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(54) **INTERNET-BASED SECURE ACCESS CONTROL WITH CUSTOM AUTHENTICATION**

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H04N 7/16	(2006.01)

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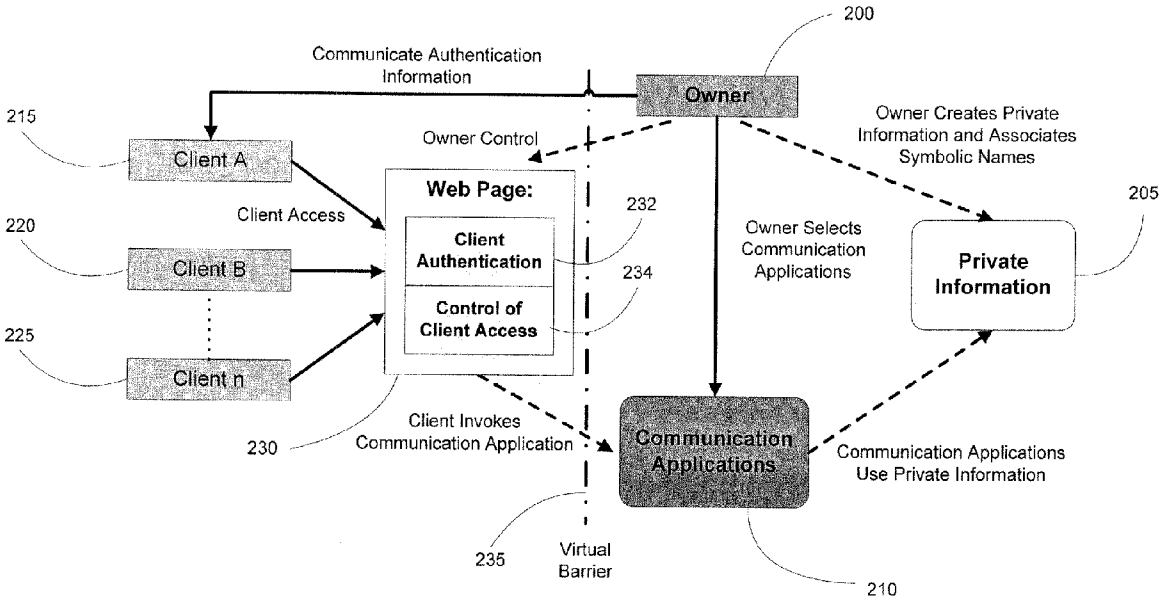
(57) **ABSTRACT**

A method of providing an owner with secure online control of private information comprises providing an owner-editable set of private information. Allowing the owner to edit at least one item of private information and allowing the owner to create a first relationship between a symbolic name and the item of private information. Allowing the owner to create a second relationship between a communication application and the symbolic name. Allowing the owner to create a third relationship between the symbolic name and a client, the third relationship arranged to prevent the client from accessing the item of private information, and providing a website, the website arranged to enable the client to access the symbolic name.



Adobe Inc. v.
Express Mobile, Inc.,
IPR2021-XXXXX
U.S. Pat. 9,063,755
Exhibit 1029

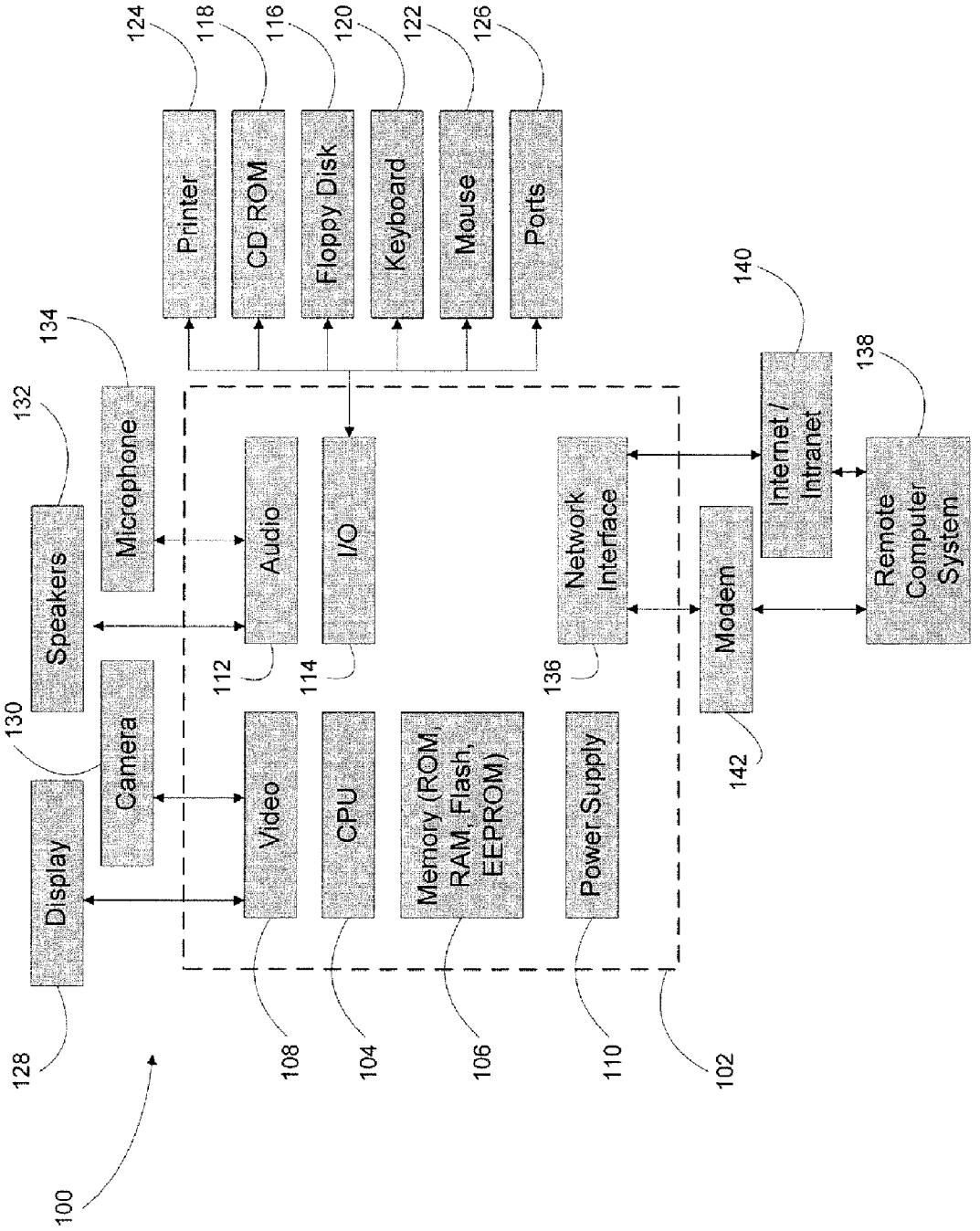

Printer
CD ROM
Floppy Disk
Keyboard
Mouse
Ports
Microphone
Speakers
Camera
Display
Audio
I/O
Video
CPU
Memory (ROM, RAM, Flash, EEPROM)
Power Supply
Network Interface
Modem
Internet / Intranet
Remote Computer System
100
102
104
106
108
110
112
114
116
118
120
122
124
126
128
130
132
134
136
138
140
142

FIG. 1

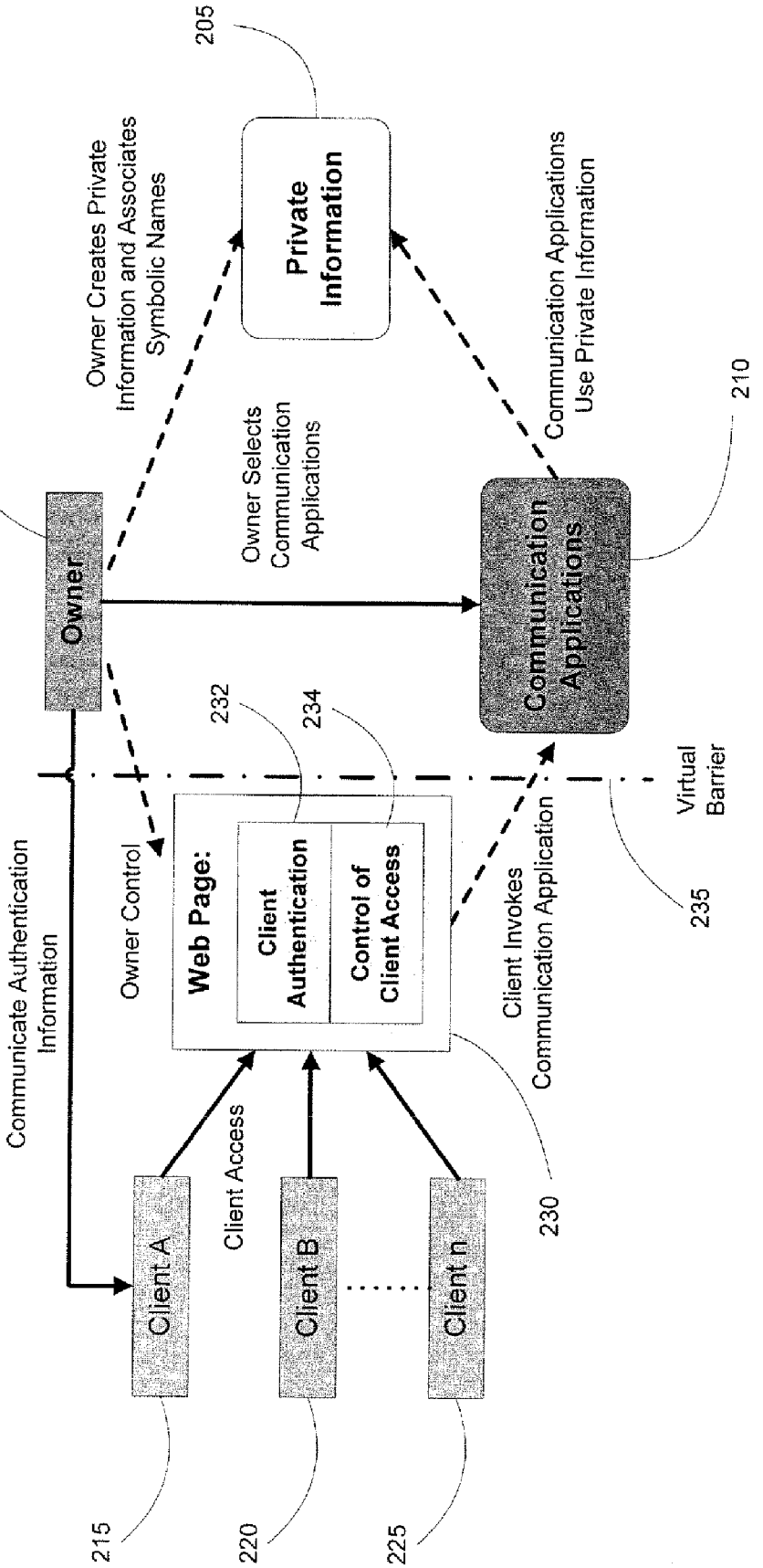

205
Private Information
Owner Creates Private Information and Associates Symbolic Names
Owner Selects Communication Applications
Communication Applications Use Private Information
200
Owner
210
Communication Applications
232
234
Communicate Authentication Information
Owner Control
Web Page:
Client Authentication
Control of Client Access
Client Invokes Communication Application
Virtual Barrier
235
Client Access
Client A
Client B
Client n
230
215
220
225

FIG. 2

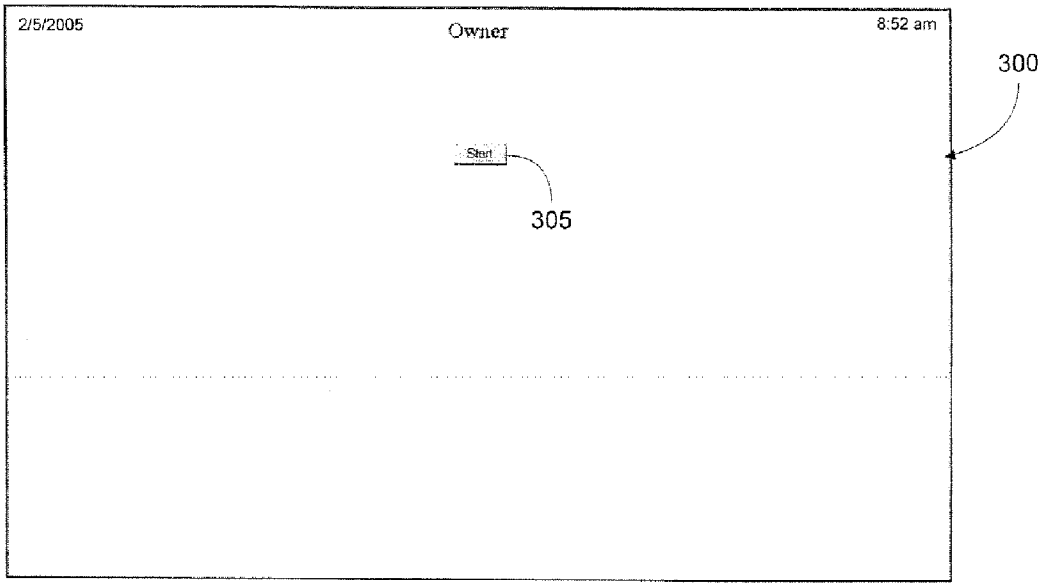

2/5/2005
Owner
8:52 am
300
Start
305

FIG. 3

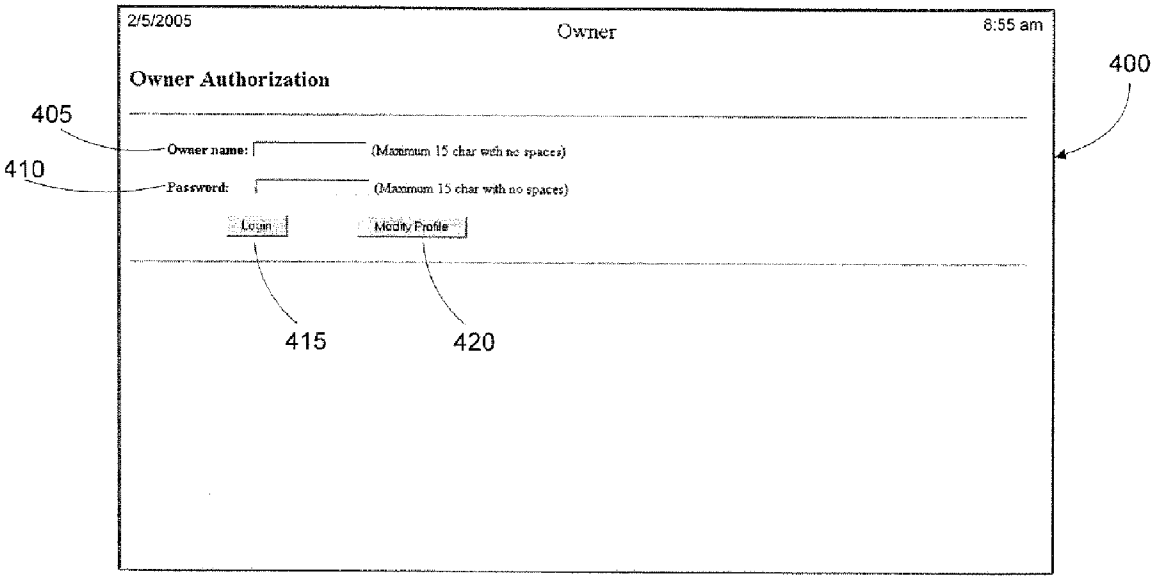

2/5/2005
Owner
8:55 am
400
Owner Authorization
405
Owner name:
(Maximum 15 char with no spaces)
410
Password:
(Maximum 15 char with no spaces)
Login
Modify Profile
415
420

FIG. 4

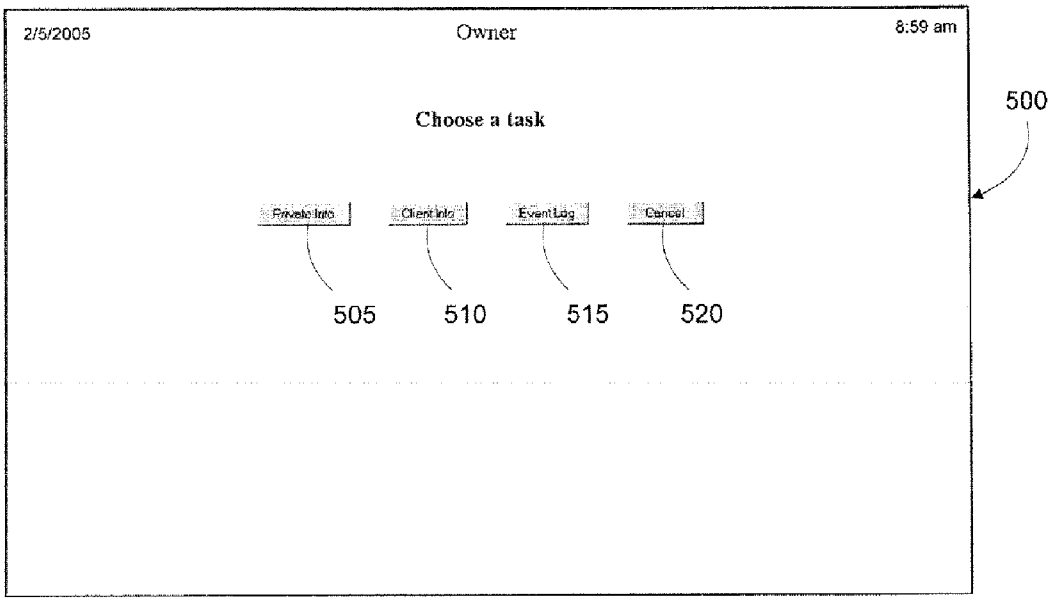

2/5/2005
Owner
8:59 am
Choose a task
Private Info
Client Info
Event Log
Cancel
500
505
510
515
520

FIG. 5

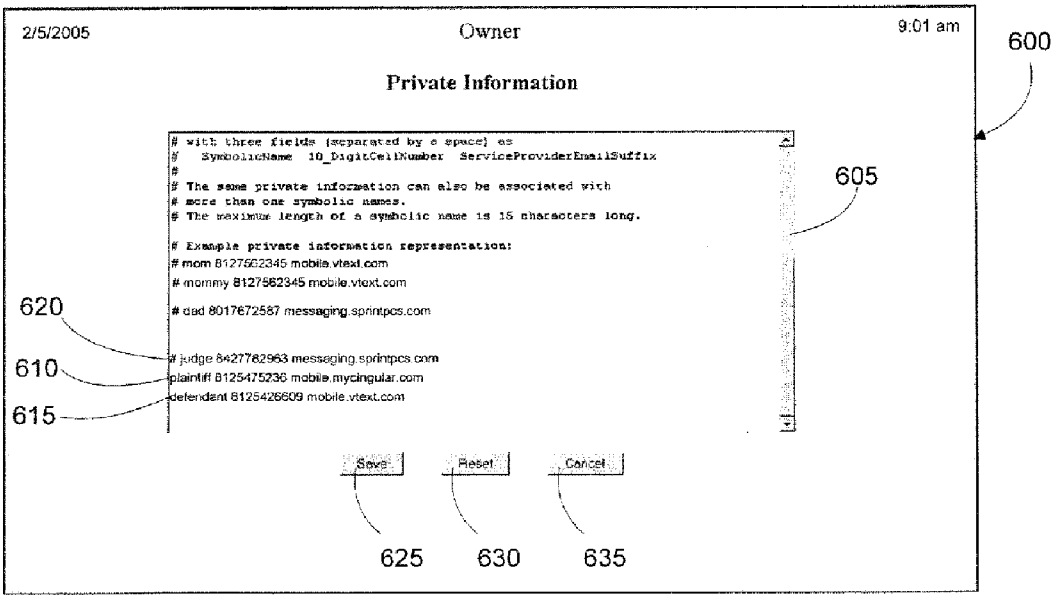

2/5/2005
Owner
9:01 am
Private Information
with three fields (separated by a space) as
SymbolicName 10_DigitCellNumber ServiceProviderEmailSuffix
#
The same private information can also be associated with
more than one symbolic names.
The maximum length of a symbolic name is 15 characters long.
Example private information representation:
mom 8127562345 mobile.vtext.com
mommy 8127562345 mobile.vtext.com
dad 8017672587 messaging.sprintpcs.com
judge 8427782963 messaging.sprintpcs.com
plaintiff 8125475236 mobile.mycingular.com
defendant 8125426609 mobile.vtext.com
Save
Reset
Cancel
600
605
620
610
615
625
630
635

FIG. 6

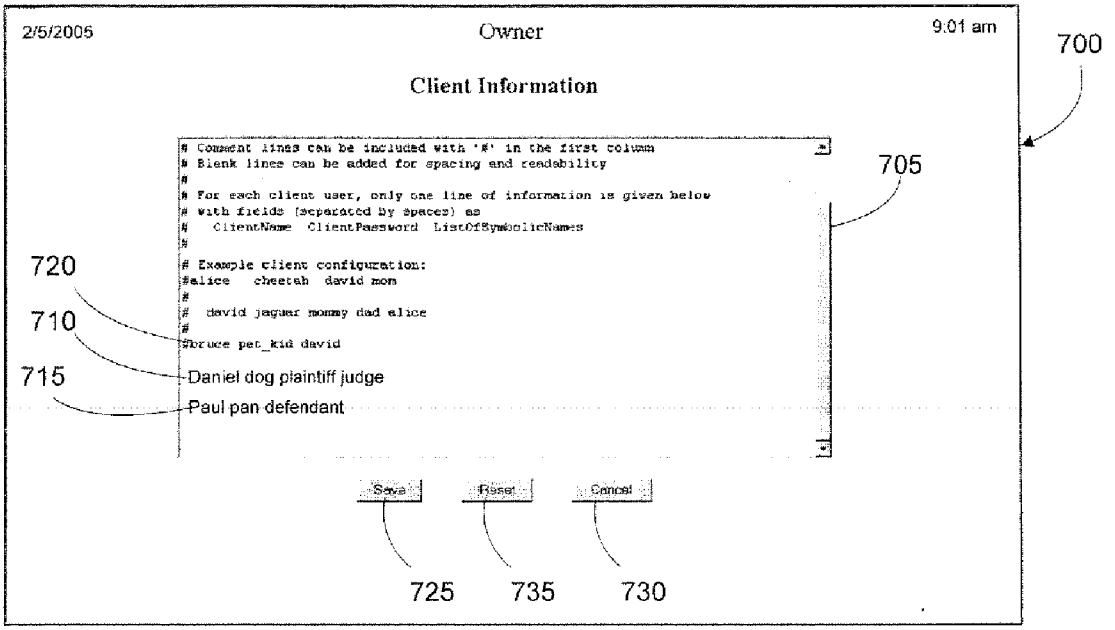

2/5/2005
Owner
9:01 am
700
Client Information
705
Comment lines can be included with '#' in the first column
Blank lines can be added for spacing and readability
#
For each client user, only one line of information is given below
with fields (separated by spaces) as
ClientName ClientPassword ListOfSymbolicNames
#
Example client configuration:
#alice cheetah david mom
#
david jaguar mommy dad alice
#
#bruce pet_kid david
720
710
715
Daniel dog plaintiff judge
Paul pan defendant
Save
Reset
Cancel
725
735
730

FIG. 7

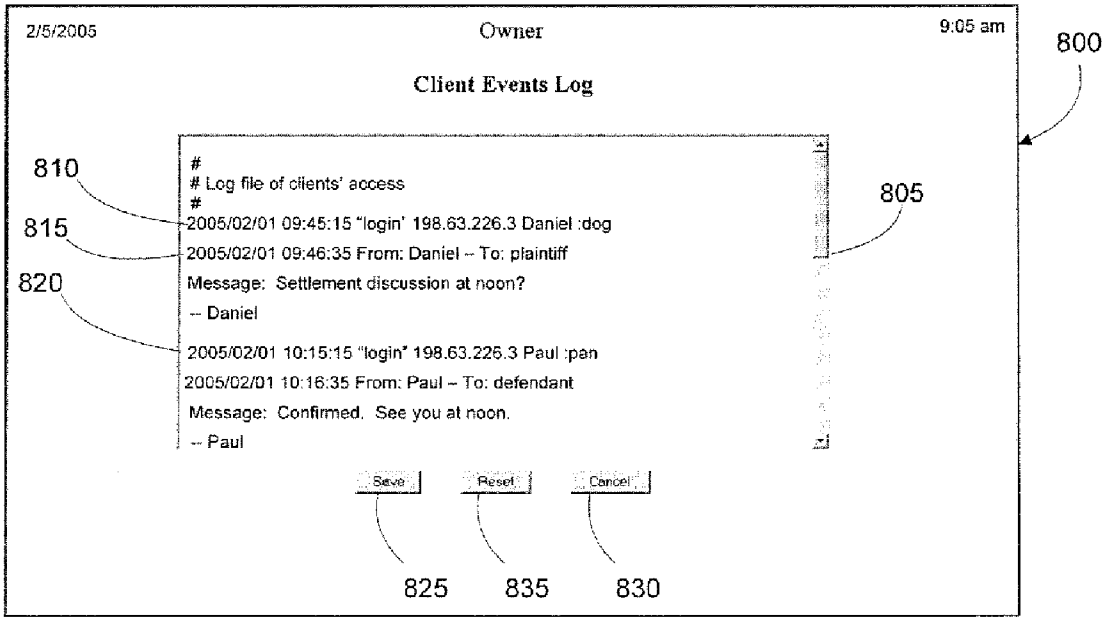

2/5/2005
Owner
9:05 am
800
Client Events Log
805
#
Log file of clients' access
#
2005/02/01 09:45:15 "login" 198.63.226.3 Daniel :dog
2005/02/01 09:46:35 From: Daniel -- To: plaintiff
Message: Settlement discussion at noon?
-- Daniel
2005/02/01 10:15:15 "login" 198.63.226.3 Paul :pan
2005/02/01 10:16:35 From: Paul -- To: defendant
Message: Confirmed. See you at noon.
-- Paul
810
815
820
Save
Reset
Cancel
825
835
830

FIG. 8

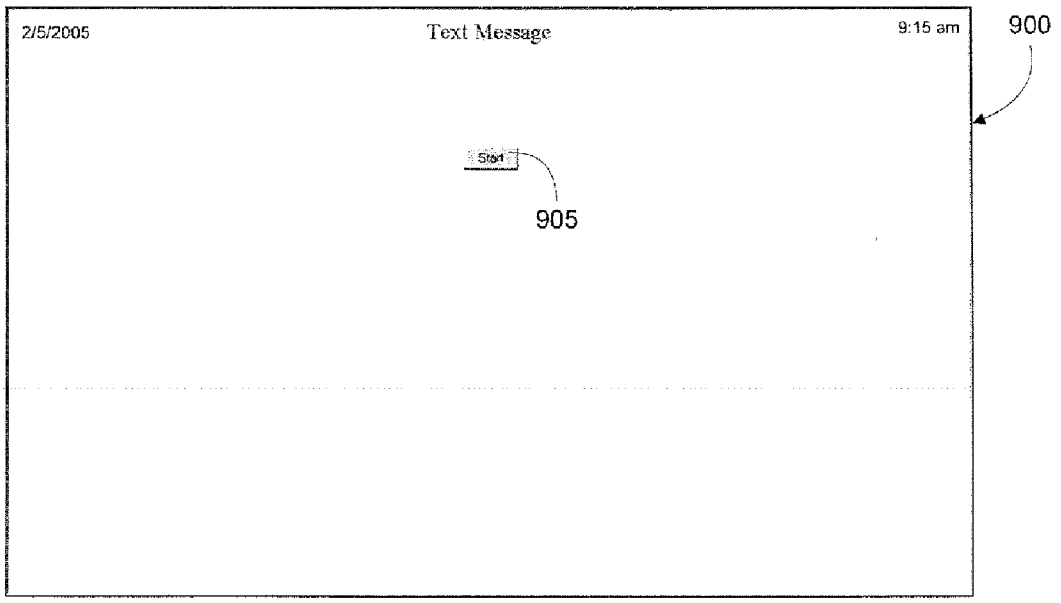

2/5/2005
Text Message
9:15 am
900
Start
905

FIG. 9

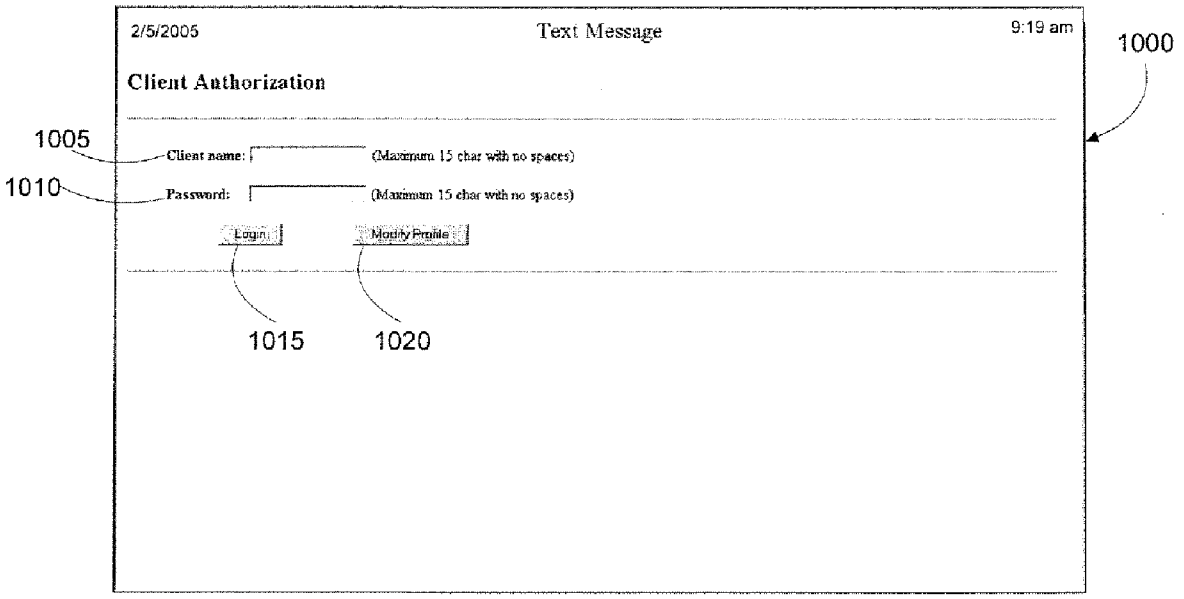

2/5/2005
Text Message
9:19 am
1000
Client Authorization
1005
Client name:
(Maximum 15 char with no spaces)
1010
Password:
(Maximum 15 char with no spaces)
Login
Modify Profile
1015
1020

FIG. 10

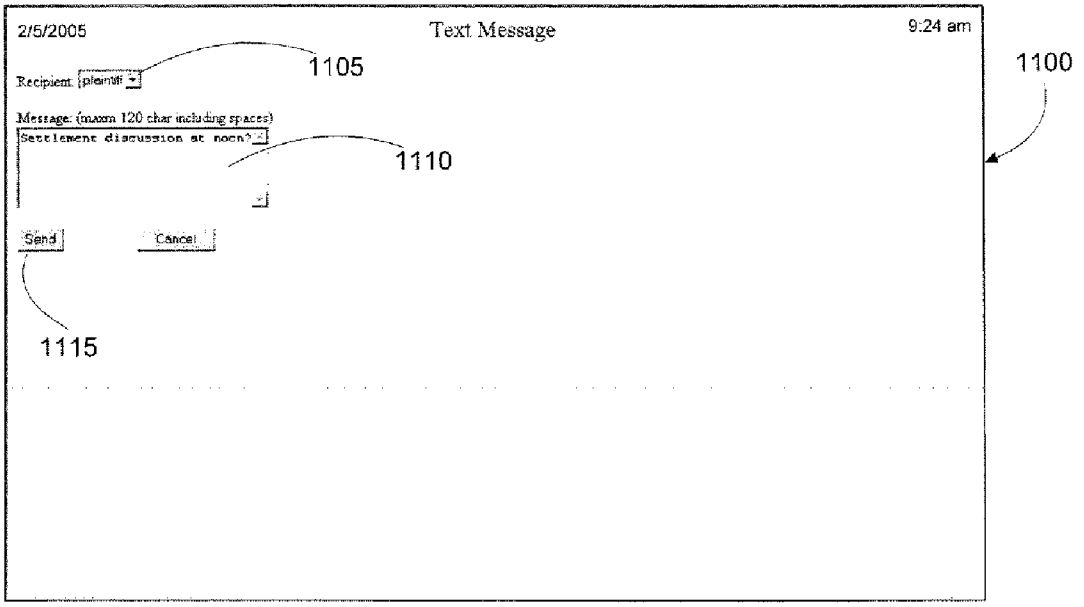

2/5/2005
Text Message
9:24 am
1105
1100
Recipient: plaintiff
Message: (maxm 120 char including spaces)
Settlement discussion at noon?
1110
Send
Cancel
1115

FIG. 11

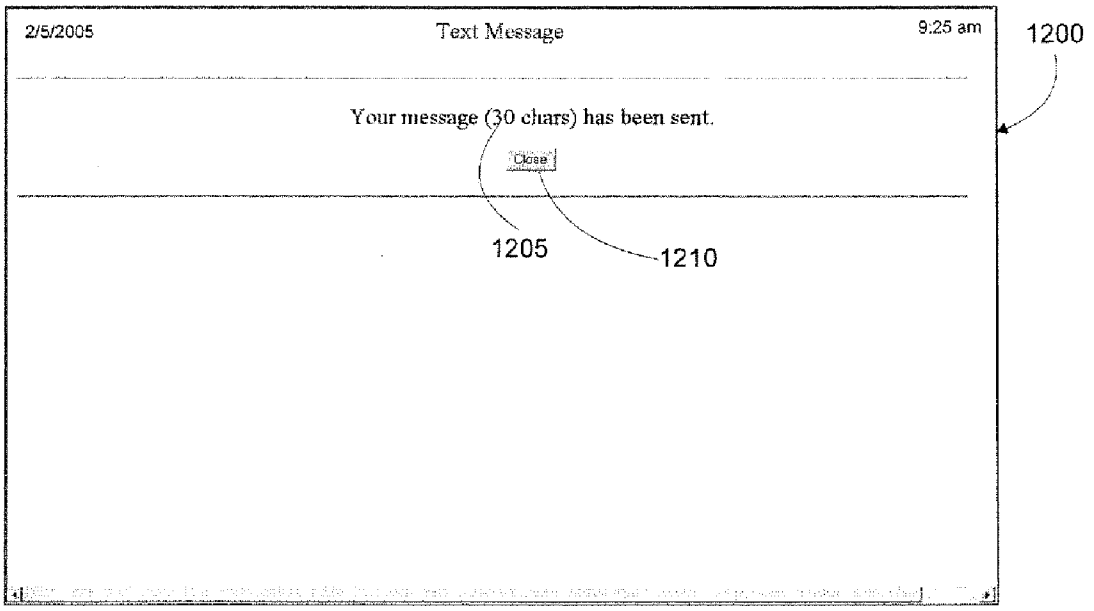

2/5/2005
Text Message
9:25 am
1200
Your message (30 chars) has been sent.
Close
1205
1210

FIG. 12

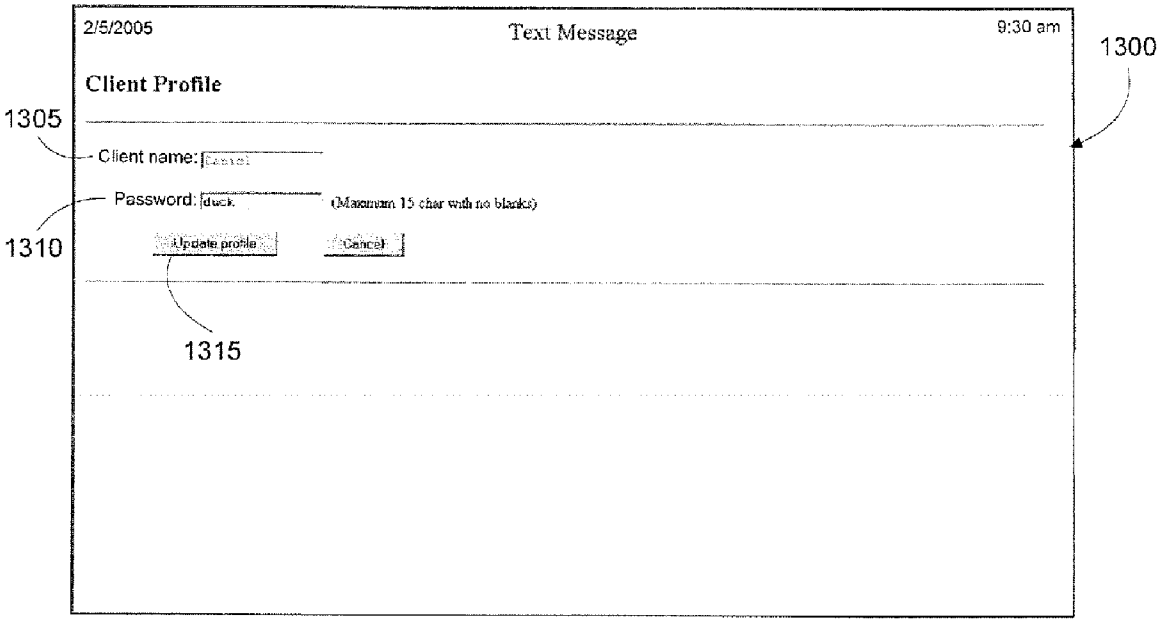

2/5/2005
Text Message
9:30 am
1300
Client Profile
1305
Client name:
Password:
duck
(Maximum 15 char with no blanks)
1310
Update profile
Cancel
1315

FIG. 13

INTERNET-BASED SECURE ACCESS CONTROL WITH CUSTOM AUTHENTICATION

BACKGROUND

[0001] Many online systems attempt to maintain information in a secure and/or private fashion. However, on many such systems the owner of the information cannot conveniently or immediately access the information. Instead, the owner must overcome various protective measures before the owner can gain access to the information. Such protective measures may include keeping the information, such as telephone numbers, account numbers, passwords and/or social security numbers, in a safe location until the information is needed.

[0002] For example, an account owner typically needs an account number in order to gain access to his/her own account. The account owner also may wish to allow others to access the account, such as service professionals or other persons or organizations that require access to the owner's account. For example, the owner may grant access to his or her financial planner so that the financial planner can buy/sell stocks, or withdraw, deposit or transfer money. When the account owner reveals the account number and perhaps an associated password to the financial planner, the owner gains the benefit of the financial planner's services. However, the account owner simultaneously gives up absolute control of that account number and the associated password. As such, the account owner may be at risk of intentional or unintentional security risks if, for example, the financial planner has unscrupulous motives, or if the financial planner simply leaves any sensitive information in public view.

[0003] While the owner of the sensitive information may, in some circumstances, change a username and password at any time when an apparent breach may have occurred, some sensitive information may not be easily modified. For example, it is a common business practice to require a username for many accounts, such as bank accounts, insurance policies, and health insurance policies. In many circumstances, that username may itself be sensitive information. For example, many financial accounts use the account owner's social security number as the username. Such common business practices often needlessly elevate the account owner's risk of identity theft.

[0004] Therefore, owners of sensitive information desire a practical solution to the aforementioned problems that will allow the owner of sensitive information to maintain full control over sensitive information, while still allowing the owner to conveniently access the information in a secure and private fashion.

SUMMARY

[0005] In accordance with an aspect of this invention, a method of providing an owner with secure online control of private information comprises providing an owner-editable set of private information. Allowing the owner to edit at least one item of private information and allowing the owner to create a first relationship between a symbolic name and the item of private information. Allowing the owner to create a second relationship between a communication application and the symbolic name. Allowing the owner to create a third relationship between the symbolic name and a client, the third relationship arranged to prevent the client from accessing the item of private information, and providing a website, the website arranged to enable the client to access the symbolic name.

[0006] In further accordance with a preferred embodiment, the method comprises providing a secure socket layer connection for transmitting and receiving the item of private information, and allowing the owner to edit at least one item of private information, including at least one of adding information, deleting information, or modifying information. The owner may create the first relationship of association or disassociation between the symbolic name and the item of private information in which a relationship of association permits a linked reference between the symbolic name and the private information, and a relationship of disassociation disables the linked reference between the symbolic name and the private information.

[0007] The owner may create a second relationship of association or disassociation between the communication application and the symbolic name. A relationship of association of the communication application with the symbolic name further permits the communication application to use the symbolic name, while disassociation of the communication application from the symbolic name prevents the communication application from using the symbolic name.

[0008] Still preferably, the owner may create a third relationship of association or disassociation between the symbolic name and the client. A relationship of association of the symbolic name with the client permits the client to use the symbolic name, while disassociation of the symbolic name and the client disables the client from using the symbolic name. Permission for the client provides client access to functionality of the communication application.

[0009] Additionally, the method further includes the communication application comprising at least one of wireless text messaging, telephone calling, or electronic mail. The owner may create the third relationship which may further include allowing the owner to assign a client name and password to the client, and assign access time limitations on at least one of the client or the symbolic name for client authentication.

[0010] Further still, the method provides a website which includes providing a client name, an owner name, or a password field, secure authentication for at least one of the client or the owner with the secure authentication uses at least one of a client name, an owner name or password. The secure authentication may further comprise a secure socket communication layer. The website may, additionally, enable the owner to monitor client activity.

[0011] In accordance with another aspect of the invention, a computer readable medium having computer executable instructions for providing an owner with secure online control of private information comprises computer executable instructions for providing an owner-editable set of private information and allowing the owner to edit at least one item of private information. The computer readable medium further comprises allowing the owner to create a first relationship between a symbolic name and the item of private information, allowing the owner to create a second relationship between a communication application and the symbolic name, and allowing the owner to create a third relationship between the symbolic name and a client, the

third relationship arranged to prevent the client from accessing the item of private information. The computer readable medium also comprises computer readable instructions for providing a website, the website arranged to enable the client to access the symbolic name.

[0012] In accordance with yet another aspect of the invention, a system for providing an owner with secure online control of private information comprises a display unit that is capable of generating video images, an input device, and a processing apparatus operatively coupled to the display unit and the input device, the processing apparatus comprising a processor and a memory operatively coupled to the processor. A network interface connected to a network and to the processing apparatus, the processing apparatus being programmed to provide an owner-editable set of private information, to allow the owner to edit at least one item of private information, and to allow the owner to create a first relationship between a symbolic name and the item of private information. The processing apparatus also allows the owner to create a second relationship between a communication application and the symbolic name, and allows the owner to create a third relationship between the symbolic name and a client, the third relationship arranged to prevent the client from accessing the item of private information. The processing apparatus also being programmed to provide a website, the website arranged to enable the client to access the symbolic name.

[0013] In accordance with yet another aspect of the invention, a method of private information control comprises providing an owner with a set of private information, enabling the owner to edit at least one item of private information in the set, enabling the owner to associate a symbolic name and the item of private information, and enabling the owner to associate the symbolic name with a communication application. The method also comprises providing a website arranged to enable the client to access the symbolic name and enables the owner to associate the symbolic name with a client, whereby the client is able to invoke the communication application without access to the item of private information, the communication application rendering services to the client.

DRAWINGS

[0014] **FIG. 1** is an exemplary block diagram of a computer system that may operate with a system or method of secure access control with custom authentication.

[0015] **FIG. 2** is an exemplary block diagram illustrating components of a secure access control system having custom authentication.

[0016] **FIG. 3** is an exemplary initial owner display screen for use with the system of **FIG. 1**.

[0017] **FIG. 4** is an exemplary owner authentication screen for use with the system of **FIG. 1**.

[0018] **FIG. 5** is an exemplary task selection screen for use with the system of **FIG. 1**.

[0019] **FIG. 6** is an exemplary private information edit screen for use with the system of **FIG. 1**.

[0020] **FIG. 7** is an exemplary client information edit screen for use with the system of **FIG. 1**.

[0021] **FIG. 8** is an exemplary client event log screen for use with the system of **FIG. 1**.

[0022] **FIG. 9** is an exemplary initial client display screen for use with the system of **FIG. 1**.

[0023] **FIG. 10** is an exemplary client authentication screen for use with the system of **FIG. 1**.

[0024] **FIG. 11** is an exemplary trusted application client screen for use with the system of **FIG. 1**.

[0025] **FIG. 12** is an exemplary trusted application results screen for use with the system of **FIG. 1**.

[0026] **FIG. 13** is an exemplary client profile screen for use with the system of **FIG. 1**.

DESCRIPTION

[0027] Although the following text sets forth a detailed description of numerous different embodiments, it should be understood that the legal scope of the invention is defined by the words of the claims set forth at the end of this patent. The detailed description is to be construed as exemplary only and does not describe every possible embodiment since describing every possible embodiment would be impractical, if not impossible. Numerous alternative embodiments could be implemented, using either current technology or technology developed after the filing date of this patent, which would still fall within the scope of the claims.

[0028] It should also be understood that, unless a term is expressly defined in this patent using the sentence "As used herein, the term '_____' is hereby defined to mean . . . " or a similar sentence, there is no intent to limit the meaning of that term, either expressly or by implication, beyond its plain or ordinary meaning, and such term should not be interpreted to be limited in scope based on any statement made in any section of this patent (other than the language of the claims). To the extent that any term recited in the claims at the end of this patent is referred to in this patent in a manner consistent with a single meaning, that is done for sake of clarity only so as to not confuse the reader, and it is not intended that such claim term be limited, by implication or otherwise, to that single meaning. Finally, unless a claim element is defined by reciting the word "means" in conjunction with a function without the recital of any structure, it is not intended that the scope of any claim element be interpreted based on the application of 35 U.S.C. § 112, sixth paragraph.

[0029] The claimed method and apparatus may be implemented on an exemplary computing system shown in **FIG. 1**. The system **100** includes functionality similar to well known computing systems including desktop computers, laptop computers, servers, handheld computers, and microprocessor systems, to name a few.

[0030] An exemplary computer **102** includes a CPU **104**, a memory **106**, a video interface **108**, a power supply **110**, and an audio interface **112**. The memory **106** may include several types of computer readable media including ROM, RAM, flash memory, and EEPROM. Such memory may store computer programs, routines, and various data structures. Similarly, an I/O (Input/Output) interface **114** may permit external memory devices, such as floppy disk drives **116** and CDROM drives **118**, to store computer programs, routines, and data structures. The I/O interface **114** may also

permit; client and owner input via a keyboard **120** and a mouse **122**, client and owner output via a printer **124**, and bi-directional input/output to/from the computer **102** via various ports **126** (e.g., RS-232, RS-485, parallel, firewire, Bluetooth, etc.). The video interface **108** may support a display **128** and a camera **130**, and the audio interface **112** may support speakers **132** and a microphone **134**.

[**0031**] A network interface **136** may support remote computer system **138** access via internet and intranet access **140**, or permit access to the computer **102** via a modem **142**. Additionally, the network interface **136** may support various configurations of local area networks (LAN) and wide area networks (WAN). Furthermore, the network interface **136** may support wired or wireless methods of network connectivity.

[**0032**] **FIG. 2** shows a block diagram for internet based secure access control with custom authentication, in accordance with an example of the present invention. The block diagram may represent functional elements for a system, a method, an apparatus, or a software application directed to internet based secure access control with custom authentication. An owner **200** may create and control a set or item of private information **205**. The set may include various items of private information, such as telephone numbers, social security numbers, or any other type of information in which the owner **200** requires privacy. An owner **200** may include, but is not limited to, individuals, groups, and/or organizations. The owner **200** may also create symbolic names to associate with the set or item of private information **205**. Such symbolic names may use nomenclature suggesting the content of the private information **205** without explicitly disclosing the details of that information. For example, if the item **205** is a nine-digit social security number, then the owner **200** may create a symbolic name of "SSN,""Smith SSN," or "HMO Identification," to name a few.

[**0033**] An owner **200** may also select a communication application **210** that uses the item **205** to provide some functionality. The communication application **210** may be a software application, a system, or a service provider, to name a few. For example, if the communication application **210** is a wireless telephone application, that application may use a wireless telephone number, i.e., the item of private information **205**, to place a call or forward a text message.

[**0034**] The owner **200** may also create a website **230** for clients **215**, **220**, **225**. Alternatively, the system and method may generate a website **230** for clients **215**, **220**, **225** through various known techniques including Active Server Pages (ASP) and Common Gateway Interface (CGI) scripts. Additionally, the owner **200** may also assign authentication credentials, such as client names and passwords, to particular clients **215**, **220**, **225**. The owner **200** may also assign particular symbolic names to those clients **215**, **220**, **225**. The owner may inform the clients **215**, **220**, **225** about the website **230** and provide them with the appropriate authentication credentials which will authorize access to the website **230** and permit client access to particular symbolic names.

[**0035**] The clients **215**, **220**, **225** may access the website **230** by using the assigned authentication credentials. Once authenticated, the website **230** may permit the clients **215**, **220**, **225** to invoke the services of a particular communication application **210** by using the symbolic name assigned to that particular client **215**, **220**, **225**.

[**0036**] For example, an owner **200**, Dr. Smith, may create an item in the form of a wireless telephone number, e.g., 123-4567. She **200** may also create a symbolic name of "Doctor Smith Cell" and associate the wireless telephone number with that symbolic name. Dr. Smith **200** may further select a communication application **210**, such as a wireless telephone company text messaging application, to use the item **205**, i.e., 123-4567. Additionally, Dr. Smith **200** may create a website **230** for Client B **220**, establish authentication credentials for the client **220**, assign the symbolic name "Doctor Smith Cell" to him or her **220**, and inform the client **220** of the website address and corresponding authentication credentials that will allow the client **220** to log on to the website **230**.

[**0037**] Continuing with the example above, Client B **220**, perhaps a patient of Dr. Smith **200**, may access the website **230** using assigned credentials. The website **230** may present the patient **220** with a list of symbolic names that Dr. Smith **200** has created for the patient's **220** use. The website **230** may also present the patient **220** with a field for entering text messages. The patient's **220** use of the symbolic name "Doctor Smith Cell" and entry of a text message invokes the communication application **210**. As a result, a wireless telephone associated with the private telephone number 123-4567 displays the text message entered by the patient **220**.

[**0038**] The preceding example illustrates that a virtual barrier **235** prevents any client **215**, **220**, **225** from accessing or viewing the set or item of private information **205**, while simultaneously allowing the authorized client **220** the benefit of the trusted application's **210** functionality. Furthermore, the owner **200** always maintains complete control over the private information **205**, the symbolic names, the relationships between the private information **205** and the symbolic names, which communication applications **210** may use the private information **205**, client authentication credentials, and which clients **215**, **220**, **225** may have access to any particular symbolic name. In other words, the owner **200** has complete control over all of the private information **205**, and the client **215**, **220**, **225** has none. Furthermore, the owner **200** controls all aspects of the client's ability to use the system, method, apparatus, or software application for internet based secure access control with custom authentication.

[**0039**] Returning to **FIG. 2** in further detail, the owner **200** may control various facets of operation, including managing the set or item of private information **205**. The set or item **205** may include any type of information in which the owner **200** desires to remain confidential (i.e., not visible) from all clients **215**, **220**, **225**. Such information **205** may include, but is not limited to, telephone numbers, social security numbers, addresses, account numbers, and passwords. The owner **200** may enter the set or item of private information **205** on a computer or terminal and stored on a computer, server, database, or any other data storage medium, device, or system. Similarly, the owner **200** may delete and edit the items of private information **205**, or the whole set of private information **205**. All data transfer and storage may occur in a secure manner, particularly when the owner **200** adds, deletes, or edits private information **205** via the website **230**.

The set or items of private information **205** may be saved to computers, servers, or other storage mediums in an encrypted manner. The data transfer between any combination of client **215**, **220**, **225**, owner **200**, and webpage **230** may include a secure socket layer (SSL) connection, thereby helping to ensure data security.

[**0040**] In addition to creating, editing, or deleting private information **205**, the owner **200** may manage a relationship between the items of private information **205** and a symbolic name. The symbolic name, generated by the owner **200**, may include alphanumeric text and may further describe the private information **205** in a general manner. For example, if the item **205** is a social security number having nine digits, the symbolic name may be "SSN,""Smith SSN," or "HMO ID" to name a few. If the owner **200** creates a relationship of association between the symbolic name and the private information **205**, then any further use of this symbolic name, discussed in further detail below, will reference the nine-digit social security number, but will not explicitly disclose or publicize that number to the client **215**, **220**, **225**. In other words, the item of private information **205** is invisible to the client **215**, **220**, **225** using the symbolic name, thereby protecting the owner **200** from theft, misuse, or accidental disclosure of the item **205**. On the other hand, if the owner **200** no longer wants the association between the symbolic name and the item **205**, the owner **200** may disassociate the relationship. Each item of private information **205** may be associated or disassociated with a unique symbolic name. Alternatively, one symbolic name may be associated or disassociated with several pieces of private information **205**, i.e., the set of private information.

[**0041**] **FIG. 2** also illustrates a communication application **210**. The owner **200** may select one or more communication applications **210** that utilize the private information **205**. As discussed earlier, the communication application **210** may be a software application, a system, or a service provider. Generally speaking, the communication application **210** may be any service which uses items of private information **205**, or requires such items prior to executing services offered by the communication application **210**. In the preceding example, a wireless telephone messaging service was the communication application **210** requiring the wireless telephone number and the text message prior to rendering service. In that example, the owner **200** of the wireless telephone number gained the benefit of allowing clients **215**, **220**, **225** to utilize that number without concern of the number being abused or distributed to others. In that regard, if at any time the owner **200** decides that the client **215**, **220**, **225** should no longer have access to the services rendered by the communication application **210**, the owner **200** may simply disassociate that communication application **210** from the set or item of private information **205**. One way in which the owner may prevent client **215**, **220**, **225** access is to comment-out or delete the client's **215**, **220**, **225** authentication credentials, as will be described in more detail later. A second way in which the owner may prevent a client from using the system is to modify or disassociate the client information from the list of symbolic names, also discussed later. Alternatively, if the owner **200** decides that the client **215**, **220**, **225** should only have access to the symbolic name for a specific period of time, then the owner **200** may further associate dates and times for which the client's use of the symbolic name will invoke the communication application **210**. For example, if the owner **200** is a doctor and the patient is the client **215**, **220**, **225** participating in a clinical trial lasting three months, then the doctor **200** may establish a three month time limitation for which the patient's use of the symbolic name results in sending a text message to the doctor **200**. Furthermore, the doctor **200** may establish a range of times throughout the day for which any use of the symbolic name will permit invocation of the communication application **210**.

[**0042**] Additionally, if the owner **200** chooses a different communication application **210**, e.g., a competing wireless provider, the owner **200** may simply associate the new application **210** (e.g., new wireless provider) with the item of private information while simultaneously disassociating the former communication application **210** (e.g., old wireless provider). As such, the clients **215**, **220**, **225** have no burden of a new or alternate symbolic name to use for receiving the services rendered by the new communication application **210**. In fact, the clients **215**, **220**, **225** may not even know that the communication application **210** has changed at all.

[**0043**] Wireless telephone messaging systems, however, illustrate only one embodiment which uses a system and method of internet based secure access control with custom authentication. Additional applications may include, but are not limited to; electronic mail systems allowing an owner the ability to receive e-mail without disclosing the e-mail address, telephone systems allowing an owner to receive calls without disclosing the telephone number, home automation access, home appliance access, security system access, software licensing applications, and financial and medical account access. As an additional example, if a patient has a medical insurance plan for which the insurance company uses the patient's social security number as an identification number, the patient is typically obligated to disclose that social security number to a health care provider (e.g., doctor's office staff) prior to receiving care and treatment. Unfortunately, the patient typically has no control of the social security number after disclosing it to the health care provider. If the health care provider neglects to shred documents, the patient may be at a much greater risk of identity theft. Alternatively, the patient (i.e., owner **200**) may provide the health care provider (i.e., client **215**, **220**, or **225**) with a web address, authentication credentials, and a symbolic name (e.g., "Smith HMO ID"). When the health care provider **215**, **220**, **225** uses the symbolic name, the communication application **210** receives the associated social security number and may validate that number with an HMO member database. The communication application **210** may further return a simple "approve" or "disapprove" status indication to the health care provider **215**, **220**, **225**, or any similar innocuous indication of valid health insurance coverage without subjecting the patient's **200** social security number **205** to unnecessary publication.

[**0044**] **FIG. 2** also illustrates a web page **230** which, among other functions, enables the owner **200** to manage authentication credentials (Client Authentication module **232**) for one or more clients **215**, **220**, **225**. The owner **200** may create, modify, and delete client names and passwords for the clients **215**, **220**, **225**. The web page **230** also includes a Control of Client Access module **234** which, as discussed earlier, allows the owner **200** to associate and disassociate symbolic names with/from the clients **215**, **220**, **225**.

[0045] **FIG. 3** illustrates an exemplary initial screen **300** for the owner **200** including a welcome screen and Start button **305**. After selecting the Start button **305**, an Owner Authorization screen **400** may appear, shown in **FIG. 4**, including an owner name field **405** and a password field **410**. The system and method for internet based secure access control with custom authentication may accommodate more than one owner **200**, with each owner **200** having a seperate account. When the owner **200** provides an owner name, a corresponding password, and selects a Login button **415**, the owner **200** thereafter gains access to the account and views a screen similar to the one shown in **FIG. 5**. Alternatively, the owner's **200** selection of a Modify Profile button **420**, assuming entry of appropriate authorization credentials, may permit the owner to modify the assigned password for future access.

[0046] A Task Page **500** includes a Private Information button **505**, a Client Information button **510**, an Event Log button **515**, and a Cancel button **520**. The Task Page **500** allows the owner **200** to manage the account by further managing the set or item of private information **205** and corresponding symbolic names, managing the client information (i.e., by modifying the client authentication credentials and/or modifying the symbolic names associated with the client) and corresponding authentication credentials, and an event log to track client activity.

[0047] Selection of the Private Information button **505** may result in a Private Information screen **600**, as shown in **FIG. 6**. A data entry field **605** permits the owner **200** to review instructions, record comments, and manage relationships between items of private information **205** and symbolic names. The data entry field **605** includes a number sign (i.e., "#") to distinguish notes or comments from items that are actively associated with a symbolic name. The embodiment shown in **FIG. 6** illustrates that a row may include three fields, each separated by a space. The first field is the symbolic name, the second field is the private information **205**, and the third field is a functional suffix for the private information **205** as required by the exemplary communication application **210** (i.e., wireless telephone service provider). Of course, **FIG. 6** is merely an exemplary embodiment and, as such, the Private Information screen **600** and private information field configuration may incorporate any design according to the needs of any communication application **210**.

[0048] **FIG. 6** also illustrates a private information row **610** including a symbolic name "plaintiff" (first field), an item of private information "8125475236"**205** (second field), and a suffix "mobile.mycingular.com" (third field). **FIG. 6** also illustrates a second associated private information row **615** with a symbolic name "defendant" (first field), an item of private information "8125426609"**205** (second field), and a suffix "mobile.vtext.com" (third field). The absence of the comment symbol for the last two private information rows, **610** and **615**, illustrate that both symbolic names "plaintiff" and "defendant" are associated with private information **205**. On the other hand, private information row **620** includes the comment symbol ("#"), thereby disassociating the symbolic name "judge" from the item **205**"8427782963." The owner **200** may simply edit the data entry field **605** whenever an item of private information **205** needs addition, modification, association with, or disassociation from a symbolic name.

[0049] When the owner **200** is finished managing the private information **205**, selecting a Save button **625** may save any changes. Alternatively, selecting a Reset button **630** may discard all current and previously saved changes and place default information in the data entry field, and selecting a Cancel button **635** disregards any recent modifications made within the data entry field **605**.

[0050] Returning to **FIG. 5**, selection of the Client Information button **510** may result in a Client Information screen **700**, as shown in **FIG. 7**. Much like **FIG. 6**, **FIG. 7** includes a data entry field **705** and permits the owner **200** to review instructions, record comments, and manage client authentication credentials. Furthermore, the owner **200** may manage which symbolic names a particular client **215**, **220**, **225** may access and use. The embodiment shown in **FIG. 7** illustrates that a row may include multiple fields, each field separated by a space. The first field is a client name, the second field is a password for the client name, and the third field, and any additional fields thereafter, are symbolic names for which the client **215**, **220**, **225** may access and use.

[0051] **FIG. 7** illustrates a client information row **710** including a client name "Daniel" (first field), a password "dog" (second field), and two symbolic names "plaintiff" and "judge" (third and fourth fields, respectively). Client information row **710** allows a client **215**, **220**, **225** with authentication credentials of client name "Daniel" and password "dog" to access the system and method for internet based secure access control with custom authentication. Furthermore, client information row **710** allows the authenticated client **215**, **220**, **225** access to the symbolic names "plaintiff" and "judge." In much the same way, client information row **715** allows a client **215**, **220**, **225** with authentication credentials of client name "Paul" and password "pan" to access the symbolic name "defendant." Comment symbols ("#") in front of any client information row may disable client authentication credentials and any associated symbolic names for that client, as is shown by client information row **720**. The client name "bruce" no longer has access to the system and method for internet based secure access control with custom authentication, much less any access to a symbolic name "david." Note that despite the client information row **710** showing that client "Daniel" has access to the symbolic name "judge," the client "Daniel" will not have access to any services related to that symbolic name because the information row **620** on the Private Information screen **600** includes a comment symbol ("#").

[0052] When the owner **200** is finished managing the client information, selecting a Save button **725** may save any changes, and selecting a Cancel button **730** may disregard any recent modifications made within the data entry field **705**. Alternatively, selecting a Reset button **735** may discard all current and previously saved changes and place default information in the data entry field **705**.

[0053] Returning again to **FIG. 5**, selection of the Event Log button **515** may result in an Event Log screen **800**, as shown in **FIG. 8**. A data display and entry field **805** permits the owner **200** to review activity of all clients **215**, **220**, **225** for which the owner has granted authorization credentials. Event log information row **810** illustrates that the client named "Daniel" used the password "dog" to login to the system and method for internet based secure access control

with custom authentication. The information row **810** also shows the access date of Feb. 1, 2005 at 9:45 a.m. Event log information row **815** illustrates that the "Daniel" client sent a message using the symbolic name "plaintiff" at 9:46 a.m. having text "Settlement discussion at noon?" Similarly, event log information row **820** illustrates login and activity information for the client named "Paul."

[**0054**] In addition to reporting client activity, the owner **200** may also manually enter information in the data display and entry field **805**. Upon completion, the owner **200** may select a Save button **825** to save such manual data entries. Alternatively, if the owner **200** does not make any manual entries, or if the owner **200** chooses not to save such manual entries, the owner **200** may select a Cancel button **830** to exit the Event Log web page **800**. Furthermore, the owner **200** may select a Reset button **835** to clear the event log information.

[**0055**] Briefly returning to **FIG. 5**, selection of the Cancel button **520** may result in presentation of the Owner Authorization screen as shown in **FIG. 4**. The Cancel button **520** may also prevent further access to the system or method until an owner **200** provides appropriate authentication credentials.

[**0056**] Returning again to **FIG. 2**, the owner **200** may inform various clients **215**, **220**, **225** about authentication credentials and the web address which allow those clients **215**, **220**, **225** to access the system and method. The clients **215**, **220**, **225**, after entering the appropriate web address on an internet browser, may access a Text Message screen **900** including welcome information, basic instructions, or a Start button **905**. Selection of the Start button **905** results in a Client Authorization screen **1000**, as shown in **FIG. 10**. After a client **215**, **220**, **225** enters valid credentials in a client name field **1005** and a password field **1010**, such as those credentials established by the owner **200** on the Client Information screen **700**, and selects a Login button **1015**, a Message Entry screen **1100** may appear, as shown in **FIG. 11**. Assuming from the previous example that "Daniel" is the client **215**, **220**, **225**, the Message Entry screen **1100** may include the symbolic names previously authorized by the owner **200**. In particular, referring again to the example illustrated in **FIG. 7**, the owner **200** authorized client "Daniel" to use symbolic names "plaintiff" and "judge." As shown in **FIG. 11**, a Recipient drop-down box **1105** shows the first of two symbolic names for which client "Daniel" has authorization to use. Selection of the Recipient drop-down box **1105** may further result in a list of all symbolic names for which that particular client **215**, **220**, **225** has authorization to use.

[**0057**] Message entry field **1110** allows the client **215**, **220**, **225** to enter alphanumeric data. The length of the data may be limited according to restrictions associated with the communication application **210**. Alternatively, the owner **200** may establish custom message data length limitations with an option or configuration set-up screen (not shown). Selection of a Send button **1115** may result in a transfer of the contents of the message entry field **1110** to the communication application **210** that is associated with the symbolic name selected by the client **215**, **220**, **225**. Additionally, selection of the Send button **1115** may also present the client **215**, **220**, **225** with a Send Confirmation screen **1200**, as shown in **FIG. 12**. The Send Confirmation screen **1200** may also display additional information about the message data, such as the number of characters sent **1205**. Selection of the Close button **1210** may display the Client Authorization screen **1000**.

[**0058**] The Client Authorization screen **1000** may also allow the client **215**, **220**, **225** to modify various parameters of a client profile. The client's selection of a Modify Profile button **1020**, assuming entry of appropriate authorization credentials (in the client name field **1005** and the password field **1010**), may display a Client Profile screen **1300**, as shown in **FIG. 13**. A client name field **1305** is disabled to prevent client modification, but a password field **1310** may allow the client **215**, **220**, **225** to enter an alternative password for future access. Changes made to the password may appear in the Client Information screen **700**. Additionally, such administrative changes may also appear in the client events log **800**. **FIG. 13** shows client changes to the contents of the password field **1310** from "dog" to "duck." Selection of an Update Profile button **1315** may update the client password accordingly, and then display a confirmation message or again display the Client Authorization screen **1000**.

[**0059**] Although the forgoing text sets forth a detailed description of numerous different embodiments, it should be understood that the scope of the patent is defined by the words of the claims set forth at the end of this patent. The detailed description is to be construed as exemplary only and does not describe every possible embodiment because describing every possible embodiment would be impractical, if not impossible. Numerous alternative embodiments could be implemented, using either current technology or technology developed after the filing date of this patent, which would still fall within the scope of the claims.

[**0060**] Thus, many modifications and variations may be made in the techniques and structures described and illustrated herein without departing from the spirit and scope of the present claims. Accordingly, it should be understood that the methods and apparatus described herein are illustrative only and are not limiting upon the scope of the claims.

What is claimed as new and desired to be protected by Letters Patent of the United States is:

1. A method of providing an owner with secure online control of private information comprising:

providing an owner-editable set of private information;

allowing the owner to edit at least one item of private information;

allowing the owner to create a first relationship between a symbolic name and the item of private information;

allowing the owner to create a second relationship between a communication application and the symbolic name;

allowing the owner to create a third relationship between the symbolic name and a client, the third relationship arranged to prevent the client from accessing the item of private information; and

providing a website, the website arranged to enable the client to access the symbolic name.

2. The method of claim 1, wherein providing the owner-editable set of private information comprises providing a

secure socket layer connection for transmitting and receiving the item of private information.

3. The method of claim 1, wherein allowing the owner to edit at least one item of private information includes at least one of adding information, deleting information, or modifying information.

4. The method of claim 1, wherein allowing the owner to create a first relationship includes a relationship of association or disassociation between the symbolic name and the item of private information.

5. The method of claim 4, wherein association of the symbolic name with the private information permits a linked reference between the symbolic name and the private information, and wherein disassociation of the symbolic name from the private information disables the linked reference between the symbolic name and the private information.

6. The method of claim 1, wherein allowing the owner to create a second relationship includes a relationship of association or disassociation between the communication application and the symbolic name.

7. The method of claim 6, wherein association of the communication application with the symbolic name further permits the communication application to use the symbolic name, and wherein disassociation of the communication application from the symbolic name prevents the communication application from using the symbolic name.

8. The method of claim 1, wherein allowing the owner to create a third relationship includes a relationship of association or disassociation between the symbolic name and the client.

9. The method of claim 8, wherein association of the symbolic name with the client permits the client to use the symbolic name, and wherein disassociation of the symbolic name and the client disables the client from using the symbolic name.

10. The method of claim 9, wherein permission for the client to use the symbolic name further comprises providing client access to functionality of the communication application.

11. The method of claim 1, wherein allowing the owner to create the second relationship further includes the communication application comprising at least one of wireless text messaging, telephone calling, or electronic mail.

12. The method of claim 1, wherein allowing the owner to create the third relationship further includes allowing the owner to assign a client name and password to the client for client authentication.

13. The method of claim 1, wherein allowing the owner to create a third relationship further includes allowing the owner to assign access time limitations on at least one of the client or the symbolic name.

14. The method of claim 1, wherein providing a website further includes providing a client name, an owner name, or a password field.

15. The method of claim 1, wherein providing a website further includes providing secure authentication for at least one of the client or the owner.

16. The method of claim 15, wherein the secure authentication further comprises using at least one of a client name, an owner name, or a password.

17. The method of claim 15, wherein providing secure authentication further comprises a secure socket communication layer.

18. The method of claim 1, wherein providing the website further comprises the website arranged to enable the owner to monitor client activity.

19. A computer readable medium having computer executable instructions for providing an owner with secure online control of private information comprising:

computer executable instructions for providing an owner-editable set of private information;

computer executable instructions for allowing the owner to edit at least one item of private information;

computer executable instructions for allowing the owner to create a first relationship between a symbolic name and the item of private information;

computer executable instructions for allowing the owner to create a second relationship between a communication application and the symbolic name;

computer executable instructions for allowing the owner to create a third relationship between the symbolic name and a client, the third relationship arranged to prevent the client from accessing the item of private information; and

computer executable instructions for providing a website, the website arranged to enable the client to access the symbolic name.

20. The computer readable medium of claim 19, wherein providing the owner-editable set of private information comprises providing a secure socket layer connection for transmitting and receiving the item of private information.

21. The computer readable medium of claim 19, wherein allowing the owner to edit at least one item of private information includes at least one of adding information, deleting information, or modifying information.

22. The computer readable medium of claim 19, wherein allowing the owner to create a first relationship includes a relationship of association or disassociation between the symbolic name and the item of private information.

23. The computer readable medium of claim 22, wherein association of the symbolic name with the private information permits a linked reference between the symbolic name and the private information, and wherein disassociation of the symbolic name from the private information disables the linked reference between the symbolic name and the private information.

24. The computer readable medium of claim 19, wherein allowing the owner to create a second relationship includes a relationship of association or disassociation between the communication application and the symbolic name.

25. The computer readable medium of claim 24, wherein association of the communication application with the symbolic name further permits the communication application to use the symbolic name, and wherein disassociation of the communication application from the symbolic name prevents the communication application from using the symbolic name.

26. The computer readable medium of claim 19, wherein allowing the owner to create a third relationship includes a relationship of association or disassociation between the symbolic name and the client.

27. The computer readable medium of claim 26, wherein association of the symbolic name with the client permits the

client to use the symbolic name, and wherein disassociation of the symbolic name and the client disables the client from using the symbolic name.

28. The computer readable medium of claim 27, wherein permission for the client to use the symbolic name further comprises providing client access to functionality of the communication application.

29. The computer readable medium of claim 19, wherein allowing the owner to create the second relationship further includes the communication application comprising at least one of wireless text messaging, telephone calling, or electronic mail.

30. The computer readable medium of claim 19, wherein allowing the owner to create the third relationship further includes allowing the owner to assign a client name and password to the client for client authentication.

31. The computer readable medium of claim 19, wherein allowing the owner to create a third relationship further includes allowing the owner to assign access time limitations on at least one of the client or the symbolic name.

32. The computer readable medium of claim 19, wherein providing a website further includes providing a client name, an owner name, or a password field.

33. The computer readable medium of claim 19, wherein providing a website further includes providing secure authentication for at least one of the client or the owner.

34. The computer readable medium of claim 33, wherein the secure authentication further comprises using at least one of a client name, an owner name, or a password.

35. The computer readable medium of claim 33, wherein providing secure authentication further comprises a secure socket communication layer.

36. The computer readable medium of claim 19, wherein providing the website further comprises the website arranged to enable the owner to monitor client activity.

37. A system for providing an owner with secure online control of private information comprising:

a display unit that is capable of generating video images;

an input device;

a processing apparatus operatively coupled to the display unit and the input device, the processing apparatus comprising a processor and a memory operatively coupled to the processor;

a network interface connected to a network and to the processing apparatus;

the processing apparatus being programmed to provide an owner-editable set of private information;

the processing apparatus being programmed to allow the owner to edit at least one item of private information;

the processing apparatus being programmed to allow the owner to create a first relationship between a symbolic name and the item of private information;

the processing apparatus being programmed to allow the owner to create a second relationship between a communication application and the symbolic name;

the processing apparatus being programmed to allow the owner to create a third relationship between the symbolic name and a client, the third relationship arranged to prevent the client from accessing the item of private information; and

the processing apparatus being programmed to provide a website, the website arranged to enable the client to access the symbolic name.

38. The system of claim 37, wherein providing the owner-editable set of private information comprises providing a secure socket layer connection for transmitting and receiving the item of private information.

39. The system of claim 37, wherein allowing the owner to edit at least one item of private information includes at least one of adding information, deleting information, or modifying information.

40. The system of claim 37, wherein allowing the owner to create a first relationship includes a relationship of association or disassociation between the symbolic name and the item of private information.

41. The system of claim 40, wherein association of the symbolic name with the private information permits a linked reference between the symbolic name and the private information, and wherein disassociation of the symbolic name from the private information disables the linked reference between the symbolic name and the private information.

42. The system of claim 37, wherein allowing the owner to create a second relationship includes a relationship of association or disassociation between the communication application and the symbolic name.

43. The system of claim 42, wherein association of the communication application with the symbolic name further permits the communication application to use the symbolic name, and wherein disassociation of the communication application from the symbolic name prevents the communication application from using the symbolic name.

44. The system of claim 37, wherein allowing the owner to create a third relationship includes a relationship of association or disassociation between the symbolic name and the client.

45. The system of claim 44, wherein association of the symbolic name with the client permits the client to use the symbolic name, and wherein disassociation of the symbolic name and the client disables the client from using the symbolic name.

46. The system of claim 45, wherein permission for the client to use the symbolic name further comprises providing client access to functionality of the communication application.

47. The system of claim 37, wherein allowing the owner to create the second relationship further includes the communication application comprising at least one of wireless text messaging, telephone calling, or electronic mail.

48. The system of claim 37, wherein allowing the owner to create the third relationship further includes allowing the owner to assign a client name and password to the client for client authentication.

49. The system of claim 37, wherein allowing the owner to create a third relationship further includes allowing the owner to assign access time limitations on at least one of the client or the symbolic name.

50. The system of claim 37, wherein providing a website further includes providing a client name, an owner name, or a password field.

51. The system of claim 37, wherein providing a website further includes providing secure authentication for at least one of the client or the owner.

52. The system of claim 51, wherein the secure authentication further comprises using at least one of a client name, an owner name, or a password.

53. The system of claim 51, wherein providing secure authentication further comprises a secure socket communication layer.

54. The system of claim 37, wherein providing the website further comprises the website arranged to enable the owner to monitor client activity.

55. A method of private information control comprising:

providing an owner with a set of private information;

enabling the owner to edit at least one item of private information in the set;

enabling the owner to associate a symbolic name and the item of private information;

enabling the owner to associate the symbolic name with a communication application;

providing a website arranged to enable the client to access the symbolic name; and

enabling the owner to associate the symbolic name with a client, whereby the client is able to invoke the communication application without access to the item of private information, the communication application rendering services to the client.

56. The method of claim 55, wherein enabling the owner to edit includes at least one of adding information, deleting information, or modifying information.

57. The method of claim 55, wherein invoking the communication application includes at least one of text messaging, telephone calling, or electronic mail.

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