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(54) **PC POSTAGE™ SERVICE INDICIA DESIGN FOR SHIPPING LABEL**

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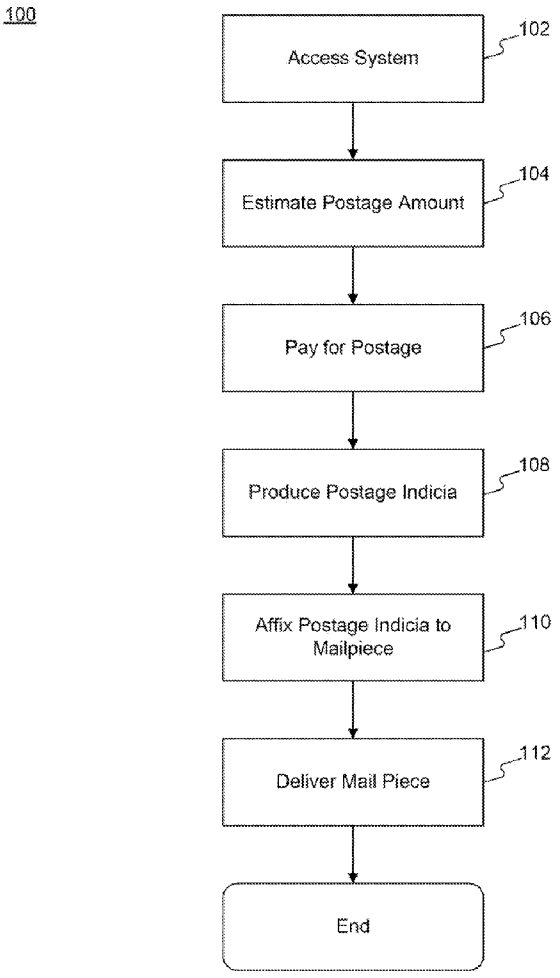
(57) **ABSTRACT**

Systems and methods of insuring payment of a proper amount of postage, comprise receiving payment for an amount of postage, affixing a postage indicia to a piece of mail, wherein the postage indicia includes the postage amount in a format readable only by machine, and adjusting the postage amount at a time subsequent to receipt of payment.



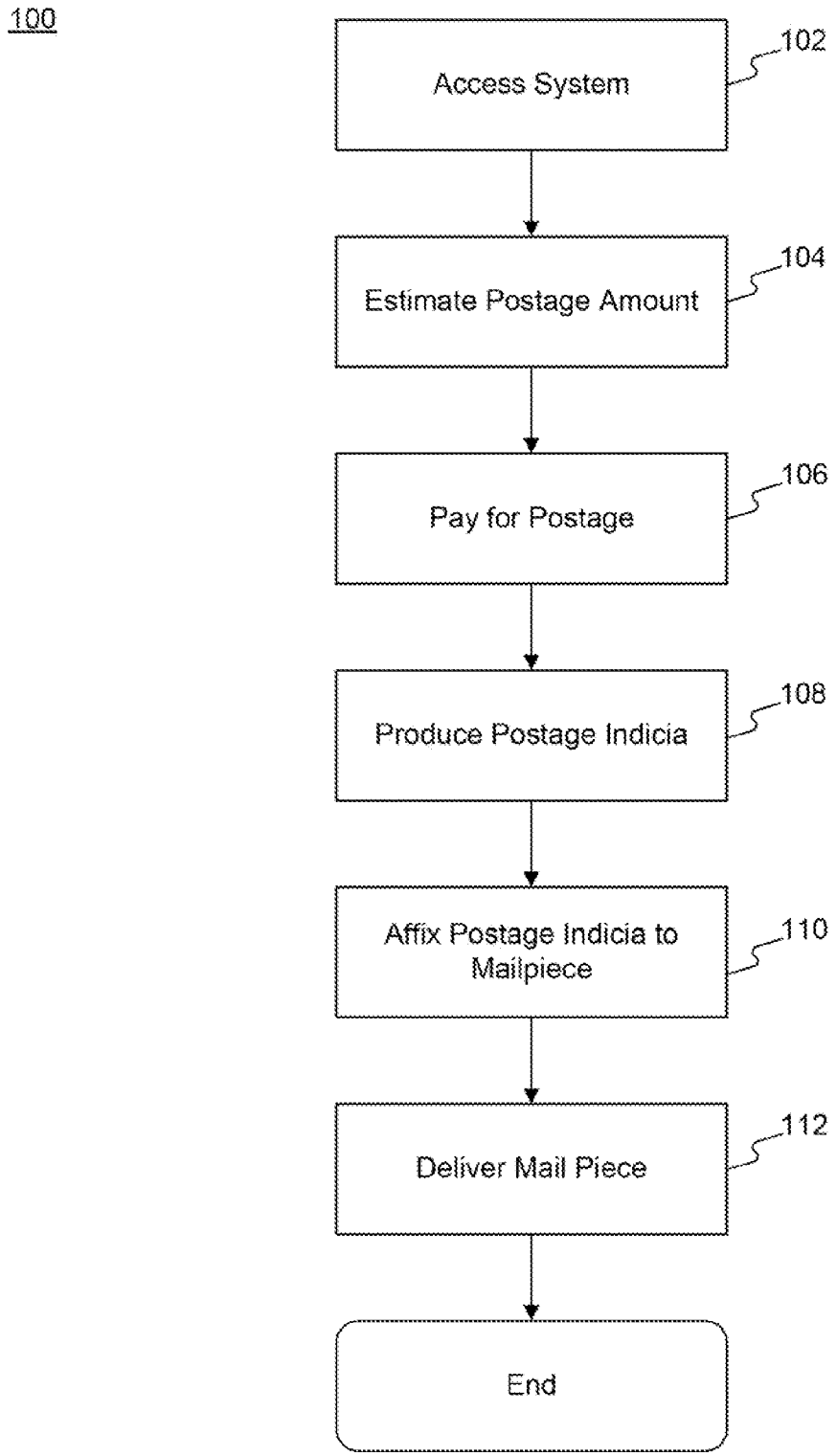

100
Access System
102
Estimate Postage Amount
104
Pay for Postage
106
Produce Postage Indicia
108
Affix Postage Indicia to Mailpiece
110
Deliver Mail Piece
112
End

Figure 1

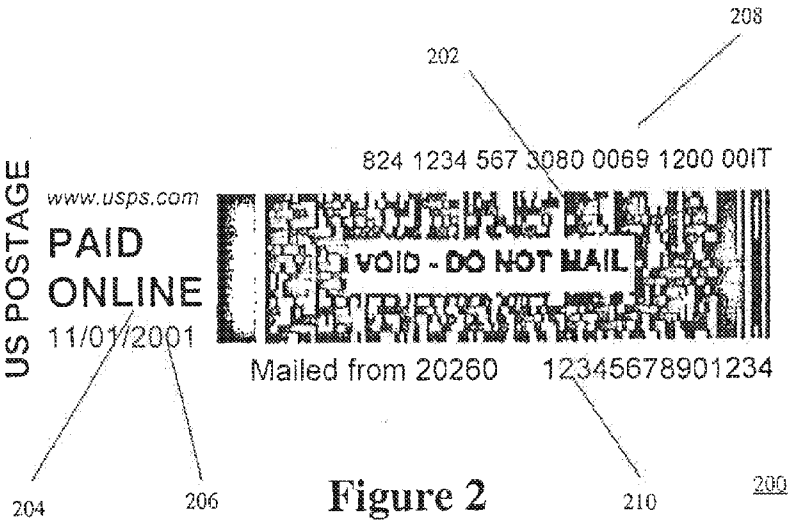


Figure 2

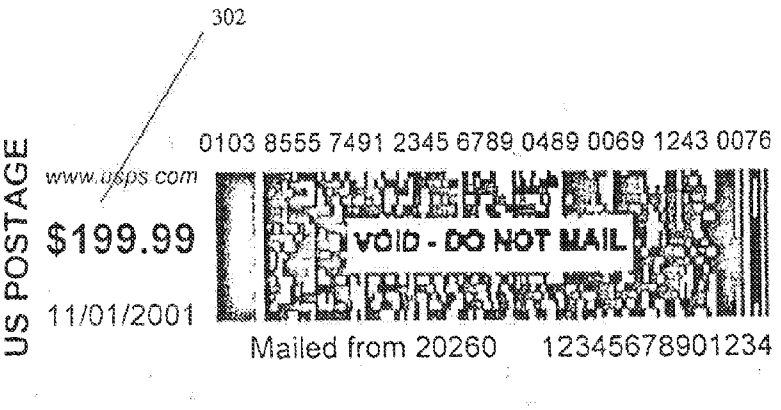


Figure 3

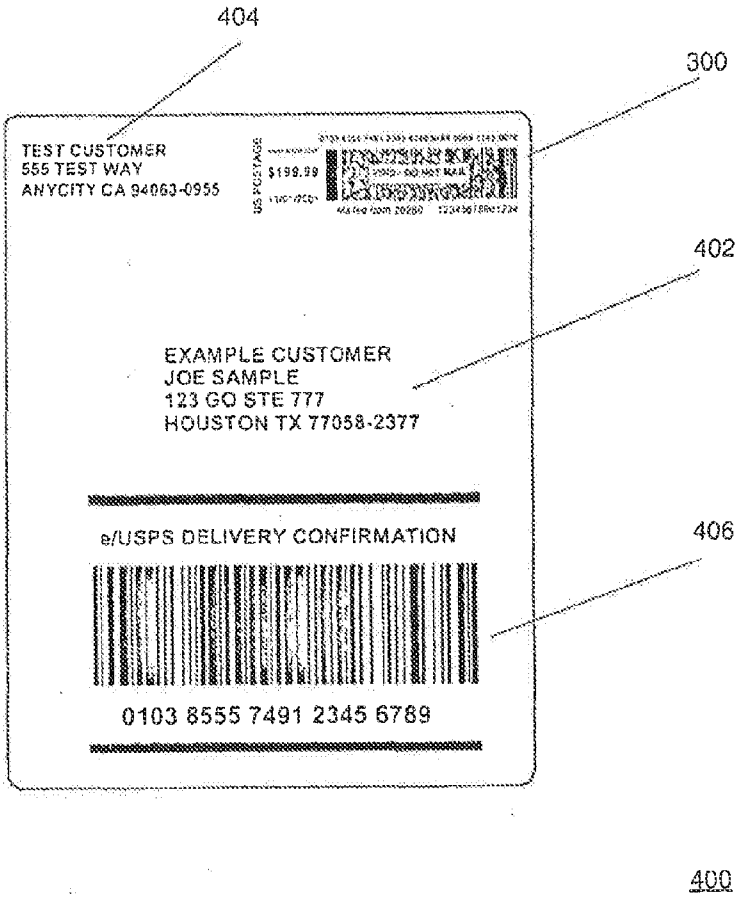

404
300
TEST CUSTOMER
555 TEST WAY
ANYCITY CA 94063-0955
US POSTAGE
$199.99
402
EXAMPLE CUSTOMER
JOE SAMPLE
123 GO STE 777
HOUSTON TX 77058-2377
e/USPS DELIVERY CONFIRMATION
406
0103 8555 7491 2345 6789
400

Figure 4

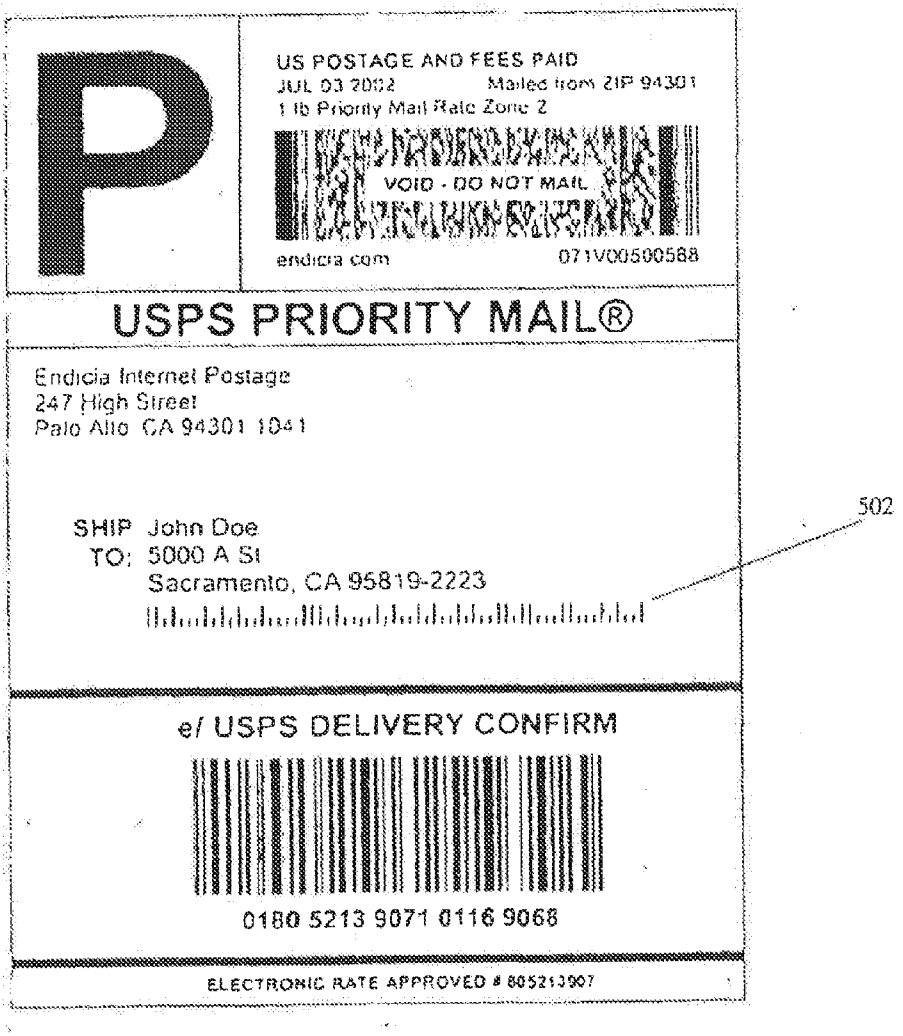

P
US POSTAGE AND FEES PAID
JUL 03 2002
Mailed from ZIP 94301
1 lb Priority Mail Rate Zone 2
VOID - DO NOT MAIL
endicia.com
071V00500588
USPS PRIORITY MAIL®
Endicia Internet Postage
247 High Street
Palo Alto CA 94301 1041
SHIP TO: John Doe
5000 A St
Sacramento, CA 95819-2223
502
e/ USPS DELIVERY CONFIRM
0180 5213 9071 0116 9068
ELECTRONIC RATE APPROVED # 805213907

Figure 5

US POSTAGE AND FEES PAID
JUL 03 2002
Mailed from ZIP 94301
8 oz Express Mail Rate Zone 6
VOID - DO NOT MAIL
endicia.com
071V00500588
USPS EXPRESS MAIL®
Endicia Internet Postage
247 High St
Palo Alto CA 94301-1041
(650) 321-2640
NO DELIVERY WEEKEND OR HOLIDAY
SHIP John Smith
TO: 6500 University Dr S
Omaha, NE 68132-3428
USPS EXPRESS MAIL
EO 000 161 100 US
POSTAL USE ONLY
Date In Mo Day Year
Time In
AM
PM
Day of Delivery
Next
Second
12 Noon
3 PM
Return Receipt
COD
Additional Insurance

Figure 6

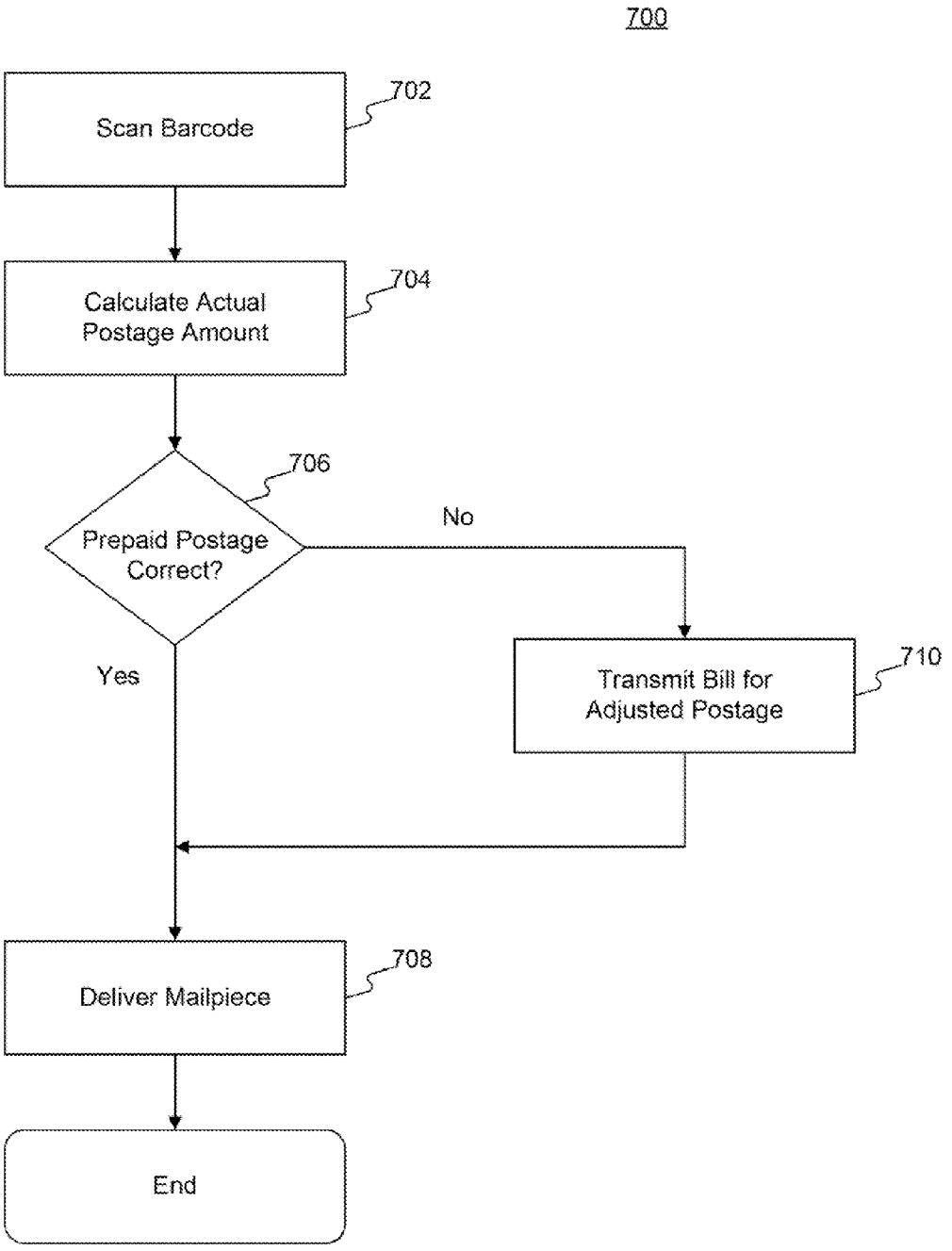

700
Scan Barcode
702
Calculate Actual Postage Amount
704
Prepaid Postage Correct?
706
No
Yes
Transmit Bill for Adjusted Postage
710
Deliver Mailpiece
708
End

Figure 7

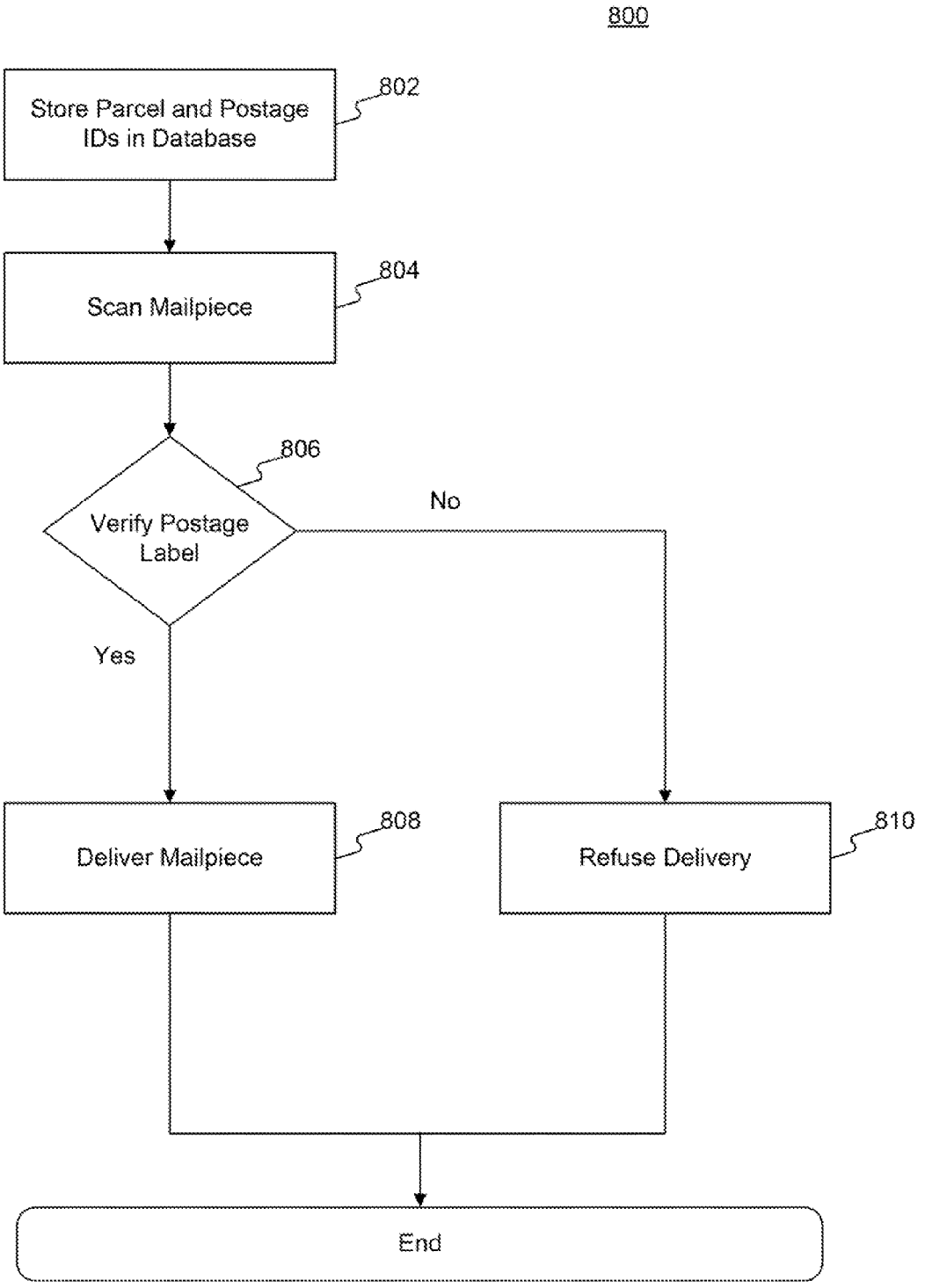

800
Store Parcel and Postage IDs in Database
802
Scan Mailpiece
804
Verify Postage Label
806
No
Yes
Deliver Mailpiece
808
Refuse Delivery
810
End

Figure 8

PC POSTAGE™ SERVICE INDICIA DESIGN FOR SHIPPING LABEL

RELATED APPLICATIONS

[0001] This application claims the benefit under 35 U.S.C. §119(e) of Provisional Application No. 60/399,251, tiled Jul. 29, 2002, the contents of which are hereby incorporated by reference, This application is related to an application entitled "SYSTEMS AND METHODS FOR NM-STREAM POSTAGE ADJUSTMENT," bearing attorney docket number 08049.0923, filed on the same date as the present application, the contents of which are incorporated herein by reference.

TECHNICAL FIELD

[0002] The present invention relates to a method of preventing fraud, misuse, abuse and reuse of postage by utilizing a uniquely designed postage indicia for a shipping label.

BACKGROUND

[0003] The United States Postal Service ("USPS"), unlike private shipping companies, is required by law to receive, payment for postage in advance of mailing of the piece of mail. For this reason, the USPS must closely monitor the payment of postage and the corresponding use of the postage labels, such as stamps. In the past, the postage must be accurately computed prior to producing a postage label or stamp, and affixing it the mailpiece. Often, this meant purchasing the postage label at a U.S. Post Office, or maintaining a strictly monitored postage. meter, capable of dispensing the appropriate postage.

[0004] With the development of Internet technology, the U.S. Postal Service (USPS) has introduced many new products for the convenience of postal customers. One such product is known as PC Postage™ whereby one can purchase postage over the internet using a computer. One can also use it for most of one's mailing needs: First-Class Mail service,

[0005] Express Mail® service, Priority Mail service, parcels, International Mail, and payment for special services like Delivery Confirmation™ etc. In this process the postal customer goes online to the USPS web page and makes an online shipping label transaction. The customer enters the type of mailing, recipient's address, sender's address and the requisite payment, which is conducted as a credit card transaction or may be a charge against the customer's deposit account with the USPS. A label is printed with this information and affixed to the mailing.

[0006] However, when using these or other methodologies, if the postage amount was improperly computed prior to purchase, the USPS must return the mail to the sender for improper postage. In addition, unless the postage was paid for at a US Post Office, and affixed by a USPS employee, the risk arose that a postage label may be duplicated and used more than once, providing shippers with unauthorized use of the mail system.

[0007] Therefore it is an object of this invention to provide a unique label and postage indicia design to prevent this type of fraud. It is also an object of this invention to keep track of all mailing transactions and to reconcile the accounts and collect statistical data on the mailings.

SUMMARY OF THE INVENTION

[0008] In accordance with the invention, systems and methods of insuring payment of a proper amount of postage, comprise receiving payment for an amount of postage, affixing a postage indicia to a piece of mail, wherein the postage indicia includes the postage amount in a format readable only by machine, and adjusting the postage amount at a time subsequent to receipt of payment.

[0009] Additional objects and advantages of the invention will be set forth in part in the description which follows, and in part will be obvious from the description, or may be learned by practice of the invention. The objects and advantages of the invention will be realized and attained by means of the elements and combinations particularly pointed out in the appended claims. It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the invention, as claimed.

BRIEF DESCRIPTION DRAWINGS

[0010] The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate several embodiments of the invention and together with the description, serve to explain the principles of the invention.

[0011] FIG. **1** is a flowchart describing the process used by a sender to obtain postage, in accordance with the present invention;

[0012] FIG. **2** shows a stealth postage indicia;

[0013] FIG. **3** shows a postage indicia design with postage shown; and

[0014] FIG. **4** shows a complete mailing label, including postage indicia design using uncoded postage;

[0015] FIG. **5** shows an alternative form of the mailing label including coded postage;

[0016] FIG. **6** shows a another alternative form of the mailing label including coded postage;

[0017] FIG. **7** is a flowchart showing the process used by a shipper system to verify the postage paid on a postage label; and

[0018] FIG. **8** is a flowchart showing the process used by a shipper system to verify the postage indicia On a piece of mail.

DESCRIPTION OF THE EMBODIMENTS

[0019] Reference will now he made in detail to the exemplary embodiments of the invention, examples of which are illustrated in the accompanying drawings. Wherever possible, the same reference numbers will be used throughout the drawings to refer to the same or like parts.

[0020] FIG. **1** is a flowchart showing method **100** performed by a sender (user) to pay a shipper for and receive postage for a mailpiece. While it is preferable that the mailing company (shipper system) is the USPS, this method may similarly be utilized to pay for the transport of a package by any public or private mail or shipping company.

[0021] While method **100** may be carried out by an individual at a sending company's facility, such sender would likely have knowledgeable staff and equipment that would accurately determine the postage amount and prevent postage fraud, rendering the present system less necessary. It is therefore preferable that method **100** be implemented on an electrical device, such as a personal computer, capable of performing the described steps. The instructions for carrying out method **100** may be implemented as a software package installed on a personal computer capable of connecting to and transmitting information to, or receiving information from,

the USPS. Alternatively, one or more steps of method **100** may be implemented by hardware, such as by a processor containing instructions for carrying out the method.

[0022] Alternatively, method **100** may be implemented as a website, For example, the USPS has developed a transactional web site that allows customers to print shipping labels online for domestic Express Mail (EM) and Priority Mail (PM), and Global Express Guaranteed (GXG) and Global Express Mail (GEM). For ease of discussion, the present description discussion will describe method **100** implemented using a website.

[0023] Method **100** begins when a person desiring to send a piece of mail ("sender") accesses the shipper's web site (block **102**) (i.e. the web site). In block **104**, the postage amount necessary for delivery of the package or mailpiece is then estimated. In one implementation, the website will contain a form for the purpose of receiving sufficient information about the mailpiece for the system to calculate the postage. For example, the web page may contain "radio buttons" or input fields for the sender to input the weight, shipping class, destination information, sender information, or other information necessary for an initial determination of the postage amount, It is important to recognize that the information inputted by the sender, and the estimated amount of postage not be 100% accurate, for reasons described below. Instead, the sender may make his or her best guess as to the weight of the parcel (or other information). For the same reason, no specialized hardware is necessary at the sender's location, since accuracy at this point in the process is not a necessity. In another embodiment, the webpage may simply present a list of possible postal rates and allow the sender to select the most appropriate (though not necessarily correct) postal rate.

[0024] Once the amount has been estimated, the sender then pays the estimated amount to the shipper (block **106**). The sender may accomplish payment of the postage by credit card payment or application of funds from a deposit account with the shipper.

[0025] U.S. laws and regulations require mail handled by the USPS to provide evidence of prepaid postage on each package. Therefore, once the sender has accomplished payment of the postage, the system then produces a postage indicia (block **108**), which the sender may affix to the mailpiece.

[0026] In one embodiment, the software or website will produce the postage indicia by producing a machine-readable representation of information associated with the mailpiece ("postage information"). For example, the software will combine the postage paid, the rate category, a device identification (identifying the device that printed the postage indicia), the licensing code, the sending zip code (or address), the destination zip code (or address), the software identification, the ascending and descending registers, the digital signature algorithm, the date of mailing, and the delivery confirmation code (a unique number assigned to the mailpiece for identification purposes). One of ordinary skill in the art will recognize that one or more pieces of information may be excluded in some circumstances (for example, the ascending and descending registers may be unnecessary in a case where the sender is not using a prepaid postage meter to print the postage indicia). In addition, a unique postage lumber may be assigned and included as an identification of the postage, for use in preventing duplication of the postage. This information may then be digitally signed using any now known or later developed digital signature algorithm, and the signature may be included as part of the postage information.

[0027] For example, a Shipping Shares Services (SSS) Application software application, sends label with postage indicia information to a browser for printing. The label includes a unique delivery confirmation number embedded within a barcode, the sender and recipient's address information, the class of mail, the special service, and the postage indicia. The postage indicia contains the mailing date, the postage amount or indication of postage payment, the ZIP Code™ mailed from, an identifying licensing number, and the corresponding delivery confirmation number at the top of the indicia.

[0028] Once the postage indicia has been produced, it may be printed on the mailpiece (or on a label for affixing to the mailpiece). While the label may be printed using specialized equipment such as a prepaid postage meter, or a secure printer with means for preventing duplication (such as a printer that uses proprietary ink to prevent unauthorized duplication), it may also be printed using any unsecured printer or other printing device associated with the sender's (or shipper's) computer. However, as further discussed below, when printing on an unsecured printer, the unique postage number assigned to the postage indicia becomes necessary to prevent unauthorized duplication of the postage indicia.

[0029] In one embodiment, shown in FIG. **2**, the printed postage indicia will take the form of a "stealth postage" indicia **200**, that is, the postage indicia will include the postage information represented only in machine readable format such as a two dimensional bar code **202** (the bar code may alternatively be implemented as a one-dimensional bar code-not shown). In this embodiment, the postage amount will not be printed on the postage indicia in a human readable form, but may instead include a notation **204** that the postage has been paid. In addition, information contained in the stealth indicia **200** may include the date of mailing **206**, a unique delivery confirmation number **208** (to identify the mailpiece), and a unique postage number **210** (to prevent the postage indicia from being separated from the mailpiece), and possibly other identifying information. FIG. **3** shows an alternative version of the postage indicia **300**, in which the postage amount **302** is printed on the indicia in a human readable format.

[0030] Referring now to FIG. **4**, the postage indicia may alternatively be printed as part of mailing label **400** including postage indicia **300** (or stealth indicia, not shown), a destination address **402**., a return address **404**, and another representation of the unique article number **406** (shown in both human readable and machine readable, i.e. barcode, forms).

[0031] FIGS. **5** and **6** show alternative mailing labels for use with the present invention. The mailing label may also include other proprietary information required for proper processing by a shipper system. For example, a label printed for use by the USPS may include a FIM code (not shown, used for orientation of the mailpiece by USPS equipment) and a POSTNET code (**502**, FIG. **5**).

[0032] Returning to FIG. **1**, once the postage indicia has been produced, the sender affixes it to the mailpiece (block **110**) and mails the mailpiece, (block **112**), such as by delivery to a US Post Office or other facility of the shipper.

[0033] Upon delivery of the mailpiece into the mail stream, the mailing system may also employ process **700**, FIG. **7** to verify that the correct amount of postage has been paid, and/or process **800**, FIG. **8**, to verify that the postage indicia has not

been improperly duplicated. These processes may be performed in addition to its standard operating procedures for routing, administering, and delivering mailpieces.

[0034] Referring to FIG. **7**, process **700** is performed by the shipper to insure that the proper amount of postage has been paid. Because of the regulations governing the USPS requiring prepayment of postage, it is preferable that. process **700** be performed prior to routing and delivery of the mailpiece. However, for private shipping companies the process may alternatively be carried out at any time, Process **700** begins by scanning the mailing label to read the postage amount previously paid by the sender (block **702**). The shipping company then calculates the actual amount of postage due for delivery of the mailpiece (block **704**). The shipper may calculate this using any known means, including weighing the package, determining the rate category and zone, and consulting the shipper's rate schedule. The shipper then compares the amount paid with the actual amount to verify (decision **706**) that the appropriate amount has been paid. If so, the shipper processes the mail according to its standard procedures (block **708**). If not, the shipper proceeds to bill (or refund) the sender for the difference (the adjusted postage value) (block **710**).

[0035] In one embodiment, the billing (or refunding) of the adjusted postage value may be charged to a credit card (such as the one used to pay the initial postage amount) or deducted from a deposit account. To account for the adjusted amount and appropriately track who to bill, the shipper system may maintain a database which it updates with each new purchase of postage by storing the billing information together with the unique delivery confirmation number and/or the unique postage number. In this way, the unique identification of the mailpiece is permanently associated with the sender's billing information. Alternatively, the billing information may be encrypted and embedded in the two-dimensional bar code on the postage indicia together with the parcel information. Once the sender has been appropriately billed, the parcel may then be delivered (block **708**), in compliance with regulations governing the USPS.

[0036] FIG. **8** is a flowchart describing the process performed by the shipper system to prevent postage fraud. The process begins at the point of purchase of the postage online. As the sender purchases the postage, the shipper updates a postage database by storing at least the unique postage number and the unique delivery confirmation number (block **802**). Once the delivery confirmation number barcode and postage number are scanned (block **804**), the shipper can then verify (decision **806**), against its database, that the postage label is being used with the mailpiece for which it was intended. If a match is not determined, then the use of the postage label on the present mailpiece is unauthorized, and the mailpiece is not delivered (block **808**). If, however, at decision **806**, a match is found, then the postage label is being used for the parcel for which it was produced, and the mail may be delivered (block **810**).

[0037] In an alternative embodiment, the block **802** may not be performed. Instead, as each new parcel is entered into the mail system, the postage label may be scanned and the information encoded therein may be entered into a new record in the database. Similarly, as each new parcel is scanned the unique parcel number and postage number may be compared against all other parcel numbers and postage numbers already in the database to prevent unauthorized duplication of the postage indicia. One of ordinary skill in the art will recognize that it is preferable to perform this scan and check as late in the delivery process as possible to prevent bypass of the system. For this purpose, the shipper system may employ portable scanners, capable of communication with the shipper system database, to scan the items as they are delivered to their final destination.

[0038] By these methods, the inclusion of the unique article number in the indicia design prevents the main portion of the label from being separated from the postage indicia. The unique article number design also prevents a person from reusing, copying or tampering with a label. The indication that postage was paid online (stealth postage) in place of the postage actually paid for the mailpiece allows for adjustments of postage as necessary and provides shippers with the ability to not disclose the postage amount to customers.

[0039] Other embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is intended that the specification and examples be considered as exemplary only, with a true scope and spirit of the invention being indicated by the following claims.

1.-**27**. (canceled)

28. A system for preventing postage fraud comprising:

a scanner for reading a unique parcel number and a unique postage number from a postage indicia affixed to a mailpiece;

a database in communication with the scanner, for verifying that the unique parcel number and the unique postage number are assigned to each other; and

an electronic interface for transmitting the postage indicia to a user, wherein the electronic interface is in communication with the database such that, upon purchase of the postage indicia by the user, the database is updated with a record for the postage indicia.

29. (canceled)

30. The system of claim **28**, wherein the electronic interface is the Internet.

31. The system of claim **28**, wherein the database further verifies that the unique postage number has not been used on a second mailpiece.

32. (canceled)

33. The system of claim **28**, wherein the unique parcel number and postage number are compared to an parcel number and postage number retrieved from a new mail parcel that enters a shipper's system.

34. The system of claim **28**, wherein the database is further updated with a new record for a new parcel scanned in by the scanner, wherein the new record comprises a unique parcel number and a unique postage number.

35. The system of claim **28**, wherein the scanner is a portable scanner.

36.-**44**. (canceled)

45. The system of claim **28**, wherein the unique parcel number includes a unique delivery confirmation number.

46. The system of claim **28**, wherein the database is further configured to compare the unique parcel number and the unique postage number with other parcel numbers and other postage numbers already stored in the database.

47. The system of claim **46**, wherein the database is further configured to detect a duplication of the postage indicia based on the comparison.

48. The system of claim **46**, wherein the database is configured to substantially delay the comparison.

49. The system of claim **28**, further comprising a computer configured to:

receive a user request including a payment for an initial postage amount; and

generate, in response to the user request, the postage indicia including the unique postage number and the unique parcel number.

50. The system of claim **28**, wherein the postage indicia further comprising billing information of a sender, and

the database is further configured to:

associate the billing information with the unique postage number; and

determine the buffing information according to the association between the billing information and the unique postage number.

51. A method for preventing postage fraud comprising:

receiving a user request for purchasing postage;

transmitting, in response to the user request, a postage indicia to the user, the postage indicia including a unique postage number and a unique parcel number;

updating a database with a record of the postage indicia;

receiving a mailpiece having the postage indicia;

scanning the unique parcel number and the unique postage number from the mailpiece; and

verifying that the unique parcel number and the unique postage number are assigned to each other.

52. The method of claim **51**, wherein the receiving of the user request for purchasing the postage further comprises:

receiving a payment for an initial postage amount; and

generating the postage indicia in response to the user request.

53. The method of claim **51**, further comprising updating the database with the unique parcel number and the unique postage number.

54. The method of claim **53**, further comprising:

receiving a new mailpiece having a new parcel number and a new postage number; and

comparing the unique parcel number and the unique postage number previously stored in the database with the new parcel number and the new postage number.

55. The method of claim **51**, further comprising substantially delaying the verification.

56. The method of claim **51**, wherein the postage indicia further comprising billing information of a sender, and

the method further comprises:

associating the billing information with the unique postage number; and

determining the billing information according to the association between the billing information and the unique postage number.

57. The method of claim **51**, further comprising comparing the unique parcel number and the unique postage number with other parcel numbers and other postage numbers already stored in the database.

58. The method of claim **57**, further comprising detecting a duplication of the postage indicia based on the comparison.

* * * * *