency input 13 may include a card reader 29 (see Figure 3) arranged to read chip-and-pin and/or magnetic-
20 strip debit and/or credit cards. The machine 11 and/or currency input 13 may alternatively or additionally include software for detecting which of a plurality of different payment cards has been inserted, and/or may include appropriate apparatus and software for receiving a cryptocurrency, such as a Bitcoin or Ethereum payment, and/or a currency transfer from a bank account. This may require the currency exchange machine to be able to update a
25 distributed ledger or blockchain to record a transaction. In this document, the word "currency" is therefore not limited to traditional paper-based or coin-based currencies but also includes cryptocurrencies, values available for redeeming on a voucher or other value card, and other forms of holding a value.

30 The currency input 13 may therefore facilitate: a currency exchange transaction (such as a transaction to exchange notes and/or coins of first and/or second currencies for notes and/or coins of a second currency or third and/or fourth currencies); a currency transfer transaction (such as a transaction to transfer money from one user of the currency exchange machine to another person, e.g. another user of the currency exchange

machine); and/or a payment transaction (such as a transaction to pay for goods or services provided at the machine 11 or elsewhere).

The currency exchange machine 11 also includes a currency output 15 arranged to issue at least a second currency that is different from the first currency. Like the currency input 13 discussed above, the currency output 15 may for example include a note slot and/or a coin slot; a card reader arranged to read and add value to a chip-and-pin, magnetic-stripe or other form of value card or voucher; and/or appropriate apparatus and software for issuing a cryptocurrency, such as a Bitcoin or Ethereum payment, and/or a payment made to a bank account. The currency output 15 may therefore facilitate a currency exchange transaction and/or a currency transfer transaction. The currency input 13 and the currency output 15 may also be arranged to receive/issue a third and/or fourth currency (e.g. different paper- and coin-based currencies), in addition to the first and second currencies discussed above.

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Additionally, the currency exchange machine 11 includes a user input 17 arranged to receive inputs from a user of the currency exchange machine 11. In the illustrated example, the user input 17 is a touchscreen device. However, in other examples, the user input 17 may be or include one or more buttons, knobs or switches, a physical keyboard or keypad, a trackball, a mouse or other input means. In further examples, the user input 17 may be located remotely from the machine 11. For example, a remotely located mobile phone, tablet or other device may be arranged to run an application which serves as user input 17 for the machine 11. In embodiments in which the user input 17 is or includes a touchscreen device or another form of touch-based input device, the device may be arranged to recognise and respond to different types of input, such as taps, sliding movements, pinching movements, multi-finger inputs and/or other types or forms of input.

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The currency exchange machine 11 also includes a user output 18 arranged to provide information to the user of the machine 11, such as information about current exchange rates. In the illustrated example, the user output 18 is the touchscreen device that also constitutes the user input 17 discussed above. However, in other examples, the user output 18 may be or include a separate device, such as one or more of: a screen, a speaker, a light or arrangement of lights, or other output means, depending on the information to be provided to the user of the machine 11. In further examples, the user output 18 may be located remotely from the machine 11. For example, a remotely located

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mobile phone, tablet or other device may be arranged to run an application which serves as user output 18 for the machine 11.

The currency exchange machine 11 further includes a debit card dispenser 23 and a debit card activator, arranged to dispense an activated debit card for use by the user. The debit card dispenser 23 may for example include one or more conveyor systems for moving a debit card from a debit card repository in the currency exchange machine 11 and ejecting the debit card from the machine. The debit card activator may include appropriate means for contacting a bank or other financial institution to arrange activation of the debit card. In the illustrated embodiment, the debit card dispenser 23 is separate from the currency output 15. However, in other examples, the card dispenser 23 may be included as part of the currency output 15, or as part of another component of the machine 21. Uses and functioning of the debit card dispenser 23 will be described below in the context of Figure 3.

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With reference to Figure 2, a further embodiment of a currency exchange machine 21 is schematically illustrated. The currency exchange machine 21 includes the currency input 13, the currency output 15, the user input 17 and the user output 18 described above in the context of Figure 1. Instead of a debit card dispenser 23 and debit card activator, the currency exchange machine 21 includes a SIM card dispenser 43 and SIM card activator. In the illustrated embodiment, the SIM card dispenser 43 is separate from the currency output 15. However, in other examples, the SIM card dispenser 43 may be included as part of the currency output 15, or as part of another component of the machine 21. Uses and functioning of the SIM card dispenser 43 will be described below in the context of Figure 3.

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With reference to Figure 3, another embodiment of a currency exchange machine 31 is schematically illustrated. The currency exchange machine 31 includes the currency input 13, the currency output 15, the user input 17 and the user output 18 discussed above in the contexts of Figures 1 and 2. The currency exchange machine 31 also includes the debit card dispenser 23 and debit card activator discussed above in the context of Figure 1, the SIM card dispenser 43 and SIM card activator discussed above in the context of Figure 2, and a camera 19.

30

The currency exchange machine 31 is arranged to determine or estimate, using the camera 19, a characteristic of a person within a predetermined distance of the machine. The predetermined distance may for example be the limit of the field of view of the camera 19 or another distance below that limit. The characteristic may for instance be a facial dimension, a height, a weight, a limb length, an age, a sex, a skin colour, or an eye colour of the person within the predetermined distance.

The currency exchange machine 31 may be arranged to use the characteristic to try to identify the person. For example, the currency exchange machine 31 may include or be able to access a database of characteristics associated with known users or prospective users of the machine 31. The machine 31, after determining that a person within the predetermined distance of the machine 31 has a particular hair colour, height and sex (or different permutation of characteristics), may consult the database of characteristics to try to identify the person. The machine 31 may be able to identify the person with a certain degree of confidence, depending on the characteristic(s) of the person it has determined. The machine 31 might prepare a shortlist of entries from the database that the characteristic(s) correspond(s) to.

The currency exchange machine 31 may be arranged to use the characteristic(s) to prepare an order of currency. For example, if, using the database described above, the machine 31 has identified a person within the predetermined distance with a given degree of confidence, the machine 31 may begin preparing an order for that person, by preparing a particular set of notes, coins and/or other token(s) or goods to issue to the person. To make this possible, the above database of characteristics may include or be linked to information about orders placed via a web interface of the currency exchange machine, or may include information about preferences of particular people.

For example, after identifying the person with the given degree of confidence, the machine 31 may determine from the database that that person's preference is for a mix of notes and/or coins according to a certain ratio of different denominations. The preference may be a global preference for that person, i.e. a preference to be applied to all orders and set on user registration or subsequently using the machine or another interface, or may be an order-specific preference entered when a specific order was placed. This may enable the currency exchange machine 31 to provide the person with his or her order more promptly and preferably also in a ratio of notes and/or coins of different denominations

specified by the person. In the absence of a global or specific preference, the machine 31 may issue notes and/or coins according to a default ratio of notes and/or coins, e.g. a default ratio for a specific sum to be issued. The machine may also be able to suggest a ratio of notes and/or coins of different denominations based on previous selections the user has made, previous selections other users have made for similar sums of money, or based on other criteria such as optimising the numbers of notes and/or coins left inside the machine. The user input 17 may also allow a user to specify a desired denomination or mix of denominations when collecting currency at the machine 31.

The currency exchange machine 31 may additionally or alternatively be arranged to display an image, a video or a message on a display associated with the machine (such as the user output 18 or another display) based on the determined characteristic. The image, video or message may for example be or include a greeting; an instruction to provide verification of the person's identity (e.g. in order for the machine 31 to allow the person to collect a specific order of currency already placed by that person); an advert or message targeted at that particular person or that person's demographic; and/or information about levels of currency currently available in the machine 31.

To enable the machine 31 to display information about levels of currency currently available in the machine 31, the machine 31 may include one or more sensors arranged to determine a number of coins and/or a number of notes inside the machine. The machine 31 may be arranged to transmit information about the determined number(s) of coins and/or notes to a remote device such as a server and/or a user device. The machine may for example be arranged to compare a determined number of coins and/or notes against a predetermined or preset number of coins and/or notes. This may enable the machine 31 to inform users of the machine that stocks of a particular currency or set of notes and/or coins are low to encourage the users to collect orders promptly or to try to prevent them from making a wasted journey, and/or to inform an administrator or operator of the currency exchange machine 31 that particular coins and/or notes need to be removed from the machine or restocked.

The currency exchange machine 31 may record a number of people passing within the predetermined distance of the machine 31 in a given time period. The currency exchange machine 31 may be arranged to record characteristics (e.g. facial dimensions, heights, weights, limb lengths, ages, sexes, skin colours, eye colours, etc.) associated with the

people passing within the predetermined distance of the machine 31 in the given time period in a database, such as the database described above or a separate database. The machine 31 may therefore be able to gather information about not only footfall near the machine 31 but also the demographics of the footfall.

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In the illustrated embodiment, the currency input 13 is arranged to receive a plurality of different currencies. The currency input 13 may for instance be arranged to receive euro, a pre-euro European currency, United States dollar, pound sterling, Japanese yen, Chinese renminbi, Korean Republic Won, Indian rupees and/or other currencies, including
10 cryptocurrencies such as Bitcoin and/or Ethereum. The currency input 13 may accept low-value and high-value coins and/or notes. Analogously, the currency output 15 may issue low-value and high-value coins and/or notes. The currency exchange machine 31 may therefore enable a user to exchange a number of low-value coins or notes of one currency for higher-value coins or notes of the same currency or a different currency, or vice versa.

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In the illustrated embodiment, the SIM card dispenser 43 is arranged to dispense SIM cards for use in mobile phones, tablets and other portable devices that connect to networks requiring subscriber identification, such as mobile telecommunication networks. The SIM card dispenser 43 may for example include one or more conveyor systems for moving a
20 SIM card from a SIM card repository in the currency exchange machine 31 and ejecting the SIM card from the machine. A user of the currency exchange machine 31 may purchase a SIM card from the machine 31, e.g. by inserting coins, notes and/or a payment card into the currency input 13 to pay a value (e.g. a value specified on the user output 18 of the machine 31) for a particular type of SIM card. The machine 31 may be arranged to
25 dispense a plurality of different types of SIM card, such as "nano" SIM cards, "micro" SIM cards, standard SIM cards and/or other varieties of SIM card.

The illustrated currency exchange machine 31 also includes a SIM card activator arranged to activate SIM cards. This may enable a user of the machine 31 who has just purchased
30 a SIM card from the machine 31 to activate the SIM card with a mobile phone network operator, at the machine 31. The SIM card activator may require the user to scan or image a bar code, a QR code or another identifying mark or text on the SIM card or the SIM card's packaging, or displayed on the screen of a mobile phone into which the user has inserted the SIM card, using a camera (such as the camera 19) or a scanner forming part of the
35 machine 31. Alternatively, the machine may be arranged for one of these processes to

happen as the SIM card is retrieved from its repository and dispensed to the user through the card dispenser. The currency exchange machine 31 may then communicate with the mobile phone network operator via the internet or another connection to activate the SIM card the user has purchased, so that the user can quickly and conveniently obtain an active
5 SIM card using the machine 31. The SIM card may be issued by the currency exchange machine in a fully activated and ready-to-use state.

The currency exchange machine 31 may furthermore be arranged to communicate with a mobile phone network operator to arrange for credit or airtime to be added to a SIM card
10 account (e.g. a pay-as-you-go SIM card account). This may for example be an account associated with a SIM card purchased from the machine 31. A user of the machine 31 may therefore add credit/airtime to the account associated with the SIM card he or she has purchased from the machine 31, or to an account associated with a SIM card obtained elsewhere. The user may be able to insert notes, coins, a card or other currency or value
15 storage into the currency input 13 to pay a value (e.g. a value displayed on the user output 18 of the machine 31) for topping up the SIM account with credit/airtime. The user may be required to scan a bar code, a QR code or another identifying mark or text on the SIM card or the SIM card's packaging, or displayed on the screen of a phone in which the user is using the SIM card, to enable the currency exchange machine 31 to identify the
20 SIM card account that is to be topped up. The user of the currency exchange machine 31 may therefore be able to activate and/or top up a purchased SIM card immediately, at the machine 31, without making a telephone or sending an SMS to a network operator.

The currency exchange machine 31 may include a SIM card determiner arranged to
25 determine a type of SIM card suitable for a particular mobile phone, tablet or other device. A user of the machine 31 may be able to scan his or her device using the SIM card determiner or a camera/scanner associated with the machine 31 to determine which kind of SIM card his or her device accepts. When the machine 31 has scanned the device, the user output 18 may display the kind(s) of SIM card ("nano", "micro", standard) accepted
30 by that device and/or may initiate a transaction for the user to purchase a specific kind of SIM card determined to be accepted by the device.

The illustrated currency exchange machine 31 also includes a debit card dispenser 23
arranged to dispense debit cards and possibly other payment cards. The debit card
35 dispenser 23 may for instance be arranged to dispense debit, credit and/or pre-paid

payment cards. The machine 31 also includes a card activator arranged to activate a card dispensed by the debit card dispenser 23. As described above in the context of SIM cards, this may for example involve scanning or imaging a mark or text on the card or its packaging to identify the card, or it may involve detection of an RFID tag forming part of the card. The machine 31 may then connect to a bank or other financial services provider to activate the debit, credit or pre-paid payment card for use by the user, e.g. using a wired or wireless connection of the currency exchange machine, and/or may update its own database or register of cards issued at the machine and their respective states of activation.

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The debit card dispenser 23 may be arranged to issue cards to users in connection with orders placed remotely from the machine 31, e.g. online, via telephone, or at a shop or a bank or other financial services institution, and in response to requests made at the machine 31 itself. A user may, for example, order a foreign SIM, debit, credit or pre-paid payment card at a shop or bank in his or her home country in advance of going abroad and collect the card from the machine 31 located in a foreign country. Alternatively, the user may order the card on the spot at the machine, or may place an order for a card by telephone (e.g. with a customer services department) for collection from the machine, such as if the user has lost his or her card and needs a new or replacement card.

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A user may be able to apply a credit to a debit, credit or other payment card at the currency exchange machine, e.g. to "top up" the debit, credit or other payment card.

Although in the illustrated embodiment the debit card dispenser 23 and the SIM card dispenser 43 are separate components, in other embodiments, the debit card dispenser 23 and the SIM card dispenser 43 may be the same component or part of the same component. Similarly, the debit card activator and the SIM card activator may be the same component or part of the same component.

30 The currency exchange machine 31 may be arranged to provide balance enquiry services. This may enable a user of the machine 31 to insert a debit, credit or pre-paid payment card and see a balance available to the user displayed on the user output 18 or another screen associated with the machine 31. The user output 18 may be arranged to display a transaction status to the user at all times during the transaction. For example, if network-based activity needs to take place during the transaction (such as contacting a remote

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server), the user output 18 may be arranged to display the status and/or progress of the transaction.

5 The machine 31 may also be arranged to provide cash withdrawal, payment and/or PIN services. This may enable a user of the machine 31 to insert a debit, credit or pre-paid payment card and withdraw cash of the third currency or another currency. It may enable a user of the machine 31 to transfer money from a first account (e.g. an account associated with the debit, credit or pre-paid payment card) to a second account. It may also enable the user to unlock a PIN, change a PIN or block the card.

10

The machine 31 may be arranged to initiate a transaction to receive currency (e.g. the first currency) or to send a currency (e.g. the second currency) via a payment network. For example, the machine may be arranged to allow a user of the machine to receive or send one or more of the first and second currencies via one or more of Amazon Pay, Android Pay, Apple Pay, Google Wallet, Mastercard, PayPal, Snapscan, Square, Visa and/or another payment service/source, as well as in coins and/or notes or using a blockchain- or distributed ledger-based currency. The machine 31 may be arranged to determine, via the internet or another connection, that a payment has already successfully been made for a product or service which the user has come to the machine to collect or receive. The machine may be arranged to issue or not issue the product/service based on this determination.

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The illustrated currency exchange machine 31 includes a voucher dispenser 27 arranged to dispense vouchers, tickets and coupons. These may be vouchers/tickets/coupons for shops, restaurants, cinemas, theatres, opera houses, music and/or other performance venues, utilities providers, or other services or locations. The voucher dispenser 27 may include means for encoding information in for example a magnetic strip or visual mark on a voucher/ticket/coupon.

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30 The currency exchange machine 31 may also be arranged to facilitate acquisition of insurance protection. A user of the currency exchange machine 31 may for example be able to select a travel insurance product from a plurality of different insurance products displayed on the user output 18. The user of the machine 31 may be able to enter information necessary for acquisition of the insurance protection via the user input 17 and/or by scanning information presented on a piece of paper or a screen of a mobile

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phone, tablet, etc. The user of the machine 31 may then be able to pay for the insurance product by inserting cash, coins and/or a card into the currency input 13, or by paying from a user account associated with the user of the machine 31.

5 One or more of the facilities of the currency exchange machine 31 mentioned above may require the user of the machine 31 to supply proof of identity, address and/or other credentials. Examples of such proof may be a passport, a utility bill, a driving licence, a wedding certificate or another document. The machine 31 may be able to recognise and/or image such documents using a camera of the machine (such as the camera 19) or
10 using a scanner forming part of the machine or associated with the machine (such as scanner 33 illustrated in Figure 3). The camera 19 and/or scanner 33 may include appropriate hardware and/or software to enable reading of printed text (such as a passport number, country of issuance, etc.), bar codes, QR codes and/or other visual marks, and/or to enable scanning of RFID information and other information encoded in non-visual form.

15 This may enable the machine 31 to ensure that a person collecting currency, a SIM card, a debit, credit or pre-paid payment card, or other goods or services has provided sufficient information for the administrator or operator of the machine 31 (or a third party) to comply with "know your customer" rules or legislation. The machine 31 may be arranged to carry
20 out a transaction only if appropriate verification of the user's identity or other credentials has been provided. The machine 31 may be arranged to display to a user a message explaining what information must be provided in order for a transaction to proceed.

The user may be able to complete an entire registration procedure at the machine 31 -
25 e.g. including entering personal information, such as full name, date of birth, address, passport number, facial photograph, voice recognition recording sample, etc., using the user input 17 and/or other components of the machine 31, and supplying proof of identity, address and/or other credentials using a camera or scanner of the machine (e.g. by scanning one or more pages of the user's passport).

30 Alternatively, the user may be able to initiate a registration procedure elsewhere (e.g. online, via an app or at a bank or other financial institution, such as a bank in a different country from the country in which the machine 31 is located), and to provide his or her passport and/or other document(s) for scanning and pay for and/or collect currency
35 notes/coins, a debit/credit/pre-paid payment card, a SIM card or other products/services

at the machine. Such a registration procedure may be required only for certain types of transaction, e.g. for currency exchange over a certain value, or for services such as an active SIM card, an active debit card, an active credit card or similar. The machine 31 may be arranged to prompt the user to enter the information and/or provide the confirmation
5 necessary for the goods or services the user has selected at the machine.

The currency exchange machine 31 may also include a biometric scanner 34 to facilitate verification of user identity. The machine 31 may for instance be able to read encoded biometric information from a passport presented to the camera 19 or document scanner 33
10 and to verify that that biometric information corresponds to the person by scanning the person using the biometric scanner 34. The biometric scanner 34 may be a hand and/or fingerprint scanner, a retina and/or iris scanner, or another form of scanner. In some embodiments, the biometric scanner 34 may be or be part of the camera 19. The biometric scanner 34 might also be used as part of a registration procedure at the machine 31. For
15 instance, on registering at the machine 31, the user may be required to scan his or her hand or fingerprints using the scanner 34. When collecting orders or completing other transactions in the future, the user may be required to scan his or her hand or fingerprints again using the scanner 34. The scans may be compared to see that the registration hand or fingerprint scans correlate to the later scans.

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To enable some of the above and/or additional functionality, the currency exchange machine 31 may include a near field communication transmitter and/or receiver, and/or another form of transmitter/receiver arranged to communicate with nearby devices, such as a Bluetooth transmitter/receiver. The SIM card determiner discussed above may for
25 instance be or include a near field communication transmitter and/or receiver arranged to communicate with a corresponding near field communication transmitter and/or receiver in a mobile phone, tablet or other electronic device to identify the type(s) of SIM card that that device can receive.

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In some embodiments, the currency exchange machine 31 may include a microphone 35. The microphone 35 may for example be part of the user input 17 or be a separate component of the machine 31. In such embodiments, the machine 31 is arranged to process sounds recorded using the microphone and to determine user inputs from the recorded sounds. This may enable a user of the machine 31 to request goods or services
35 and/or to make or confirm selections orally. It may also enable a user of the machine to

communicate with a remote customer services team if the user encounters difficulty with the machine, and/or to use other services provided at the machine 31. In such circumstances, the user output 18 may be arranged to project the voice and/or display an image of a customer services representative, so that the user of the machine 31 can hear and/or see the representative to receive help and/or other services.

The machine 31 may additionally be arranged to allow a user to conduct audio and/or visual transactions with other users. The machine may for instance include a Google Hangouts, GoToMeeting, Skype, Viber or other audio/visual conference application interface. A user of the machine may be able to log in to the service (e.g. using his or her own credentials) and contact users of the service at other locations in real time. Alternatively or additionally, the user may be able to record audio or visual messages and send or upload them for other users to listen to and/or watch at a later time. Components of the machine 31 such as the user input 17 and/or user output 18 may receive and/or play the corresponding audio and/or video.

As discussed above, the currency exchange machine 31 may be arranged to facilitate currency transfer transactions between users. In particular, a first user at a first machine may be able to insert currency (e.g. in the first currency and other currencies, if desired) into the currency input 13 and initiate a transfer to a second user. The currency may be transferred from an account associated with the first user to an account associated with the second user. These accounts may be bank accounts or accounts offered by the administrator or operator of the currency exchange machine 31.

The second user may be able to collect the money from his or her account at the first machine, at a second currency exchange machine located elsewhere, online, or at a bank or other financial institution, depending on the nature of the account to which funds were transferred. This may enable in-country and/or cross-border money transfers to take place between users.

Accounts offered by the administrator or operator of the machine 31 may allow users to maintain sub-accounts in different currencies and to conduct transactions into and out of the sub-accounts. The user may for example transfer money between a first sub-account and a second sub-account in advance of needing money in the currency associated with the second account. This may allow a user to fix a rate of currency exchange in advance

of travelling to a foreign country, e.g. if the user believes rates are currently more favourable than they are likely to be on arrival in the foreign country, rather than conducting an exchange transaction after arrival in the foreign country.

5 Some users may have access to different currency exchange rates from other users. For example, users who register for the accounts described above which are offered by the administrator or operator of the machine 31 may obtain access to different exchange rates from users who do not register for such accounts. Users who register for such accounts may for example be eligible for more competitive exchange rates than users who do not
10 register for such accounts. The exchange rates available to users of the machine 31 may additionally or alternatively be varied in dependence upon the sums of currency the users wish to exchange. For instance, a user who wishes to exchange £1000 may have access to a different currency exchange rate from a customer who wishes to exchange £500.

15 The machine may be arranged to enable the first user or the second user to authenticate him- or herself in order to send or receive money using the machine, e.g. using the camera, scanner or other mechanisms discussed above, and/or using a password or other form of security. The machine 31 may require two-stage authentication to allow a deposit, a transfer and/or a collection. For instance, one or both of the first user and the second user
20 may be required to enter or pass a combination of 2 of: a confirmation PIN, a QR code, a hand or fingerprint scan, a passport scan, voice recognition and/or facial recognition.

The currency exchange machine 31 may be locally and/or remotely configurable. This may enable an administrator or operator of the machine to implement software changes, change currency exchange rates, change default settings such as default ratios or
25 permutations of note and/or coin denominations paid out for specific sums of money, add new functionality to a user interface of the machine, change messages or adverts displayed on a display associated with the machine, and/or make other changes locally or from afar. This may be effected via the internet or another connection. The machine 31
30 may have wired and/or wireless connection to the internet. In some embodiments, for example, the machine may include hardware and software for connecting to a mobile phone network such as a 2G, 3G, 4G or 5G network. The machine 31 may be part of a group or groups of machines within a location, area, region or country which the administrator or operator of the machine can configure substantially simultaneously.

The currency exchange machine 31 illustrated in Figure 3 includes an antenna 37 arranged to allow wireless LAN connectivity between the machine and other devices. The machine 31 may be arranged to host a wireless LAN. The machine 31 may enable users to connect to the wireless LAN and/or use services provided via the wireless LAN (such as internet connectivity, content streaming, etc.) using user credentials. The credentials may for example be a username and/or a password associated with a user account which the user can use at the machine (e.g. an account used by a user to exchange or transfer currency or purchase a SIM card and/or credit/airtime). The machine 31 may be arranged to control a length of time for which a respective user may use the wireless LAN or services provided via the wireless LAN. For example, users may be permitted to use the wireless LAN (or services) for a certain period of time without cost. The machine 31 may also enable the user to purchase wireless LAN connection time by inserting coins and/or notes of one or more currencies into the currency input 13. The machine 31 may be arranged to control users' access to the wireless LAN or services provided via the wireless LAN based on properties associated with a user account. For instance, a user who routinely conducts large (e.g. high-value) transactions using the machine 31 or other machines operated by the same operator may be granted lengthier and/or less restricted access to the wireless LAN and/or services provided via the wireless LAN relative to other users.

The currency exchange machine 31 may be arranged to transmit user information (e.g. information about a user or information entered by a user) to a remote server. The currency exchange machine 31 may for example include an application arranged to transmit user information to a remote server such as a Facebook, Google+, Twitter, Weibo or other social networking platform server. This may allow a user of the machine to: update his or her profile on the corresponding remote server; upload text, pictures, videos or other data to the remote server; notify other users of the social network(s) that the user has arrived in the place where the machine 31 is located (e.g. in a different country from the user's home country); notify other users that the user is using or has used the machine 31 to complete a transaction; or enter competitions on the social network(s) once the user's transaction is complete. The application may be a web browser or a dedicated application. This facility may be combined with the machine's near field communication, Bluetooth, wireless LAN and/or other connectivity functionality to enable the user to transfer text, photos, videos, etc. from his or her mobile phone, tablet or other device to the machine 31 for upload to the remote server.

In some embodiments, the machine 31 is arranged to allow playback of audio and/or visual content. For example, the user may be able to select a film or a television or radio programme for playback on the user output 18 or another output of the machine 31. This may include a live television stream or other live content received via satellite, cable, aerial
5 or the internet, or pre-recorded content.

The machine 31 may also be arranged to automatically play a video or an audio recording, or to automatically display an image or text, to a user identified by the machine 31 using the camera 19. The video, audio recording, image or text may for example be or include
10 current exchange rates, adverts, news, weather information (e.g. current/forecast temperature, precipitation, etc.), location-based information such as opening hours of nearby attractions and facilities, or other information. The machine 31 may be arranged to recognise users or groups of users waiting to use the machine or passing the machine 31, e.g. using demographic characteristics of the users determined using the
15 camera 19, and to display specific content (e.g. videos, images or text containing adverts) for those users or groups of users to see based on the determined demographic characteristics. The machine 31 may be arranged to display the content on any display associated with the machine 31 (e.g. the user output 18 or another display, such as a display on a side of the machine 31 or a display attached to a wall near the machine 31).

20 The illustrated currency exchange machine 31 includes a motion sensor 39 arranged to sense movement of the machine. In particular, the motion sensor 39 is arranged to determine a magnitude of movement of the machine. The sensor 39 and/or the machine 31 may be arranged to compare the determined magnitude against a
25 predetermined threshold of movement. The machine 31 also includes an alarm device arranged to indicate that the magnitude of movement of the machine is greater than the predetermined threshold of movement. The alarm device may alert nearby individuals to nefarious activity, such as attempted theft of or damage to the currency exchange machine 31. The alarm device may also be arranged to send a message to a remote
30 location to indicate that the alarm has been triggered. This may inform an administrator or operator of the machine 31 who is not located near the machine that nefarious activity may be taking place.

The currency input 13 may be arranged such that it accepts a limited number of currencies,
35 such as a first currency only, or a first currency and a second currency only. Analogously,

the currency output 15 may be arranged such that it issues a limited number of currencies, such as a second currency only or a third currency and a fourth currency only. Alternatively and/or additionally, the currency input 13 may be arranged such that it accepts notes only or coins only. Analogously, the currency output 15 may be arranged such that issues
5 notes only or coins only. In other embodiments, the currency input 13 and currency output 15 may accept and issue a large number of currencies, respectively, (e.g. 10 or more currencies in total) in various denominations of note and coin. This may advantageously allow the size of the machine 31 to be optimised for an intended use, e.g. to make the machine more suitable for use in certain locations or for certain applications.
10 Different embodiments of the machine may have different footprints, heights, weights and other dimensions or properties according to the intended use.

The machine 31 may include memory arranged to store information about exchange rates, ratios of notes and/or coins for paying out sums of money and other details relating to
15 transactions initiated and/or conducted at the machine 31. This may enable a machine to continue providing services if it is not connected to the internet.

In some embodiments, the machine 31 is arranged to email or otherwise send to the user a confirmation, an invoice or another document relating to a transaction the user has
20 initiated, verified or completed at the machine 31. The machine 31 may be arranged to apply to the document an image, such as an advert. The machine 31 may be arranged to apply a specific image (e.g. advert) to the document based on a characteristic of the user, such as a demographic to which the user belongs, a recent purchase the user has made, or another known or determined fact about the user. In some embodiments, the
25 machine 31 may also be arranged to print a hard copy of the confirmation, invoice or other document for the user.

As mentioned above, the machine 31 may be arranged to allow a user to complete an entire registration and product-/service-obtaining process at the machine, i.e. to enter
30 information using the user input 17, scan documents and/or verify the user's identity using the scanners 33, 34 and/or the camera 19, and receive a product and/or a service at the machine 31. In such cases, the machine 31 facilitates immediate access to the desired product and/or service.

However, a user may also be able to complete one or more steps in another location. For example, a user may be able to use a mobile phone or tablet application (e.g. an application (app) provided by an administrator or operator of the machine 31) to complete some of the steps remotely from the machine. In such cases, the mobile phone or table
5 application may constitute a "user input" of the machine.

A user may be able to enter registration information via the mobile phone or tablet app (e.g. name, address and other personal details). The user may be able to scan documents or verify his or her identity via the mobile phone or tablet app, e.g. by photographing him-
10 or herself, providing a recording of his or her voice for voice recognition purposes, photographing or uploading documents proving his or her identity, address, etc. such as a passport or utility bill.

The user may also be able to place an order via the app, such as an order for foreign
15 currency, a "micro" SIM card and a debit card, and specify that he or she wishes to collect the currency, SIM card and debit card in a particular area (e.g. from one or more machines in the area, which the user may specify or may be specified automatically based on the number of machines in the area). Information about the order may then be transferred from the app to the one or more machines in the area specified by the user (e.g. via one
20 or more servers). The user may then be able to collect the pre-ordered goods from one of those machines and, if necessary, to activate them at one of those machines. Depending on the nature of the goods/services, the machine may be arranged to activate them automatically when they are issued, or to activate them in response to further input or actions by the user.

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The user may be able to use the app to perform other functions relating to goods or services obtained or obtainable from the machine. For instance, the user may be able to top up a pre-paid payment card via the app, or to view details associated with the debit/credit account (such as balance, interest or other figures associated with the
30 account). The user may be able to pay off balances associated with a debit or credit card and to pre-load such cards with money via the app.

The app may also enable the user to find a currency exchange machine near the user's current location. To facilitate this, the app may use a geolocation sensor forming part of
35 the user's phone, tablet or other device, and/or may prompt the user to input his or her

current location via a user input of the device. The app may display the nearby currency exchange machines in a list and/or on a map on the user output of the device. The app may be arranged to provide information about the nearby exchange machines, such as availability of particular currencies and denominations at those machines, current queue
5 lengths at those machines, and distances to those machines from the user's location. The app may be able to provide a user with navigation instructions for getting to a currency exchange machine from the user's current location - e.g. by car, bus, bicycle, train, tube, or on foot.

10 The app may be arranged to notify the user of current exchange rates and/or of the locations of nearby currency exchange machines. For instance, the app may determine that the user is going to or in a different country and may provide information about the current exchange rates between a currency of the destination country and another
15 currency, such as a currency of the country the user is leaving or a currency in an account of the user. The app may also prompt the user to order goods or services offered at currency exchange machines in the destination country, such as a pre-paid payment card or a SIM card.

The app may allow a user to connect to or access data via a wireless LAN hosted at a
20 currency exchange machine.

The app may also allow a user to transmit user information (e.g. information about a user or information entered by a user) to a remote server. The app may for example be arranged to transmit user information to a remote server such as a Facebook, Google+,
25 Twitter, Weibo or other social networking platform server. This may allow a user of the app to: update his or her profile on the corresponding remote server; upload text, pictures, videos or other data to the remote server; notify other users of the social network(s) that the user has arrived in a new country; notify other users that the user is using or has used a currency exchange machine to complete a transaction; or enter competitions on the
30 social network(s). The notifications may include additional information relating to the administrator or operator of a currency exchange machine or app, e.g. an advert relating to the administrator or operator.

The app may allow a user to receive electronically a confirmation, an invoice or another
35 document relating to a transaction the user has initiated, verified or completed at a

currency exchange machine. The app may enable the user to forward the confirmation, invoice or other document by email. The app may be arranged to store a confirmation, an invoice or another document for a pre-determined period of time (e.g. 1 week, 1 month or indefinitely), depending on user preference and/or a default app setting.

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The app may allow a user to exchange currency in his or her account for a voucher, ticket or coupon, or vice versa.

The app may allow a user to purchase a SIM card for his or her mobile phone, tablet or other device, using data from the device to determine which kind of SIM card(s) the device accepts. The app may also allow the user to top up a SIM card. Similarly, the app may allow the user to purchase a pre-paid payment card, a debit card or a credit card, or a travel insurance policy.

15 The app may be arranged to facilitate currency transfer transactions between users. In particular, a first user of the app may be able to initiate a transfer to a second user. The currency may be transferred from an account associated with the first user to an account associated with the second user. These accounts may be bank accounts or accounts offered by an administrator or operator of a currency exchange machine.

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The second user may be able to collect the money from his or her account using the app, at a currency exchange machine, through a web browser, or at a bank or other financial institution, depending on the nature of the account to which funds were transferred. This may enable in-country and/or cross-border money transfers to take place between users.

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The app may enable the first user or the second user to authenticate him- or herself in order to send or receive money using the app, e.g. using a camera of a device on which the app is running to scan a document or for facial recognition, using a microphone of the device for speech recognition, using a fingerprint scanner of the device for fingerprint recognition, and/or using a password or other form of security. The app may require two-stage authentication to allow a deposit, a transfer and/or a collection of money to or from a user's account. For instance, one or both of the first user and the second user may be required to enter or pass a combination of 2 of: a confirmation PIN, a QR code, a fingerprint scan, a passport scan, voice recognition and/or facial recognition. The app may provide

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the first and/or second user with confirmation (e.g. via email or notification on a device) that a transaction has taken place.

The app may be arranged to integrate with other apps, such as Concur, Hotels.com, Kayak, TripAdvisor and Triplt. The app may provide information to other apps, such as
5 copies of invoices and details about currency exchange transactions, and may receive information from other apps. The app may be arranged to display offers associated with providers of other apps and/or the operator of a currency exchange machine in conjunction with which the app can be used. For instance, a user may be presented with a voucher,
10 a coupon or a ticket for redeeming with providers of other apps and/or other services, or for redeeming via the currency exchange machine.

The app may be arranged to allow users to maintain sub-accounts in different currencies and to conduct transactions into and out of the sub-accounts. The user may for example
15 transfer money between a first sub-account and a second sub-account in advance of needing money in the currency associated with the second account. This may allow a user to fix a rate of currency exchange in advance of travelling to a foreign country, e.g. if the user believes rates are currently more favourable than they are likely to be on arrival in the foreign country, rather than conducting an exchange transaction after arrival in the
20 foreign country. The user may hold balances in multiple different currencies at once.

With reference to Figure 4, a further embodiment of a currency exchange machine 41 is schematically illustrated. The currency exchange machine 41 includes the currency input 13, the currency output 15, the user input 17 and the user output 18 described above
25 in the contexts of Figures 1, 2 and 3. The currency exchange machine 41 is arranged such that at least one of the currency input 13 and the currency output 15 can transact in a cryptocurrency. For example, the currency input 13 may be able to receive a cryptocurrency, and/or the currency output 15 may be able to issue a cryptocurrency, as described above in the context of Figure 3.

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In some embodiments, a currency exchange machine which is able to receive and/or issue cryptocurrencies may additionally be arranged to create cryptocurrency value (e.g. to carry out Bitcoin mining). For example, the currency exchange machine may be arranged to carry out such activities when the currency exchange machine is not in use by a user and
35 the on-board processing apparatus would otherwise be at minimal usage.

Although in the above description some features were described in the context of the embodiment of a currency exchange machine illustrated in Figure 3, those features may apply equally to the embodiments illustrated in other Figures. As examples, although the
5 currency exchange machine 11 illustrated in Figure 1 does not include a SIM card dispenser 43 or a SIM card activator, the currency exchange machine 11 might include those and/or one or more of the other features discussed in the preceding paragraphs in relation to the currency exchange machine 31 illustrated in Figure 3, and although the
10 currency exchange machine 21 illustrated in Figure 2 does not include a debit card dispenser 23 and a debit card activator, the currency exchange machine 21 might include those and/or one or more of the other features discussed in the preceding paragraphs in relation to the currency exchange machine 31 illustrated in Figure 3.

Although the illustrated currency exchange machine 31 includes only a single camera 19,
15 in other embodiments, a plurality of cameras may be provided. The cameras may separately collect data about numbers of people passing within a predetermined distance or predetermined distances of the cameras, may separately determine characteristics associated with people passing within the predetermined distance(s) of the cameras, and/or may corroborate each other's conclusions about numbers of people and/or
20 associated characteristics. The results of the separate cameras' counting and/or determinations may be used to affect what is displayed on separate displays associated with a currency exchange machine. For example, one camera may be located on or near a first side of the currency exchange machine and may affect information displayed on a first display on or near the first side of the currency exchange machine, and another
25 camera may be located on or near a second side of the currency exchange machine and may affect information displayed on a second display on or near the second side of the currency exchange machine.

CLAIMS

1. A currency exchange machine including:
 - a currency input (13) arranged to receive at least a first currency;
 - 5 a currency output (15) arranged to issue at least a second currency that is different from the first currency;
 - a user input (17) arranged to receive inputs from a user of the currency exchange machine;
 - a user output (18) arranged to provide information to the user of the currency
 - 10 exchange machine;
 - at least one of a camera (19) and a scanner (33, 34), arranged to enable the currency exchange machine to collect or verify information relating to a user of the currency exchange machine;
 - a debit card dispenser (23) and a debit card activator arranged to dispense an
 - 15 activated debit card for use by the user; and
 - a SIM card dispenser and a SIM card activator arranged to dispense an activated SIM card for use by the user,
 - wherein one of the first currency and the second currency is a cryptocurrency.
- 20 2. A currency exchange machine as claimed in claim 1 wherein one of the first and second currencies comprises euro, a pre-euro European currency, United States dollar, pound sterling, Japanese yen, Chinese renminbi or Korean Republic Won.
3. A currency exchange machine as claimed in claim 1 or claim 2 wherein the
- 25 currency input (13) is arranged to receive notes and/or coins.
4. A currency exchange machine as claimed in any preceding claim wherein the currency output (15) is arranged to issue notes and/or coins.
- 30 5. A currency exchange machine as claimed in any preceding claim wherein the machine is arranged to determine or estimate, using the camera, a characteristic of a person within a predetermined distance of the machine.

6. A currency exchange machine as claimed in claim 5 wherein the characteristic comprises a facial dimension, a height, a weight, a limb length, an age, a sex, a skin tone, an eye colour.
- 5 7. A currency exchange machine as claimed in claim 5 or claim 6 wherein the machine is arranged to use the characteristic to identify the person.
8. A currency exchange machine as claimed in any of claims 5 to 7 wherein the machine is arranged to use the characteristic to prepare an order of currency.
- 10 9. A currency exchange machine as claimed in any of claims 5 to 8 wherein the machine is arranged to display an image or message on a display associated with the machine, based on the determined characteristic.
- 15 10. A currency exchange machine as claimed in claim 9 wherein the display is the user output (18).
11. A currency exchange machine as claimed in any of claims 5 to 10 wherein the machine is arranged to record the characteristic in a database.
- 20 12. A currency exchange machine as claimed in any of claims 5 to 11 wherein the machine is arranged to determine or estimate, using the camera, a number of people passing within a predetermined distance of the machine in a given time period.
- 25 13. A currency exchange machine as claimed in claim 12 wherein the machine is arranged to record the number of people passing within the predetermined distance of the machine in the given time period in a database.
- 30 14. A currency exchange machine as claimed in any of claims 5 to 11 wherein the machine is arranged to record characteristics of people passing within a predetermined distance of the machine in a given time period in the database.
15. A currency exchange machine as claimed in any preceding claim wherein the machine is arranged to determine a number of notes and/or coins in the machine.

16. A currency exchange machine as claimed in claim 15 wherein the machine is arranged to transmit information based on the determined number of notes and/or coins in the machine.

5 17. A currency exchange machine as claimed in claim 16 wherein the information includes a message indicating that a predetermined level of notes and/or coins in the machine has been reached.

10 18. A currency exchange machine as claimed in claim 16 or 17 wherein the information is transmitted to a server and/or a user device.

19. A currency exchange machine as claimed in any preceding claim wherein the machine is arranged to dispense a predetermined mix of notes and/or coins to a given user, based on user preferences.

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20. A currency exchange machine as claimed in claim 19 wherein the predetermined mix includes a ratio of denominations of notes and/or coins.

20 21. A currency exchange machine as claimed in any preceding claim wherein the SIM card dispenser and the SIM card activator are separate from the debit card dispenser and the debit card activator.

22. A currency exchange machine as claimed in any preceding claim wherein the debit card activator is arranged to activate debit cards dispensed by the debit card dispenser.

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23. A currency exchange machine as claimed in any preceding claim wherein the SIM card activator is arranged to activate SIM cards dispensed by the SIM card dispenser.

24. A currency exchange machine as claimed in any preceding claim additionally including a mobile phone SIM card determiner arranged to determine a type of SIM card suitable for a particular mobile phone.

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25. A currency exchange machine as claimed in any preceding claim wherein the machine is arranged to top up a pre-paid SIM card.

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26. A currency exchange machine as claimed in any preceding claim additionally including a voucher dispenser (27) arranged to dispense vouchers, tickets and/or coupons.
27. A currency exchange machine as claimed in any preceding claim wherein the
5 machine is arranged to facilitate acquisition of insurance protection.
28. A currency exchange machine as claimed in any preceding claim including a card reader (29) arranged to read chip-and-pin and/or magnetic strip credit and debit cards
- 10 29. A currency exchange machine as claimed in any preceding claim wherein the machine is arranged to provide balance enquiry, cash withdrawal and/or payment services.
30. A currency exchange machine as claimed in any preceding claim wherein the
15 machine is arranged to receive or issue the first and/or second currencies via a payment network.
31. A currency exchange machine as claimed in any preceding claim additionally including a near field communication transmitter and/or receiver.
- 20 32. A currency exchange machine as claimed in any preceding claim wherein the scanner comprises a document scanner (33).
33. A currency exchange machine as claimed in claim 32 wherein the document
25 scanner is arranged to scan passports.
34. A currency exchange machine as claimed in any preceding claim wherein the scanner comprises a biometric scanner (34).
35. A currency exchange machine as claimed in claim 34 wherein the biometric
30 scanner (34) comprises a hand and/or fingerprint scanner, or a retina and/or iris scanner.
36. A currency exchange machine as claimed in any preceding claim wherein the scanner comprises a QR code reader (33).

37. A currency exchange machine as claimed in any preceding claim additionally including a microphone (35), wherein the machine is arranged to process sounds received using the microphone.

5 38. A currency exchange machine as claimed in any preceding claim wherein the machine is arranged to facilitate transactions between users.

39. A currency exchange machine as claimed in any preceding claim wherein the machine is arranged to enable a user to authenticate him-/herself in order to send or
10 receive money using the machine.

40. A currency exchange machine as claimed in any preceding claim wherein the machine is locally and/or remotely configurable.

15 41. A currency exchange machine as claimed in any preceding claim wherein the machine is arranged to allow a user to conduct audio and/or visual transactions with other users.

42. A currency exchange machine as claimed in claim 41 wherein the machine is
20 arranged to allow the audio and/or visual transactions to occur in real time.

43. A currency exchange machine as claimed in claim 41 or 42 wherein the machine is arranged to allow a user to record an audio and/or visual message.

25 44. A currency exchange machine as claimed in any preceding claim additionally including an antenna (37) arranged to allow wireless LAN connectivity between the machine and other devices.

45. A currency exchange machine as claimed in claim 44 wherein the machine is
30 arranged to host a wireless LAN.

46. A currency exchange machine as claimed in any preceding claim wherein the machine is arranged to transmit user information to a remote server.

47. A currency exchange machine as claimed in any preceding claim additionally arranged to allow playback of audio and/or visual content.

48. A currency exchange machine as claimed in any preceding claim additionally including a motion sensor arranged to sense movement of the machine.

49. A currency exchange machine as claimed in claim 48 wherein the motion sensor is arranged to determine a magnitude of movement of the machine and to compare the determined magnitude against a predetermined threshold of movement.

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50. A currency exchange machine as claimed in claim 49 additionally including an alarm device arranged to indicate that the magnitude of movement of the machine is greater than the predetermined threshold of movement.

15 51. A currency exchange machine as claimed in any previous claim wherein the user input is located in or at the currency exchange machine.

52. A currency exchange machine as claimed in any of claims 1 to 50 wherein the user input is external to the currency exchange machine.

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53. A currency exchange machine as claimed in claim 52 wherein the user input comprises an application arranged for execution on a portable device or a desktop computer.

25 54. A currency exchange machine as claimed in any previous claim wherein the user output is located in or at the currency exchange machine.

55. A currency exchange machine as claimed in any of claims 1 to 53 wherein the user output is external to the currency exchange machine.

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56. A currency exchange machine as claimed in claim 55 wherein the user output comprises an application arranged for execution on a portable device or a desktop computer.

57. A currency exchange machine as claimed in any preceding claim wherein the at least one of a camera (19) and a scanner (33, 34) is located in or at the currency exchange machine.

5 58. A currency exchange machine as claimed in any of claims 1 to 56 wherein the at least one of a camera (19) and a scanner (33, 34) is external to the currency exchange machine.

59. A currency exchange machine including:
10 a currency input (13) arranged to receive at least a first currency;
a currency output (15) arranged to issue at least a second currency that is different from the first currency;
a user input (17) arranged to receive inputs from a user of the currency exchange machine;
15 a user output (18) arranged to provide information to the user of the currency exchange machine; and
a debit card dispenser (23) and a debit card activator arranged to dispense an activated debit card for use by the user.

20 60. A currency exchange machine including:
a currency input (13) arranged to receive at least a first currency;
a currency output (15) arranged to issue at least a second currency that is different from the first currency;
a user input (17) arranged to receive inputs from a user of the currency exchange
25 machine;
a user output (18) arranged to provide information to the user of the currency exchange machine; and
a SIM card dispenser and a SIM card activator arranged to dispense an activated SIM card for use by the user.

30 61. A currency exchange machine including:
a currency input (13) arranged to receive at least a first currency;
a currency output (15) arranged to issue a second currency that is different from the first currency;

a user input (17) arranged to receive inputs from a user of the currency exchange machine; and

a user output (18) arranged to provide information to the user of the currency exchange machine;

5 wherein at least one of the first currency and the second currency is a cryptocurrency.

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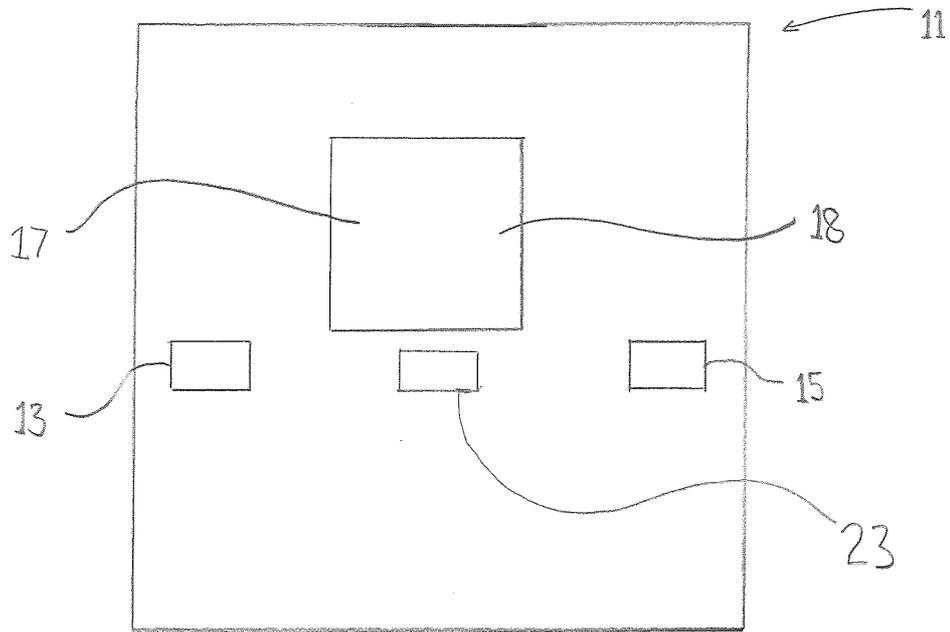
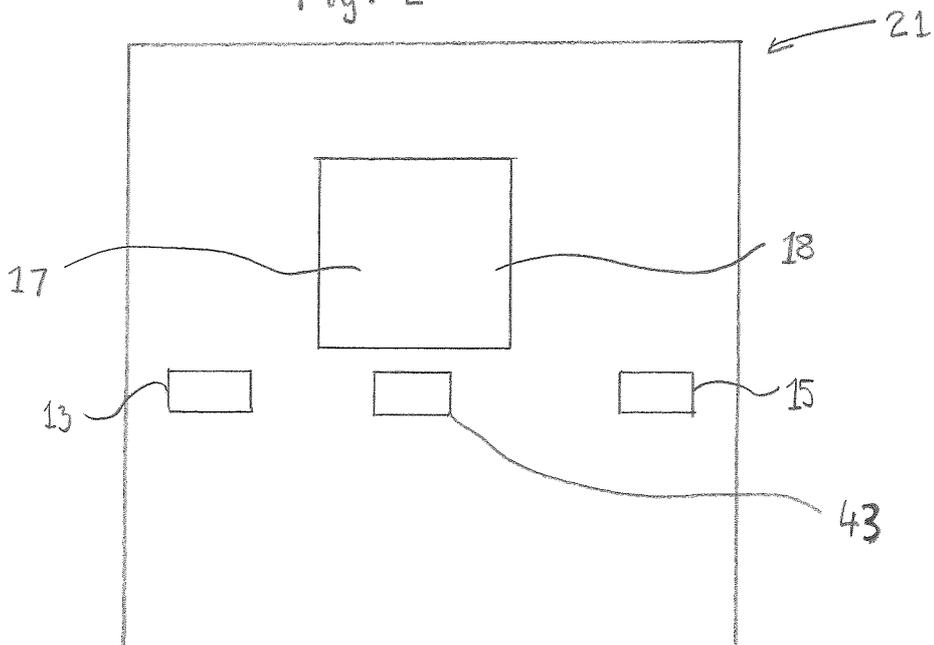


Fig. 1

Fig. 2



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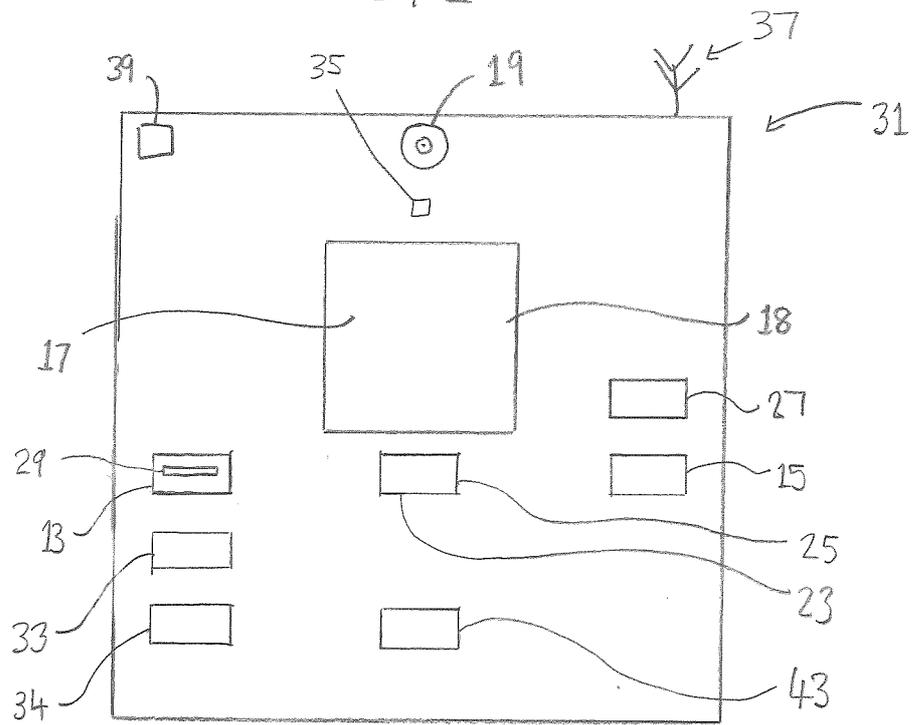
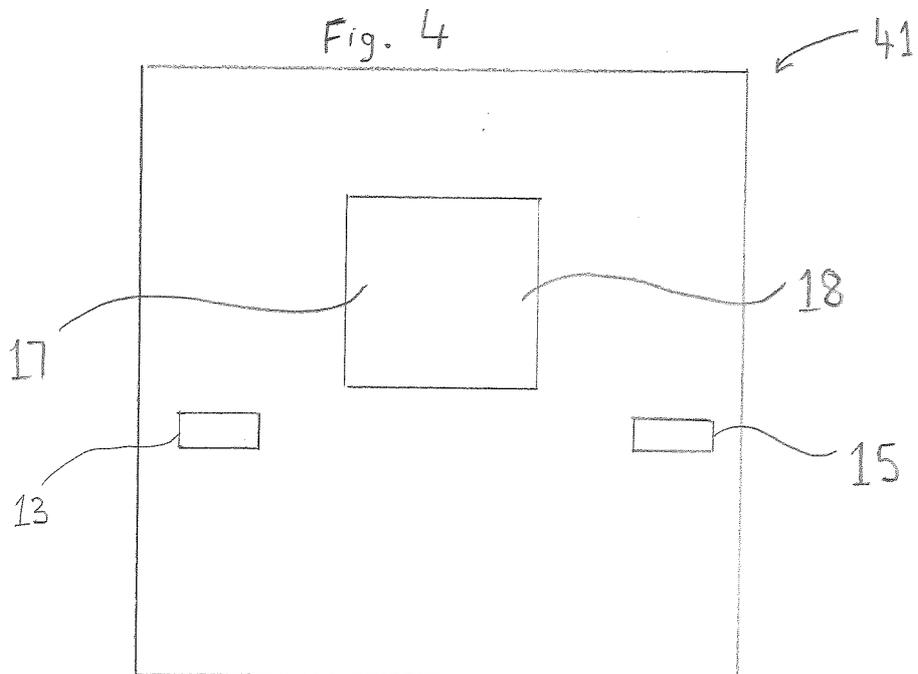


Fig. 3



INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2017/051912

A. CLASSIFICATION OF SUBJECT MATTER
 INV. G06Q20/18 G07F19/00 G06Q40/04
 ADD.
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 G06Q G07F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 EPO-Internal , WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 458 387 A (CUMMINS ALLISON CORP [US]) 23 September 2009 (2009-09-23) paragraph [0030] paragraph [0034] paragraph [0041] paragraph [0044] paragraph [0046] paragraph [0049] - paragraph [0074] paragraph [0082] - paragraph [0083] paragraph [0087] - paragraph [0090] paragraph [0098] - paragraph [0099] paragraph [0106] paragraph [0113] paragraph [0120] - paragraph [0131] paragraph [0142] figures 1,2,6 ----- -/- .	1-61

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 13 September 2017	Date of mailing of the international search report 21/09/2017
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Raymaekers , Jens
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INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2017/051912

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2011/270695 AI (JONES WILLIAM J [US] ET AL) 3 November 2011 (2011-11-03) paragraph [0003] - paragraph [0008] paragraph [0010] paragraph [0343] figure 1	5-14
A	----- US 6 822 550 BI (SIMS JOHN W [US] ET AL) 23 November 2004 (2004-11-23) column 3, line 14 - line 20 column 4, line 28 - line 40 column 7, line 1 - line 6 figure 2	48-50
A	----- US 8 261 976 BI (BLOCK JAMES [US] ET AL) 11 September 2012 (2012-09-11) column 21, line 33 - line 45 figure 18	48-50
A	----- US 2014/351075 AI (D ARGENIO MICHAEL J [US] ET AL) 27 November 2014 (2014-11-27) paragraph [0044] paragraph [0057] figure 5E	1-61
A	----- US 2013/304592 AI (WILLSON GUILLERMO BRILLEMBOURG [VE]) 14 November 2013 (2013-11-14) paragraph [0006] paragraph [0009] paragraph [0010] claim 1	1-61
A	----- US 9 135 787 BI (RUSSELL MARK [US] ET AL) 15 September 2015 (2015-09-15) column 4, line 42 - column 8, line 14 figures 1-3,5-7	1-61

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International application No PCT/GB2017/051912
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