(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
17 May 2001 (17.05.2001)

PCT

(10) International Publication Number
WO 01/35352 A1

(51) International Patent Classification[7]: G07F 7/10

(21) International Application Number: PCT/IL00/00529

(22) International Filing Date:
5 September 2000 (05.09.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
132909 12 November 1999 (12.11.1999) IL
134824 1 March 2000 (01.03.2000) IL

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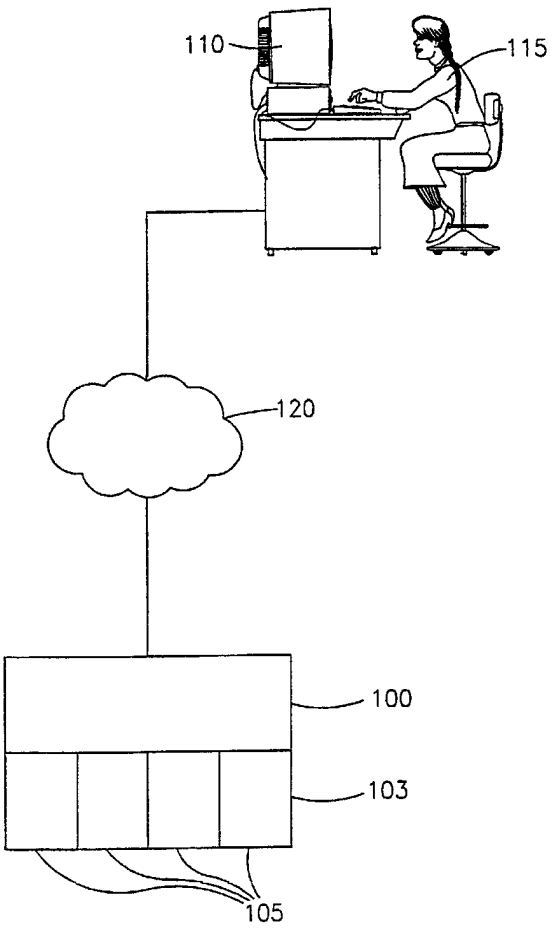
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian

[Continued on next page]

(54) Title: SWITCHABLE PAYMENT SYSTEM



(57) Abstract: A system and method for authorizing a sale of goods or services from a seller to a buyer (115). The system comprises a processor (100) configured to switch a credit card from an inactive state to an active state, and from the active state to the inactive state. The processor (100) stores in a database (103) data relating to periods of time when the credit card was in each active state. A first means of communication allows the buyer to instruct the processor (100) to switch the credit card from the inactive state to the active state or from the active state to the inactive state. A second means of communication allows the issuer to determine when the credit card was in the active state and when the credit card was in the inactive state. The sale is authorized only if the credit card is in the active state at the time of the sale.

WO 01/35352 A1

patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *With international search report.*

SWITCHABLE PAYMENT SYSTEM

FIELD OF THE INVENTION

The present invention concerns a method and system for securing non-cash monetary transactions and more particularly to such transactions involving credit cards.

BACKGROUND OF THE INVENTION

Banks and retailers commonly supply buyers with transaction cards, referred to herein as *"credit cards"*, that allow a buyer to execute non-cash payments. These include both tangible as well as electronic credit cards. Various methods have been devised to prevent fraudulent use of a credit card. In the case of tangible cards, for example, a seller in a store might compare the signature on the card to the signature on the transaction receipt. The buyer may be requested to provide a second form of identification such as a driver's license. The seller may verify the validity of a card by telephoning the card issuer's processor. Finally, point-of-sale magnetic strip card readers connected to the issuer's processor have been introduced for card verification.

U.S. Patent No. 5,907,142 to Kelsey discloses a credit card that may exist in an active or inactive state. The card is activated by the buyer just prior to presenting his card to a seller to execute a payment. Activation of the card is achieved when the buyer inputs a personal identification number through a keypad on the card surface.

None of the above methods for preventing fraudulent use of a credit card are applicable in cases where the buyer and the seller are remotely located. This occurs

commonly, for example, in cases of transactions carried out between the buyer and seller over a telephone or computer network. In these cases, it is only necessary to provide a credit card number and not a tangible card. Since the credit card number is provided to the seller whenever a transaction is made, the credit card owner has no control over the people who have access to his credit card number. The opportunity for fraudulent use of a credit card number is therefore very great.

Several solutions have been proposed to the problem of authenticating an electronic payment request even when the buyer and seller are remotely located. For example, U.S. Patent No. 5,991,738 to Ogram discloses an automated payment system for transactions over a computer network such as the Internet. The buyer transmits his credit card number and the value of the transaction to a *"payment -processing computer"*. The payment-processing computer contacts a bank for verification of the credit card and the amount. The bank transmits an authorization to the payment-processing computer that then communicates a password to the buyer's computer. The buyer presents the password to the seller's computer and then receives the goods or services.

U.S. Patent No. 5,936,219 to Yashida *et al.* discloses an *"electronic check"* having associated with it a check identifier and an issue time. The check identifier includes a *"payer identifier"* uniquely identifying the payer and a *"payment identifier"* uniquely identifying the payment. An electronic check is refused by the seller when an amount of time exceeding an allowed limit has elapsed since the check was issued.

SUMMARY OF THE INVENTION

In the following description and set of claims, the term *"credit card"* will be used to include tangible and electronic credit cards, as well as any other type of financial guarantee card such as automatic debit accounts, checking account numbers, savings account numbers, and other financial instruments known in the art.

The present invention provides a system and method for preventing fraudulent use of a credit card. The method may be used in cases where the payment is for a transaction carried out between a buyer and a seller in close physical proximity to one another, for example in an actual store, as well as in cases when the buyer and supplier are remotely located and communicate over a network such as a telephone system or a computer network.

In accordance with the invention, a credit card alternates between an active state and an inactive state. The credit card is switched from one state to the other by the credit card owner (the buyer). Typically, the credit card is activated by the buyer just prior to initiating a payment and deactivated by him upon completion of the payment process. The payment is effectuated by the credit card issuer only if the credit card was in an active state during the payment process.

When a buyer wishes to make a purchase of goods or services, he first activates his credit card. This is done by contacting a processor. Communication between the buyer and the processor may be, for example, over a computer or telephone network, and is independent of the mode of communication between the buyer and the seller. The buyer identifies himself to the processor and provides the credit card number he wishes to activate. The processor verifies the buyer's identification and further verifies the provided credit card number as belonging to the identified buyer. Before providing the goods or services, the seller contacts the credit card issuer for authorization. The mode of communication between the seller and the issuer is independent of the mode of communication between the buyer and the seller and between the buyer and the issuer. The issuer, in turn, contacts the processor and requests verification that the buyer's credit card was in an active state when the purchase was made by the buyer. The processor may belong to the issuer, or may be independent of the issuer. Only purchases made when the credit card is active are authorized by the credit card issuer.

The credit card is ideally activated by the buyer just prior to making a purchase and is subsequently deactivated immediately upon completion of the purchase. The credit card will therefore be in the active, and hence usable, state for

only a very small fraction of time during the course of a typical day. This makes fraudulent use of the credit card extremely difficult.

The invention thus provides in its first aspect a system for authorizing a sale of goods or services from a seller to a buyer, the system comprising:

(a) a processor configured to:

(aa) switch a credit card from an inactive state to an active state, and from the active state to the inactive state, the credit card having an issuer; and

(ab) store in a database data relating to periods of time when the credit card was in the active state and when the credit card was in the inactive state;

(b) a first means of communication, between the buyer and the processor, the first means of communication being configured to allow the buyer to instruct the processor to switch the credit card from the inactive state to the active state or from the active state to the inactive state; and

(c) a second means of communication, between the issuer and the processor, the second means of communication being configured to allow the issuer to determine when the credit card was in the active state and when the credit card was in the inactive state.

In its second aspect, the invention provides a method for authorizing a sale of goods or services from a seller to a buyer, the method comprising steps of:

(a) switching a credit card from an inactive state to an active state; and

(b) authorizing the sale.

The invention further provides a method for securing monetary transactions over computer networks, comprising:

(a) providing a user with a software capable of providing, when the user performs a purchase over a computer network, a user-specific code, identifying a user and a user-associated account;

(b) upon performing a purchase, activating said software to transmit said user-specific code to a server, said server recording time of receipt of the user-specific code, and defining a time window following such

receipt in which a purchase will be considered as being a legitimate user-induced purchase; comparing the purchased time to said time window, a purchase being performed outside said window being an illegitimate purchase; and

(c) debiting the user-associated account for the purchase of a legitimate purchase.

The invention also provides a system for securing monetary transactions performed over a computer network, comprising:

(i) a client, equipped with a client software providing a user with a software capable of providing, when the user performs a purchase over a computer network, of transmitting over the network a user-specific code, identifying the user, and a user-associated account;

(ii) a server for storing client's particulars, including the client-specific code; for receiving said client-specific code upon activation of the code by the client; for defining a time window in which a purchase performed using said client-specific code as an account identifier, will be considered as a legitimate purchase; and for issuing a confirmation message permitting the debiting of a client account for all transactions considered legitimate transactions.

BRIEF DESCRIPTION OF THE DRAWINGS

In order to understand the invention and to see how it may be carried out in practice, preferred embodiments will now be described, by way of non-limiting example only, with reference to the accompanying drawings, in which:

Fig. 1 shows a switchable payment system using a computer network according to one embodiment of the invention; and

Fig. 2 shows a switchable payment system using a telephone network according to another embodiment of the invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

First Embodiment

Fig. 1 shows a first embodiment of the invention wherein communication between a buyer **115** and a processor **100** occurs over a computer network indicated by the cloud **120.** The computer network **120** may be, for example, the Internet an intranet or an extranet. The processor **100** includes a database **103** containing a plurality of buyer entries **105.**

A buyer **115** contacts a seller (not shown) and decides to purchase goods or services from the seller. The mode of communication between the buyer and seller (not shown) may be of any means, for example, over a computer or telephone network. Alternatively, the buyer **115** may decide to make a purchase in a real store and communicate with the seller face to face. The buyer **115** must then switch a credit card to the active state. In accordance with this embodiment of the invention, in order to switch the credit card to the active state, the buyer contacts the processor **100** over the computer network **120,** using a computer terminal **110.** In order to communicate with the processor **100,** the buyer may, but not necessarily, require special software that was previously loaded onto his computer **110.** The processor **100** prompts the buyer **115** for a previously obtained identification such as a password and the credit card number the buyer **115** wishes to activate. The requested information is provided by the buyer using any computer input device such as a keyboard or computer mouse. The processor verifies that the credit card number is stored in the buyer's entry **105** in the database **103.** If so the credit card is switched to the active state. When the buyer **115** decides that he wishes to switch his credit card to the inactive state, he inputs this into his computer **110** which that transmits the information to the processor **100** over the computer network **120.** The processor **100** stores in the buyer's **115** entry **105** in the database **103** the times that the credit card was in the active state.

A seller may contact the credit card issuer (not shown) by any means and at any time for authorization of a transaction. The mode of communication between

the seller and issuer (not shown) is independent of the mode of communication between the buyer **115** and the processor **100,** and may or may not involve the computer network **120**. The seller may, for example, contact the issuer over a telephone network. The mode of communication between the seller and issuer is also independent of the mode of communication between the buyer **115** and the seller. The credit card issuer verifies that the credit card was in the active state when the purchase was made by contacting the processor **100.** The mode of communication between the seller and issuer is independent of the modes of communication between the buyer **115** and the seller, the buyer and the processor **100,** and the seller and the issuer. If the issuer determines that the credit card was in the active state when the purchase was made and that the amount of the purchase is within the buyer's **115** credit line, the issuer authorizes the sale to the seller.

Second Embodiment

Fig. 2 shows a second embodiment of the invention wherein communication between a buyer **225** and a processor **200** occurs over a telephone network indicated by the cloud **220.** The telephone network **220** may be, for example,a public switched telephone network (PSTN). The processor **200** includes a database **203** containing a plurality of buyer entries **205.**

A buyer **225** contacts a seller (not shown) and decides to purchase goods or services from the seller. The mode of communication between the buyer and seller may be of any means, for example. over a computer or telephone network. Alternatively, the buyer **225** may decide to make a purchase in a real store and communicate with the seller face to face. The buyer **225** must then switch a credit card to the active state. In accordance with this embodiment of the invention. he contacts the processor **200** over the telephone network **220**. The buyer may use, for example, a telephone **210**, as shown in Fig. 2, or any other known means for sending and receiving data over a telephone network, such as a facsimile machine (not shown). The telephone **210** may be for example, a touch tone telephone or a

cellular telephone. The processor **200** may identify the buyer by the telephone **220** that he is calling from, for example by means of the ESN of a cellular phone. Alternatively, the processor **200** may prompt the buyer **225** for a previously obtained identification such as an alphanumeric password. The processor **200** will prompt the buyer for the credit card number the buyer **225** wishes to activate. When data are inputted to the telephone network by the buyer using a telephone **210**, any requested information is provided by the buyer by depressing keys on the telephone's **220** keypad **230**. The processor verifies that the credit card number is stored in the buyer's entry **205** in the database **203.** If so the credit card is switched to the active state. When the buyer **225** decides that he wishes to switch his credit card to the inactive state, he inputs this by depressing keys on the telephone keypad **230**. The information is transmitted to the processor **200** over the telephone network **220.** The processor **200** stores in the buyer's **225** entry **205** in the database **203** the times that the credit card was in the active state.

As in the case of the first embodiment, a seller may contact the credit card issuer (not shown) by any means and at any time for authorization of a transaction. The mode of communication between the seller and issuer is independent of the mode of communication between the buyer and the processor **200,** and may or may not involve the telephone network **220.** The mode of communication between the seller and issuer is also independent of the mode of communication between the buyer **225** and the seller. The credit card issuer verifies that the credit card was in the active state when the purchase was made by contacting the processor **200.** The mode of communication between the seller and issuer is independent of the mode of communication between the buyer **225** and the seller, the buyer and the processor **200,** and the seller and the issuer. If the issuer determines that the credit card was in the active state when the purchase was made and that the amount of the purchase is within the buyer's **225** credit line, the issuer seller authorizes the purchase to the seller.

CLAIMS:

1. A system for authorizing a sale of goods or services from a seller to a buyer, the system comprising:

(a) a processor configured to:

(aa) switch a credit card from an inactive state to an active state, and from the active state to the inactive state, the credit card having an issuer; and

(ab) store in a database data relating to periods of time when the credit card was in the active state and when the credit card was in the inactive state;

(b) a first means of communication, between the buyer and the processor, the first means of communication being configured to allow the buyer to instruct the processor to switch the credit card from the inactive state to the active state or from the active state to the inactive state; and

(c) a second means of communication, between the issuer and the processor, the second means of communication being configured to allow the issuer to determine when the credit card was in the active state and when the credit card was in the inactive state.

2. The system of Claim 1 wherein the first communication means between the buyer and the processor comprises a computer network.

3. The system according to Claim 2 wherein the computer network is the Internet.

4. The system according to Claim 3 wherein the first communication means between the buyer and the processor comprises a telephone network.

5. The system of Claim 1 wherein the second communication means between the issuer and the processor comprises a computer network.

6. The system according to Claim 5 wherein the computer network is the Internet.

7. The system according to Claim 1 wherein the second communication means between the issuer and the processor comprises a telephone network.

8. The system according to any one of the previous claims further comprising a third means of communication between the issuer and the seller, the third means of communication being configured to allow the seller to request authorization for the sale from the issuer.

9. The system according to Claim 1 further comprising a fourth means of communication between the issuer and the seller, the fourth means of communication being configured to allow the issuer to authorize the sale in response to a request from the seller when the credit card was in the active state when the sale was proposed.

10. The system according to Claim 8 wherein the third or fourth communication means comprises a computer network.

11. The system according to Claim 10 wherein the computer network is the Internet.

12. The system according to Claim 8 wherein the third or fourth communication means comprises a telephone network.

13. A method for authorizing a sale of goods or services from a seller to a buyer, the method comprising steps of:

(a) switching a credit card from an inactive state to an active state; and

(b) authorizing the sale.

14. The method of Claim 13 further comprising one or more steps selected from the group of:

(a) storing in a database data relating to the times that the credit card was in the inactive state and when the credit card was in the active state;

(b) determining that the credit card was in the active state at the time of the sale;

(c) requesting authorization for the sale; and

(d) switching the credit card from the active state to the inactive state.

15. A method for securing monetary transactions over computer networks, comprising:

(a) providing a user with a software capable of providing, when the user performs a purchase over a computer network, a user-specific code, identifying a user and a user-associated account;

(b) upon performing a purchase, activating said software to transmit said user-specific code to a server, said server recording time of receipt of the user-specific code, and defining a time window following such receipt in which a purchase will be considered as being a legitimate user-induced purchase; comparing the purchased time to said time window, a purchase being performed outside said window being an illegitimate purchase; and

(c) debiting the user-associated account for the purchase of a legitimate purchase.

16. A method according to Claim 15, wherein said computer network is the Internet.

17. A system for securing monetary transactions performed over a computer network, comprising:

(ii) a client, equipped with a client software providing a user with a software capable of providing, when the user performs a purchase over a computer network, of transmitting over the network a user-specific code, identifying the user, and a user-associated account;

(iii) a server for storing client's particulars, including the client-specific code; for receiving said client-specific code upon activation of the code by the client; for defining a time window in which a purchase performed using said client-specific code as an account identifier, will be considered as a legitimate purchase; and for issuing a confirmation message permitting the debiting of a client account for all transactions considered legitimate transactions.

18. A system according to Claim 17, wherein the computer network is the Internet.

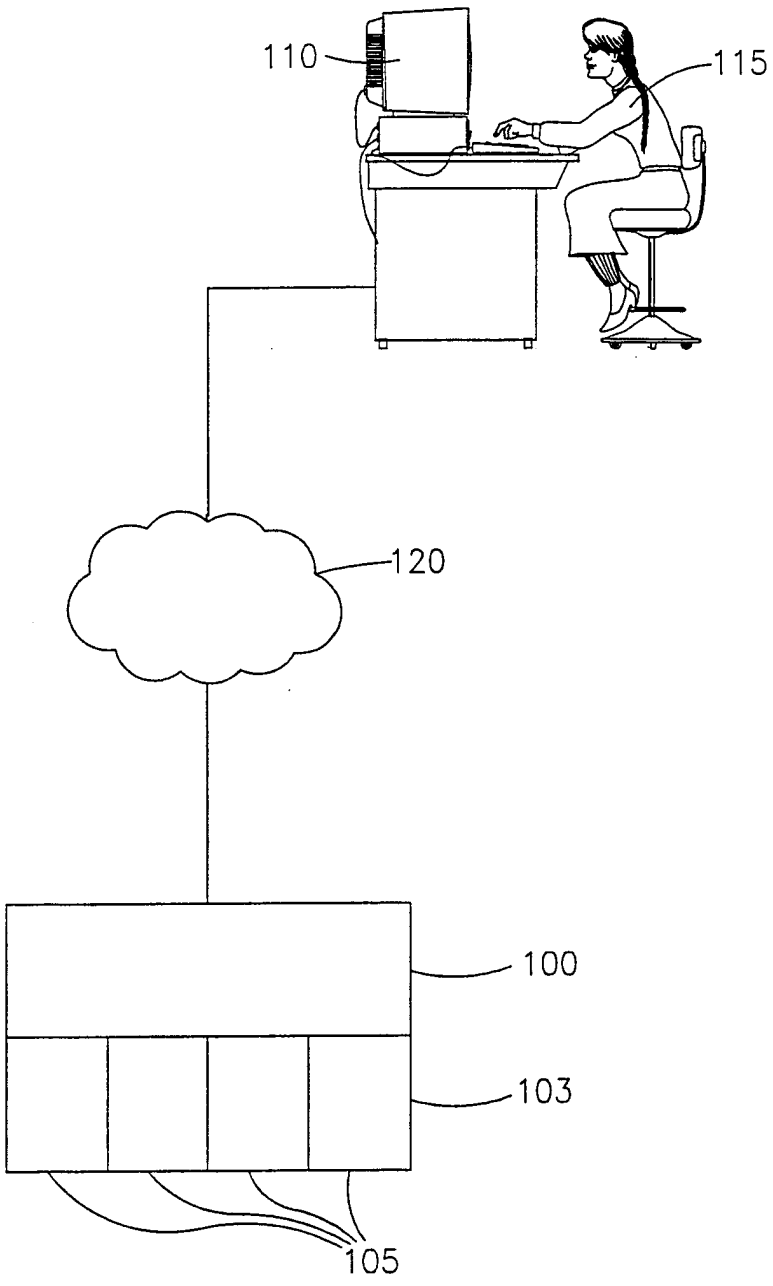


FIG.1

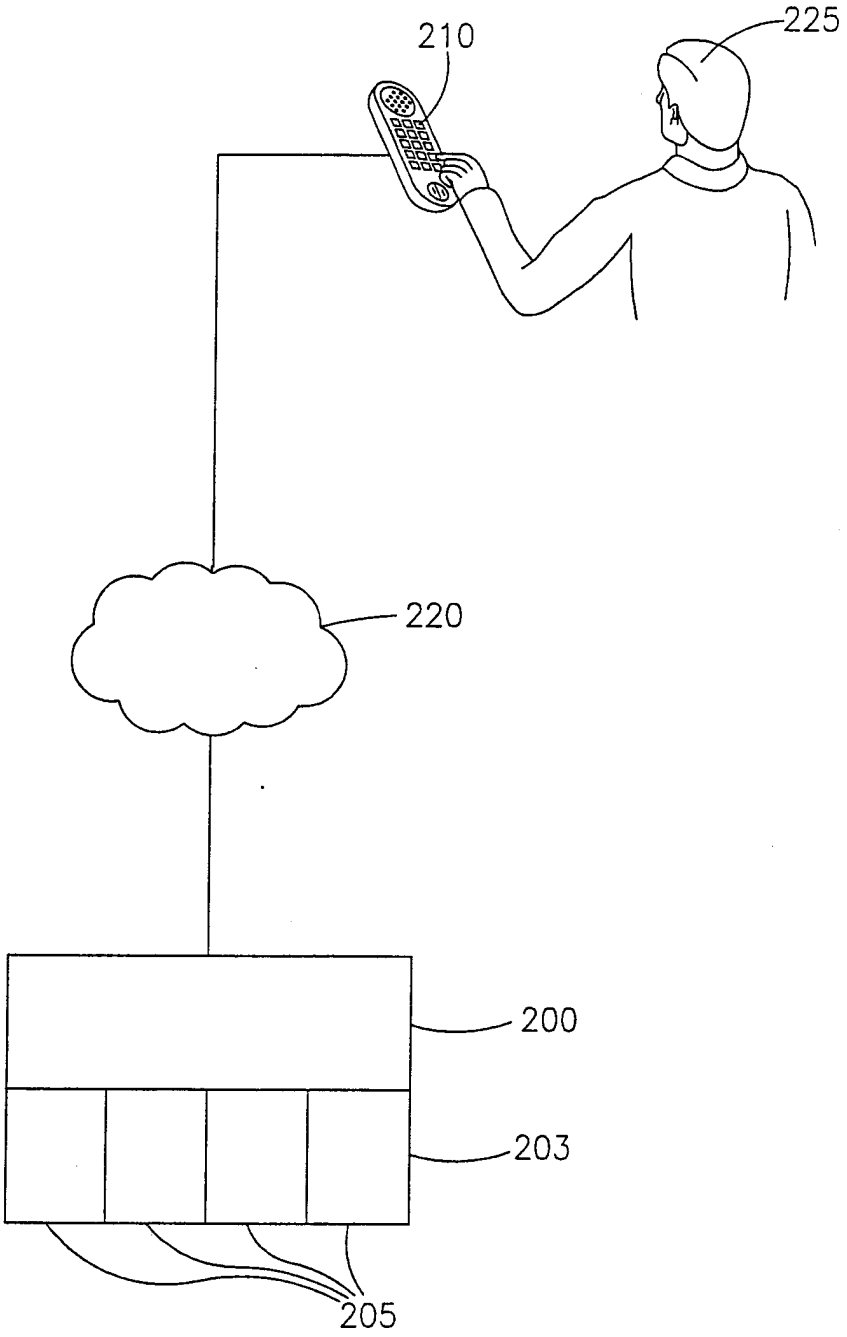


FIG.2

INTERNATIONAL SEARCH REPORT

Int[illegible]ional Application No
PCT/IL 00/00529

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G07F7/10

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)
IPC 7 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 practical, search terms used)
WPI Data, PAJ, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P A,P	WO 00 33497 A (TRANSACTIONSECURE, L.L.C.) 8 June 2000 (2000-06-08) page 3, line 8 -page 4, line 9 page 5, line 6 -page 11, line 22; figures 1-5	1-7, 13-18 8-12
A	US 5 513 250 A (MCALLISTER) 30 April 1996 (1996-04-30) column 2, line 51 -column 3, line 38 column 3, line 64 -column 10, line 65 column 14, line 8 -column 16, line 15; figures 1-5	1,13,15, 17
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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
7 February 2001	14/02/2001

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Rivero, C

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INTERNATIONAL SEARCH REPORT

Int(ional Application No
PCT/IL 00/00529

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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1

INTERNATIONAL SEARCH REPORT

Information on patent family members

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