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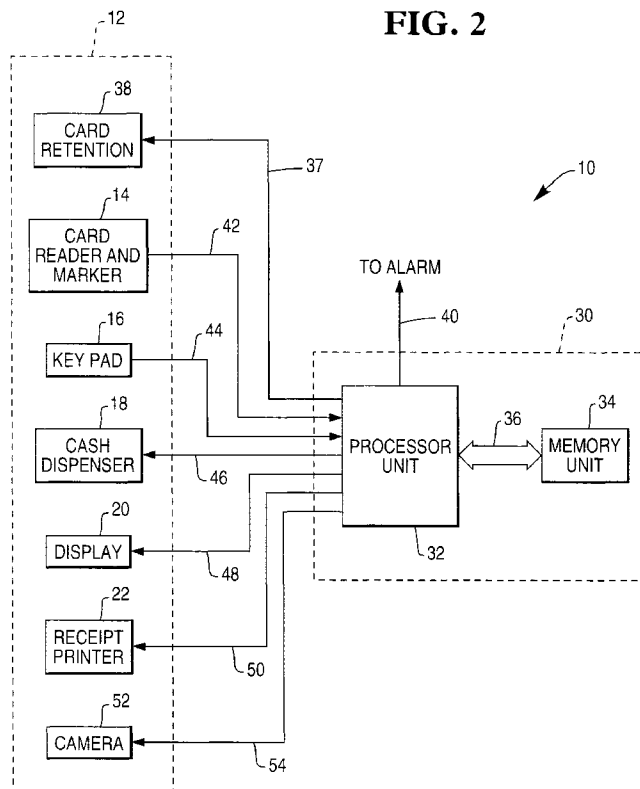
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NCR Limited,
206 Marylebone Road
London NW1 6LY (GB)**(54) **Anti-theft system for self-service terminal**

(57) An automated teller machine having a processor (32), a display (20), a key pad (16), and a cash dispenser slot (18) is provided with a memory unit (34) programmed to recognise a 'panic' code keyed in by a user under threat of personal attack or theft of cash or user

card. In response, the machine operates in an apparently normal way and displays apparently normal messages, to reduce the personal risk to the user while, for example, retaining the user's card and providing no cash. An alarm message may be sent to a police station or central security office.

FIG. 2

Description

The present invention relates to an anti-theft system for a self-service terminal, such as an automated teller machine (ATM).

A customer at a typical ATM initially inserts a user's identifying card into a card entry slot of a card reader. The customer then enters a personal identification number (PIN) to validate the card. After the user's identifying card is validated, the customer can perform many banking functions including deposits, cash withdrawals, and transfers of funds without the presence of a bank employee. Since the customer has access to cash withdrawals from the ATM and/or may have cash in hand while carrying out a financial transaction at the ATM, the customer needs to be alertly watchful of the area surrounding the ATM to avoid being victimized.

A criminal may approach a cardholder after a withdrawal of cash from an ATM, or during a withdrawal, or may force a cardholder to make a cash withdrawal, and may afterwards steal the cash, and possibly the card also.

One system of improving the personal security of the user of an ATM is described in our copending UK patent application No. 9601840.3 filed on 30 January 1996.

It is an object of the invention to provide an alternative or additional system for improving the personal security of the user of an ATM, and for reducing the financial risk to the user.

According to the invention there is provided a method of operating an automated teller machine (ATM), characterized by recognizing an input by a user indicating a perceived threat to said user, and modifying the operation of the ATM to reduce the risk to the user.

Optionally the input indicating a threat is a characteristic 'panic' code to be input through the input means of the ATM.

The invention will now be described by way of example only, with reference to the accompanying drawings, wherein:

Fig. 1 is a perspective view of an automated teller machine (ATM) according to the present invention; and

Fig. 2 is a block representation of the ATM of Fig. 1;

In Figure 1, the ATM 10 comprises a user interface in the form of a front panel 12. The front panel 12 includes a card reader 14, a key pad 16, a cash dispenser 18, a CRT display 20, and a receipt printer 22. The card reader 14 has a card slot through which a customer 24 can insert a user's identifying card 26 at the commencement of a transaction to be conducted by the customer 24. The cash dispenser 18 has a cash slot through which currency notes stored inside the ATM 10 can be delivered to the customer 24 during the transaction. The receipt printer 22 has a receipt slot through which a receipt

of the transaction is delivered to the customer 24 on termination of the transaction.

When the customer 24 inserts the user's identifying card 26 into the card slot of the card reader 14, the card reader reads data contained on the card. The customer 24 is then prompted on the CRT display 20 to enter a personal identification number (PIN) via the key pad 16. After the correct PIN is entered, menus are displayed on the display 20 to enable the customer 24 to carry out the desired transaction. After the transaction is completed, the receipt printer 22 prints a receipt of the transaction and delivers the receipt through the slot of the receipt printer 22 to the customer 24.

Referring to Figs. 1 and 2, the ATM 10 further comprises a controller unit 30 which communicates with components of the front panel 12. The controller unit 30 includes a processor unit 32, which receives input signals on lines 42, 44 from the card reader 14 and the key pad 16, respectively, and provides output signals on lines 46, 48, 50 to the cash dispenser 18, the display 20, and the receipt printer 22, respectively, to control the amount of cash dispensed by the cash dispenser 18, the information displayed on the display 20, and the information printed by the receipt printer 22.

All of the components of the ATM described above are conventional.

An ATM according to the invention further comprises a memory unit 34 connected to the processor 32 by a bus line 36. The processor unit 32 is also connected by a line 37 to a card retention unit 38 within the front panel 12, and to a connection 40 to a remote alarm, for example in a police station or where the ATM is situated for example in a shopping centre or hotel, in a central security unit; such an alarm, when operated, will also indicate the location of the ATM from which the alarm was initiated.

The ATM is also provided with a camera 52 connected to the processor unit 32 by a line 54.

The card reader 14 is modified to provide the option of an invisible mark on a user card, preventing its subsequent use.

When ATMs according to the invention are provided by a bank or other financial institution, cardholders are given a 'panic' code, which may for example be the emergency services telephone number of the country of operation, e.g. 999 in the UK and 911 in the USA, or may be some other easily remembered number.

In operation, when a user of an ATM feels under threat of attack, the user keys in the 'panic' code, either instead of the user's genuine PIN or at any time during a transaction on the key pad 16 of the ATM; the memory unit 34 recognises the 'panic' code received by the processor unit 32, and triggers the operation of the ATM in a special application in one or more of the following ways:-

a) if any user card is already within the ATM a nor-

mal transaction is mimicked by the ATM, but at its termination no cash is supplied and the card is retained in the card retention unit 38, the conventional 'card retained' message being displayed on display 20;

b) if the card is retained, the display 20 is caused to display a normally-valid reason to refuse a transaction, such as the message 'card illegal' or 'insufficient funds'.

c) if any user card is already within the ATM the card is specially and invisibly marked by the card reader 14 to prevent further use, and is then returned as usual.

d) the ATM is withdrawn from service and the usual warning message is displayed on the display 20; in a variation, such a withdrawal may be reversed after a time interval, e.g. 5 or 10 minutes, or may be reversed immediately.

e) whatever sum requested by the user, the cash dispenser supplies the smaller possible sum, i.e. a single note of the lowest denomination in the ATM.

f) the processor unit 32 sends an alarm signal over the connection 40 to a police station or a central security unit.

g) the processor unit 32, after sending an alarm signal, then delays the requested transaction and provides normally-valid messages on the display 20 such as 'checking your account'; operation of a clear cycle may be initiated to mimic the sound made by an ATM when counting out currency, but no cash is supplied.

h) the camera 52 is instructed to operate or to operate at shorter-than-normal time intervals, to attempt to record the suspected attacker.

If option c) is applied and the card is stolen, it cannot be reused; the card owner is inconvenienced, but the risk of financial loss is minimised;

If option e) is applied, any theft from the user is minimised;

If option f) is applied, the transaction may be extended until the police or security service are able to reach the ATM and arrest the criminal or suspect.

If option g) is applied, a photograph of the criminal or suspect may assist in a future arrest.

In whichever mode the ATM operates, the messages displayed on display 20 are always apparently genuine, so as not to alert the attacker to the fact that a 'panic' signal has been sent. The personal security of the user is therefore not jeopardized.

An ATM according to the invention also provides several options for reducing the risk of theft from the user.

Claims

1. A method of operating an automated teller machine

(ATM), characterized by recognizing an input by a user indicating a perceived threat to said user, and modifying the operation of the ATM to reduce the risk to the user.

2. A method according to claim 1, characterized by the user entering a characteristic code through input means of the ATM.

3. A method according to claim 1 or claim 2, characterized in that the operation of the ATM is modified to cause the user's card to be retained and to display a message indicating a normal reason for said retention.

4. A method according to claim 1 or claim 2, characterized in that the operation of the ATM is modified to cause the ATM to go out of operation and to display a message indicating a normal reason therefor.

5. A method according to claim 1 or claim 2, characterized in that the operation of the ATM is modified to cause the user's card to be invisibly marked to prevent further use, the card then being returned to the user.

6. A method according to any one of claims 1, 2 and 5, characterized in that the operation of the ATM is modified to cause the ATM to supply only a single currency note whatever the sum requested.

7. A method according to any preceding claim, characterized by sending an alarm signal to a central security office.

8. A method according to claim 7, characterized in that the operation of the ATM is modified to cause the ATM to display at least one message indicating that a cash withdrawal process is being delayed for an apparently normal reason.

9. A method according to any preceding claim, characterized in that the ATM is arranged to operate or more frequently operate a camera means associated with the ATM.

10. An automated teller machine ATM (10) comprising processor means (32), display means (20), input means (16), means for storing currency notes, and dispenser means (18) for supplying a requested sum of money, characterized by recognition means (34) to recognise an input indicating a threat to a user, and modifying means (32) to modify the operation of the ATM to reduce the risk to the user.

FIG. 1

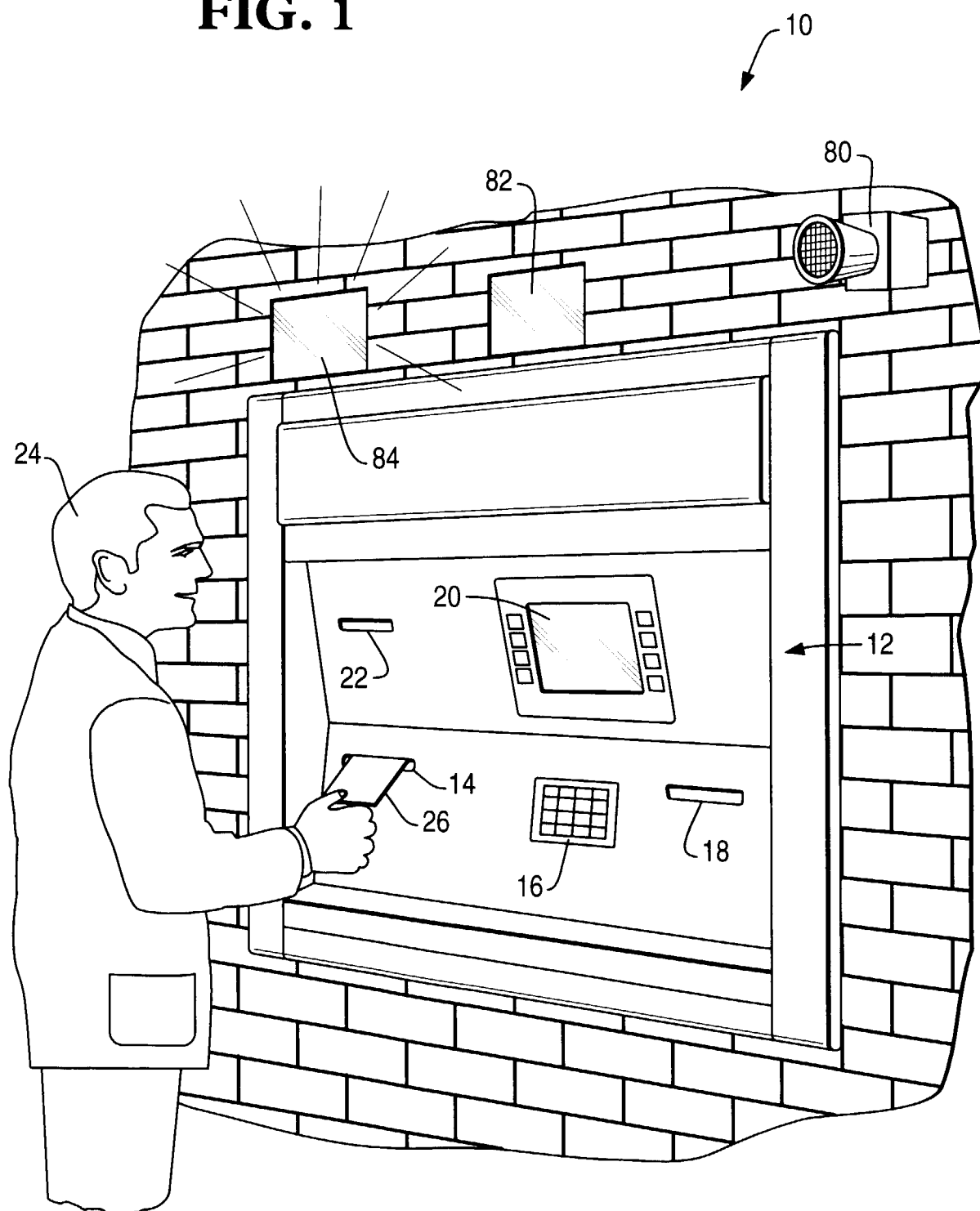


FIG. 2