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(54) **Method and product for protecting the secrecy of messages written on a movable support article, in particular on a sheet of paper cardboard or plastic**

(57) The method comprises the following steps: applying to the support article (10) a lower film (21) of opaque ink adhering to the surface of the article (10) and of the type able to be scratched off in small disintegrated particles by a sharp-edged hard object; then writing the secret message (11) on said lower film (21), said writing being such as to be able to be seen on said film (21); then covering the written message (11) with a

transparent laminar plastic support (32), which is applied adheringly to said lower film (21) in such a manner as to conceal the written message (11); then adheringly applying to the upper surface of said plastic support (32) an upper film (31) of opaque ink of the type able to be scratched off the plastic support (32) in small disintegrated particles by a sharp-edged hard object.

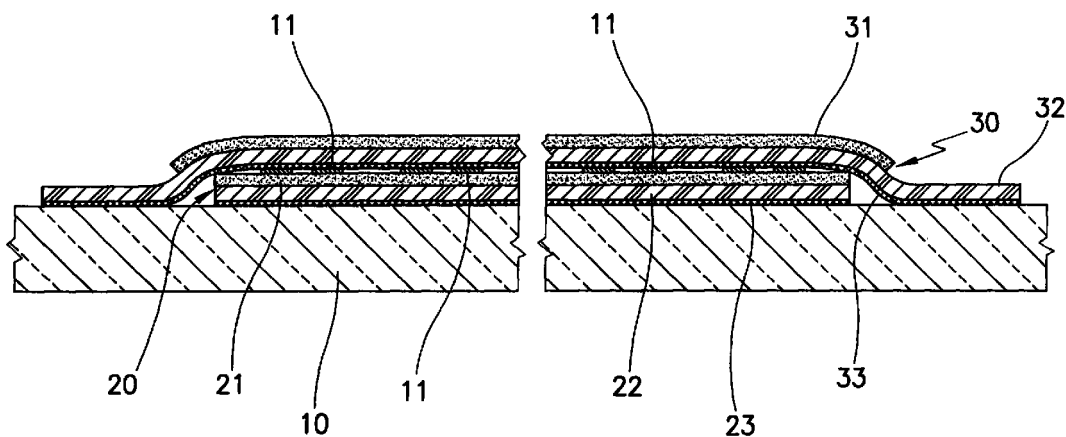


FIG. 1

## Description

**[0001]** This invention relates to secrecy protection in communicating written messages.

**[0002]** A typical application is in communicating codes (such as the code of a rechargeable telephone card or of a credit card) or other messages written on a sheet, card etc., to a user by the organization providing the service.

**[0003]** In these and other similar cases it is important to be able to transmit a code (or another message) secretly to the legitimate addressee such that this secrecy is protected, in the sense that third parties are prevented from seeing the code, or if a third party does violate the protection there remains an evident trace of the violation.

**[0004]** For this purpose it is known to cover the message with a layer of scratch-off ink, ie an opaque ink adhering to the article and able to be scratched off the article in small disintegrated particles by a sharp-edged hard object (a blade, a coin, etc.). A typical widespread application is to protect the numbers on nationally distributed lottery tickets of scratch card type.

**[0005]** In this example it is not possible to secretly know the protected numbers. They can be known only by scratching the ink layer away, however this immediately reveals that this action has been taken. This system hence effectively protects, in the aforesaid sense, the secrecy of the message contained on the card. However it requires large costly machinery, to be operated by an expert, hence limiting its application to very large scale production.

**[0006]** Another known system uses self-adhesive labels with a transparent plastic laminar surface which have their lower surface covered with permanently adhering glue and their upper surface covered with a layer of scratch-off ink adhering to the support.

**[0007]** A label is applied to the message to be protected. Again in this case the ink layer has to be scratched off to read the message, hence again revealing that this action has been taken.

**[0008]** This system is simple and economical to apply. In particular, it requires the use of devices (of the type suitable for applying self-adhesive labels to sheets and the like) which are simple and are easy to use even by inexperienced personnel, and is hence suitable for many different applications and usable by personnel without particular expertise and without special machinery.

**[0009]** However such a system does not protect the message secrecy with total reliability because it is possible to reduce the action of the glue, in particular by using hot steam, and raise the self-adhesive label from the sheet to enable the secret message to be read, after which the label can be repositioned, without leaving any sign that this action has been taken.

**[0010]** An object of the invention is to provide a method, and the relative article carrying the secret com-

munication, which protects the message secrecy much more reliably than the known system using self-adhesive labels with scratch-off ink, while at the same time, in its preferred embodiment, requiring merely the application of a self-adhesive label with scratch-off ink and the necessary application devices, which are relatively very simple and easy to use.

**[0011]** This and further objects are attained by the invention as characterised in the claims.

**[0012]** The invention is described in detail hereinafter with the aid of the accompanying figures, which illustrate one embodiment thereof by way of non-limiting example.

Figure 1 is a generic schematic enlarged cross-section through an article for the secret communication of written messages, according to the invention.

Figure 2 is an exploded view of an article such as that of Figure 1, protected by a usual envelope.

**[0013]** The reference numeral 10 indicates an article acting as a movable support for a written message.

This can be a sheet of cardboard, as in the illustrated example, or a sheet of paper, plastic etc.

**[0014]** According to the invention, to the surface of the sheet 10 there is applied a lower film of opaque ink (or equivalent covering material) adhering to the surface of the article 10 and of the type which can be scratched off in the form of small disintegrated particles by a hard sharp-edged object.

**[0015]** In a preferred (but not exclusive) embodiment, said lower ink film 21 is applied to the support article 10 using a self-adhesive label 20 comprising a transparent laminar plastic support 22 (in particular of polyester) having its lower surface covered with a thin layer of permanently adhering glue 23 (also transparent), and having on its upper surface said film of opaque ink 21, which is of scratch-off type and adheres to the support 22.

**[0016]** Said label 20 is of known type, available commercially and known as a "self-adhesive scratch-off label". Brand names of these labels include "ARCA ETICHETTE<sup>R</sup>", "EUROLABEL<sup>R</sup>" and "ETIKA<sup>R</sup>".

**[0017]** At least one of these labels 20 is applied to the surface of the article 10, so that a lower ink film 21 rigidly adheres to the article.

**[0018]** The secret message (for example a code) is then written on said lower ink film 21 so as to be visible on the ink film 21. The message is typically printed on the film 21 with an ink of different colour. The written parts of the message are shown schematically in Figure 1, where they are indicated by 11.

**[0019]** Over the written message 11 there is then applied a transparent laminar plastic support 32, which carries on its upper surface an upper adhering film 31 of opaque ink (or equivalent covering material) of the type

able to be scratched off the plastic support 32 in small disintegrated particles by a hard sharp-edged object. The support 32 and the relative film 31 are adheringly applied to said lower ink film 21 such as to cover and hide the written message 11.

**[0020]** In a preferred (but not exclusive) embodiment, said upper ink film 31 is applied to the lower film 21 using a self-adhesive label 30 comprising a transparent laminar plastic support 32 (in particular of polyester) having its lower surface covered with a thin layer of permanently adhering glue 33 (also transparent), and having on its upper surface a film of opaque ink, which is of scratch-off type and adheres to the support 32.

**[0021]** In particular, said label 30 is identical to the label 20.

**[0022]** In normal use, to read the message 11 it is sufficient (and necessary) to scratch away the upper film 31 using a sharp-edged hard object such as a blade, a coin or the like. In this manner the plastic upper support 32 is uncovered, and being transparent enables the message lying below it to be seen. The support 32 itself is formed of a material which is not substantially scratched by the object with which the film 31 is scratched off. In contrast, this latter is formed of a layer of covering material (typically ink) which, while remaining adhering to the support 32 during normal handling, easily crumbles when scratched, to uncover the support 32 and hence allow the underlying message 11 to be seen.

**[0023]** At the same time, if a third person tries to lift the label 30 from the label 20 in an attempt to view the message 11 from the underside without scratching the layer 31 away, the upper plastic support 32 drags with it the lower ink film 21 adhering to the adhesive layer 33, because the force of adhesion of the glue 33 is greater than the force with which the ink 21 adheres to the lower support 22. Consequently, in this case the ink forming the message 11 remains covered upperly by the upper ink film 31 and lowerly by the lower ink film 21, and consequently it cannot be read. If the lower film itself were to be scratched away, not only would obvious traces of this action remain, but the actual message parts 11 would be also scratched away together with the film 21, and hence the message 11 would be destroyed.

**[0024]** In conclusion, the message 11 can only be read by scratching off the upper ink layer 31, this having the required result of leaving a clear and unerasable indication of the fact that this action has been accomplished.

**[0025]** Advantageously, the films of scratch-off ink 21 and 31 (or equivalent covering material) are absolutely opaque to better conceal the message 11.

**[0026]** Figure 2 is an exploded view of an article, in particular a sheet of paper, cardboard or plastic, for secret message communication, prepared by the afore-described method, and in particular the article 10 shown in Figure 1.

**[0027]** The article 10 carries a lower self-adhesive

label 20 which utilizing its self-adhesive properties is applied to the surface of the sheet 10. The message (code) which is to be kept secret is written on the upper surface of the label 20. An upper self-adhesive label 30, in particular of greater length and width than the lower label 20, is applied over the lower label 20 to totally cover this and also conceal its perimetral edge.

**[0028]** The sheet 10 formed in this manner is enclosed within an envelope composed of two sheets, namely an upper sheet 41 and a lower sheet 42, which are joined together along their respective perimetral edges 41' and 42'. The upper sheet 41 also possesses a window 43 enabling the region carrying the secret message to be inspected.

**[0029]** The invention enables relatively very secure protection to be provided for the secret message. In its preferred embodiment, this is achieved using and applying a (known) self-adhesive label with scratch-off ink, requiring simple and inexpensive devices (of the type suitable for applying a self-adhesive label to sheets and the like), and hence suitable for many uses in various fields, it moreover being usable by users without particular expertise and without special machines.

**[0030]** Numerous modifications of a practical and applicational nature can be made to the invention, but without leaving the scope of the inventive idea as hereinafter claimed.

## Claims

1. A method for protecting the secrecy of messages written on a movable support article, in particular on a sheet of paper, cardboard or plastic, characterised by comprising the following steps:

applying to the support article (10) a lower film (21) of opaque ink or equivalent material adhering to the surface of the article (10) and of the type able to be scratched off in small disintegrated particles by a sharp-edged hard object;

then writing the secret message (11) on said lower ink film (21), said writing being such as to be able to be seen on said ink film (21);

then covering the written message with a transparent laminar plastic support (32), which is applied adheringly to said lower opaque ink film (21) in such a manner as to conceal the written message (11);

then adheringly applying to the upper surface of said plastic support (32) an upper film (31) of opaque ink or equivalent material of the type able to be scratched off the plastic support (32) in small disintegrated particles by a sharp-edged hard object.

2. A method as claimed in claim 1, characterised in that said upper film (31) of ink (or equivalent cover-

ing material) is applied to said lower film (21) of ink (or equivalent covering material) by applying at least one upper self-adhesive label (30) comprising a transparent laminar plastic support (32) having its lower surface covered with permanently adhering glue (33), and having on its upper surface said film (31) of opaque ink, which is of scratch-off type and adheres to the support (32). 5

3. A method as claimed in claim 1, characterised in that said lower film (21) of ink (or equivalent covering material) is applied to the support article (10) by applying at least one lower self-adhesive label (20) comprising a transparent laminar plastic support (22) having its lower surface covered with permanently adhering glue (23), and having on its upper surface said film (21) of opaque ink, which is of scratch-off type and adheres to the support (22). 10 15

4. A method as claimed in claim 1, characterised in that the films (21, 31) of opaque ink (or equivalent material) of scratch-off type are absolutely opaque. 20

5. An article, in particular a sheet of paper, cardboard or plastic, for communicating secret messages, characterised by comprising, to protect the message secrecy: 25

a lower film (21) of opaque ink (or equivalent covering material) adhering to the surface of the article and of the type able to be scratched off the surface of the article in small disintegrated particles by a sharp-edged hard object, the secret message (11) being written on said lower ink film (21) and being such as to be visible on said ink film (21); 30 35

a transparent laminar plastic support (32) adheringly applied to said lower opaque ink film (21) in such a manner as to cover and conceal the written message (11); 40

an upper film (31) of opaque ink (or equivalent covering material) of the type able to be scratched off in small disintegrated particles by a sharp-edged hard object, and adheringly applied to the upper surface of said plastic support (32). 45

6. An article as claimed in claim 5, characterised by comprising a self-adhesive lower label (20) comprising a transparent laminar plastic support (22) having its lower surface covered with permanently adhering glue (23), and having on its upper surface said film of opaque scratch-off ink adhering to the support, said self-adhesive lower label (20) being adheringly applied to the surface of the article (10) and the message (11) being written on its film of ink (21), and a self-adhesive upper label (30) comprising a transparent laminar plastic support (32) hav- 50 55

ing its lower surface covered with permanently adhering glue (33), and having on its upper surface said film of opaque scratch-off ink (31) adhering to the support.

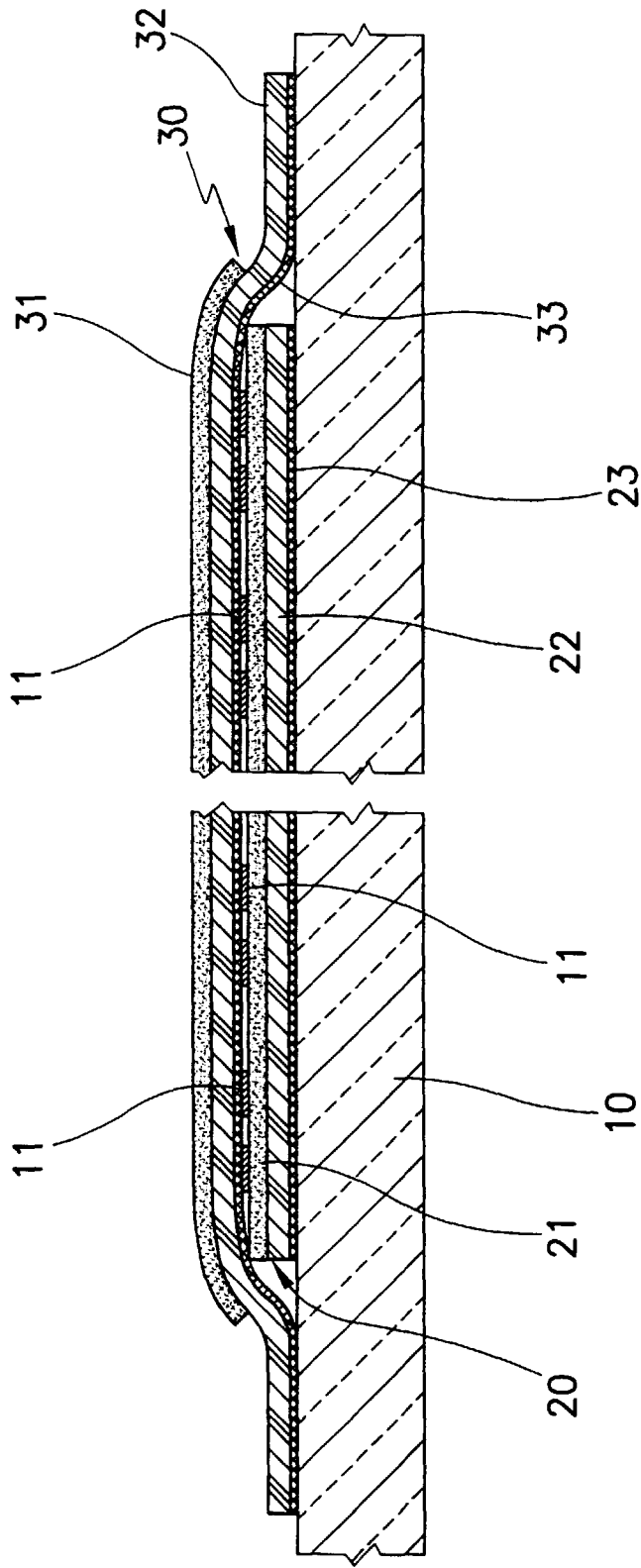


FIG.1

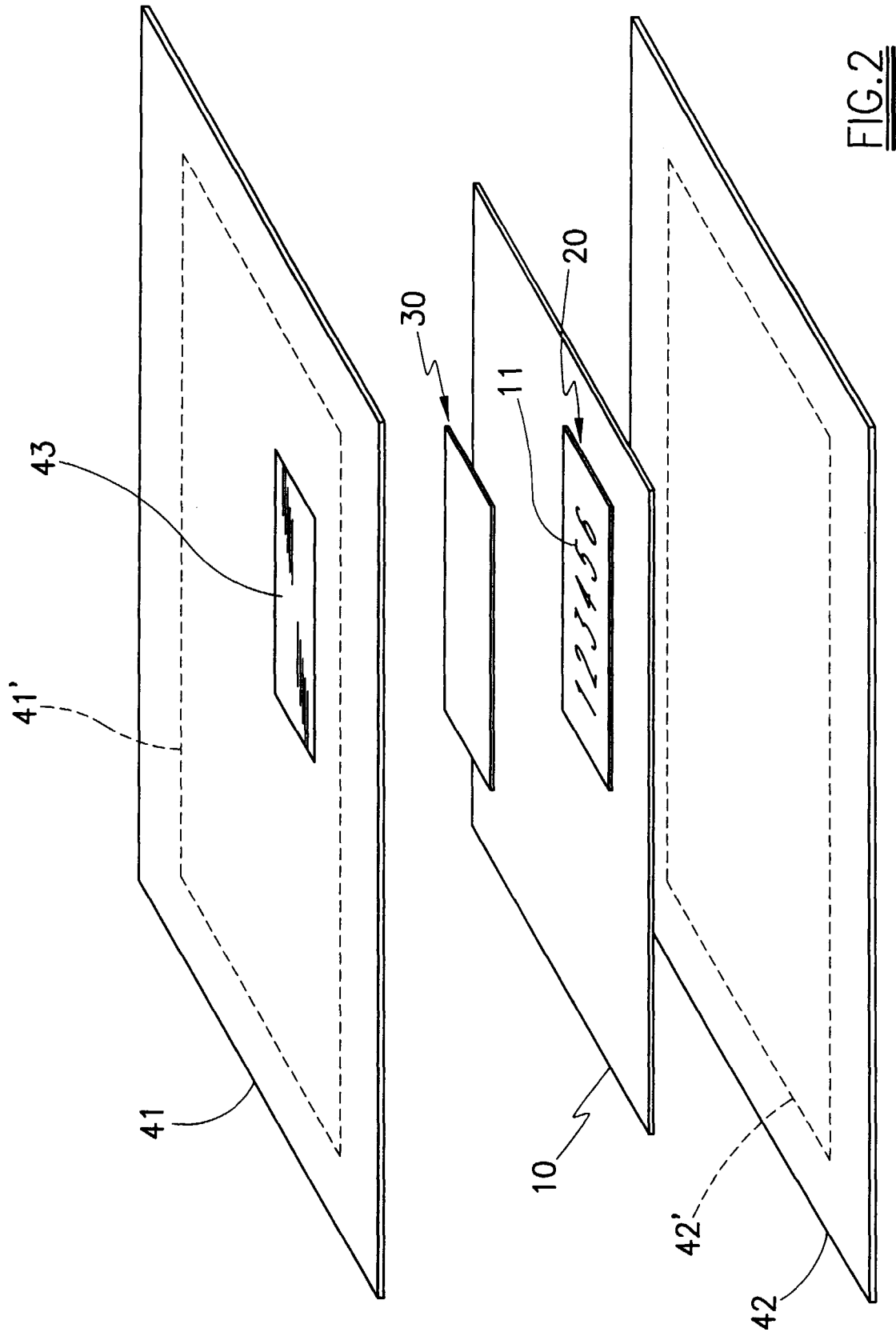


FIG.2