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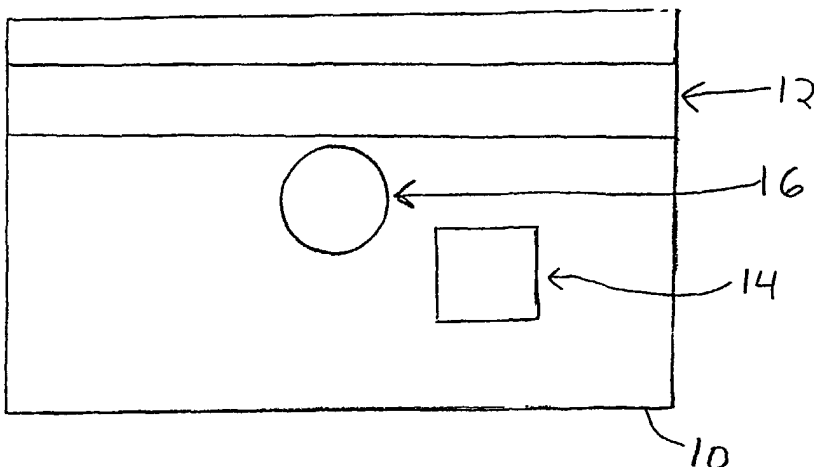
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(54) Title: HIGH SECURITY DATA CARD



(57) Abstract: A device for use in a system for reducing fraud in financial transactions. The device includes a member associated with a machine readable rotatably accessible optical data-containing structure, a machine readable magnetically encoded data-containing structure, and a circuit, each containing separate data sets. The device is used as a data card in financial and other transactions. The separate data sets are individually accessible only with user input information, are compared to such information and the other data sets to verify user identity and

authorization. A system for using the card in transactions is also disclosed and claimed.



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HIGH SECURITY DATA CARD

BACKGROUND

1. The Field of the Invention.

5 This invention relates to apparatus for portably containing data. More particularly, the present invention relates to devices which store data in multiple formats in one physical structure.

2. The Prior Art.

10 Currently available portable data-containing devices include plastic cards that are used to carry and transmit financial, medical and other data. Such cards are also used as credit cards and debit cards, in addition to other uses. Currently, machine readable data is carried on portable data cards in magnetic strips which require linear  
15 motion to read the data stored in the magnetic strip, or in electronic circuits from which the data is read using a digital protocol, or in linearly accessible optical storage formats which require linear movement in relation to the card to read the data, or in optical forms that are  
20 rotatably accessible which require rotational movement in relation to the card to read the data on the card.

Currently, there are financial transaction cards, such as credit cards, which possess both a data carrying magnetic strip and a data carrying electronic circuit which  
25 are used to identify the bearer of the card. These cards are capable of carrying data in two mediums. The limited data capacity of these dual medium cards requires that additional information must be obtained to verify that the user has the proper authority to use the card.

30 Fraudulent use of financial transaction cards is, unfortunately, a common occurrence. MasterCard International, of Purchase, N.Y. reported that in 1995, worldwide, 9 cents of every \$100 dollars was lost to fraud. This represents roughly \$400 million out of \$470 billion in

transactions. It has been estimated that credit card fraud totals over \$1 billion every year.

At present, to verify that a user is authorized to make a transaction with such a financial transaction card, a merchant must first verify the card's validity through a computer network (e.g., a computer network known as VISAnet, a computer network provided by American Express, or some other credit card issuer) associated with the card, separate physical information must then be collected and compared by the merchant, for example signatures compared to the authorized signature provided on the card, or other forms of picture containing identification which are compared to the user. Disadvantageously, even the limited protection provided by comparing an authorized signature or picture provided on a financial transaction card becomes unavailable in a computer based (also referred to as an "online") transaction, where there are no merchant personnel physically present to make this comparison. Recent surveys have suggested that credit card fraud may be up to twelve times more common in "on-line" transactions than in "in person" transactions. Additionally, "on-line" retailers often have to bear the liability for this fraud, while the credit card companies generally absorb these costs for traditional "in person" retailers that take fraud prevention steps.

In view of the foregoing, it will be appreciated that it would be an improvement in the art to provide a financial transaction device or system which eliminates the need for using an additional identification card, and for comparison of signatures, while continuing to ensure that the user is authorized to make the transaction.

Also currently, there are wallet sized cards known which contain optically accessible data stored in a format which does not require rotating the card. While this type

of containing more data than a wallet sized card which stores data on a magnetic strip, it requires a specialized and proprietary reader for accessing the data, which reads the optically stored data in a linear fashion. In order to use this technology, the linear reading means must be available, which requires the user to have access to such means. To adapt this type of non-rotating optically accessible data card to online transactions, initiated from a consumer's personal computer, would require the attachment of a compatible proprietary reader to the consumer's personal computer. A system for preventing fraud in a computer based transaction, which uses optically stored data not requiring hardware in addition to that which is readily, or currently, available to consumers, would also be an improvement in the art.

Moreover, the previously available systems and devices do not sufficiently address privacy and security concerns.

For example, the loss of financial institution customer account numbers and theft of personal identity over the Internet is a serious problem. Such problems prevent the Internet from reaching its full potential of promised immense transactions savings.

Existing plastic financial transaction cards are supposed to be safe, but are not. Credit card issuers must promise to refund funds lost due to unauthorized card use and the problem is expensive to the merchant who must pay the cost of the fraudulent transaction and subsequently passes the loss to the consumer by way of higher prices. Moreover, privacy invasion continues against a card holder when their old account number is used to obtain their personal identity files, resulting in embarrassment or financial burden to the card holder.

It would be a significant advance in the art to provide a data containing card that provides greater

identification, which also includes encryption, preventing unauthorized use and access to the data. Any transaction, be it financial or identification verification, would be reliable and would not compromise personal privacy of the user.

BRIEF SUMMARY OF THE INVENTION

In accordance with one aspect of the present invention a transaction card is provided, that combines in one device the capability to store magnetically encoded data, rotatably accessible optically stored data, and data stored in a circuit. In one preferred embodiment of the present invention, a financial transaction card is provided with at least one structure capable of containing magnetically encoded data, at least one structure capable of holding rotatably accessible optically stored data and at least one circuit. Preferably, there are at least three independent data sets, accessible through different data retrieval methods. The plurality of data sets are preferably separately encrypted, namely, each set is encrypted using a different standard.

In other aspects of the present invention a multi-function card is provided with greatly increased processing and storage capacity. Such multi-function cards preferably have beneficial applications as driver licenses, passports, government and corporate employee verification, ingress and egress cards. In illustrative embodiments, one card preferably has several layers of security, encryption, password and biometric verification files. One illustrative card can contain fingerprint and facial recognition files, driver license information and records, passport information, credit/debit information, medical insurance records, and all of the functions provided by the card have running transaction results which are stored on the card. Such stored information is preferably used, for

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