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Lurey et al.

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(54) **METHOD AND APPARATUS FOR PROTECTING ACCOUNT NUMBERS AND PASSWORDS**

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(51) **Int. Cl.**
G06F 21/00 (2013.01)

(52) **U.S. Cl.**
USPC **726/27**; 726/17; 726/26; 713/165

(58) **Field of Classification Search**
USPC 726/27, 30; 713/183
See application file for complete search history.

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Ascendo et al. "Ascendo DataVault—BlackBerry Passwprd Manager Version 4 user guide" Oct. 2007, http://web, arch ive.org/web/20071020175341/http://ascendo-inc.com/UserGuides/DV/DV4UGContents.html.*

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(57) **ABSTRACT**

A method and apparatus are provided for protecting confidential information. The method includes the steps of providing a plurality of files where each file contains at least one item of secret information, password protecting the plurality of files with a master password, detecting entry of passwords into a master password entry field, comparing entered passwords with the master password to identify incorrect master passwords and deleting the plurality of files upon successive entry of incorrect master passwords a predetermined number of times.

18 Claims, 6 Drawing Sheets

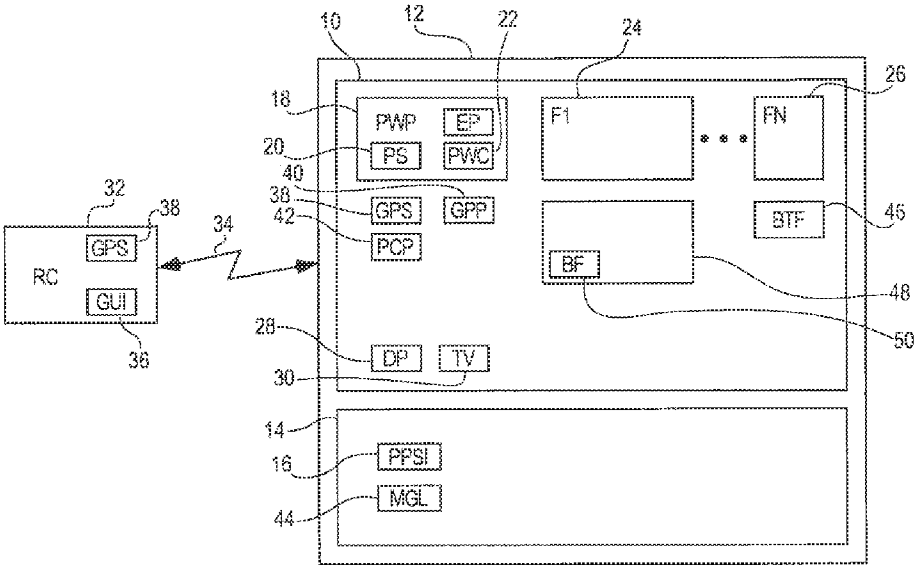


Fig. 1

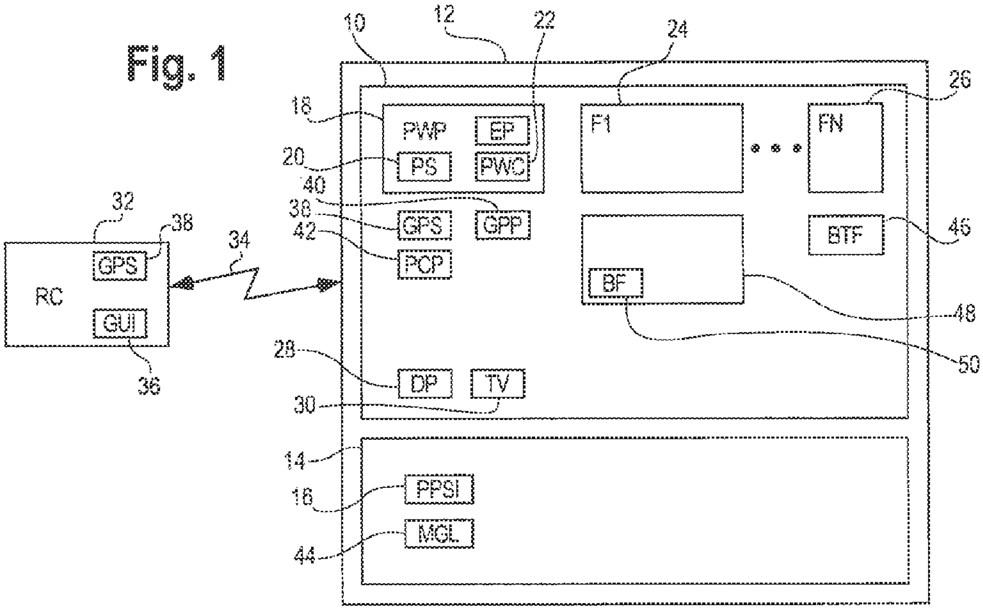

10
12
22
24
26
18
PWP
EP
20
PS
PWC
F1
FN
40
38
GPS
GPP
42
PCP
32
38
GPS
34
RC
GUI
36
BF
BTF
46
48
50
28
DP
TV
30
14
16
PPSI
44
MGL

Fig. 2

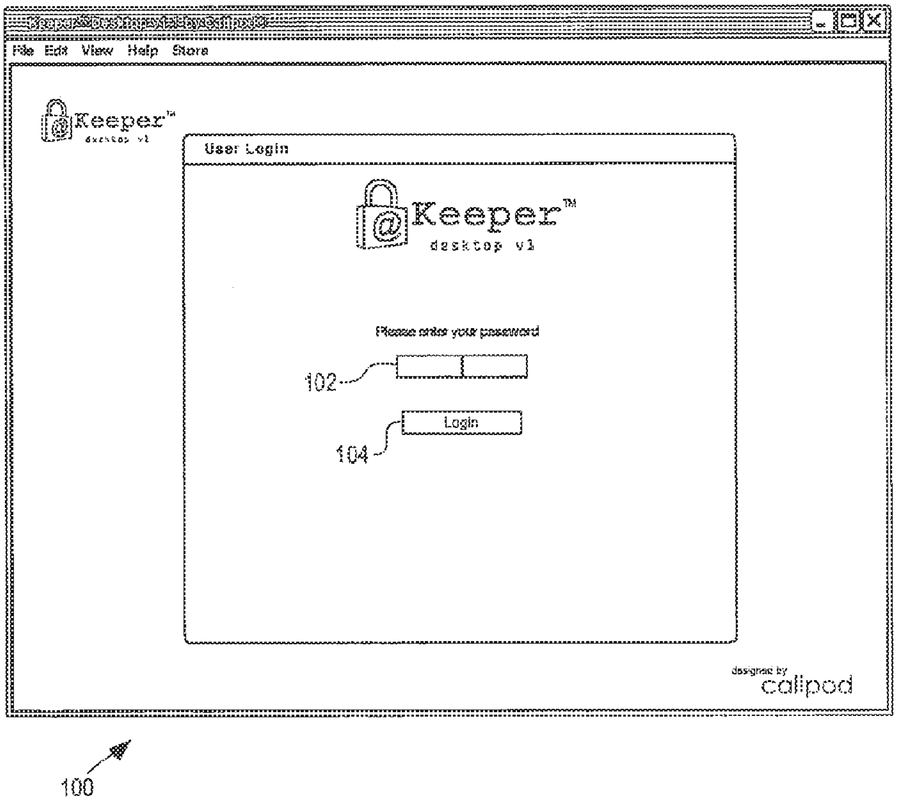

File Edit View Help Store
Keeper™
desktop v1
User Login
Keeper™
desktop v1
Please enter your password
102
Login
104
designed by
callpod
100

Fig. 3

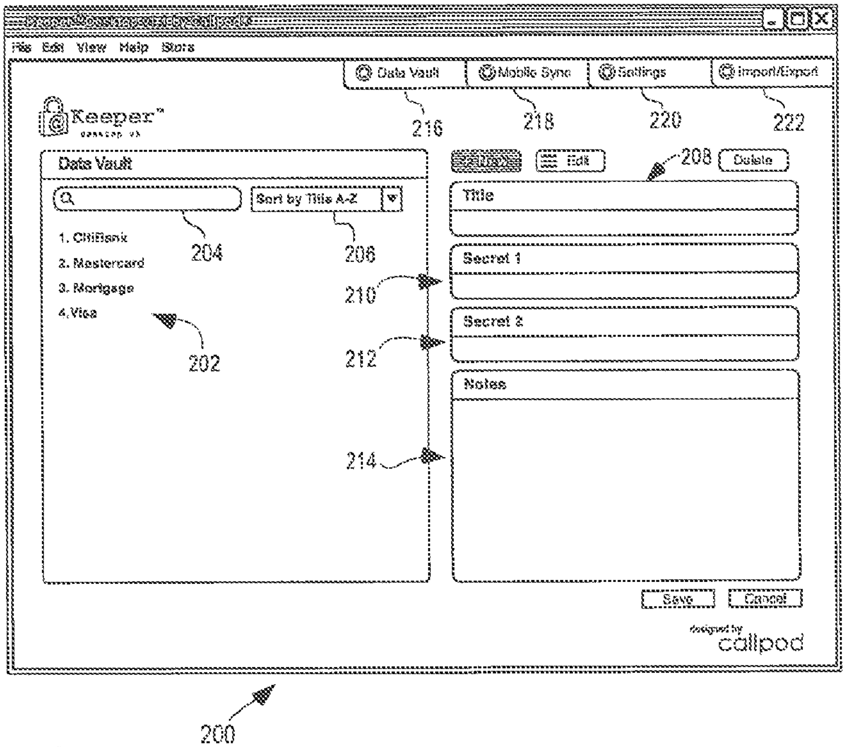
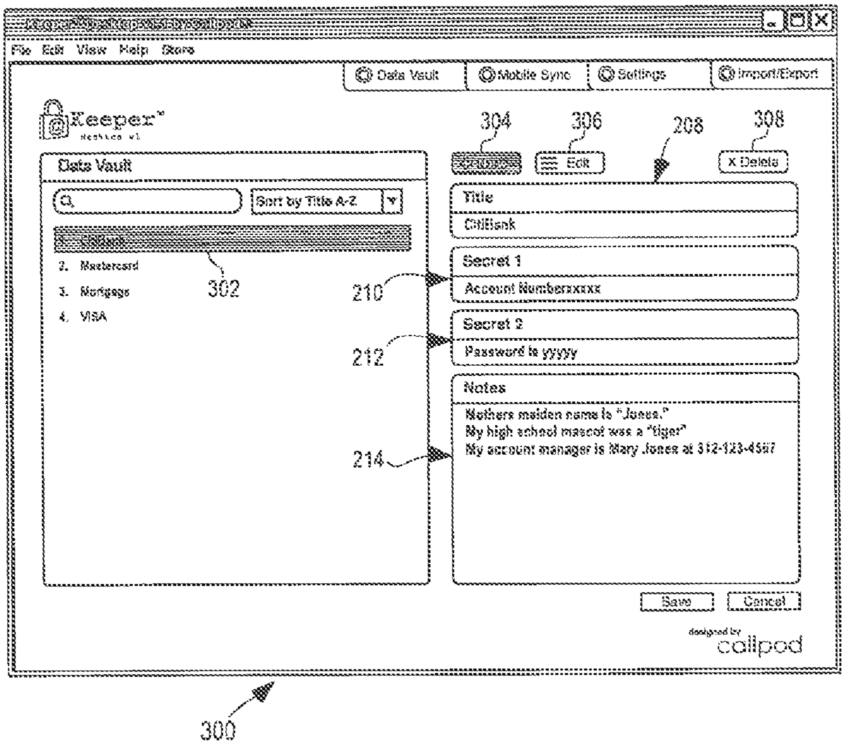


Fig. 4



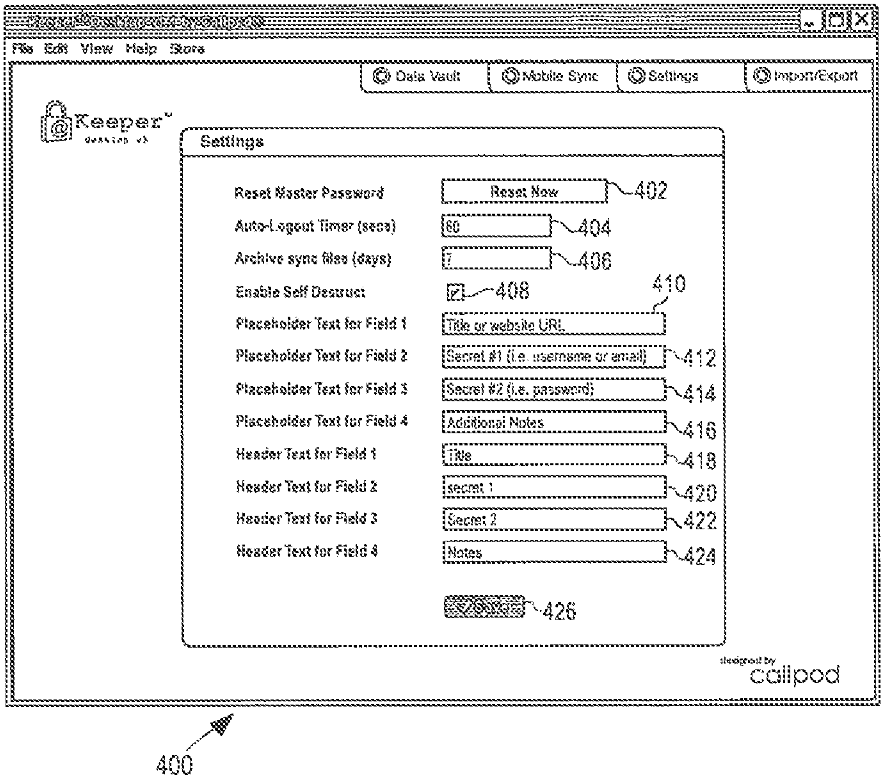
Title
CitiBank

Secret 1
Account Numberxxxxx

Secret 2
Password is yyyyy

Notes
Mothers maiden name is "Jones."
My high school mascot was a "tiger"
My account manager is Mary Jones at 312-123-4567

Fig. 5



Reset Master Password: Reset Now

Auto-Logout Timer (secs): 60

Archive sync files (days): 7

Enable Self Destruct: ☑

Placeholder Text for Field 1: Title or website URL

Placeholder Text for Field 2: Secret #1 (i.e. username or email)

Placeholder Text for Field 3: Secret #2 (i.e. password)

Placeholder Text for Field 4: Additional Notes

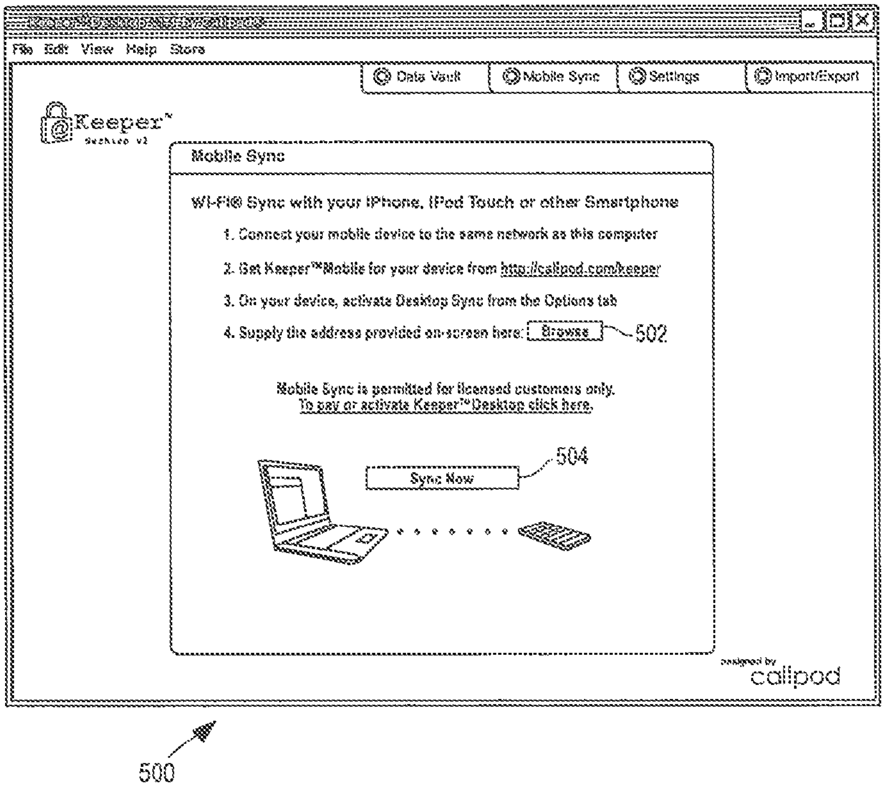
Header Text for Field 1: Title

Header Text for Field 2: secret 1

Header Text for Field 3: Secret 2

Header Text for Field 4: Notes

Fig. 6



Wi-Fi® Sync with your iPhone, iPod Touch or other Smartphone

1. Connect your mobile device to the same network as this computer

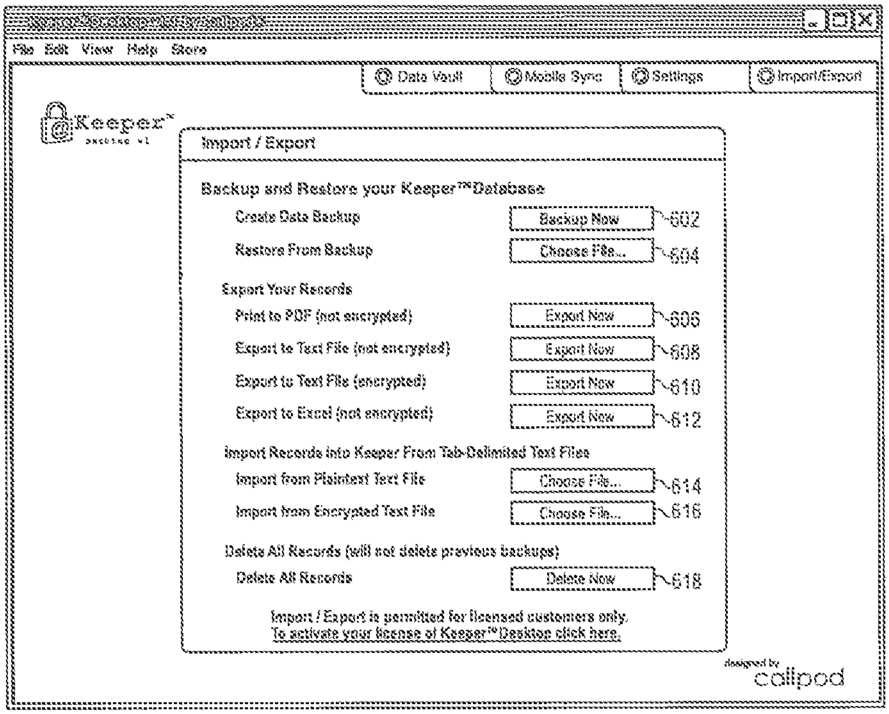
2. Get Keeper™Mobile for your device from http://callpod.com/keeper

3. On your device, activate Desktop Sync from the Options tab

4. Supply the address provided on-screen here:

Mobile Sync is permitted for licensed customers only.
To pay or activate Keeper™Desktop click here.

Fig. 7



Import / Export

Backup and Restore your Keeper™ Database

Create Data Backup

Restore From Backup

Export Your Records

Print to PDF (not encrypted)

Export to Text File (not encrypted)

Export to Text File (encrypted)

Export to Excel (not encrypted)

Import Records into Keeper From Tab-Delimited Text Files

Import from Plaintext Text File

Import from Encrypted Text File

Delete All Records (will not delete previous backups)

Delete All Records

Import / Export is permitted for licensed customers only.
To activate your license of Keeper™ Desktop click here.

Fig. 8

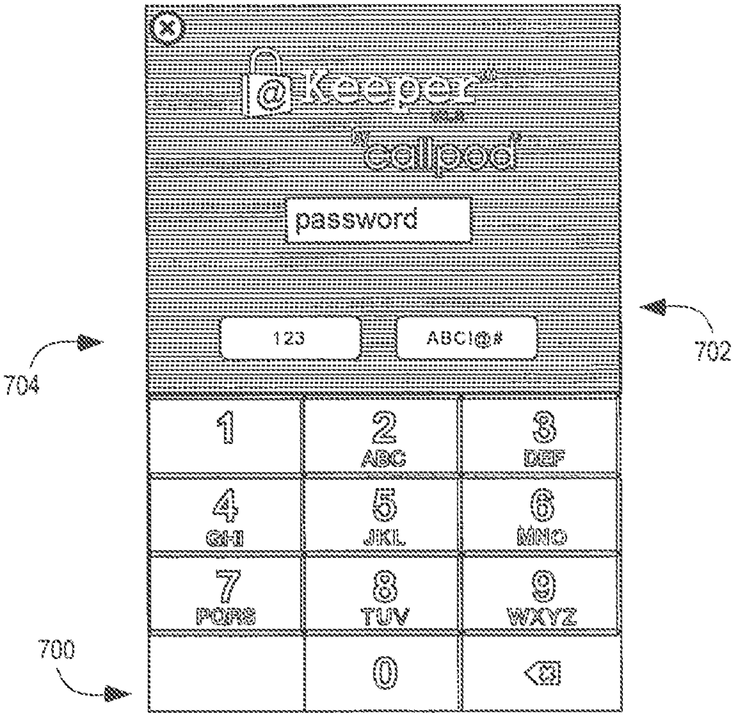


Fig. 9

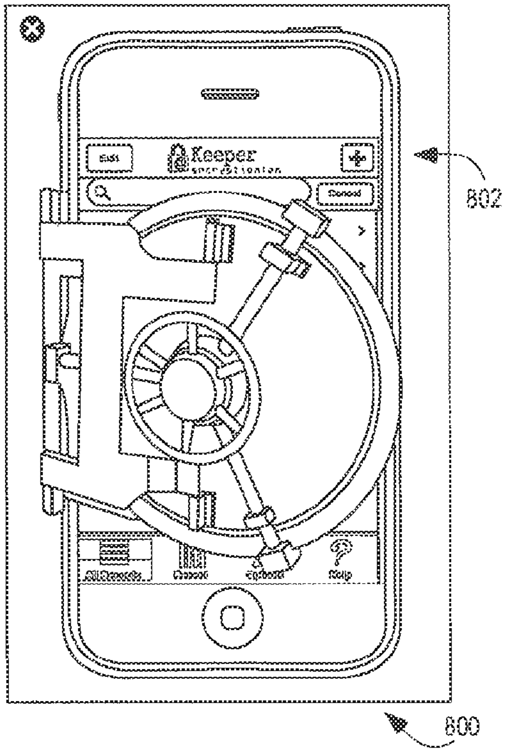
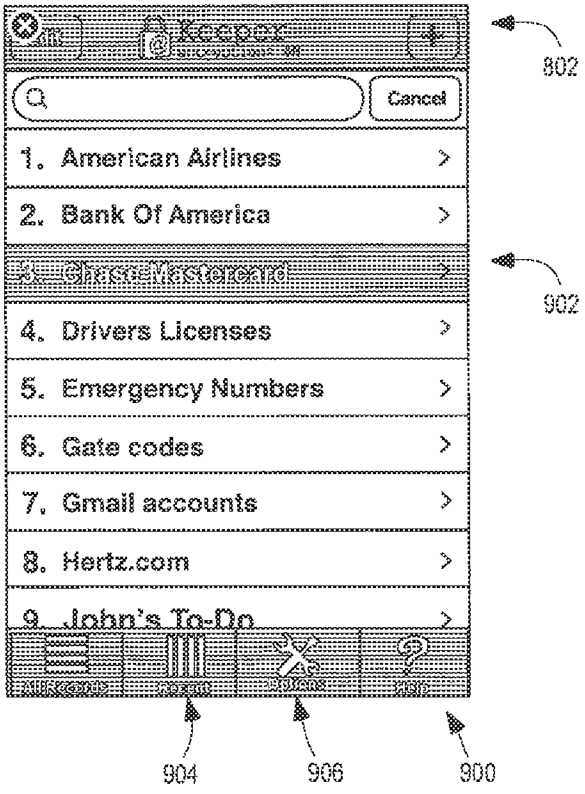
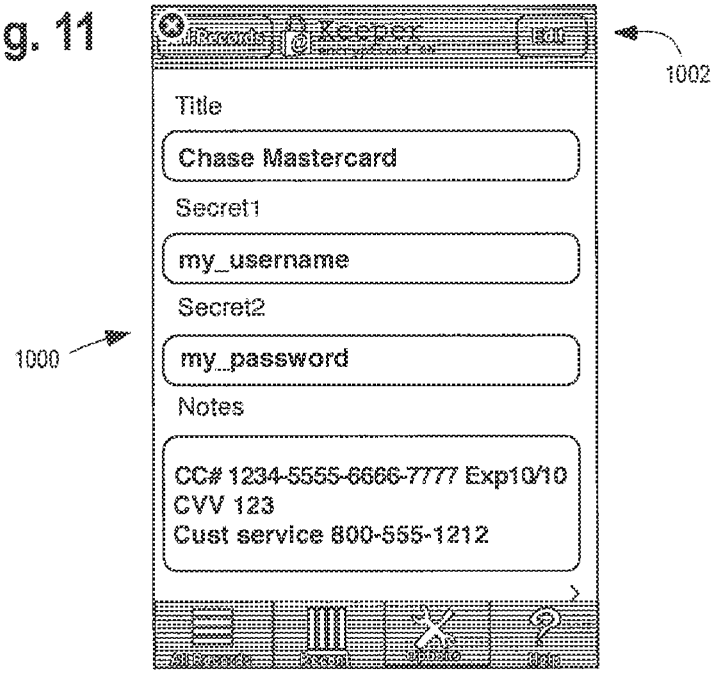


Fig. 10



1. American Airlines
2. Bank Of America
3. Chase Mastercard
4. Drivers Licenses
5. Emergency Numbers
6. Gate codes
7. Gmail accounts
8. Hertz.com
9. John's To-Do

Fig. 11



Title

Chase Mastercard

Secret1

my_username

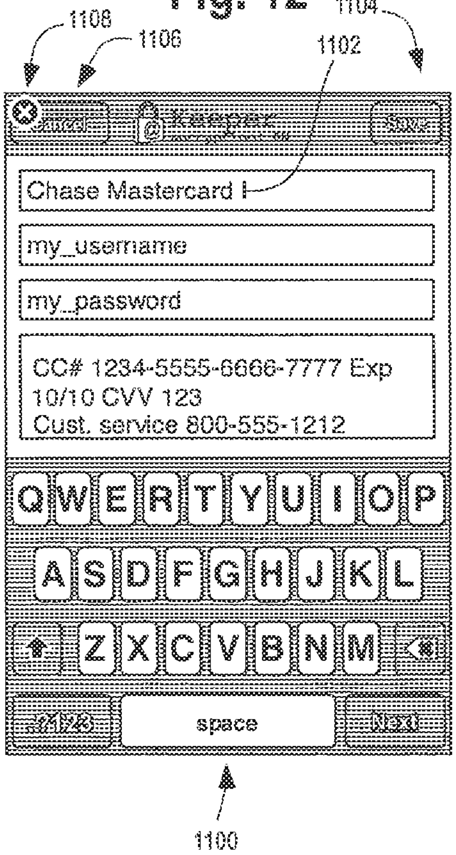
Secret2

my_password

Notes

CC# 1234-5555-6666-7777 Exp10/10
CVV 123
Cust service 800-555-1212

Fig. 12



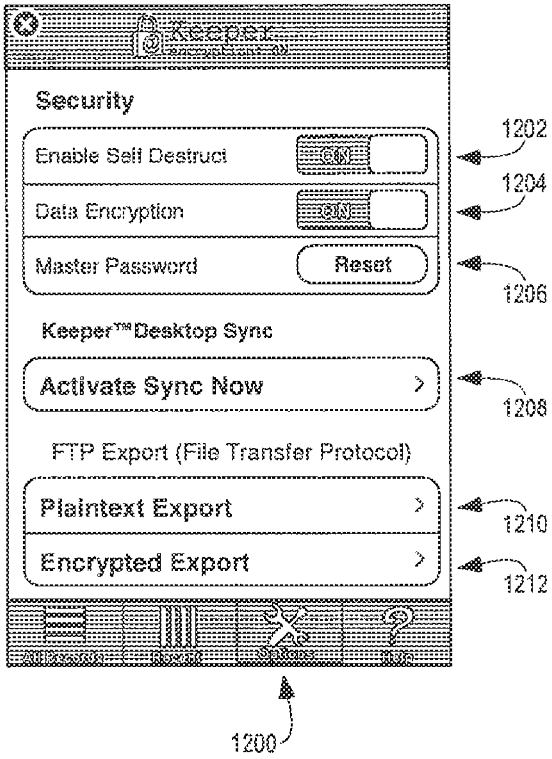
Chase Mastercard

my_username

my_password

CC# 1234-5555-6666-7777 Exp
10/10 CVV 123
Cust. service 800-555-1212

Fig. 13



Security

Enable Self Destruct ON

Data Encryption ON

Master Password Reset

Keeper™ Desktop Sync

Activate Sync Now >

FTP Export (File Transfer Protocol)

Plaintext Export >

Encrypted Export >

METHOD AND APPARATUS FOR PROTECTING ACCOUNT NUMBERS AND PASSWORDS

FIELD OF THE INVENTION

The field of the invention relates to portable electronic devices and more particularly to the security of information kept within portable devices.

BACKGROUND OF THE INVENTION

Fraud prevention methods are well known. In the past, methods of fraud prevention were based upon a personal relationship among transaction partners. Merchants knew their customers and would not be fooled by someone else asking for access to customer accounts.

In today's environment, merchants and account managers do not personally know their customers. As such, access to accounts is typically based upon at least two levels of security. On the first level, a user is required to have some form of identification (e.g., a credit or debit card, an account number, etc.). The second level of security is usually a password.

The first level of security is often manifested in a hard-coded format (e.g., a plastic card) that could be lost or stolen. On the other hand, the second level of security (i.e., passwords) are often committed to memory. As long as a person's password is committed to memory, a lost or stolen credit card is useless.

However, many people often forget their passwords. As a consequence, some people will write their passwords down and carry the passwords with them in their purse or wallet. In this case, if the user loses their purse or wallet, then a thief may still be able to access the accounts of the account holder.

In order to counteract the problem of compromised passwords, many organizations will often request personal information from users (e.g., mother's maiden name, high school mascot, name of first employer, etc.). In addition, to requiring an account number and passwords, many organizations often request an item of personal information on a random basis.

While adding another level of security further increases security, the additional level further increases the difficulty in providing the information of the various levels of security, especially where the memory of a user is impaired. This problem is made worse when a user has accounts with many different organizations. Accordingly, a need exists for better methods of providing the information required for the various levels of security.

SUMMARY OF THE INVENTION

A method and apparatus are provided for protecting confidential information. The method includes the steps of providing a plurality of files where each file contains at least one item of secret information, password protecting the plurality of files with a master password, detecting entry of passwords into a master password entry field, comparing entered passwords with the master password to identify incorrect master passwords and deleting the plurality of files upon successive entry of incorrect master passwords a predetermined number of times.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a block diagram of a password protection system **10** shown in a context of use generally in accordance with an illustrated embodiment of the invention;

FIG. **2** is a master password entry screen that may be used by the system of FIG. **1**;

FIG. **3** is a title selection list screen of confidential information that may be displayed by the system of FIG. **1**;

FIG. **4** is confidential information for a title selected by a user from the screen of FIG. **3**;

FIG. **5** is a settings screen that may be selected be a user through the screens of FIG. **3** or **4**;

FIG. **6** is a synchronization screen that may be selected by a user through the screens of FIGS. **3-5**;

FIG. **7** is a Import/Export screen that may be selected by a user through the screens of FIGS. **3-6**;

FIG. **8** is a master password entry screen of a portable device that may be used by the system of FIG. **1**;

FIG. **9** is a introductory title list screen of a portable device that may be used with the system of FIG. **1**;

FIG. **10** is a selection list screen of confidential information of a portable device that may be displayed by the system of FIG. **1**;

FIG. **11** is an information screen of a portable device that may be selected through the screen of FIG. **10**;

FIG. **12** is an edit screen that may be selected through the screen of FIG. **11**; and

FIG. **13** is a synchronization screen that may be selected through the screens of FIGS. **9-12**.

DETAILED DESCRIPTION OF AN ILLUSTRATED EMBODIMENT

FIG. **1** is a block diagram of a password protection system **10** shown within a context of use generally in accordance with an illustrated embodiment of the invention. The password protection system **10** may be used in conjunction with any of a number of portable electronic devices (e.g., an iPhone, PDA, portable computer, desktop computer etc.) **12** for convenient access to personal information in a safe, secure, portable environment.

Under the illustrated embodiment, a separate subject matter file may be created within the password protection system **10** for each unit of confidential information. For example, a first file may be provided for a VISA credit card, a second file may be provided for a MASTERCARD, a third file may be provided for bank or brokerage accounts, etc. Moreover, each file is not limited in the amount of information that may be used to define the unit of information.

Each file within the password protection system may be identified by a convenient title. In most cases, the title may be selected to be suggestive of the subject matter of the file. For example, a VISA file may be entitled "VISA."

Another file may be entitled "mortgages" as an indication of content. Within the file may be a name and account number of a mortgage holder. Alternatively, the content of the file may be a list of mortgage holders where a content of the list operate as pointers to other files that contain the specific account information of the mortgage holders in the list.

Moreover, the information contained within the password protection system **10** is intended to be automatically deleted upon the occurrence of any of a number of predetermined events. For example, entry of a sequence of incorrect passwords into the field intended for entry of a master password may cause deletion of all of the data within the password protection system **10** when the number of incorrect passwords in the sequence exceeds some predetermined value. Similarly, any attempt to copy the password protection system **10** or the encrypted files of the password protection system **10** may also automatically cause deletion.

Under another illustrated embodiment, the password protection system **10** may automatically offer information based upon geographic location. In this case, a user of the device **12** may mark certain geographic locations where certain units of confidential information are typically used. The next time that the user logs into the password protection system **10** at the marked location, the password protection system **10** automatically offers access to the marked information that corresponds to that geographic location.

The password protection system **10** may be used as an auxiliary application on any of a number of electronic devices **12** or as a single application on a stand-alone portable electronic device. For example, the password protection system **10** could be used as an application on an iPhone.

While the password protection system may have its greatest utility in small portable devices, the password protection system **10** may also be used in laptops and other desktop computer devices. For simplicity, the system **10** will first be described in the context of a laptop or desktop computer **12**.

In order to access the system **10**, an access icon **16** of the password protection system **10** may be provided on a display **14** of the device **12**. Upon selection of the icon **16**, a sign on or login screen **100** (FIG. **2**) may be presented to the user. Included within the sign on screen may be an interactive window **102** for entry of a master password. As used herein, a master password is an alphanumeric string used for gaining global access to the password protection system **10**.

The master password may be any length up to 32 characters or longer in some cases. Any combination of letters or numbers may be combined depending upon the level of security needed.

Once presented with the interactive window for the master password, a user may enter the master password and activate an ENTER or LOGIN softkey **104**. In response, a password processor **18** may compare the entered password with a previously saved master password **20**.

If the password entered through the master password window **102** matches the saved master password **20**, then access is granted to the subject matter files **24**, **26** of the password protection system **10**. For example, the window **200** of FIG. **3** may be presented to the user showing a list of titles **202**.

On the other hand, if the entered password does not match the saved master password **20**, then the password processor **18** increments a master password sequence counter or count register **22**. Each time the entered password matches the saved master password **20**, the password processor **18** resets (i.e., enters a zero value into) the master password sequence count register **22**.

After each incorrect master password, the password processor **18** compares the value within the sequence count register **22** with a threshold value (e.g., a value of 5) 30. If the value within the count register **22** exceeds the threshold value **30**, then the password processor **18** may activate a deletion processor **28**. The deletion processor automatically and completely deletes each of the subject matter files **24**, **26**.

It should be specifically noted that the password protection system **10** does not provide any method for recovering or resetting forgotten master passwords. Moreover, if an unauthorized party should attempt to guess a password or use some computer controlled algorithm to match the master password, the automatic deletion of the subject matter files will defeat such attempt after a very limited number of tries.

Information saved within the system **10** may be encrypted using a public key and military specified encryption algorithm. In this regard, the public key and encryption algorithm operate on substantially all of the data within the system **10**. On a first level, the master password is encrypted using the public key and encryption algorithm. Passwords entered through the password window **102** are encrypted and compared with the previously encrypted master password **20** during login. On another level, the subject matter files **24**, **26** are further encrypted using the encrypted master password **20**.

Once a user opens the password protection system **10**, the password processor decrypts the files **24**, **26** and the user is presented with a navigation screen **200** containing the list of titles (alphanumeric sequences) **202** where each title corresponds to a respective file **24**, **26**. Each title of the list **202** presented on the navigation screen **200** operates as an access softkey for accessing a corresponding respective file **24**, **26**.

As opposed to scrolling through the list **202**, the user may also search the files **24**, **26**. Included on the navigation screen may be an interactive window **204** for entering a search term. In this regard, the name and content of the files **24**, **26** may be searchable. For example, if a user wishes to know if he/she has used the same term (e.g., title, password, etc.) for any other file, the user may enter the term, activate the ENTER button and the password system **10** will return an indication of any other files in which the term has been used.

Alternatively, the user may be provided with a “sort by” menu softkey **206**. In this case, if the user selects “Sort by Title” and enters a letter, then the system **10** will return an alphabetic list of files **24**, **26** that have a title beginning with the entered letter. Alternatively, the user may sort by oldest or youngest file **24**, **26**.

Associated with each of the files **24**, **26** may be a number of information fields **208**, **210**, **212**, **214** defined according to function. If the user wishes to retrieve a particular file **24**, **26**, then the user may select the corresponding title (e.g., title **302** in FIG. **4**) from the list **202**. Upon selection of the title **302**, the user is presented with the information within each of the fields **208**, **210**, **212**, **214**.

In the example shown in FIG. **4**, the user has selected the title “CitiBank” **302**. In this case, the file **24**, **26** contains information regarding a bank account with CitiBank. The title “CitiBank” is shown in the first field **208**, the account number “xxxxx” is shown in the second field **210** as the first secret item, the password “yyyyy” is shown as the second secret item in the third field **212**.

Also shown in FIG. **4** is a fourth field **214** labeled “Notes.” Within the Notes field **214**, the user may enter any information used in conjunction with the account. In this case, the user may enter the answers to the personal questions asked by the bank in setting up the account. In this case, the answers to the personal questions may be used by the bank to confirm the identity of the user in any of a variety of different situations (e.g., on-line transactions, telephone requests, etc.).

In addition to retrieving information, the user can also easily modify the records **24**, **26** within the system **10**. For example, if the user should want to change a password saved in the second field or window **212** of the screen **300**, then the user may activate an Edit softkey **306**. Once the Edit softkey **306** has been activated, the user can place a cursor over the information of the fields **208**, **210**, **212**, **214** and enter changes.

Similarly, if the user should wish to create an entry for a new account (i.e., create a new file **24**, **26**), the user may activate the New softkey **304**. Once the New softkey **304** is activated, the user can add files **24**, **26** as necessary by typing a title into the first window **208** followed by additional information into the following windows **210**, **212**, **214**.

If the user should find that certain information has become outdated or may be replaced by other information, the user can delete the appropriate files **24**, **26**. In this case, the user simply selects the title of a file **24**, **26** and activates the Delete softkey **308**.

Similarly, the system **10** can be adapted to any of a number of different uses. For example, if the user should wish to change the user interface of the system **10**, then the user may activate the Settings softkey **220** (FIG. **3**).

Upon activating the Settings softkey **220**, the user is presented with the settings screen **400** of FIG. **5**. A first choice of the settings screen **400** is a Reset Master Password softkey **402**. The Reset softkey **402** resets the master password **20**.

In order to reset the master password **20**, the password processor **18** first decrypts each of the files **24**, **26** using the old encrypted master password **20**. The password processor **18** then requires that the user enter a new master password a first and then a second time. If the two newly entered passwords match then the password processor first encrypts the new master password **20** and then re-encrypts each of the files **24**, **26**.

Another choice on the setting screen **400** is a window **404** for entering a time delay controlling automatic logout. In this case, a timer within the system **10** is initiated each time the user logs in. When the timer reaches the time value shown in the window **404** (or reaches zero from a starting value equal to the time shown in the window **404**), the system **10** automatically logs the user out of the system **10**. The logout in this case may be set to a relatively short period of time to further protect the files **24**, **26** by automatically requiring the user to re-enter the master password each time the time period **404** elapses.

Another choice on the settings screen **400** is a window **406** for specifying a time interval for backing up or otherwise archiving the files **24**, **26** in a memory device. In this case, the specified time is in days. After the expiration of the time period specified in the window **406**, the user is prompted to synchronize the files **24**, **26**.

Another choice on the settings screen **400** is a box **408** for enabling or disabling the automatic deletion of the files **24**, **26**. If the box **408** is checked, then after a specified sequence of incorrect master passwords are entered, the files **24**, **26** are automatically deleted. If the box **408** is not checked, then the system **10** will not delete the files **24**, **26**. However, the system **10** will continue to deny access until the proper master password is entered.

Other choices include a number of windows **410**, **412**, **414**, **416**, **418**, **420**, **422**, **424** that may be used in conjunction with the New softkey **304** and with the creation of new files **24**, **26**. For example, boxes **418**, **420**, **422**, **424** are used for entering the terms that will appear in the upper halves of fields **208**, **210**, **212**, **214**. Boxes **410**, **412**, **414**, **416** are used for entry of placeholder terms that are initially displayed in the lower halves of fields **208**, **210**, **212**, **214** and that are replaced with the actual information entered by the user. For example, a first box **418** may be used for entry of header text (e.g., the word "title") or other descriptive term in the upper portion of field **208** for each of the files **24**, **26**. In the example, of FIG. **5**, the placeholder for the header text entered through box **410** is descriptive of the format of the header text, including an identifier of a bank or credit account or the name of a website.

Similarly, a second box **420** and third box **422** may be used for entry of descriptive header text displayed in the top halves of the second and third fields **210**, **212**, respectively, while boxes **412**, **414** receive descriptive placeholder information of the format of user information that may be entered into the lower halves of the second and third fields **210**, **212**. For example, box **420** may have the title of "secret **1**" in the top half of field **210** while the placeholder entered through box **412** may be "Secret #1 (i.e., username or email)." Similarly, box **422** may have the title of "secret **2**" in the top half of field **212** while the placeholder entered through box **414** may be "Secret #2 (i.e., password)." Box **424** may have the header text of "Notes" in the top half of field **214** while the placeholder entered through box **416** may be "Additional Notes." The user may make whatever setting changes desired and activate a Save softkey **426** to save the desired settings.

If the user should select the Mobile Sync softkey **218** (FIG. **3**), then the user may be presented with the screen **500** of FIG. **6**. The Mobile Sync softkey **218** operates to synchronize data or otherwise exchange updates between the laptop **12** and mobile device **32**.

In order to synchronize data, the user first provides an appropriate software version of the system **10** to the mobile device **32** and connects the mobile device **32** to the same network as the laptop **12**. In this regard, the connection may be established via any appropriate medium (e.g., WiFi, USB cable, Bluetooth, etc.). In the example of FIG. **1**, the laptop **12** is connected to the mobile device **32** via a WiFi connection **34**.

To initiate synchronization, the user activates Mobile Sync softkey **218** (if not already activated). From the screen **500**, the user may select the communication system via a Browse softkey **502**. In the example of FIG. **1**, the user would select the WiFi connection **32**. Once the communication connection **34** has been selected, the user activates the Sync Now softkey **504** to synchronize files **24**, **26** among devices **12**, **32**.

In addition to synchronizing files **24**, **26**, the user may also archive the files **24**, **26**. In this case, the user may activate an Import/Export softkey **222** (FIG. **3**). In response, the screen of FIG. **7** may be presented to the user.

If the user has not previously backed up the files, then the user may activate the Backup Now softkey **602**. In response, the user would be presented with a proposed path/file name for backup. The user may either activate an OK softkey or modify the proposed path/file name and then activate the OK softkey to complete the backup.

Alternatively, the user may restore a previous set of files **24**, **26** by activating a Chose File softkey **604**. In response, the user may be presented with one or more previously created backup file. The user may select one of the files followed by activation of an OK softkey completing the restore operation.

The user may also export the files **24**, **26** either in an encrypted on unencrypted format. For example, a user may export the files **24**, **26** under an unencrypted pdf format by activating an Export Now softkey **606**. In response, the user would be presented with an interactive window for entry of a path/filename. The user may select a path, enter a file name and activate an OK softkey to complete exportation into the unencrypted pdf file.

Similarly, the user may export the files **24**, **26** under an unencrypted text format by activating an Export Now softkey **608**. In response, the user would be presented with an interactive window for entry of a path/filename. The user may select a path, enter a file name and activate an OK softkey to complete exportation into the unencrypted text file.

Alternatively, the user may export the files **24**, **26** under an encrypted text format by activating an Export Now softkey **610**. In response, the user would be presented with an interactive window for entry of a path/filename. The user may select a path, enter a file name and activate an OK softkey to complete exportation into the encrypted text file.

In another alternative, the user may export the files **24**, **26** under an unencrypted Excel format by activating an Export Now softkey **612**. In response, the user would be presented with an interactive window for entry of a path/filename. The user may select a path, enter a file name and activate an OK softkey to complete exportation into the unencrypted Excel file.

The user may also import files from one or more tab-delimited text files having the appropriate format. In this case, the user may import from a plaintext text file by activating a Choose File softkey **614**. In response, the user would be presented with a Browse softkey where the user would select the appropriate text file. The user may then activate an OK softkey to complete the importation.

The user may also import files from one or more text files having the appropriate encrypted format. In this case, the user may import from an encrypted plaintext text file by activating a Choose File softkey **616**. In response, the user would be presented with a Browse softkey where the user would select the appropriate encrypted text file. The user may then activate an OK softkey to complete the importation.

The user may also delete all files **24**, **26** within the system **10** by activating the Delete Now softkey **618**. Activation of this softkey **618** will not affect previous backups of the files **24**, **26**.

Under another illustrated embodiment, the system **10** includes (or accesses) a global positioning system (GPS) sensor **38**. Each time that the user opens a particular file **24**, **26**, the GPS sensor **38** may determine a current global position (e.g., by street address, latitude and longitude, etc.) of the device **12**, **32** and a global positioning processor **40** saves the global position within the file **24**, **26**. If the file **24**, **26** already contains a record of the current global position, then the global positioning processor may increment the number of times that the file **24**, **26** has been opened at the current position. Alternatively, a user may activate a Mark Global Position softkey **44** to mark a particular location of use of the file **24**, **26**.

The collection of geographic information may be very useful in some situations. For example, where a user enters a bank or stock broker's office, it is very likely that the user will need access to any files **24**, **26** containing secret information related to one or more accounts the user has previously established with the bank or broker.

Operating in the background on the system **10** may be a position comparison processor **42** that determines a current global position of the system **10** each time that the user logs into the system **10** or periodically after login. A comparator within the position comparison processor **42** then looks for any marked files **24**, **26** or compares the current global position with any global positions saved within each of the files **24**, **26** to identify any files **24**, **26** that are frequently used at the current geographic location. The position comparison processor **42** may do this by comparing the number of times that a file was opened at a current location with a threshold value used to eliminate random events. The position comparison processor **42** may then order any remaining files based upon which file **24**, **26** was opened most frequently at the current location and proceed to present the ordered list to the user. The user may open the most frequently used file **24**, **26**, scroll through the list or open none at all.

In general, the system **10** operates substantially the same on the mobile unit **32** as on the laptop or desktop device **12**. One exception is the graphical user interface (GUI) **14**. For example, where the system **10** is installed into an iPhone, the GUI **36** of the mobile unit **32** would appear somewhat different than when used on the laptop **12**.

For example, to access the system **10**, the user would activate the password protection system icon **16** on the mobile device **32**. In response, the login screen **700** of FIG. **8** would appear on the GUI **36** of the mobile device **32**.

Using the screen **700**, the user would log into the system **10**. For a master password including numbers, the user would activate the number softkey **704** for entering numbers. For letters, the user would activate the alphabetic softkey **702** and be presented with a full alphabetic keyboard instead of the number keyboard shown on screen **700**.

Upon the successful entry of a master password, the screen **800** of FIG. **9** would appear on the mobile device **32**. In order to access the records **24**, **26**, the user may activate an advance softkey **802**.

Upon activating the advance softkey **802**, the user may be presented with the screen **900** of FIG. **10** showing a list of titles **202**. If the user does not see the title that he/she wants, then the user may continue to activate the advance softkey **802**. Alternatively, the user may activate a most recently accessed softkey **904** to view a set of most recently displayed records **24**, **26**.

Alternatively, the user may select one of the titles (e.g., title **902** of FIG. **10**). Upon activating the title **902**, the user would be taken to the screen **1000** of FIG. **11**.

The user may review and use the information on the screen **1000** or may decide that the information needs to be updated. If the user desires to update the screen **1000**, then the user activates the Edit softkey **1002** and is taken to the screen **1100** of FIG. **12**.

On the screen **1100** of FIG. **12**, the user may place a cursor **1102** where ever desired and make corrections. Once the corrections are complete, the user may activate the Save softkey **1104**. Alternatively, the user may activate the Cancel softkey **1106** or Close softkey **1108** to cancel the corrections. If the user activates the Close softkey **1108**, then the system **10** would close and the user would be required to activate the system icon **16** to login and continue use of the system **10**.

If the user chooses to activate the Save softkey **1104** or Cancel softkey **1106**, then the user may be taken back to the title list of screen **900**. From the title list of screen **900**, the user may activate an Options softkey **906** and be presented with the tools screen **1200** of FIG. **13**.

On the tools screen **1200**, the user may activate the Enable Self Destruct softkey switch **1202** to enable the automatic deletion of records **24**, **26** upon the entry of a sequence of incorrect master password a predetermined number of times. Alternatively, the user may activate a Data Encryption softkey switch **1204** to encrypt the files **24**, **26** and master password saved on the mobile device **32**. The user may also activate a Master Password Reset softkey **1206** to reset the master password.

The user may also initiate a synchronization procedure through the Activate Sync Now softkey **1208**. The user may also specify the format of synchronization by selecting either a Plaintext Export softkey **1210** or a Encrypted Export softkey **1212**.

If the user activates the Activate Sync Now softkey **1208**, the user may be asked to activate a further softkey switch to confirm his/her desire to synchronize with the laptop **12**. If the user confirms, his/her desire to continue, then the mobile device presents an address for use with and entry into the laptop in order to facilitate synchronization. Once complete, the mobile device presents a screen to the user confirming the successful synchronization of the mobile device **32**.

In another embodiment of the invention, the password processor **18** may compare any entered password with a booby trap password **46**. The use of a booby trap password **46** may be useful in cases where the user of the system is under duress. For example, a user on a public street may be threatened with harm if the user does not provide a thief with the master password. In this case, the booby trap password **46** may be a password that instead of providing access to the files operates to immediately delete the files **20**, **26**.

As above, the booby trap password **46** may be encrypted using a public key and the booby trap password **46** and saved as an encrypted booby trap file **48**. Any entered password may be used to decrypt the file **48**. If the entered password successfully decrypts the file **48**, the deletion processor **28** may be immediately activated to delete the files **24**, **26**.

In still another embodiment, the successful decryption of the booby trap file **50** may result in a series of steps intended to confound a threat. In this case, the successful decryption of the booby trap file **48** may cause a set of bogus information from a file **50** to be displayed on the screen including a set of bogus passwords or passwords that if used by the threat would immediately cause an alert to be sent to the authorities.

A specific embodiment of method and apparatus for protecting confidential information has been described for the purpose of illustrating the manner in which the invention is made and used. It should be understood that the implementation of other variations and modifications of the invention and its various aspects will be apparent to one skilled in the art, and that the invention is not limited by the specific embodiments described. Therefore, it is contemplated to cover the present invention and any and all modifications, variations, or equivalents that fall within the true spirit and scope of the basic underlying principles disclosed and claimed herein.

The invention claimed is:

1. A computer-implemented method for securing confidential information on a computing device, the device having a display associated therewith, comprising:

receiving data corresponding to the confidential information;

creating a plurality of files on the device based on the received data, wherein each of the plurality of files is associated with a respective account, and wherein each of the plurality of files stores a respective account password that is generated during the plurality of files creation and is associated with such account;

encrypting the plurality of files using an encryption key;

storing the encrypted plurality of files on the device;

associating a master password, provided by a user, with the encrypted plurality of files, wherein the master password is different than each of the respective account passwords generated during the creation of the corresponding plurality of files and stored therein;

receiving a password from the user; and

comparing the received password and the master password, and, if the received password and master password match:

decrypting the plurality of files,

displaying, on the display, file identifiers respectively associated with each of the decrypted plurality of files,

receiving a selection of one of the displayed file identifiers, wherein a determination that the received selection causes a frequency of selecting the one of the displayed file identifiers at a geographical location to exceed a predetermined selection threshold triggers an association of the geographical location with one of the plurality of files associated with the selected file identifier, and

displaying the account password stored in the file associated with the account associated with the selected file identifier.

2. The method of claim **1**, further comprising sequentially receiving a predetermined number of passwords that do not match the master password and, in response, deleting the plurality of files.

3. The method of claim **1**, further comprising receiving a predetermined booby trap password and, in response, deleting the plurality of files.

4. The method of claim **3**, further comprising restoring the deleted plurality files from a backup of the plurality of files.

5. The method of claim **3**, wherein a successful decryption of the booby trap password may cause a set of bogus information to be displayed including a set of bogus passwords or passwords that if used by a threat causes an alert to be sent to authorities.

6. The method of claim **1**, further comprising associating an additional geographical location with the plurality of files automatically once encrypted and stored on the device.

7. The method of claim **1**, further comprising receiving a current geographical location associated with the device that matches substantially the geographical location and automatically selecting the file associated with the current geographical location.

8. The method of claim **1**, further comprising receiving a current geographical location associated with the device and wherein displaying the file identifiers respectively associated with each of the plurality of files includes displaying the file identifiers in accordance with a sorting order, wherein the sorting order is in accordance with the frequency with which the file identifier has previously been selected at the current geographical location.

9. The method of claim **1**, wherein the device is a mobile device and includes a GPS controller that provides geographical location information.

10. A system for securing confidential information on a computing device, the device having a display and a storage medium associated therewith, comprising:

a plurality of files created based on the confidential information and stored on the device in an encrypted format in the storage medium, wherein each of the plurality of files is associated with a respective account, and wherein each of the plurality of files stores a respective account password that is generated during the plurality of files creation and is associated with such account;

a master password provided by a user and stored in the storage medium, wherein the master password is associated with the encrypted plurality of files and is different than each of the respective account passwords generated during the creation of the corresponding plurality of files and stored therein;

a password processor that receives a password from the user and compares the received password and the master password and, if the received password and master password match, the password processor is configured to:

decrypt the plurality of files,

display a navigation screen on the display having file identifiers respectively associated with each of the decrypted plurality of files,

receive a selection of one of the displayed file identifiers, wherein a determination that the selection causes a frequency of selecting the one of the displayed file identifiers at a geographical location to exceed a predetermined threshold triggers an association of the geographical location with one of the plurality of files associated with the selected file identifier, and

display the account password stored in the file associated with the account associated with the selected file identifier.

11. The system of claim **10**, wherein the password processor sequentially receives a predetermined number of passwords that do not match the master password and, in response, deletes the plurality of files.

12. The system of claim **10**, wherein the password processor deletes the plurality of files in response to receipt of a booby trap password.

13. The system of claim **12**, wherein the deleted plurality of files is restored onto the storage medium from a previously created backup of the plurality of files.

14. The system of claim **12**, wherein a successful decryption of the booby trap password may cause a set of bogus information to be displayed including a set of bogus passwords or passwords that if used by a threat causes an alert to be sent to authorities.

15. The system of claim **10**, further comprising a position comparison processor that associates an additional geographical location with the plurality of files automatically once encrypted and stored on the device.

16. The system of claim **10**, wherein the position comparison processor receives a current geographical location associated with the device that matches substantially the geographical location and automatically selects the file associated with the current geographical location.

17. The system of claim **10**, wherein the position comparison processor receives a current geographical location associated with the device and the password processor displays the file identifiers respectively associated with each of the plurality of files in accordance with a sorting order, wherein the sorting order is in accordance with the frequency with which the file identifier has previously been selected at the current geographical location.

18. The system of claim **10**, wherein the device is a mobile device and includes a GPS controller that provides geographical location information.

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