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(54) **Method for franking and handling a mail piece**

(57) The present invention relates to a method for franking and handling a mail piece as well as to the franked mail piece as such. The method comprises franking of a mail piece with a franking code transmitted by a service provider to a communication device of a customer. The franking code, which comprises a plurality of symbols, includes a first and a second part, where the first part represents a franking value whereas the second part is a unique identifier. The franked mail piece is handled in a mail handling machine for carrying out a database-independent determination of the franking value.

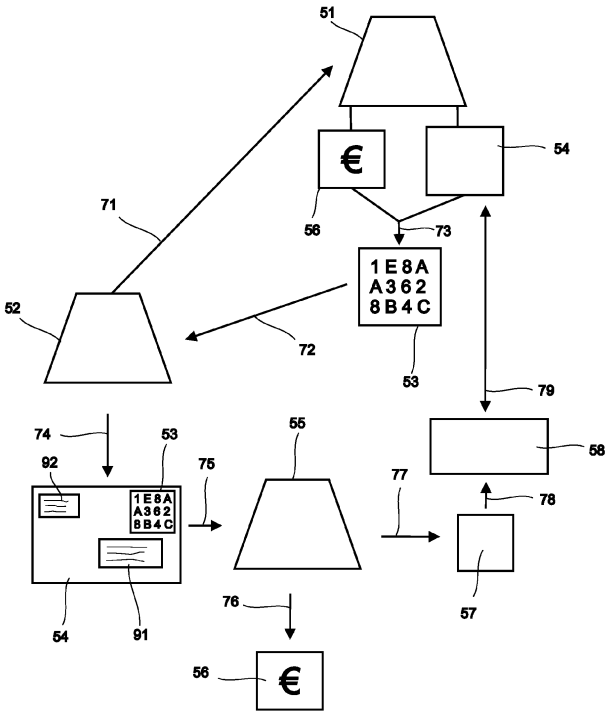

Fig. 1

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Description

[0001] The present invention relates to a method for franking and handling a mail piece. The present invention also relates to a mail piece comprising a hexadecimal franking code.

[0002] In spite of the accomplishments of digital communication technology, it is still necessary to rely on regular mail for certain correspondence. When sending mail items, such as letters and packages, the traditional way of paying for the postage is the purchase of stamps. However, the availability of stamps or other franking means is often a limiting factor, since the purchase of stamps is usually confined to post offices. Another problem is the variation in franking value as dependant on the nature of the mail piece and the shipping address. This necessitates the availability of stamps of different price categories.

[0003] To address this problem there have been recent attempts to develop new forms of franking methods, such as SMS postage. Here, a customer can contact a postal service for ordering and purchasing a franking code to his mobile phone. The user can apply said code to the mail piece, thereby franking the same. Several examples of this general idea are discussed in the following.

[0004] German patent application DE10131304 describes a method for franking a mail piece where a user contacts a central computer from a mobile phone to request a franking code. The latter is stored in a database and then sent to the mobile phone. The user copies the code onto a letter and dispatches the same. At the postal service, a sorting machine reads the code with a scanner and its authenticity is checked against the stored database information. The information in the database can also include code postage value and expiration date.

[0005] German patent application DE10133887 relates to a method in which a user orders electronic postage by entering a customer number or SMS reception number. A postage number is then forwarded to the customer, wherein that number is also stored in a database. The customer writes the number on a mail piece, which is subsequently scanned at the postal service. Several validity checks are made such as whether the order was made in the same postal district and/or whether the used mobile phone was present in that postal district. If at least one of these checks is positive, the shipment is carried out. Subsequently, the stored information in the database is deleted.

[0006] European patent application EP1310917 discloses a franking method where a customer orders electronic postage, giving information such as payment method. Upon such request, an alphanumeric postal code is generated and transmitted to the customer. The client applies the code to the mail piece and effects the dispatch. At the postal service the authenticity of the code is verified by reading the code and delivery address and then cross-checking whether there exists a valid counterpart in the database.

[0007] British patent application GB0207594 describes a method for ordering electronic postage, where a user orders a franking code from a mail server. The franking code, which can consist of alphanumeric characters is sent to the mobile phone of the user with a charge debited to the same. The alphanumeric code can be generated based on the postage value, weight, destination, or postage category. The generated code is saved in a database and is subsequently used to validate the shipment.

[0008] International patent application WO2008082310 relates to a process where a sender uses a tag, e.g. a sticker with a unique code that is placed on the letter. Then he sends a text message with specific information about the letter, including said code. The postal service saves this information. When the sorting centre receives the letter, the tag is registered, and the received code is compared with the previously saved code.

[0009] All of the above approaches have a common disadvantage. Once the franked mail piece arrives at the postal service it is usually handled and scanned in a mail handling machine which records the applied franking code. For authenticating said code and/or deriving the applicable franking value of the same, a cross-check with a database is performed. In such a system this cross-check with a database may easily develop into a bottleneck. The handling system needs to either rely on information forwarded from the database/server that recorded the dispatch of the code, and/or needs to consult that database/server to compare the applied franking code with the corresponding values in the database. In addition, the database/server has to be updated in real-time with respect to the sold franking codes. Also, the franking value needs to be established by consulting said database/server. This makes the handling system complicated and difficult to manage.

[0010] It is therefore a first object of the present invention to provide a method for franking and handling a mail piece that is user-friendly and simple.

[0011] It is another object of the present invention to obviate or minimise the need for cross-checking with databases and simultaneous updating of the same.

[0012] In a first aspect, the present invention relates to a method for franking and handling a mail piece, said method comprising:

- receiving, by a service provider, a request from a customer for franking, wherein the request contains information relating to a required franking value,
- transferring, by the service provider, of a franking code to a communication device of the customer, wherein said

franking code comprises a plurality of symbols, wherein said franking code comprises a first part and a second part, wherein said first part represents the franking value, wherein said second part is a unique identifier,

- labelling, by the customer, the mail piece with the franking code
- dispatching, by the customer, the labelled mail piece,
- receiving, by the service provider, the labelled mail piece,
- handling, by the service provider, the labelled mail piece in a mail handling machine, said handling comprising forming a digital image of the labelled mail item and performing an automatic optical character recognition (OCR) of the franking code for determining the franking value from said first part of the code, wherein the mail handling machine comprises decoding means for automatically decoding said first part of the franking code independently of the second part to yield the respective franking value.

[0013] The mail piece may be a letter, a parcel or the like. The service provider will typically be a postal service. The request from the customer for franking is advantageously sent to the service provider by means of the same communication device to which the franking code is subsequently transferred by the service provider. The communication device is preferably a mobile phone or a personal computer.

[0014] The request for franking may, for example, take the form of an SMS message, an e-mail, or may be put forward via an online form. The information relating to a required franking value may be the desired franking amount as such. Alternatively, the information may specify details of the mail piece to be sent, such as size, weight and/or destination, which information then can be used by the service provider to determine the applicable franking amount.

[0015] The service provider transfers a franking code according to the present invention to a communication device of the customer, for example to a personal computer or a mobile phone, for example by e-mail or SMS message or MMS message. Typically, the franking code is purchased from the service provider, wherein the franking amount may be billed to the same communication device. The franking charge could, for example, be added to a monthly bill of the customer's communication device. Alternatively, the customer could purchase a certain amount of credit from the service provider which could be used for subsequent purchases of franking codes.

[0016] The respective first and second parts of the franking code each may correspond to one or more of the symbols, e.g. one or more alphanumeric characters. Also, the respective first and second parts each may correspond to one or more binary digits (bits) when the franking code is converted to bits. For example, the first part may be constituted by six bits whereas the second part may be constituted by the remaining bits or a subset thereof. The second part serves as an identifier, which is unique for the respective request and the mail piece to be sent. The unique identifier can for example be used to track and authenticate the mail piece and the applied franking code and/or for preventing misuse of the present method.

[0017] After having received the franking code, the customer labels the mail piece with said code. This may be a hand-written label, for example a two-dimensional matrix of alphanumeric characters, or may take the form of a print-out label that is attached to the mail piece. The customer subsequently dispatches the addressed and franked mail piece, after which it is received by the service provider.

[0018] The labelled mail piece is handled in a mail handling machine such as any customary mail sorting machine. The mail handling machine carries out an automatic OCR of the franking code for a determination of the franking value from the first part of the code. This may, for example, be done by converting the franking code to a plurality of binary digits (bits), where one or more of said bits correspond to the first part of the code. Using suitable decoding means provided in the handling machine, the first part can be decoded to directly yield the respective franking values. Suitable decoding means may comprise processor means for looking up the franking value corresponding to the first part of the code in a pre-configured list stored in a memory portion of the decoding means. The decoding means may thus advantageously comprise a list of each possible first part of the franking code, e.g. in binary form, and its corresponding franking value. Alternatively, the franking value may also be calculated from the first part of the franking code by a processor according to a pre-configured formula stored in a memory portion of the decoding means. The calculated franking value may be validated against a list of possible franking values. The decoding means could also comprise a decryption key.

[0019] In this way, the correct franking value is automatically established for each mail piece without the need of consulting an external and/or central database for comparing a given unique identifier with a list of issued codes and their respective franking values.

[0020] The major advantage of the present method thus resides in the fact that the franking value is an inherent feature of the franking code which can be derived during mail handling in the mail handling machine, i.e. inline, directly and independently of the unique identifier. That means that the service provider is freed from the need of constantly and immediately updating a database with respect to the franking codes issued to their customers. There is therefore no need to simultaneously write into and read from a database. This simplifies the mail handling and sorting dramatically, making it quicker and cheaper. Thus, a simple and database-independent determination of the franking value can be achieved irrespective of the unique identifier, that is irrespective of any information about which and when a given franking code has been sold.

[0021] The decoding may thus be performed inline and at a speed that is compatible with the processing speed for mail pieces in the mail handling machine. Such processing speeds can easily attain ten mail pieces per second for a single processing line of a mail handling machine.

[0022] The established franking value may be used in combination with other details of the mail piece determined in the mail handling machine for each mail piece, such as size, weight and/or destination, in order to perform an inline validation of the franking code. Additional inline validation checks may also be performed on the second part of the franking code. Examples for such inline validation checks are verification of a checksum value, date/time validation, or an expiry check.

[0023] The result of the inline validation may be fed in real-time as input to a subsequent decision process, such as the decision matrix of the mail handling machine for determining the further processing of the mail piece. Alternatively or in addition thereto, the franking value and/or any further inline validation information may be stored for later use, e.g. for offline validation. The term "offline" characterises processes as being performed independent of the production line, her independent of the mail processing in the mail handling machine.

[0024] In a preferred embodiment, the unique identifier is during a first time period selected from a first plurality of unique identifiers, wherein the unique identifier is during a second time period selected from a second plurality of unique identifiers. The respective first and second time periods could, for example, be a week or a month. Thus, for example, in a first month the unique identifiers used for the franking code are selected from a first list of unique identifiers, e.g. the January list, whereas during a second month, the unique identifiers are selected from a second list, e.g. the February list. Subsequently, a third plurality of unique identifiers could be used during a third time period (e.g. a month) and so on.

[0025] According to one embodiment of the present invention, a part of the franking code encodes the number of the day in a year, i.e. a value from 1-366. This can advantageously be used to verify and check the franking code which may be valid for a period of 14 days from issuance by the service provider. Alternatively or in addition, part of the franking code may encode the year and time of issuance by the service provider. It is also conceivable that part of the franking code is used to encode a specific country or geographic region.

[0026] Also, according to the present invention the mail handling comprises forming a digital image of the labelled mail item. According to a preferred embodiment of the inventive method, said digital image is stored in a database. This database of stored images may then, subsequent to mail sorting and possibly to mail delivery, be used to prevent and/or identify misuse of the method by carrying out a one or more offline checks. For example, the multiple occurrence of the identical franking code can be identified and related to at least the addressee of the mail piece and/or the communication device used. Also, the service provider may maintain a list of unique identifiers sold in a given period. When suspecting misuse, the franking code on the digital image may be cross-checked against that list to spot irregularities.

[0027] According to an expedient embodiment of the present invention, the request and/or the franking code is transmitted by short message service (SMS). This makes the method very simple and flexible, allowing for purchase of franking codes from virtually unlimited locations.

[0028] According to another embodiment of the present invention, the digital image further includes address information on the mail piece. In this way a simple and efficient link between franking code and address can be established, which is particularly relevant for identifying and/or preventing misuse of the method of the present invention.

[0029] According to a highly preferred embodiment of the present invention, the symbols are alphanumeric characters. This is especially preferred if the labelling of the mail piece by the customer is done by hand. Other symbols such as geometrical shapes or the like are also conceivable, however, alphanumeric characters are most preferred since they are most familiar to people in Western societies, thus reducing the risk of labelling mistakes.

[0030] According to another embodiment of the present invention, the alphanumeric characters are those letters and numbers which have the highest probability of being recognized correctly in OCR. The relevant numbers and letters will typically depend on the geographical area in which the method is used and may depend on the OCR device implemented on the system. The relevant numbers and letters can be determined by repeated testing of the possible characters in OCR.

[0031] The amount of information that can be encoded in a franking code of a given length, i.e. having a given number of symbols, depends on the number N of different characters each of the symbols in the franking code may be selected from. By selecting the symbols of the franking code from a list of length N, where N is the number of different characters in the list, a base N encoded franking code is obtained.

[0032] The number of encoding characters per symbol is determined by balancing the requirement for high information density with the constraints imposed by practical use in the transmission, labelling and handling/OCR steps. For example, if only numbers between 0 and 9 are used, the franking code is made up of decimal digits, thereby forming a decimal franking code (base 10 encoding). However, for practical applications in mail handling, a decimal franking code would require rather long symbol sequences that would be at the least inconvenient for the customer. An excessively long sequence also increases the risk of "misspelling", i.e. the risk of errors that may occur during the labelling step.

[0033] In a preferred embodiment, each digit of the franking code is encoded by symbols that are selected from a list of sixteen or more different characters.

[0034] A large variety of characters can be used for the franking code of the present invention, including characters

that do not belong to the Latin alphabet. These include symbols such as pyramids, smiley, male/female, pounds, dollars, and the like. The number of symbols that can be used to represent a franking value in the inventive code are in principle infinite, which means that the code in principle may contain an infinite amount of data.

[0035] To increase recognition of the characters used, these should be characters that people know well. A particularly advantageous choice is the Latin alphabet for use in, for example, Western Europe, i.e. A-Z in uppercase and a-z in lowercase and in addition, numbers 0-9. This gives 26 +26 +10 = 62 possible characters for each digit in the code.

[0036] In a practical application, one should take account of misreading, as some characters may be confused with other, especially if the code is written by hand. To avoid error readings, certain characters could be avoided. As an example, B can be confused with 8, O can be confused with Q, D or 0. The characters to be avoided may be different depending on font size, writing style and context. Having removed those characters that are particularly prone to misreading, the following characters may be used for the franking code of the present invention: A,C,E,F,H,K,L,M,N,P,R,T,U,V,W,X,Y, a,c,d,e,f,h,k,m,n,p,r,t,u,v,w,x,y, 0,1,2,3,4,5,6,7,8,9. This gives 17 +17 +10 = 44 possible characters per digit in the code if one takes the context into account, ie. it is known when a character can be uppercase or lowercase (e.g. the letter C is easy to recognize, but it is more difficult to see whether it is uppercase or lowercase).

[0037] If the context is not known, the number of possible characters is further reduced, so as to avoid error readings. This can easily be done for example by only using the respective capital letters and numbers. Hence, in a preferred embodiment the symbols are selected from the following characters: A,C,E,F,H,K,L,M,N,P,R,T,U,V,W,X,Y, 0,1,2,3,4,5,6,7,8,9. This gives 17 +10 = 27 possible symbols per digit that are easily recognizable and which also are less prone to misreading in OCR equipment.

[0038] According to a preferred embodiment of the present invention, the symbols are selected from a group of alphanumeric characters, the group consisting of the numbers {0,1,2,3,4,5,6,7,8,9} and the letters {A,C,E,F,H,K,L,M,N,P,R,T,U,V,W,X,Y}, to form an alphanumeric franking code. The symbols of the franking code thus each represent a digit with 27 values, which in combination form a base 27 encoded number for the franking code.

[0039] According to yet another embodiment of the present invention, said symbols are applied onto the mail piece in a two-dimensional matrix. This facilitates both labelling by the customer and OCR in the mail handling machine, and reduces the likelihood of mistakes. Arranging the symbols in a matrix would also minimise the risk of mistakenly reading into the franking code one or more of the characters used in the address or recipient fields of the mail piece.

[0040] According to a preferred embodiment, the two-dimensional matrix is a 3 x 4 matrix. However, the amount symbols and the most suitable matrix may be adjusted according to a number of factors such as the geographical extent of the area of operation.

[0041] Using the base 27 encoding of the above-mentioned embodiment, and arranging the symbols in a 3 x 4 matrix an example franking code could be

2K3P
3A5N
E837

[0042] An amount of 27 possible characters per digit/symbol in a 12-digit franking code yields an amount of 27^12 = 150.094.635.296.999.121 ~ 1,5x10^17 possible codes.

[0043] The franking code may be structured in a first part and a second part on the symbol level, e.g. by reserving two symbols of a base 27 encoded franking code for encoding the franking value. This yields 27^2 = 729 franking value levels.

[0044] According to an advantageous embodiment of the present invention, the franking code is converted into a plurality of binary digits (bits) in the mail handling machine.

[0045] As mentioned above, if the symbols of the franking code each are selected from a list of N different characters, the symbols may be combined to represent a base N encoded number. Converting that base N encoded number to a binary representation allows structuring the franking code on a binary level. On the binary level, the data represented by the franking code may be attributed in a more flexible manner than when structuring the franking code on the symbol level. For example, if the above 729 franking value levels by far exceed the number of required franking value levels, while 27 franking value levels defined by a single symbol are insufficient, a more adequate intermediate number of franking value levels, for instance 64, may be defined at the binary level using less code possibilities for the first part, thus leaving more code possibilities for the second part.

[0046] According to an advantageous embodiment of the present invention, the symbols of the franking code may be selected from sixteen characters, preferably alphanumeric characters, to form a hexadecimal franking code (base 16 encoding). Such a hexadecimal franking code can easily be converted into the corresponding plurality of bits (four bits per digit), which facilitates computer-operated handling.

[0047] According to another embodiment of the present invention, the first part of the franking code corresponds to a first subset of said plurality of bits and wherein the second part of the franking code corresponds to a second subset of

said plurality of bits. The number of binary digits in the first subset of said plurality of bits should be chosen according to the desired amount of distinct franking values. Also, the number of binary digits in the second subset of said plurality of bits is advantageously chosen according to the desired amount of unique identifiers.

[0048] According to another embodiment of the present invention, a part of the franking code represents the number of the day in a year. In this way, the service provider would be given a simple tool to determine on what day the respective code was transferred to the user. This may be useful when identifying and/or preventing misuse of the inventive method.

[0049] According to another embodiment of the present invention, the first part of the franking code encodes one of a predetermined plurality of discrete franking values.

[0050] According to another embodiment of the present invention, the second part of the franking code is used to validate the authenticity of the franking code on the mail piece using the digital image stored in the database. This can be done in many different ways, for example by comparing the franking code on the digital image with a list of franking codes sold by the service provider in a given period, or by comparing two or more franking codes among the digital images stored in the database for detecting multiple occurrences.

[0051] According to another embodiment of the present invention, the franking code further comprises one or more redundant symbols for error correction during OCR. This is particularly relevant if the franking code is applied by hand to the mail piece. Preferably, the error correction is a Reed-Solomon error correction.

[0052] In particular in automatic code reading, the probability of correct reading may be increased by incorporating redundant symbols in the code such as Reed-Solomon error correction algorithms. Incorporating redundant symbols leaves fewer symbols to carry the actual data. One possible location of redundant symbols could be in the corners of the code, as in this example showing again a 3x4 matrix:

2 K 3 P
3 A 5 N
E 8 3 7

[0053] In the above example, the redundant symbols are underlined {2,P,E,7}. This reduces the amount of possible franking codes to 27^8 = 282.429.536.481 ~2,8x10^11. In return, the probability of correct reading is increased, since the error correction algorithm such as Reed-Solomon can correct 2 errors in the code or 4 missing symbols or a misreading in combination with 2 missing symbols. Using a Reed-Solomon algorithm, it can be calculated how many defects can be corrected according to the formula:

$$\text{"Number of errors"} \times 2 + \text{"missing character"} \leq 4$$

[0054] Increasing the number of redundant symbols also increases the robustness of the franking code, however at the expense the amount of data that can be carried by the code.

[0055] The franking code of the present invention comprises a first part and a second part, wherein said first part represents the franking value, and wherein said second part is a unique identifier. If, for example, two of the symbols in a 3x4 matrix represent the franking value, there are still 27^6 = 387.420.489 possible unique identifiers available whereas there are 27^2= 729 possible franking values, as shown in the example below:

2 K 3 P
3 A 5 N
E 8 3 7

[0056] Here, the underlined symbols are redundant symbols (four in total), whereas the two italic symbols {A,5} in the centre represent the franking value. The remaining six symbols (normal font) constitute the unique identifier. These six symbols can be further structured so that further inline and offline checks will be possible.

[0057] Alternatively, the symbols {K,3,3,A,5,N,8,3} may be combined according to a predetermined sequence to represent a base 27 encoded number, which may be converted into binary format using 39 bits, and at the binary level structured such that a given portion of the bits is reserved for the first part representing the franking value and the remaining bits or a subset thereof are reserved for the second part.

[0058] In another aspect, the present invention relates to a mail piece comprising a franking code constituted by symbols that are selected from a group of characters, said franking code having a first part and a second part, wherein said first part represents a franking value, and wherein said second part is a unique identifier. The mail piece may, for example, be a letter or a parcel. Decoupling the encoded franking value from the unique identifier has a number of advantages as described above.

[0059] According to an advantageous embodiment of the mail piece of the present invention, the symbols are selected from a group of alphanumeric characters.

[0060] In a preferred embodiment of the mail piece according to the present invention, said symbols are arranged on the mail piece in a two-dimensional matrix. Preferably, the matrix is a 3 x 4 matrix.

[0061] In another embodiment of the mail piece according to the present invention, the alphanumeric characters are those letters and/or numbers which have the highest probability of being recognized correctly in OCR. These letters and/or numbers may, for example, be selected from the following characters:

{A,C,E,F,H,K,L,M,N,P,R,T,U,V,W,X,Y, 0,1,2,3,4,5,6,7,8,9}.

[0062] According to an advantageous embodiment of the mail piece of the present invention, the symbols are selected from a group of sixteen characters, thereby forming a hexadecimal franking code.

[0063] According to another embodiment of the mail piece of the present invention, the franking code comprises redundant symbols for error correction, preferably by Reed-Solomon error correction.

[0064] According to a preferred embodiment of the mail piece of the present invention, the code comprises at least eight symbols, more preferably between 9 and 16 symbols, and most preferably 12 symbols.

[0065] According to another embodiment of the mail piece of the present invention, the franking code is convertible into binary representation.

[0066] In one advantageous embodiment of the mail piece of the present invention, a hexadecimal franking code comprises 12 symbols wherein 4 symbols are dedicated to redundancy for error correction in the OCR step, and 8 symbols are dedicated to the data carrying portion of the franking code, wherein 6 bit are allocated to the first part, and 26 bit are allocated to the second part.

[0067] In the following a detailed description of the invention is given by way of example with reference to the accompanying drawings, which show on

[0068] Fig. 1 schematically, one embodiment of the method according to the present invention.

[0069] With reference to Fig. 1, a customer 52 puts forward a request 71 to a service provider 51 for franking a letter. The request 71 is transmitted by a mobile phone (not shown) using SMS. The request contains information on the size, weight and destination of the letter. Upon receiving said request, a franking code 53 is selected at 73 by the service provider 51. The resulting franking code 53 is a hexadecimal code consisting of twelve alphanumeric characters which are arranged in a 4 x 3 matrix. The franking charge is subtracted from a franking credit which the customer has purchased in advance from the service provider.

[0070] The franking code 53 comprises a first part relating to the required franking value 56 and a second part with a unique identifier which is selected from a list 54 of unique identifiers for the relevant time period, for example for the relevant number of week. The unique identifiers on the list 54 may be in hexadecimal or binary format. In this example, the unique identifier is constituted by 26 bits.

[0071] The applicable franking value is determined from the size and weight of the letter. Six binary digits (bits) are used by the service provider to encode 64 discrete franking values covering the range of used franking values. The applicable franking value and its corresponding 6-bit code is selected and converted into the applicable hexadecimal code. 16 bit of the franking code 53, i.e. four of the hexadecimal characters are redundant symbols used for error correction.

[0072] The established franking code 53 is then transmitted to a communication device (not shown) of the customer 52. The customer then carries out a labelling step 74 where the franking code 53 is copied onto the letter resulting in labelled letter 54. Said labelled letter comprises the franking code 53, an address field 91 containing the name and address of the addressee and a sender field 92 containing the name and address of the sender. At 75, the labelled letter is dispatched by the customer.

[0073] Subsequently, the labelled letter 54 is received by the service provider where it is handled in a mail handling machine 55. Here, an optical character recognition (OCR) is carried out and the hexadecimal code is converted into binary digits (bits). The bits relating to the first part are decoded 76 using a code list, thus yielding the decoded franking value 56. Also, a digital photography step 77 is carried out to yield a digital image 57 of that surface of the mail piece that contains the franking code and the address. If the established franking value matches the size, weight and destination of the letter, the same can be shipped.

[0074] At 78, the digital image is stored in a database 58, which can be used to identify potential misuse by matching 79 the unique identifier with one of the plurality of unique identifiers on list 54 or by identifying multiple occurrences of the same unique identifier on different mail pieces.

[0075] The foregoing description with reference to Fig. 1 illustrates the invention by way of example and not by way of limitation.

Claims

1. A method for franking and handling a mail piece, said method comprising:

   - receiving, by a service provider, a request from a customer for franking, wherein the request contains information relating to a required franking value,
   - transferring, by the service provider, of a franking code to a communication device of the customer, wherein said franking code comprises a plurality of symbols, wherein said franking code comprises a first part and a second part, wherein said first part represents the franking value, wherein said second part is a unique identifier,
   - labelling, by the customer, the mail piece with the franking code
   - dispatching, by the customer, the labelled mail piece,
   - receiving, by the service provider, the labelled mail piece,
   - handling, by the service provider, the labelled mail piece in a mail handling machine, said handling comprising forming a digital image of the labelled mail item and performing an automatic optical character recognition (OCR) of the franking code for determining the franking value from said first part of the code, wherein the mail handling machine comprises decoding means for automatically decoding said first part of the franking code independently of the second part to yield the respective franking value.

2. A method according to claim 1, wherein said digital image is stored in a database.

3. A method according to claims 1 or 2, wherein the request and/or the franking code is transmitted by short message service (SMS).

4. A method according to any of the preceding claims, wherein the symbols are alphanumeric characters.

5. A method according to claim 4, wherein the alphanumeric characters are those letters and numbers which have the highest probability of being recognized correctly in OCR.

6. A method according to any of the preceding claims, wherein the symbols are selected from a group of alphanumeric symbols, the group consisting of the numbers {0,1,2,3,4,5,6,7,8,9} and the letters {A,C,E,F,H,K,L,M,N,P,R,T,U,V, W,X,Y}, to form an alphanumeric franking code.

7. A method according to any of the preceding claims, wherein said symbols are applied onto the mail piece in a two-dimensional matrix.

8. A method according to claim 7, wherein the two-dimensional matrix is a 3 x 4 matrix.

9. A method according to any of claims 6-8, wherein the alphanumeric franking code is converted into a plurality of binary digits (bits) in the mail handling machine.

10. A method according to claim 9, wherein the first part of the franking code corresponds to a first subset of said plurality of bits and wherein the second part of the franking code corresponds to a second subset of said plurality of bits.

11. A method according to any of the preceding claims, wherein a part of the franking code represents the number of the day in a year.

12. A method according to any of the preceding claims, wherein the first part of the franking code encodes one of a predetermined plurality of discrete franking values.

13. A method according to any of the preceding claims, wherein the second part of the franking code is used to validate the authenticity of the franking code on the mail piece.

14. A method according to any of the preceding claims, wherein the franking code further comprises one or more redundant symbols for error correction during OCR.

15. Mail piece comprising a franking code constituted by symbols that are selected from a group of characters, said franking code having a first part and a second part, wherein said first part represents a franking value, and wherein said second part is a unique identifier.

16. Mail piece according to claim 15, wherein the alphanumeric characters are those letters and numbers which have the highest probability of being recognized correctly in OCR.

17. Mail piece according to claim 15 or 16, wherein the symbols are selected from a group of alphanumeric characters.

18. Mail piece according to any of the claims 15 - 17, wherein the symbols are selected from a group of characters consisting of the numbers {0,1,2,3,4,5,6,7,8,9} and the letters {A,C,E,F,H,K,L,M,N,P,R,T,U,V,W,X,Y}.

Amended claims in accordance with Rule 137(2) EPC.

1. A method for franking and handling a mail piece, said method comprising:

- receiving, by a service provider, a request from a customer for franking, wherein the request contains information relating to a required franking value,
- transferring, by the service provider, of a franking code to a communication device of the customer, wherein said franking code comprises a plurality of symbols,
- labelling, by the customer, the mail piece with the franking code
- dispatching, by the customer, the labelled mail piece,
- receiving, by the service provider, the labelled mail piece,
- handling, by the service provider, the labelled mail piece in a mail handling machine, said handling comprising forming a digital image of the labelled mail item and performing an automatic optical character recognition (OCR) of the franking code

characterised in that
the method further comprises the step of performing an inline validation of the franking code, wherein the franking code comprises a first part and a second part, wherein said first part represents the franking value, wherein said second part is a unique identifier, and wherein the franking value is determined from said first part of the code, wherein the mail handling machine comprises decoding means for automatically decoding said first part of the franking code independently of the second part to yield the respective franking value.

2. A method according to claim 1, wherein said digital image is stored in a database.

3. A method according to claims 1 or 2, wherein the request and/or the franking code is transmitted by short message service (SMS).

4. A method according to any of the preceding claims, wherein the symbols are alphanumeric characters.

5. A method according to any of the preceding claims, wherein the symbols are selected from a group of alphanumeric symbols, the group consisting of the numbers {0,1,2,3,4,5,6,7,8,9} and the letters {A,C,E,F,H,K,L,M,N,P,R,T,U,V,W,X,Y}, to form an alphanumeric franking code.

6. A method according to any of the preceding claims, wherein said symbols are applied onto the mail piece in a two-dimensional matrix.

7. A method according to claim 6, wherein the two-dimensional matrix is a 3 x 4 matrix.

8. A method according to any of claims 5-7, wherein the alphanumeric franking code is converted into a plurality of binary digits (bits) in the mail handling machine.

9. A method according to claim 8, wherein the first part of the franking code corresponds to a first subset of said plurality of bits and wherein the second part of the franking code corresponds to a second subset of said plurality of bits.

10. A method according to any of the preceding claims, wherein a part of the franking code represents the number of the day in a year.

11. A method according to any of the preceding claims, wherein the first part of the franking code encodes one of a predetermined plurality of discrete franking values.

12. A method according to any of the preceding claims, wherein the second part of the franking code is used to validate the authenticity of the franking code on the mail piece.

13. A method according to any of the preceding claims, wherein the franking code further comprises one or more redundant symbols for error correction during OCR.

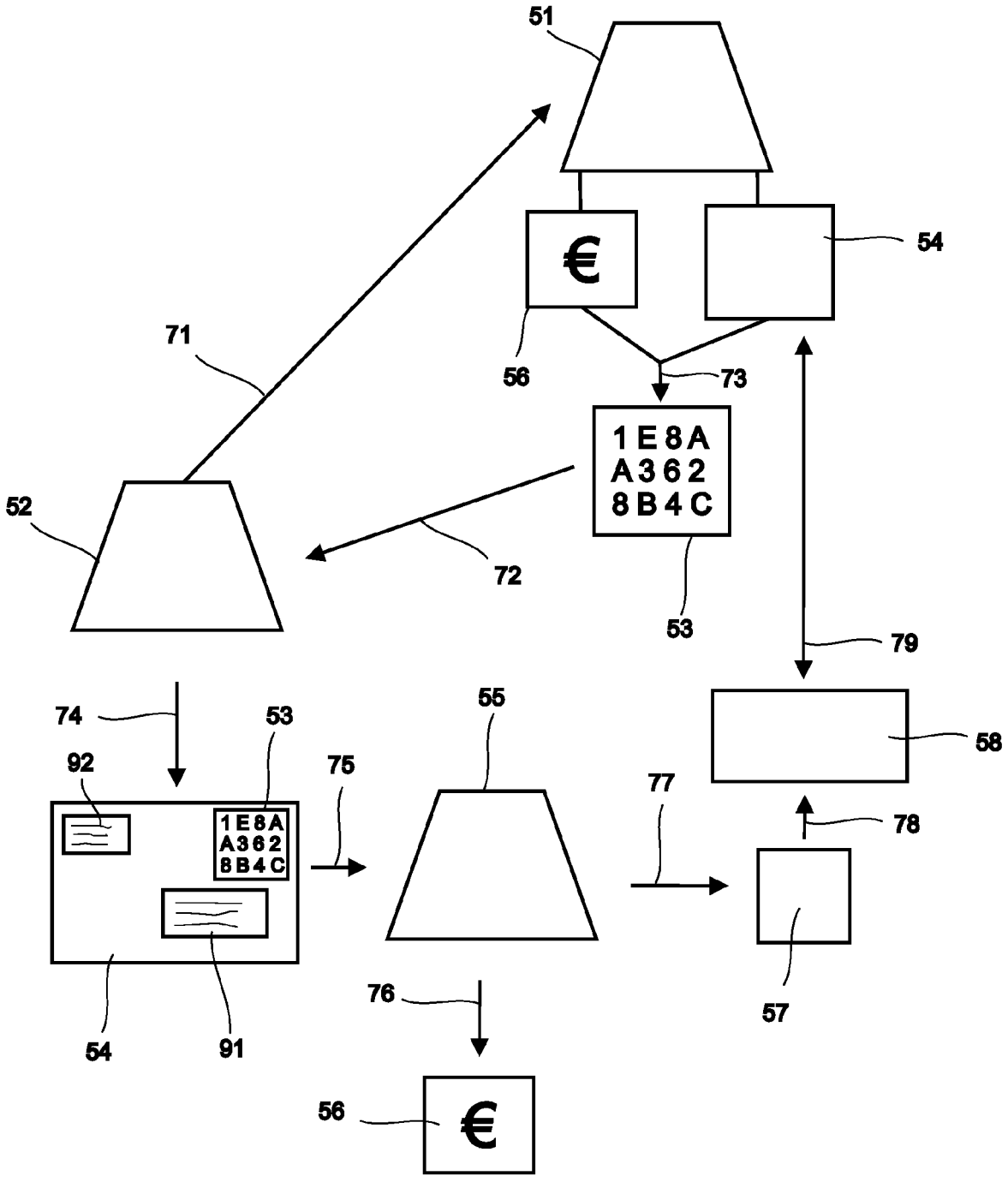
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Fig. 1

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EUROPEAN SEARCH REPORT

Application Number
EP 10 19 1547

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TECHNICAL FIELDS SEARCHED (IPC)

G07B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	8 March 2011	Bohn, Patrice

CATEGORY OF CITED DOCUMENTS

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