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(54) **Security device for mailing credit cards or the like, particularly for credit cards that do not require direct contact with payment terminals**

(57) A security device for mailing credit cards or the like, particularly for credit cards that do not require direct contact with payment terminals, the security device comprising a sheet-like element (2) that has a central region (3) that is adapted to cover a credit card (4) or the like and peripheral portions (5) that extend around the central region (3), the peripheral portions (5) having, on the face of the sheet-like element (2) that is intended to be directed toward the credit card (4), an adhesive layer (6) that can engage a backing sheet (7) so as to define, between the backing sheet (7) and the sheet-like element (2), a compartment (14) that is adapted to accommodate the credit card (4), the sheet-like element (2) being provided with breach-prevention means (9, 10, 13), which are adapted to render evident a fraudulent attempt to separate the sheet-like element (2) from the backing sheet (7), and with a protective element (15) that is adapted to prevent the correct transmission of electromagnetic waves of at least one preset frequency through the sheet-like element (2).

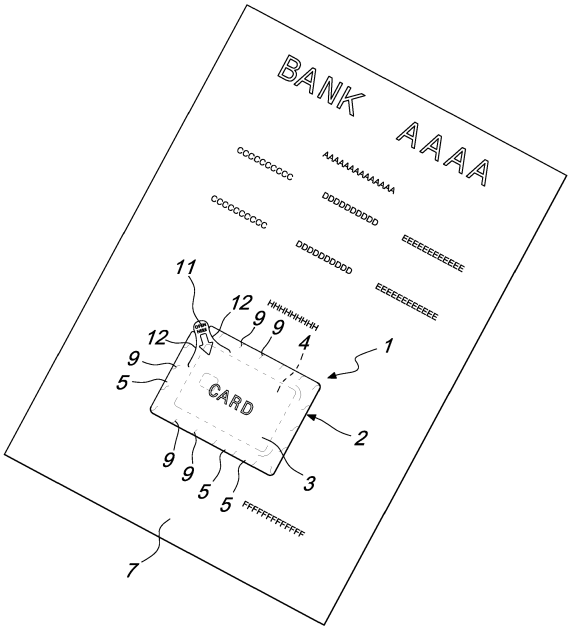

Fig. 1

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Description

[0001] The present invention relates to a security device for mailing credit cards or the like, particularly for credit cards that do not require direct contact with payment terminals.

[0002] As is known, sending credit cards through the mail for first issuing or for renewal is a particularly delicate step in that the envelope containing the credit card can be intercepted and the credit card information can be fraudulently read by persons other than the holder.

[0003] Currently, credit cards or the like which are sent to the holder by mail are applied to a letter of presentation which is folded and inserted in an envelope. This delivery method does not offer sufficient breach-prevention guarantees in that, with average ability, it is possible to open the envelope, separate the credit card from the backing sheet and letter of presentation, and read the sensitive data of the credit card on the front and on the back or even clone the magnetic strip with an adapted apparatus and then restore the envelope without leaving any sign of tampering.

[0004] With this stratagem, it is possible to make one or more copies of the credit card which can be used without the holder of the credit card being aware that his/her credit card has been cloned.

[0005] The danger of fraudulent use of credit cards sent through the mail is even greater for the latest generation of credit cards, known as contactless, which are based on RFID (Radio Frequency IDentification) technology, with which it is possible to make payments without the magnetic strip and/or the microchip present on the credit card having to come into contact with the payment terminals.

[0006] These credit cards are provided, internally, with a transmitter device, which is generally of the passive type and that is to say powered by an external device for reading radio waves, which is constituted by a compatible payment terminal. The transmitter device located in the credit card is provided with an adapted antenna, by way of which the credit card can interact remotely, and thus without contact, with compatible payment terminals, providing its identification code in order to allow payments to be made without requiring the user to type a PIN or provide a signature, and thus speeding up and simplifying economic transactions considerably.

[0007] When sent through the mail, credit cards of this type, if already active, could actually be used to make payments without the knowledge of the holder and without even needing to remove them from the envelope used for sending the cards.

[0008] In order to guard against fraudulent attempts of this type, envelopes are used that contain inside metallic plates, or removable labels that contain metallic laminas are applied directly on the credit card. The function of these metallic laminas is to disturb the transmission of radio waves and thus to prevent the credit card from "interacting" correctly with a payment terminal.

[0009] These contrivances however exhibit the drawback of not offering sufficient guarantees of security in that the envelope containing the metallic lamina can be opened and substituted with a different envelope after using the credit card, and the labels applied to the credit card can be temporarily removed without the holder of the credit card being aware of the fraudulent handling of his/her credit card when he/she receives it.

[0010] The aim of the present invention is to provide a security device for mailing credit cards or the like, particularly for credit cards that do not require direct contact with payment terminals, which makes it possible for the holder of the credit card to check, with a high level of certainty, that the credit card has not undergone attempts at tampering before it was received.

[0011] Within this aim, an object of the invention is to provide a device that makes it impossible to use a credit card of the contactless type without the holder of the credit card having clear evidence of such use.

[0012] Another object of the invention is to provide a device that can guarantee an adequate certainty of highlighting any attempts at tampering or fraudulent use so as to make it possible to continue the method of sending credit cards through the mail.

[0013] Another object of the invention is to provide a device that is simple in application and in use.

[0014] Another object of the invention is to provide a device that, thanks to its reliability, can increasingly discourage attempts at tampering, thus contributing to raising the standard of security in the mailing of credit cards or the like.

[0015] This aim and these and other objects which will become better apparent hereinafter are achieved by a security device for mailing credit cards or the like, particularly for credit cards that do not require direct contact with payment terminals, characterized in that it comprises a sheet-like element that has a central region that is adapted to cover a credit card or the like and peripheral portions that extend around said central region; said peripheral portions having, on the face of said sheet-like element that is intended to be directed toward the credit card, an adhesive layer that can engage a backing sheet in order to define, between said backing sheet and said sheet-like element, a compartment that is adapted to accommodate said credit card, said sheet-like element being provided with breach-prevention means, which are adapted to render evident a fraudulent attempt to separate said sheet-like element from said backing sheet, and with a protective element that is adapted to prevent the correct transmission of electromagnetic waves of at least one preset frequency through said sheet-like element.

[0016] Further characteristics and advantages of the invention will become better apparent from the description of a preferred, but not exclusive, embodiment of the security device according to the invention, which is illustrated by way of non-limiting example in the accompanying drawings wherein:

Figure 1 shows the device according to the invention applied to a backing sheet;

Figure 2 shows an enlarged detail of Figure 1 highlighting the device according to the invention correctly applied to a backing sheet with the credit card or the like accommodated between the device and the backing sheet;

Figure 3 shows the result of a possible attempt at tampering with the device according to the invention;

Figure 4 shows the result of another attempt at tampering with the device according to the invention;

Figure 5 shows the result of a further attempt at tampering with the device according to the invention by way of a source of hot air;

Figure 6 shows the tearing of the device according to the invention in order to access the credit card or the like.

[0017] With reference to the figures, the device according to the invention, generally designated by the reference numeral 1, comprises a sheet-like element 2, preferably made of synthetic material, which is provided with a central region 3 that is dimensioned and contoured so as to be adapted to cover a credit card 4 or the like. The sheet-like element 2 has peripheral portions 5 that extend from the central region 3 and extend around such central region 3. These peripheral portions 5 have, on the face of the sheet-like element 2 that is intended to be directed toward the credit card 4 or the like, an adhesive layer 6 that can engage a backing sheet 7 so as to define, between the backing sheet 7 and the sheet-like element 2, a compartment 14 that is adapted to accommodate the credit card 4.

[0018] The sheet-like element 2 is provided with breach-prevention means which are adapted to render evident a fraudulent attempt aimed at separating the sheet-like element 2 from the backing sheet 7 in order to gain access to the credit card 4 or the like.

[0019] Furthermore, the sheet-like element 2 is provided with a protective element 15 that is adapted to prevent the correct transmission of electromagnetic waves of a preset frequency or of a range of preset frequencies through the sheet-like element 2.

[0020] Advantageously, the protective element 15 comprises a metallic lamina 16 that is embedded in the sheet-like element 2.

[0021] Conveniently, the dimensions, including the thickness, of the metallic lamina 16 are correlated to the frequency of transmission of the transmitter device, in particular an RFID transmitter, that is embedded in the credit card 4 to be sent in the mail in such a way that such metallic lamina 16 can interfere, by preventing it or at least by altering it, with the communication between such transmitter device and a compatible payment terminal.

[0022] The metallic lamina 16 can also be constituted simply by a metallic layer arranged between the various layers that make up the sheet-like element 2.

[0023] Advantageously, the breach-prevention means comprise at least one layer of the sheet-like element 2, made of heat-shrinkable material.

[0024] Conveniently, the sheet-like element 2 has a border 8 that surrounds the central region 3. Such border 8 defines the peripheral portions 5 and has, on the face thereof that is intended to be directed toward the backing sheet 7, the adhesive layer 6 which can be engaged with the backing sheet 7.

[0025] The breach-prevention means can also comprise pre-cuts 9 which are defined on the peripheral portions 5. Such pre-cuts 9, which in the embodiment shown are wave-shaped, start from the perimetric edge of the peripheral portions 5 and extend partly into the border 8 that surrounds the central region 3.

[0026] Advantageously, the breach-prevention means can also comprise divisible printed characters 10 that create a "void" effect.

[0027] Such printed characters 10 are applied to the side of the peripheral portions 5 that is intended to be directed toward the backing sheet 7 and are divisible into fragments upon removal of the sheet-like element 2 from the backing sheet 7 at the areas of the border 8 that are affected by such printed characters 10. The printed characters 10 are defined on the face of the border 8 on which the the adhesive layer 6 is applied. In essence, an attempt to remove the sheet-like element 2 at the region affected by the adhesive layer 6 and by such printed characters 10 causes a tearing of the printed characters 10 which remain partially on the backing sheet 7 and partially on the sheet-like element 2 thus making it impossible to perfectly recompose the printed characters 10 by way of reapplying the sheet-like element 2 to the backing sheet 7.

[0028] Conveniently, the breach-prevention means can also comprise microcapsules of pigments 13 which are arranged in the printed characters 10 and/or in the adhesive layer 6 that is applied to the border 8. Such microcapsules of pigments are broken if an attempt is made to scrape off the portions of torn printed characters 10 or the fragments of adhesive layer 6 that remain on the backing sheet 7 in order to then bond the credit card or the like to the backing sheet 7 with adhesive in the traditional manner, as if the sheet-like element 2 had never existed.

[0029] The device according to the invention can be produced in a similar manner to self-adhesive labels while providing that, at the central region 3, on the face thereof that is intended to be directed toward the backing sheet 7, the adhesive layer 6 is absent or deactivated so that the central region 3 does not adhere to the credit card 4 or the like.

[0030] The central region 3 has a grip flap 11 that protrudes into the border 8. On such grip flap 11 also, the adhesive layer 6 is absent or deactivated. The grip flap 11 is separated from the border 8 by way of cut lines 12 that extend for at least a portion of the perimeter of the central region 3 so as to enable the lifting of the grip flap

11 and facilitate the tearing of the sheet-like element 2, by the holder of the credit card 4 or the like, in order to gain access to the credit card 4.

[0031] Conveniently, the sheet-like element 2 can also be provided with anti-counterfeiting means in order to make its unauthorized reproduction more difficult, such as for example the printing of holograms, the printing of security microtexts, the printing with thermochromic inks, the printing with inks visible in black light, or other, conventional anti-counterfeiting means.

[0032] Use of the device according to the invention is the following.

[0033] The sheet-like element 2 is overlaid on the credit card 4 or the like and applied, using the adhesive layer 6 of the border 8, to the backing sheet 7 which can be constituted by the letter of presentation that is usually used by banks or credit institutions to send credit cards or the like to their holders. In this manner, the credit card 4 is stably fixed to the backing sheet 7 and is protected, with a high level of security, against attempts at tampering in that such attempts would leave clear evidence that is immediately identifiable by the holder of the credit card 4 when he/she receives it.

[0034] Furthermore, the device according to the invention makes it practically impossible to use the credit card 4, if it is a credit card of the contactless type, without removing it from the backing sheet 7 and thus without producing breaches that leave clear evidence. In fact, the presence of the metallic lamina 16 prevents the transmitter device located in the credit card 4 from being able to correctly interact with a payment terminal unless the credit card 4 is removed and moved away from the sheet-like element 2 by way of tearing the latter or removing it from the backing sheet 7, and such operations would leave signs that would be easily identifiable by the holder when he/she receives the credit card 4.

[0035] In fact, if, as often happens in attempts at tampering, a source of hot air is used, for example a hairdryer, in order to facilitate the removal of the sheet-like element 2 from the backing sheet 7, the layer of heat-shrinkable material present in the sheet-like element 2 would cause the irreversible wrinkling of the sheet-like element 2, as illustrated in Figure 5, thus telling the holder of the credit card 4 that there has been an attempt at tampering.

[0036] If an attempt is made to simply remove, i.e. without the use of heat sources, the sheet-like element 2 from the backing sheet 7 starting from any point of the border 8, the presence of the pre-cuts 9 will cause a tearing of the border 8, again showing the attempt at tampering.

[0037] Furthermore, the removal of portions of the border 8 causes the separation of the printed characters 10 which remain partially on the backing sheet 7 and partially on the sheet-like element 2, as illustrated in Figure 3. An attempt to recompose the printed characters 10 by sticking the portions of the border 8 that were previously removed back onto the backing sheet 7 would not succeed in recomposing the printed characters 10, which were fragmented and deformed during separation, thus giving further indication of the attempt at tampering.

[0038] If an attempt is made to hide the attempt at tampering by completely removing the sheet-like element 2 and scraping off the residues of the printed characters 10 and of the adhesive layer 6 from the backing sheet 7, this will result in the breakage of the microcapsules of pigments 13 with the consequent blotting of the backing sheet 7, which indicates the attempt at tampering, as illustrated in Figure 4.

[0039] The breach-prevention means described above can be used individually or in various combinations thereof in order to obtain the desired degree of security in indicating attempts at tampering.

[0040] Thanks to the device according to the invention it is possible to use mail as a means of delivering credit cards or the like with higher security for the holder of the credit card in that any attempts to gain fraudulent access to the credit card or uses would inevitably be clearly indicated to the holder of the credit card when he/she receives it.

[0041] It should be noted, furthermore, that the device according to the invention conceals the sensitive information printed on the front of the credit card, such as the PAN (Primary Account Number), the expiry date, surname and name of the holder, and simultaneously the information on the back as well, such as the CVV (Credit Validation Value).

[0042] The holder of the credit card 4, when he/she receives the envelope containing the backing sheet 7 to which the sheet-like element 2 is applied that retains the credit card 4, once he/she has verified the integrity of the sheet-like element 2 and the absence of evidence of attempts at tampering, he/she can gain access to the credit card 4 simply by holding the grip flap 11 and pulling it so as to cause a tearing of the sheet-like element 2 which frees the credit card 4, as illustrated in Figure 6.

[0043] In practice it has been found that the security device according to the invention fully achieves the set aim and objects in that it is capable of prominently disclosing, with a high level of reliability, any attempts to gain fraudulent access to the credit card or the like, and it prevents mailed credit cards of the contactless type from being used without the holder having unmistakable evidence of the successful or attempted use, thus offering adequate guarantees of security to the holder of the credit card or the like who receives the credit card through the mail.

[0044] The device, thus conceived, is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims. Moreover, all the details may be substituted by other, technically equivalent elements.

[0045] In practice the materials employed, provided they are compatible with the specific use, and the dimensions, may be any according to requirements and to the state of the art.

[0046] The disclosures in Italian Patent Application No. MI2013A001347 from which this application claims pri-

ority are incorporated herein by reference.

[0047] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A security device for mailing credit cards or the like, particularly for credit cards that do not require direct contact with payment terminals, **characterized in that** it comprises a sheet-like element (2) that has a central region (3) that is adapted to cover a credit card (4) or the like and peripheral portions (5) that extend around said central region (3); said peripheral portions (5) having, on the face of said sheet-like element (2) that is intended to be directed toward the credit card (4), an adhesive layer (6) that can engage a backing sheet (7) in order to define, between said backing sheet (7) and said sheet-like element (2), a compartment (14) that is adapted to accommodate said credit card (4), said sheet-like element (2) being provided with breach-prevention means (9, 10, 13), which are adapted to render evident a fraudulent attempt to separate said sheet-like element (2) from said backing sheet (7), and with a protective element (15) that is adapted to prevent the correct transmission of electromagnetic waves of at least one preset frequency through said sheet-like element (2).

2. The device (1) according to claim 1, **characterized in that** said protective element (15) comprises a metallic lamina (16) that is embedded in said sheet-like element (2).

3. The device (1) according to claims 1 and 2, **characterized in that** the dimensions of said metallic lamina (16) are correlated to said at least one preset frequency of the electromagnetic waves.

4. The device (1) according to one or more of the preceding claims, **characterized in that** said sheet-like element (2) is made of synthetic material, said breach-prevention means comprising at least one layer of said sheet-like element (2) that is made of heat-shrinkable material.

5. The device (1) according to one or more of the preceding claims, **characterized in that** said sheet-like element (2) has a border (8) that surrounds said central region (3), said border (8) defining said peripheral portions (5) and having, on its face intended to be directed toward said backing sheet (7), said adhesive layer (6), which can engage said backing sheet (7).

6. The device (1) according to one or more of the preceding claims, **characterized in that** said breach-prevention means comprise pre-cuts (9) defined on said peripheral portions (5).

7. The device (1) according to one or more of the preceding claims, **characterized in that** said pre-cuts (9) extend from the perimetric edge of said peripheral portions (5) and extend partly into said border (8) that surrounds said central region (3).

8. The device (1) according to one or more of the preceding claims, **characterized in that** said pre-cuts (9) are wave-shaped.

9. The device (1) according to one or more of the preceding claims, **characterized in that** said breach-prevention means comprise printed characters (10) that are applied to the side of said peripheral portions (5) that is intended to be directed toward said backing sheet (7) and are divisible into fragments upon separation of said sheet-like element (2) from said backing sheet (7).

10. The device (1) according to one or more of the preceding claims, **characterized in that** said breach-prevention means comprise microcapsules of pigments (13) contained in said printed characters (10) and/or in said adhesive layer (6).

11. The device (1) according to one or more of the preceding claims, **characterized in that** said adhesive layer (6), at said central region (3), is absent or deactivated.

12. The device (1) according to one or more of the preceding claims, **characterized in that** said central region (3) has a grip flap (11) that protrudes into said border (8); on said grip flap (11) said adhesive layer (6) being absent or deactivated, said grip flap (11) being separated from said border (8) by means of cut lines (12) that extend for at least one portion of the perimeter of said central region (3).

13. The device (1) according to one or more of the preceding claims, **characterized in that** said sheet-like element (2) has at least one of the following anti-counterfeiting means:

    - printing of holograms;
    - printing of security microtexts;
    - printing with thermochromic inks;
    - printing with inks visible in black light.

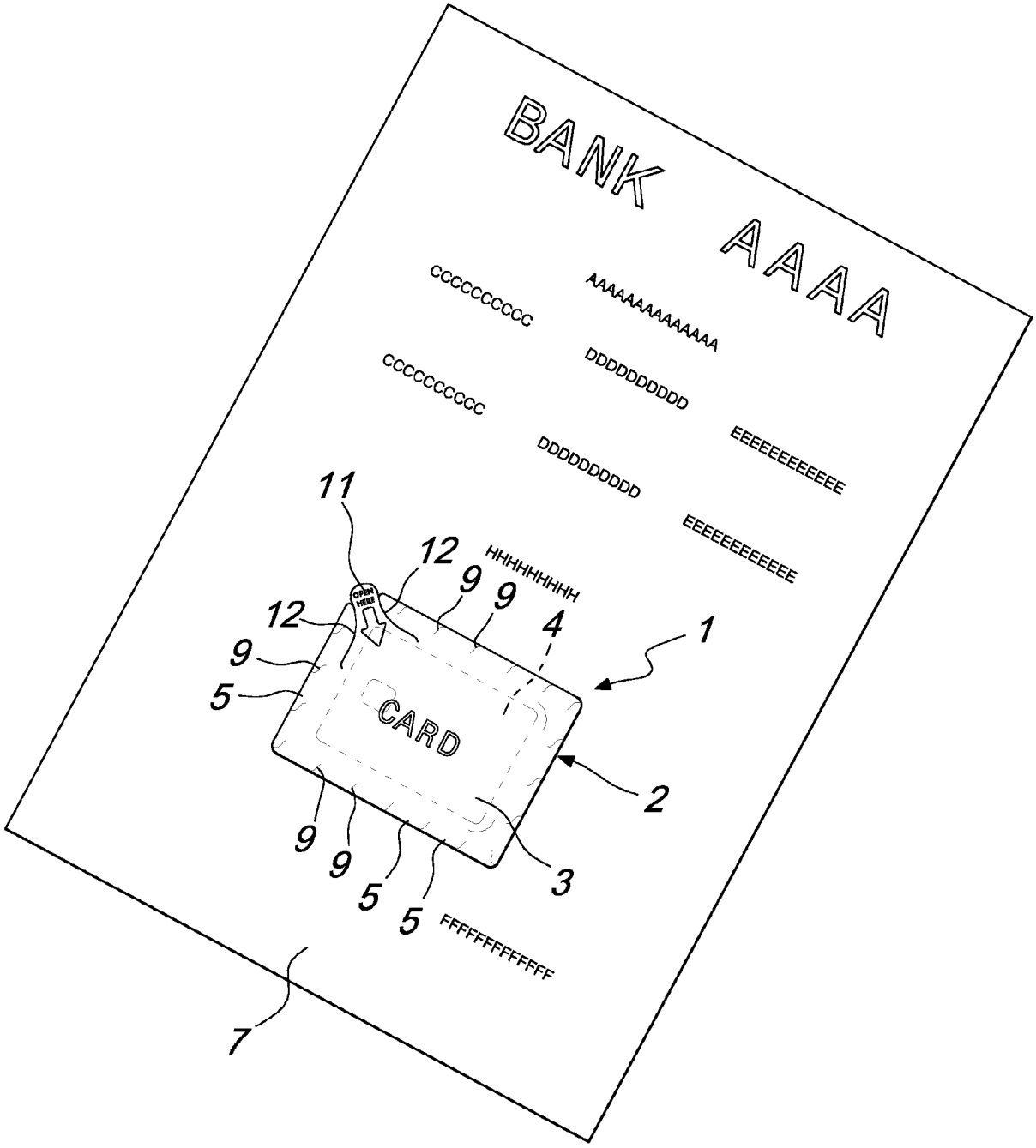
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Fig. 1

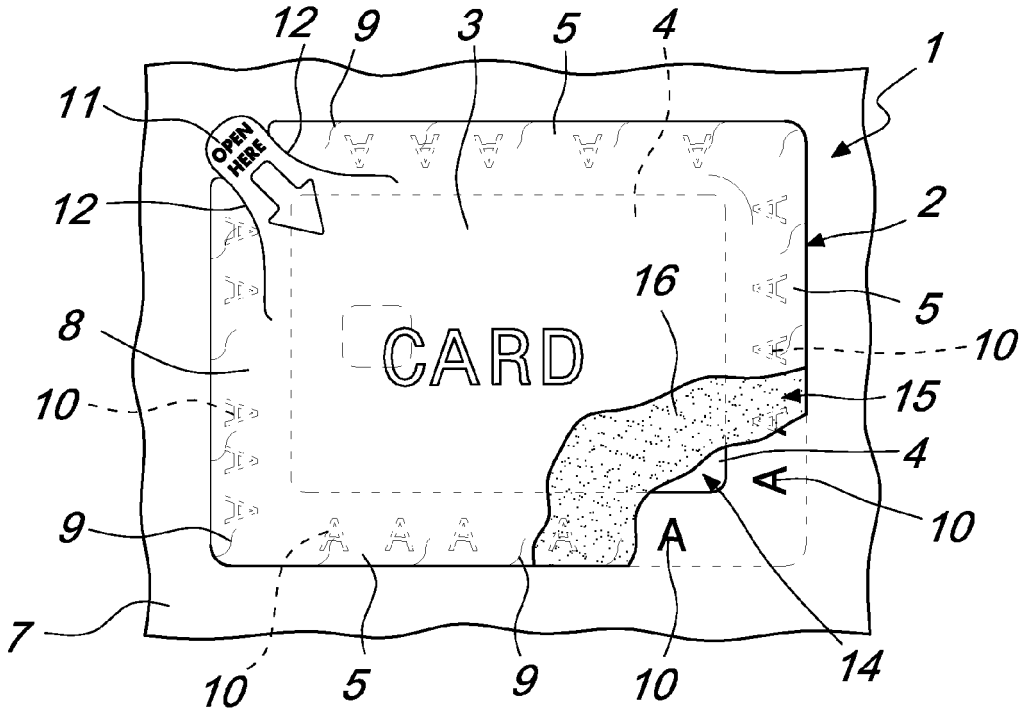
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Fig. 2

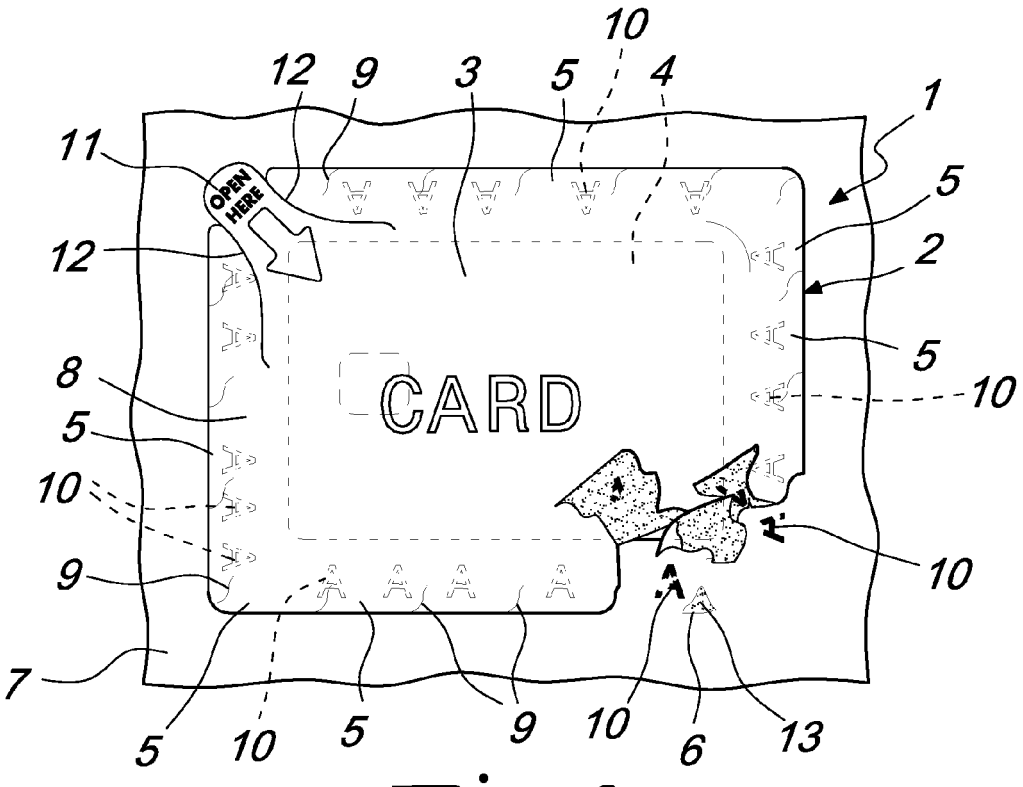
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Fig. 3

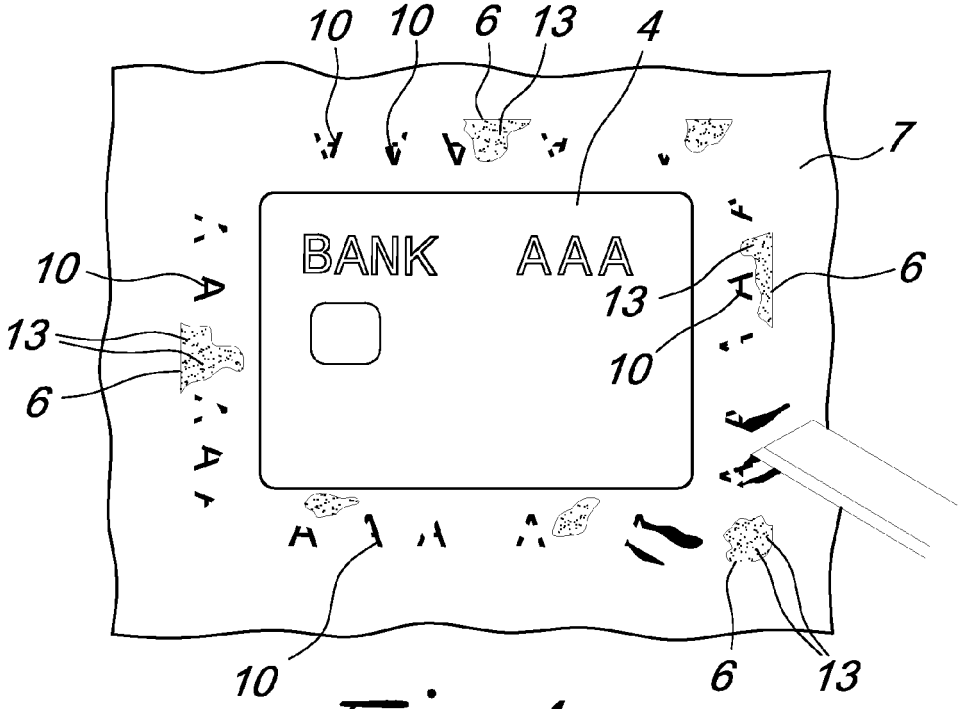
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Fig. 4

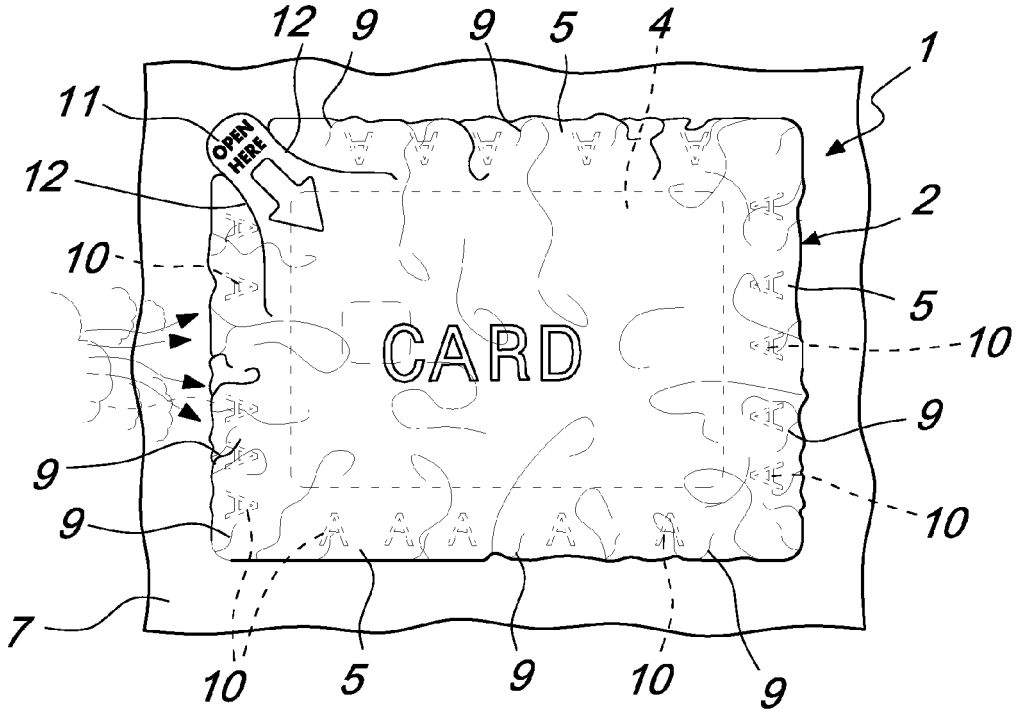
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Fig. 5

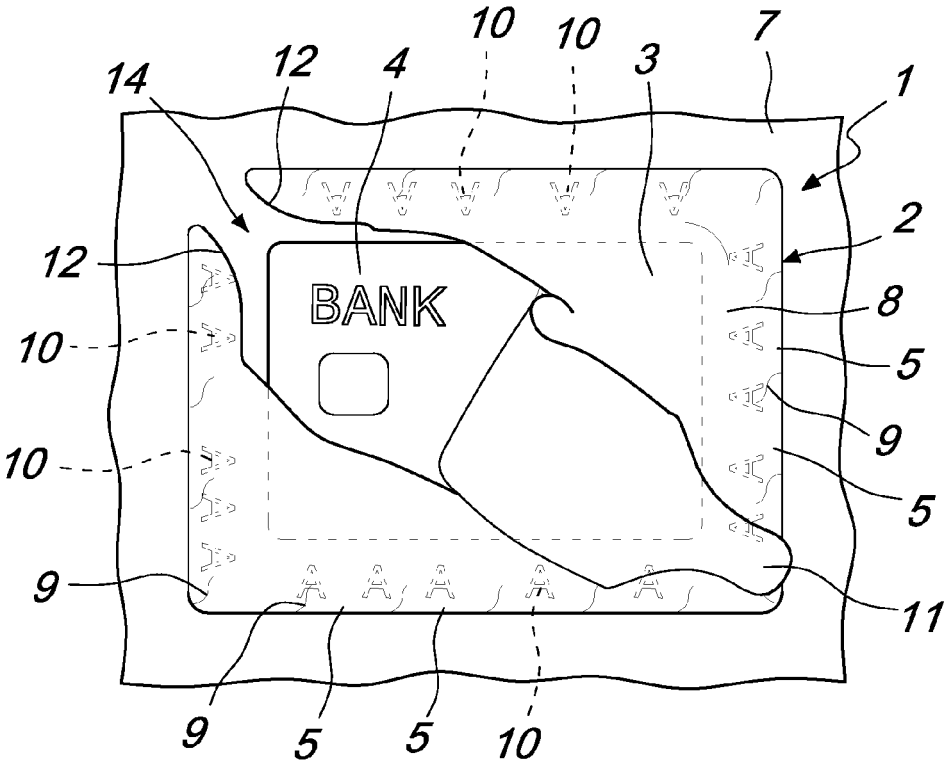

Fig. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 14 16 8870

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	1 July 2014	D'Incecco, Raimondo

CATEGORY OF CITED DOCUMENTS

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01-07-2014

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REFERENCES CITED IN THE DESCRIPTION

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