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(54) **SYSTEM AND METHOD FOR IDENTIFYING A RECORD CONCERNING A MAIL OBJECT IN A DATABASE**

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(52) **U.S. Cl.**

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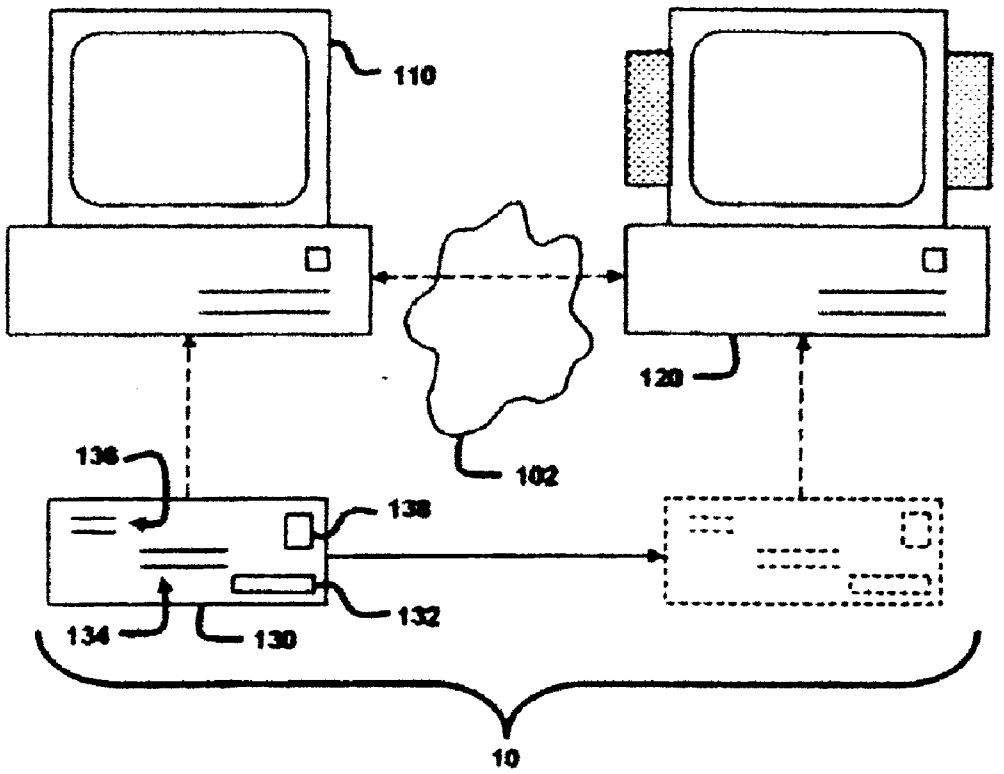
(57) **ABSTRACT**

A system and method is provided that allows a sender of a mail object to generate a barcode that uniquely identifies the mail object, where the barcode includes a sender-generated unique identifier concatenated with mail-related data (e.g., sender data, recipient data, shipping method data, etc.), rendering the barcode globally unique. The barcode can then be used by a sender-based system to provide data concerning the mail object via a network. In one embodiment of the present invention, barcode data (or a portion thereof) is stored in a sender's memory device and linked to information concerning the mail object. The barcode data can then be used to identify the mail object and provide information concerning the mail object over a network, such as the Internet.



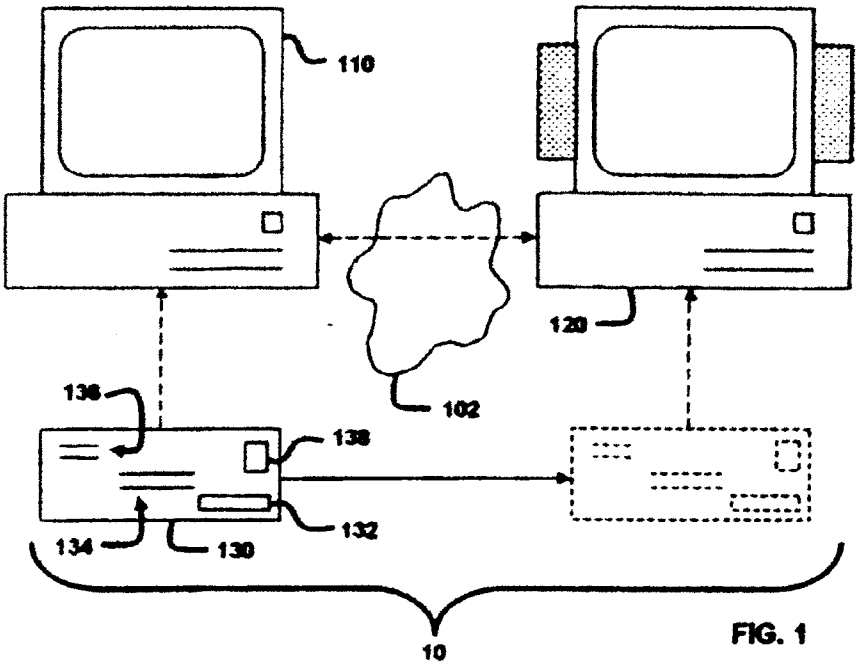


FIG. 1

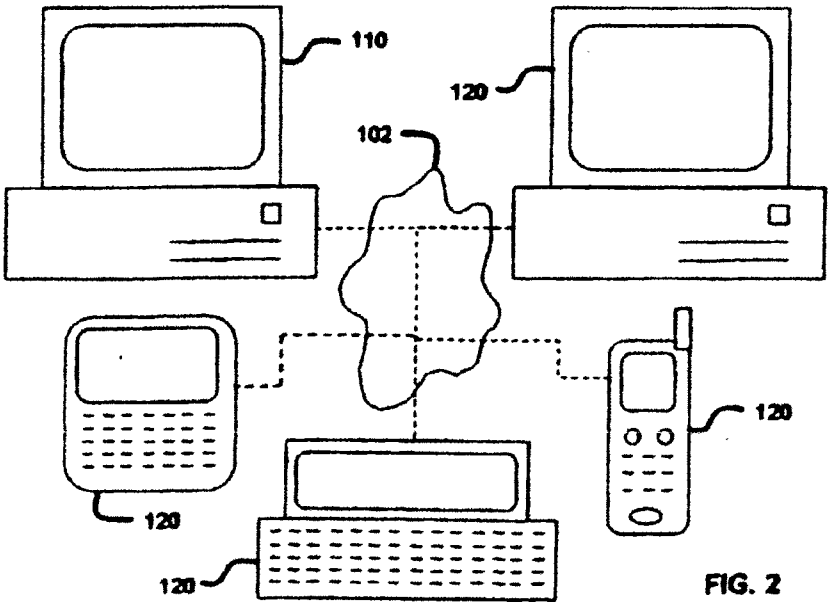


FIG. 2

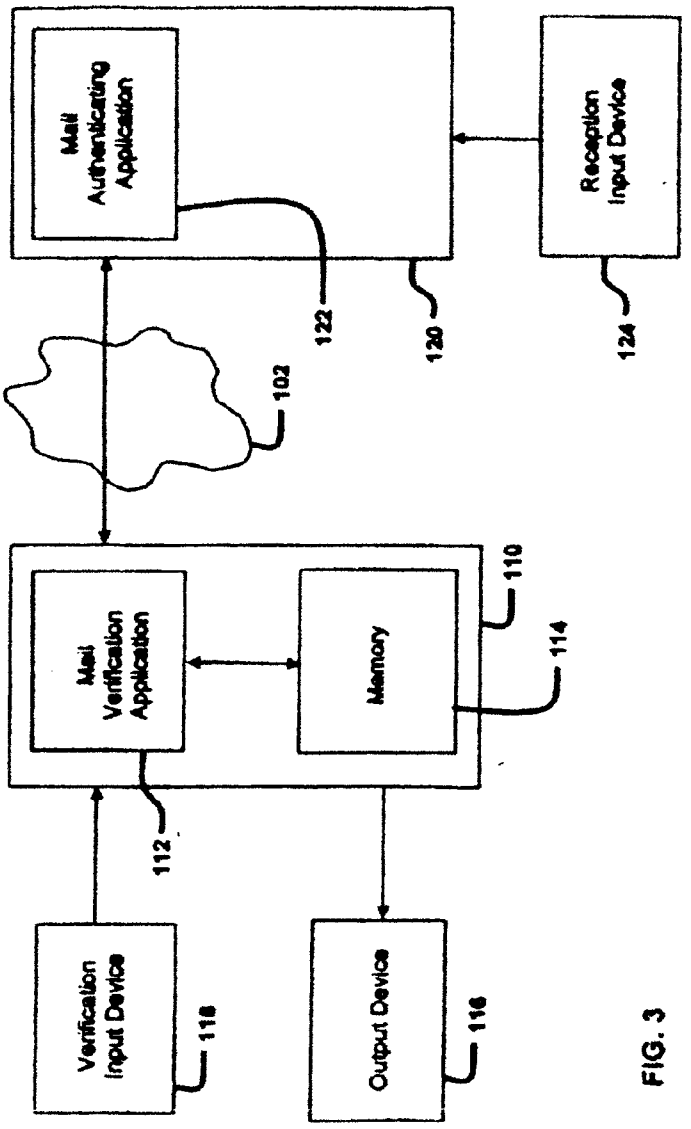

Mail Authenticating Application
Reception Input Device
122
120
124
102
Mail Verification Application
Memory
110
114
112
Verification Input Device
118
Output Device
116

FIG. 3

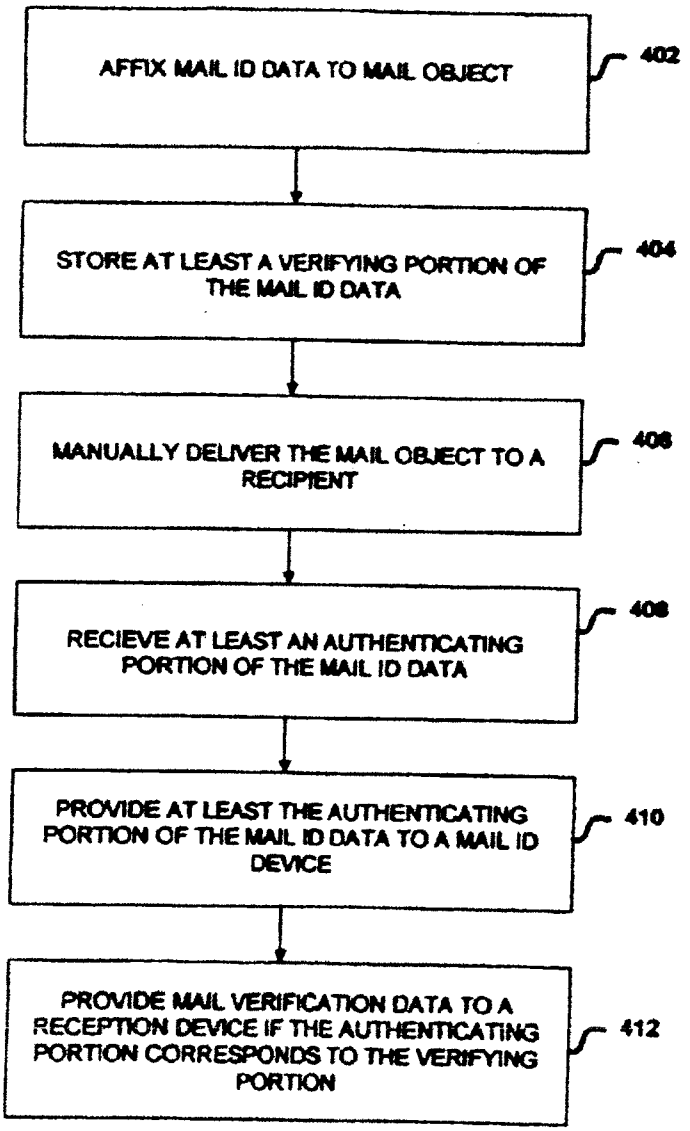

AFFIX MAIL ID DATA TO MAIL OBJECT
402
STORE AT LEAST A VERIFYING PORTION OF THE MAIL ID DATA
404
MANUALLY DELIVER THE MAIL OBJECT TO A RECIPIENT
406
RECIEVE AT LEAST AN AUTHENTICATING PORTION OF THE MAIL ID DATA
408
PROVIDE AT LEAST THE AUTHENTICATING PORTION OF THE MAIL ID DATA TO A MAIL ID DEVICE
410
PROVIDE MAIL VERIFICATION DATA TO A RECEPTION DEVICE IF THE AUTHENTICATING PORTION CORRESPONDS TO THE VERIFYING PORTION
412

FIG. 4

SYSTEM AND METHOD FOR IDENTIFYING A RECORD CONCERNING A MAIL OBJECT IN A DATABASE

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application is a continuation of Ser. No. 14/821,762, filed Aug. 9, 2015, which is a continuation of U.S. patent application Ser. No. 14/528,675, filed Oct. 30, 2014, and issued on Aug. 11, 2015 as U.S. Pat. No. 9,105,002, which is a continuation of U.S. patent application Ser. No. 13/848,370, filed Mar. 21, 2013, and issued on Dec. 16, 2014 as U.S. Pat. No. 8,910,860, which is a continuation of U.S. patent application Ser. No. 13/560,306, filed Jul. 27, 2012, and issued on Apr. 23, 2013 as U.S. Pat. No. 8,429,093, which is a continuation of U.S. patent application Ser. No. 13/297,515, filed Nov. 16, 2011, and issued on Sep. 4, 2012 as U.S. Pat. No. 8,260,629, which is a continuation of U.S. patent application Ser. No. 12/454,052, filed May 11, 2009, and issued on Dec. 6, 2011 as U.S. Pat. No. 8,073,787, which is a continuation of U.S. patent application Ser. No. 10/271,471, filed Oct. 15, 2002, and issued on Oct. 19, 2010 as U.S. Pat. No. 7,818,268, which claims the benefit pursuant to 35 U.S.C. §119(e) of U.S. Provisional Patent Application No. 60/330,031 filed Oct. 16, 2001, which applications are specifically incorporated herein, in their entirety, by reference.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to mail verification, and more particularly to a system and method of authenticating at least one mail object by providing at least a portion of mail identification data over a wide area network, such as the Internet, in order to receive mail verification data.

[0004] 2. Description of Related Art

[0005] Currently there are two ways to provided mail objects (e.g., letters, documents, packages, etc.) to an end user; that being electronically (e.g., email, etc.) and through traditional mail services (e.g., U.S. Postal Service, Federal Express, UPS, Courier, etc.). However, because certain mail objects cannot be delivered electronically (either because it's impossible or impractical), they are delivered using traditional mail services.

[0006] There are several problems with delivering mail objects through traditional mail services. First, the mail object is typically secured inside packaging (e.g., envelops, boxes, etc.) before it is provided to the mail service. Thus, neither the mail service nor the recipient is aware of the contents of the package until such package is opened by the recipient. This creates a problem in that hazardous mail objects (i.e., Anthrax, explosives, etc.) are not detected until they are opened by the recipient, thus exposing the recipient to the hazardous material. It also creates a problem in that mail objects (in general) are not known until they are opened by the recipient, thus making it difficult for the recipient (or his designee) to properly screen, sort or avoid certain mail objects (e.g., offensive mail, annoying mail, etc).

[0007] Second, a manually delivered mail object is limited to a one-way production of a finite set of information and/or products. This becomes problematic when the sender of the mail object is interested in providing or receiving additional information (e.g., product instructions, warranty information, etc.). Finally, contents that can be delivered electronically (e.g., advertisements, software, etc.) are often included in mail objects that are delivered via traditional mail services. The drawback with this is that it increases the cost associated with producing and/or delivering the mail object and increase the size of the mail object. For at least these reasons, a need exists in the industry for a system and method of providing mail verification data in response to receiving mail ID data over a wide area network, such as the Internet.

SUMMARY OF THE INVENTION

[0008] The present invention provides a system and method for providing mail verification data over a wide area network, such as the Internet, in response to receiving and authenticating at least a portion of mail identification (ID) data. Preferred embodiments of the present invention operate in accordance with at least one reception device, a mail identification (ID) device, a memory, and a mail verification application adapted to communicate with the reception device over a wide area network, such as the Internet. Specifically, the mail verification application is adapted to store at least a verifying portion of mail ID data in memory. In one embodiment of the present invention, the verifying portion of the mail ID data includes an identifiable code portion (e.g., an alpha code, a numeric code, an alphanumeric code, a symbolic code, a digital code, etc.), a shipping portion (e.g., ship date, shipping location, shipping method, etc.) and/or a recipient portion (e.g., the recipients name, address, email address, IP address, account number, social security number, etc.). The mail ID data is then affixed to a mail object. The mail object, which may further include a mail-to-address, a return-mail-address, and/or postage, is then manually delivered to a recipient. In one embodiment of the present invention, the mail ID data further includes mail-to-address data, return-mail-address data, and/or postage data.

[0009] At least an authenticating portion of the mail ID data is then provided to the reception device. The reception device, which communicates with the mail ID device over a wide area network, transmits at least the authenticating portion of the mail ID data to the mail verification application operating on the mail ID device. The mail verification application then compares the authenticating portion of the mail ID data with the verifying portion stored in memory. If the authenticating portion corresponds to the verifying portion (e.g., matches, is reasonably related, etc.), then mail verification data is sent to the reception device. In one embodiment of the present invention, at least a portion of the mail verification data includes authenticating data (indicating that the mail ID data has been authenticated), securing data (indicating who secured the mail object), sender data (indicating who sent the mail object), recipient data (indicating the intended recipient of the mail object) and/or additional data (e.g., the contents of the mail object, downloadable product data, sender web-page information, third party advertisements, etc).

[0010] In one embodiment of the present invention, the mail ID device further includes an input device adapted to provide at least a verifying portion of the mail ID data to the mail verification application and/or an output device adapted to affix the mail ID data on the mail object. In another embodiment of the present invention, the reception device includes an input device for receiving at least an authenti-

cating portion of the mail ID data from the mail object and/or a mail authenticating application adapted to receive at least the authenticating portion of the mail ID data from the input device and provide at least the authenticating portion of the mail ID data to the mail ID device. In another embodiment of the present invention, the U.S. Postal Service (or an interim authenticating or screening entity) is the recipient of the mail object, thus interacting with the reception device to receive mail verification data.

[0011] A more complete understanding of the system and method for providing mail verification data in response to receiving at least a portion of mail ID data will be afforded to those skilled in the art, as well as a realization of additional advantages and objects thereof, by a consideration of the following detailed description of the preferred embodiment. Reference will be made to the appended sheets of drawings which will first be described briefly.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. **1** illustrates one embodiment of the mail verification system.

[0013] FIG. **2** illustrates a mail ID device communicating with a plurality of reception devices over a wide area network, such as the Internet.

[0014] FIG. **3** illustrates one embodiment of the mail ID device and the reception device depicted in FIG. **1**.

[0015] FIG. **4** is a flow chart illustrating one method of providing mail verification data in response to receiving at least a portion of mail ID data.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0016] The present invention provides a system and method for providing mail verification data over a wide area network, such as the Internet, in response to receiving and authenticating at least a portion of mail identification (ID) data. In the detailed description that follows, like element numerals are used to describe like elements illustrated in one or more figures.

[0017] Preferred embodiments of the present invention operate in accordance with at least one reception device, a mail identification (ID) device, a memory, and a mail verification application adapted to communicate with the reception device over a wide area network, such as the Internet. FIG. **1** illustrates one embodiment of the mail verification system **10**, which includes a mail ID device **110** and a reception device **120** communicating through a wide area network **102**, such as the Internet. It should be appreciate, as depicted in FIG. **2**, that the reception device(s) **120** includes, but is not limited to, personal computers, set top boxes, personal digital assistances (PDAs), mobile phones, land-line phones, televisions, bar code readers, and all other physically and wirelessly connected reception devices generally known to those skilled in the art. It should further be appreciated that the number of reception devices **120** depicted in FIGS. **1** and **2** are merely to illustrate how the present invention operates, and are not intended to further limit the present invention.

[0018] As shown in FIG. **3**, the mail ID device **110** further includes a mail verification application **112** and a memory **114**. The mail verification application **112** is adapted to store at least a portion (i.e., a verifying portion) of mail ID data in the memory **114**, receive at least a portion (i.e., an authenticating portion) of mail ID data from the reception device **120**, and provide mail verification data if the portion of the mail ID data received from the reception device **120** is authenticated. It should be appreciated that the mail verification application **112** may further be adapted to generate the mail ID data and provide it to an external device (e.g., a printer, etc.) or receive at least a verifying portion of the mail ID data from an external device (e.g., a scanner, etc.). It should also be appreciated that the mail verification application **112** may exist as a single application, or as multiple applications (locally and/or remotely stored) that operate together to perform the verification functions as described herein. It should further be appreciated that the location of the memory device **114** depicted in FIG. **3** is not intended to further limit the present invention. Thus, a memory device that is, for example, external to the mail ID device **110** is within the spirit and scope of the present invention.

[0019] Referring back to FIG. **1**, where the dashed arrows indicate data transactions and the solid arrow indicates physical movement, mail ID data **132** is affixed to a mail object **130** (as used in its broader sense to include, but is not limited to, the packaging that surrounds the mail object). It should be appreciated that mail ID data can be encoded/encrypted (e.g., using bar code data, digital data, etc.) to prevent fraudulent usage. It should further be appreciated that affixing the mail ID data **132** on the mail object **130** includes, but is not limited to, printing or attaching mail ID data directly on the outer surface of the mail object **130** or printing/storing the mail ID data **132** on labels, ICs, smart cards, RFID tags, or any other data storage devices (or materials) generally known to those skilled in the art, and attaching them to the outer surface of the mail object **130**. It should also be appreciated that the location of the mail ID data **132** on the mail object **130** in FIG. **1** is merely to exemplify how the invention operates, and is not intended to further limit the present invention. Thus, affixing the mail ID data **132** in some other location, such as over the sealing flap of an envelope, is within the spirit and scope of this invention.

[0020] At least a portion (i.e., a verifying portion) of the mail ID data **132** (either before or after the mail ID data is affixed) is stored in the mail ID device **110**, or more particular (as shown in FIG. **3**) in a memory **114** located within the mail ID device **110**. Specifically, the mail verification application **112** either receives or generates at least the verifying portion of the mail ID data **132**. The verifying portion is then stored in the memory **114**. In one embodiment of the present invention, the verifying portion of the mail ID data includes a identifiable code portion (e.g., an alpha code, a numeric code, and alphanumeric code, a symbolic code, a digital code, etc.), a shipping portion (e.g., ship date, shipping location, shipping method, etc.), and/or a recipient portion (e.g., the recipients name, address, email address, IP address, account number, social security number, etc.). The mail object **130**, which may further include a mail-to-address **134**, a return-mail-address **136**, and/or postage **138**, can then be manually delivered to a recipient. It should be appreciated that the mail ID data **132** can also be encoded (e.g., in a bar code, etc.) to include mail-to-address data, return-mail-address data, and/or postage data. In other words, for example, mail ID data could be encoded to include both coded data and postage-account data.

[0021] Once the recipient (or their designee) receives the mail object **130**, at least an authenticating portion of the mail ID data **132** is provided to the reception device **120**. The reception device **120**, which communicates with the mail ID device **110** over a wide area network **102**, transmits at least the authenticating portion of the mail identification data to the mail verification application **112** operating on the mail ID device **110**. The mail verification application **112** then compares the authenticating portion of the mail ID data with the verifying portion stored in memory **114**. If the received portion is authenticated, or corresponds to the verifying portion (e.g., matches, is reasonably related, etc.), then mail verification data is sent to the reception device **120**.

[0022] In one embodiment of the present invention, at least a portion of the mail verification data includes authenticating data (e.g., image data, audio data, etc.) indicating that the mail ID data has been authenticated. This would allow, for example, the reception device **120** to produce at least one authenticating image on a display and/or perform at least one authenticating sound on a speaker. In another embodiment of the present invention at least a portion of the mail verification data includes securing data (indicating who secured the mail object), sender data (indicating who sent the mail object), recipient data (indicating who is to receive the mail object) and/or additional data (e.g., the contents of the mail object, downloadable product data, sender webpage data, third party advertisements, etc).

[0023] In another embodiment of the present invention, the mail ID device and/or the reception device further include an input device (e.g., **118**, **124**) adapted to receive at least a portion of the mail ID data. It should be appreciated that that the input devices depicted and discussed herein (e.g., **118**, **124**) include, but are not limited to, scanners (e.g., bar code scanners, etc.), keyboards, RFID readers, smart card readers, IC readers, and all other input devices generally known to those skilled in the art.

[0024] In another embodiment of the present invention, the mail ID device further includes an output device **116** adapted to affix (e.g., print, store, etc.) the mail ID data on the mail object. It should be appreciated that affixing the mail ID data on the mail object includes, but is not limited to, printing or attaching mail ID data directly on the outer surface of the mail object or printing/storing the mail ID data on labels, ICs, smart cards, RFID tags, or any other data storage devices (or materials) generally known to those skilled in the art, and attaching them to the outer surface of the mail object. It should further be appreciated that the output device depicted and described herein (e.g., **116**) includes, but is not limited to, printers, data storage device (e.g., device capable of storing data on ICs, smart cards, RFID tags, etc.), and all other output devices generally known to those skilled in the art.

[0025] In another embodiment of the present invention, as shown in FIG. **3**, the reception device **120** further includes a mail authenticating application **122** adapted to receive at least the authenticating portion of the mail ID data from the input device **124** and provide at least the authenticating portion of the mail ID data to the mail ID device. It should be appreciated that the mail authenticating application **122** may exist as a single application, or as multiple applications (locally and/or remotely stored) that operate together to perform the authenticating functions as described herein.

[0026] In one embodiment of the present invention, the mail ID data further includes software-booting data adapted to boot the mail authenticating application, an email application and/or a browser application. Either one of these applications could then be used to provide at least an authenticating portion of said mail ID data to said mail ID device, provide additional information to said mail ID device (or the sender of the mail object), and/or receive additional information from either the mail ID device, the sender of the mail object, or a third-party. In another embodiment, the mail verification data further includes software-booting data adapted to boot an email application and/or a browser application. Either one of these applications could then be used to provide additional information to the mail ID device and/or receive additional information from either the mail ID device, the sender of the mail object, or a third party.

[0027] In another embodiment of the invention, the reception device **120**, or more particularly the mail authenticating application **122** is adapted to provide a reply email to the mail ID device **130** or the sender of the mail object. This reply email may either be sent automatically, to acknowledge the reception of the mail ID data and/or mail verification data, or manually, to allow the recipient to communicate with the mail ID device and/or sender of the mail object. In another embodiment of the invention the mail verification application **112** is adapted to provide the mail verification data to the reception device **120** via an email.

[0028] In another embodiment of the present invention, the U.S. Postal Service (or an interim authenticating or screening entity) is the recipient (as defined by this application) of the mail object **130**, thus interacting with the reception device **120** to receive mail verification data. If mail is authenticated (or approved in the case of screening), the mail object **130** is forwarded on to the actual intended recipient.

[0029] FIG. **4** is a flow chart illustrating one method of providing mail verification data in response to receiving at least a portion of the mail ID data. Specifically, in step **402** mail ID data is affixed to a mail object. At step **404**, a verifying portion of the mail ID data is stored in a memory device. The mail object is then delivered to its recipient (or designee) at step **406**. At step **408**, a reception device receives at least an authenticating portion of the mail ID data. The reception device then provides at least the authenticating portion to a mail ID device at step **410**. If the authenticating portion of the mail ID data corresponds to the verifying portion of the mail ID data, then mail verification data is provided to the reception device at step **412**. It should be appreciated that storing the verifying portion of the mail ID data before the mail ID data is affixed to the mail object is within the spirit and scope of the present invention.

[0030] Having thus described multiple embodiments of a system and method of providing mail verification data in response to receiving mail ID data, it should be apparent to those skilled in the art that certain advantages of the system have been achieved. It should also be appreciated that various modifications, adaptations, and alternative embodiments thereof may be made within the scope and spirit of the present invention. The invention is further defined by the following claims.

What is claimed is:

1. A method for identifying a record concerning a mail object in a database on a first system, which said record can also be used to identify said mail object on a second system

in communication with said first system via the Internet and distinguish said mail object from a plurality of other mail objects, comprising:

generating by said first system a first identifier for said mail object that consists of a numeric value;

using at least said first identifier, sender data, recipient data, and shipping method data to create a second identifier for said mail object that is affixed to said mail object as a single set of encoded data, said sender data being assigned by said second system;

storing said second identifier in said database such that said second identifier is linked to said record concerning said mail object in said database;

receiving by said first system data on said mail object from said second system via the Internet, wherein said data received from said second system comprises at least said first identifier, said sender data, and said shipping method data; and

providing by said first system data concerning said mail object via the Internet when at least said first identifier, said sender data, and said shipping method data, as received from said second system, corresponds to said record concerning said mail object in said database, said data concerning said mail object being stored within said record in said database;

wherein said first system's ability to uniquely identify said mail object is based at least in part on said first system's generation of a first portion of said second identifier, and said second system's ability to uniquely identify said mail object is based at least in part on said second system's assignment of a second portion of said second identifier.

2. The method of claim **1**, wherein said first system is operated by a sender of said mail object.

3. The method of claim **1**, wherein said second system is operated by a mail carrier.

4. The method of claim **2**, wherein said second system is operated by a mail carrier.

5. The method of claim **1**, wherein said received data further comprises said recipient data, and said step of providing comprises providing said data on said mail object when said first identifier, said sender data, said recipient data, and said shipping method data, as received from said second system, correspond to said record in said database.

6. The method of claim **1**, wherein said first system provides said data concerning said mail object to said second system via the Internet.

7. The method of claim **1**, wherein said first system provides said data concerning said mail object to a recipient of said mail object.

8. The method of claim **1**, wherein said first system provides said data concerning said mail object to a sender of said mail object via a web page.

9. The method of claim **1**, wherein said first system provides said data concerning said mail object to a sender of said mail object via an email.

10. A system for identifying a record concerning a mail object, which record is stored on a database on a first system, can be used to identify said mail object on a second system in communication with said system via the Internet, and can be used to distinguish said mail object from a plurality of other mail objects, comprising:

a memory for storing a record on said mail object; and

at least one application adapted to:

generate a first identifier for said mail object that consists of a numeric value, wherein said first identifier may not be unique to said second system;

use at least said first identifier, sender data, recipient data, and shipping method data to create a second identifier for said mail object that is affixed to said mail object as a single set of encoded data, said sender data being assigned by said second system;

storing said second identifier in said memory such that said second identifier is linked to said record concerning said mail object in said database;

receiving data on said mail object from said second system via the Internet, wherein said data received from said second system comprises at least said first identifier, said sender data, and said shipping method data; and

providing information concerning said mail object via the Internet when at least said first identifier, said sender data, and said shipping method data corresponds with said record concerning said mail object in said database;

wherein said system's ability to uniquely identify said mail object is based at least in part on said system's assignment of a first portion of said second identifier, and said second system's ability to uniquely identify said mail object is based at least in part on said second system's assignment of a second portion of said second identifier.

11. The system of claim **10**, wherein said first identifier is assigned by a sender of said mail object.

12. The system of claim **10**, wherein said sender data is assigned by a mail carrier.

13. The system of claim **11**, wherein said sender data is assigned by said mail carrier.

14. The system of claim **10**, wherein said received data further comprises said recipient data, and said application is adapted to provide said information concerning said mail object via the Internet if at least said first identifier, said sender data, said recipient data, and said shipping method data corresponds with said record concerning said mail object in said database.

15. The system of claim **10**, wherein said application is further adapted to provide said information to said second system via the Internet.

16. The system of claim **10**, wherein said application is further adapted to provide said information to a recipient of said mail object.

17. The system of claim **10**, wherein said application is further adapted to provide said information to a sender of said mail object via a web page.

18. The system of claim **10**, wherein said application is further adapted to provide said information to a sender of said mail object via an email.

19. A method of using an identifier to identify a record concerning a mail object in a database on a first system that is operated by a sender of said mail object, wherein said identifier can also be used to identify said mail object on a second system that is operated by a mail carrier and is in communication with said first system via the Internet and distinguish said mail object from a plurality of other mail objects, comprising:

generating by said first system a unique identifier for said mail object;

using by said first system said unique identifier, sender data, recipient data, and shipping method data to create an identifier for said mail object, said identifier being affixed to said mail object as a single set of encoded data and including data assigned by said second system;

storing said identifier in said database, at least a portion of said identifier being linked to said record concerning said mail object in said database;

receiving by said first system data on said mail object from said second system via the Internet, wherein said data received from said second system comprises at least said unique identifier, said sender data, and said shipping method data; and

using at least said unique identifier, said sender data, and said shipping method data to identify said record concerning said mail object in said database, said identification of said record allowing said first system to provide information concerning said mail object via the Internet;

wherein said first system's ability to uniquely identify said mail object is based at least in part on said first system's generation of a first portion of said identifier, and said second system's ability to uniquely identify said mail object is based at least in party on said second system's assignment of a second portion of said identifier.

20. The method of claim **19**, wherein said first system is further configured to send at least said first portion of said identifier to said second system, and said second system is further configured to send at least said second portion of said identifier to said first system.

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