



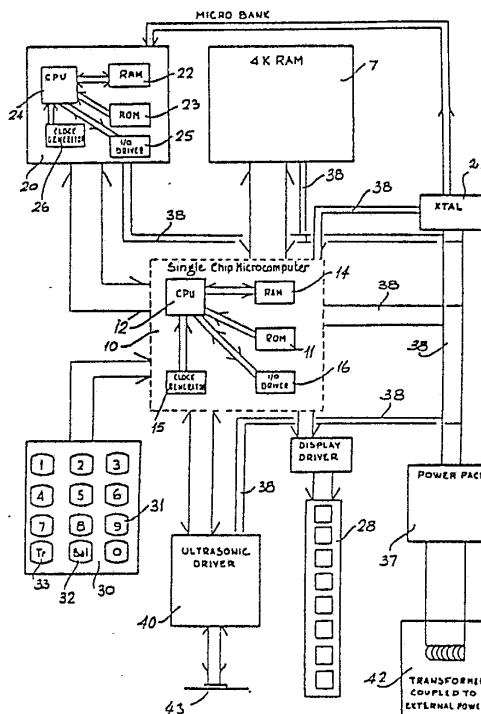
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification³ : G07F 7/10</p>	<p>A1</p>	<p>(11) International Publication Number: WO 83/ 03018 (43) International Publication Date: 1 September 1983 (01.09.83)</p>
<p>(21) International Application Number: PCT/SE83/00062 (22) International Filing Date: 24 February 1983 (24.02.83) (31) Priority Application Number: 411/82 (32) Priority Date: 25 February 1982 (25.02.82) (33) Priority Country: IE (71) Applicant: TELEFONAKTIEBOLAGET L M ERICSSON [SE/SE]; S-126 25 Stockholm (SE). (72) Inventors: CREMIN, Patrick, Victor ; 43 Kilgobbin Heights, Stepside, County Dublin (IE). CARROLL, Patrick, Gerard ; Richardstown House, Kildangin, Monasterevin, Co. Kiildare (IE). (74) Agents: GAMSTORP, Bengt et al.; Telefonaktiebolaget L M Ericsson, S-126 25 Sotckholm (SE).</p>		<p>(81) Designated States: AT (European patent), AU, BE (European patent), CH (European patent), DE (European patent), DK, FI, FR (European patent), GB (European patent), JP, LU (European patent), NL (European patent), NO, SE (European patent). Published <i>With international search report.</i></p>

(54) Title: A PORTABLE DEVICE FOR STORING AND TRANSFERRING DATA

(57) Abstract

A portable device for storing and transferring funds for use in a funds transfer system. Each portable device (1) is card-like and comprises a memory means (7) for storing a monetary balance, and a plurality of identifying characteristics of the user. Micro-computer means (10) in the card (1) update the balance after funds transfer, and randomly select some of the identifying characteristics to query the user. The users response is compared with the stored characteristics. Ultra-sonic coupling means (40) in the card permits coupling to another card (1) through a coupling terminal (2). A keyboard (30) and a digital display (28) permit inspection of the balance. The micro-computer (10) date and time stamps each transaction.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	LI	Liechtenstein
AU	Australia	LK	Sri Lanka
BE	Belgium	LU	Luxembourg
BR	Brazil	MC	Monaco
CF	Central African Republic	MG	Madagascar
CG	Congo	MR	Mauritania
CH	Switzerland	MW	Malawi
CM	Cameroon	NL	Netherlands
DE	Germany, Federal Republic of	NO	Norway
DK	Denmark	RO	Romania
FI	Finland	SE	Sweden
FR	France	SN	Senegal
GA	Gabon	SU	Soviet Union
GB	United Kingdom	TD	Chad
HU	Hungary	TG	Togo
JP	Japan	US	United States of America
KP	Democratic People's Republic of Korea		

A PORTABLE DEVICE FOR STORING AND TRANSFERRING DATA

The present invention relates to a portable device for storing and transferring data, the device being of the type comprising memory means for storing the data and an identifying characteristic to prevent unauthorised use of the device, coupling means for coupling the device to an external terminal or other
5 device for transferring data, micro-computer means to update the data in the device after data transfer, means to compare an identifying characteristic entered by the user with the identifying characteristic stored in the memory means, and clock means to drive the micro-computer.

Such devices are well known, and generally are in the form of a substantially
10 flat pocket sized card. A monetary balance or any other data may be stored in the device, and transferred to another device. A coupling terminal is normally provided for routing the data being transferred and the two portable devices between which a transaction is to be made are connected into the coupling terminal. U.S. Patent Specifications Nos. 4,211,919, 4,102,493, 4,092,524,
15 4,007,355, 4,001,550 and 3,971,916 describe such devices and terminals.

Unfortunately, these known devices suffer from various disadvantages, particularly, in the field of security, both of the device and the information stored therein, and during transfer of the data. Furthermore, due to the fact that most devices need to be connected on line or into a computer, they lack versatility.

20 In particular, where security is concerned, none of the known devices are secure against unauthorised use. Most rely on the use of a personal identification number stored in the memory of the card, and once the correct personal identification number is provided by the user, the card is enabled to carry out a transaction. Unfortunately, with the use of personal identification numbers,
25 there is a limit to the security that can be provided. For example, in four digit personal identification number, which is the more common length of number, there are only 9,999 combinations available. Accordingly, with modern high powered computers, it is relatively easy to discover the correct personal identification number stored in any particular card.



Secondly, where data is transferred from a card, it is relatively easy to tap into the line transferring the data and record the transaction. Accordingly, the transaction may be replayed an unlimited number of times, and thus in the case of funds transfer, an amount of money may be fraudulently transferred an
5 unlimited number of times.

Additionally, it is difficult to encode data being transferred in such a way that the code cannot be relatively easily broken by unauthorised people tapping into the transfer line. Attempts have been made to overcome these problems. However, so far, none of these attempts have been totally satisfactory.

10 Accordingly, it is an object of the invention to provide a portable data storage and transfer device and associated terminal which ensures that the portable device is relatively secure against unauthorised use. It is also an object of the invention to provide a device which will prevent the fraudulent transfer of data by replaying a transaction an unlimited number of times. Furthermore, it is an
15 object of the invention to provide a portable device which permits the data being transferred to be encoded, so that it is virtually impossible for an unauthorised person to decode the data. It is a further object of the invention to provide a portable device which can store and transfer data without being connected on-line to a computer, and which is particularly suitable for storing
20 and transferring monetary amounts.

The invention achieves these objects and overcomes the problems of prior art devices by virtue of the fact that the memory means in the portable device stores a plurality of identifying characteristics and the micro-computer means selects at least one of the identifying characteristics and queries the user on
25 the selected characteristics prior to data transfer.

The advantage of the invention is that it provides a device which is relatively secure against fraudulent use. This is because the invention permits a user of the device to be queried on one or more of a number of identifying characteristics, and this has the further advantage that the number of characteristics
30 on which the user is queried, may be increased or decreased, depending on, for example, the type of data being transferred. If the data being transferred is of relatively limited value and/or importance, only one or a few characteristics may be selected. However, if the data is important, or of a high value,



then many more characteristics may be selected. For example, in the case of a user making a small purchase, he may be queried on only one characteristic, thereby having the advantage of saving time, for example, at a checkout in a store. While on the other hand, if he is making a large purchase, many more
5 characteristics may be selected.

Preferably, the micro-computer means randomly selects one or more of the identifying characteristics. The advantage of this feature of the invention is that it makes it more difficult for fraudulent use of the card.

In one embodiment of the invention, the number of identifying characteristics
10 selected by the micro-computer means is dependent on the data to be transferred.

The advantage of this feature of the invention is that it permits relatively small and unimportant transactions to be carried out quicker than larger or more important transactions, thereby adding to the speed at which transactions may
15 be carried out.

Advantageously, at least one of the identifying characteristics is variable with time.

The advantage of this feature of the invention is that it makes it more difficult for the card to be used fraudulently.

20 Preferably, at least some of the identifying characteristics are characteristics of the user, and at least one of the variable identifying characteristics is the users age.

The advantage of this feature of the invention is that because the characteristics relate to the user, they are relatively easily remembered.

25 In another embodiment of the invention, the micro-computer means comprises means to date stamp each data transfer to make it a unique transaction. The advantage of this feature of the invention is that it ensures that each transaction is a unique transaction and therefore, if repeated will be rejected because the date or time will be incorrect.



Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.