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(54) **SECURITY ELEMENT APPLICABLE TO DOCUMENTS IN GENERAL AND PARTICULARLY TO BANK NOTES, IDENTIFICATION DOCUMENTS AND THE LIKE**

SICHERHEITSELEMENT ZUR EINBETTUNG IN SICHERHEITSDOKUMENTE WIE BANKNOTEN,
IDENTITÄTSDOKUMENTE ODER DERGLEICHEN

ÉLÉMENT DE SÉCURITÉ POUVANT ÊTRE APPLIQUÉ SUR DES DOCUMENTS EN GÉNÉRAL ET
SUR DES BILLETS DE BANQUE, DES DOCUMENTS D'IDENTIFICATION ET ANALOGUE EN
PARTICULIER

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(73) Proprietor: **FEDRIGONI S.P.A.**
37135 Verona (IT)

(72) Inventor: **LAZZERINI, Maurizio**
I-20070 Cerro al Lambro (IT)

(74) Representative: **Modiano, Micaela Nadia et al**
Modiano & Partners
Via Meravigli, 16
20123 Milano (IT)

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EP-A- 0 330 733 WO-A-00/54985
FR-A- 2 803 939 GB-A- 2 243 578

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Description

[0001] The present invention relates to a security element applicable to documents in general and particularly to bank notes, identification documents, and the like.

[0002] As is known, several kinds of security elements are already commercially available and are provided by means of threads, strips, patches and the like, which are generally obtained by means of a backing layer, generally made of polyester, onto which regions having various characteristics are applied.

[0003] Considering in particular the case of the use of fluorescent inks, current methods provide a background that is solid or optionally provided with stripes or regions on which a second pass applies other elements that can have magnetic or visibility characteristics.

[0004] With current solutions, the fluorescent layer is intentionally covered by the additional layer without achieving a precise and preset registration between the fluorescent regions and the regions having magnetic or visibility characteristics.

[0005] Accordingly, these solutions limit the possibility to achieve an intended degree of security, because it can be impossible to apply the different regions, since there is no precise registration between them.

[0006] WO-A-0 054 985 discloses a security element having, alternatively, fluorescent characteristics or magnetic characteristics.

[0007] FR-A-2 803 939 discloses a security element having a plurality of layers.

[0008] GB-A-2 243 578 discloses a security element formed by two distinct layers, a backing layer and a drawing layer.

[0009] EP-A-0 330 733 discloses a security element having two distinct layers, the upper layer having recesses wherein coloring and/or luminescent substances are deposited.

[0010] The aim of the present invention is to solve the problem noted above by providing a security element applicable to documents in general and particularly to bank notes, identification documents, and the like, which allows to have areas that are visible to the naked eye but contain other characteristics that can be rendered more evident and rendered detectable by using automatic or manual devices.

[0011] Within this aim, an object of the invention is to provide a security element applicable to documents in general and particularly to bank notes, identification documents, and the like, in which it is possible to combine various characteristics that are individually detectable.

[0012] Another object of the present invention is to provide a security element that thanks to its particular constructive characteristics is capable of giving the greatest assurances of reliability and safety in use.

[0013] Another object of the present invention is to provide a security element applicable to documents in general and particularly to bank notes, identification documents, and the like, that can be easily obtained starting

from commonly commercially available elements and materials.

[0014] This aim and these and other objects that will become better apparent hereinafter are achieved by a security element applicable to documents and particularly to bank notes, identification documents, as defined in claim 1.

[0015] Further characteristics and advantages will become better apparent from the description of a preferred but not exclusive embodiment of a security element applicable to documents in general and particularly to bank notes, identification documents, and the like, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a schematic view of a preferred embodiment of a security element of the thread type;

Figure 2 is a view of the security element fully embedded in a document;

Figure 3 is a view of the detection of the characters provided on the security element by means of an ultraviolet light; security element by means of an ultraviolet light;

Figure 4 is a view of the security element introduced in a document with the windowed technique;

Figure 5 is a view of the security element introduced in a document with the windowed technique and detected by means of ultraviolet light.

Ways of carrying out the Invention

[0016] With reference to the figures, the security element applicable to documents in general and particularly to bank notes, identification documents, and the like, according to the invention, generally designated by the reference numeral 1, is constituted by a sheet-like backing element, generally designated by the reference numeral 2, which can be constituted by a thread, a strip, a patch or the like and is typically obtained by means of a layer of polyester or similar material.

[0017] Regions, designated by the reference numeral 3, are provided on at least one face of the sheet-like element 2 and can be constituted by characters, graphic markings, designs and so forth; such regions have the particularity of being constituted by areas that are perfectly in register with each other and have magnetic characteristics, naked-eye visibility characteristics, and fluorescent characteristics with the possibility of detection by means of an ultraviolet light.

[0018] In practice, it is possible to provide regions that are perfectly in register with each other and combine three separate characteristics of possible detectability, thus allowing a particularly rigorous security criterion.

[0019] The security element described above, once completely embedded within a document, designated by the reference numeral 10 in the drawings, is substantially invisible in reflected light and is possibly visible in transmitted light, but most of all allows to make the regions

visible when the document is struck by an ultraviolet light 15, i.e., with a light having a frequency of less than 400 nm.

[0020] Likewise, if the security element is inserted in the document with the windowed technique, the regions located at the windows, designated by the reference numeral 20, remain always visible even to the naked eye, while the regions that are completely embedded are visible only when they are struck by an ultraviolet light.

[0021] In order to achieve perfect registration of the regions having the distinct characteristics, it has been found that it is optimum to use a security ink obtained with magnetic pigments, colored pigments, and fluorescent pigments that are sensitive to ultraviolet light.

[0022] Such ink can be applied by way of normal printing techniques or by transfer or by means of any other system normally used for printing on threads.

[0023] The regions 3 can provide any type of characteristic deemed appropriate, and the fluorescent colors may also be obtained with the most disparate colorings, such as yellow, red, blue; likewise, the magnetic properties can be of different kinds.

[0024] Furthermore, the regions that represent the various characters can obviously be provided both as negative regions and as positive regions.

[0025] From what has been described above, it is therefore evident that the invention achieves the intended aim and objects. Further, according to a non-claimed arrangement a security element is provided which, by combining in perfect register magnetic areas, areas with fluorescent characteristics and areas that are visible to the naked eye, allows to further augment the useful security criteria.

[0026] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0027] All the details may further be replaced with other technically equivalent elements.

[0028] In practice, the materials used, so long as they are compatible with the specific use, as well as the contingent shapes and dimensions, may be any according to requirements.

Claims

1. A security element (1) applicable to documents and particularly to bank notes, identification documents, **characterized in that** it comprises a sheet-like backing element (2), said backing element comprising a single layer on at least one face of which there are regions (3) that are perfectly in register with each other and have at least magnetic and fluorescent characteristics that can be detected with ultraviolet light, said regions combining three separate characteristics of possible detectability, wherein the regions (3) are provided by an ink which comprises magnetic pigments and fluorescent pigments or colors that can

be detected with an ultraviolet light.

2. The security element according to claim 1, **characterized in that** said regions (3) have naked-eye visibility characteristics.
3. The security element according to the preceding claims, **characterized in that** said regions (3) form characters, graphic markings, or designs in positive and/or negative form.
4. The security element according to one or more of the preceding claims, **characterized in that** said regions (3) have fluorescent characteristics with different coloring.
5. The security element according to one or more of the preceding claims, **characterized in that** said regions (3) are detectable both by manual devices and by automatic devices.
6. A document (10) in general, comprising a security element (1) that is at least partially embedded in said document, **characterized in that** said security element comprises a sheet-like backing element (2), said backing element comprising a single layer on at least one face of which there are regions (3) that are perfectly in register with each other and have at least magnetic characteristics and fluorescent characteristics that can be detected with an ultraviolet light, said regions combining three separate characteristics of possible detectability, wherein the regions (3) are provided by an ink which comprises magnetic pigments and fluorescent pigments or colors that can be detected with an ultraviolet light.

Patentansprüche

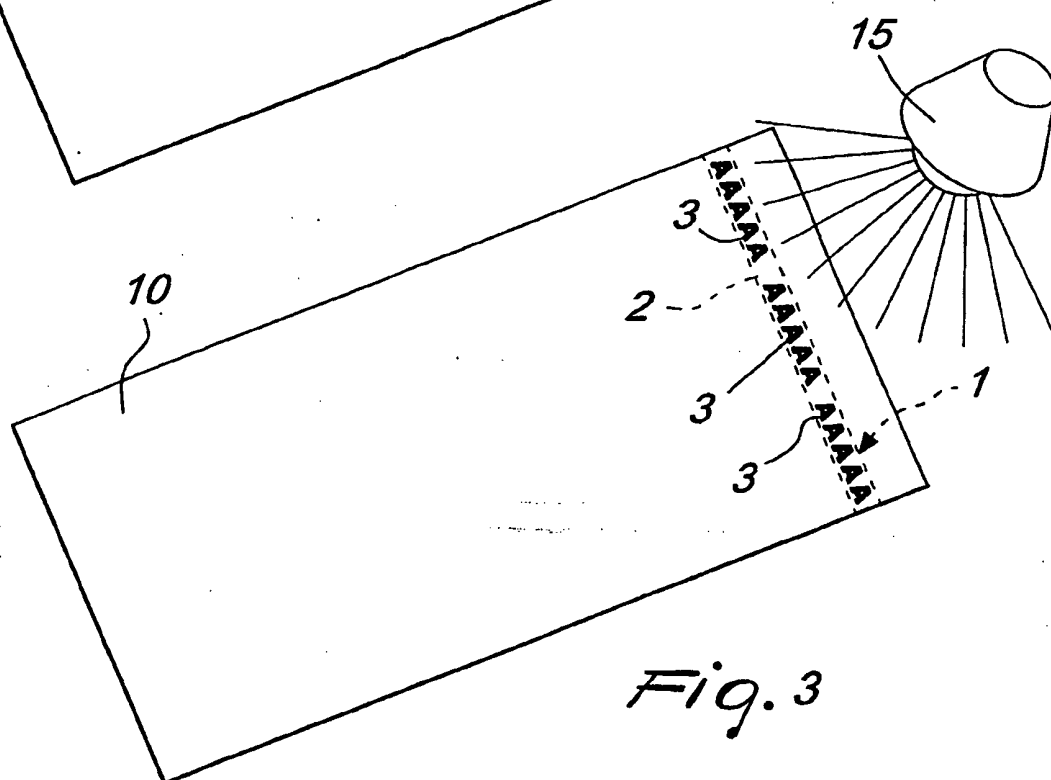
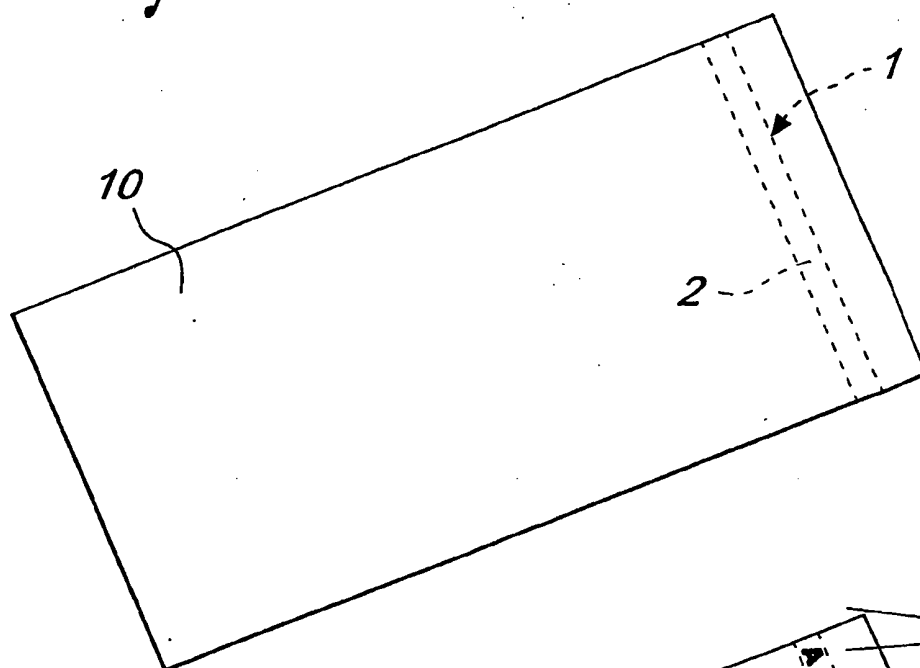
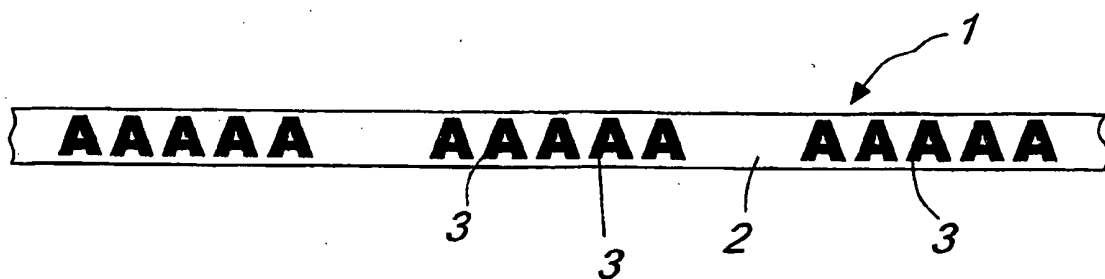
1. Sicherheitselement (1), welches in Dokumenten und insbesondere in Banknoten, Ausweisdokumenten, einsetzbar ist, **dadurch gekennzeichnet, dass** es ein blattartiges Trägerelement (2) umfasst, welches genannte Trägerelement eine einzelne Schicht umfasst, wobei auf wenigstens einer Seite davon Bereiche (3) vorhanden sind, die zueinander perfekt ausgerichtet sind und wenigstens magnetische und fluoreszierende, mit ultraviolettem Licht feststellbare Merkmale besitzen, wobei die Bereiche drei getrennte Merkmale für eine mögliche Nachweisbarkeit vereinen, wobei die Bereiche (3) durch eine Tinte bereitgestellt werden, die magnetische Pigmente und fluoreszierende Pigmente oder Farben umfasst, welche mit ultraviolettem Licht nachgewiesen werden können.
2. Sicherheitselement nach Anspruch 1, **dadurch gekennzeichnet, dass** die genannten Bereiche (3) die

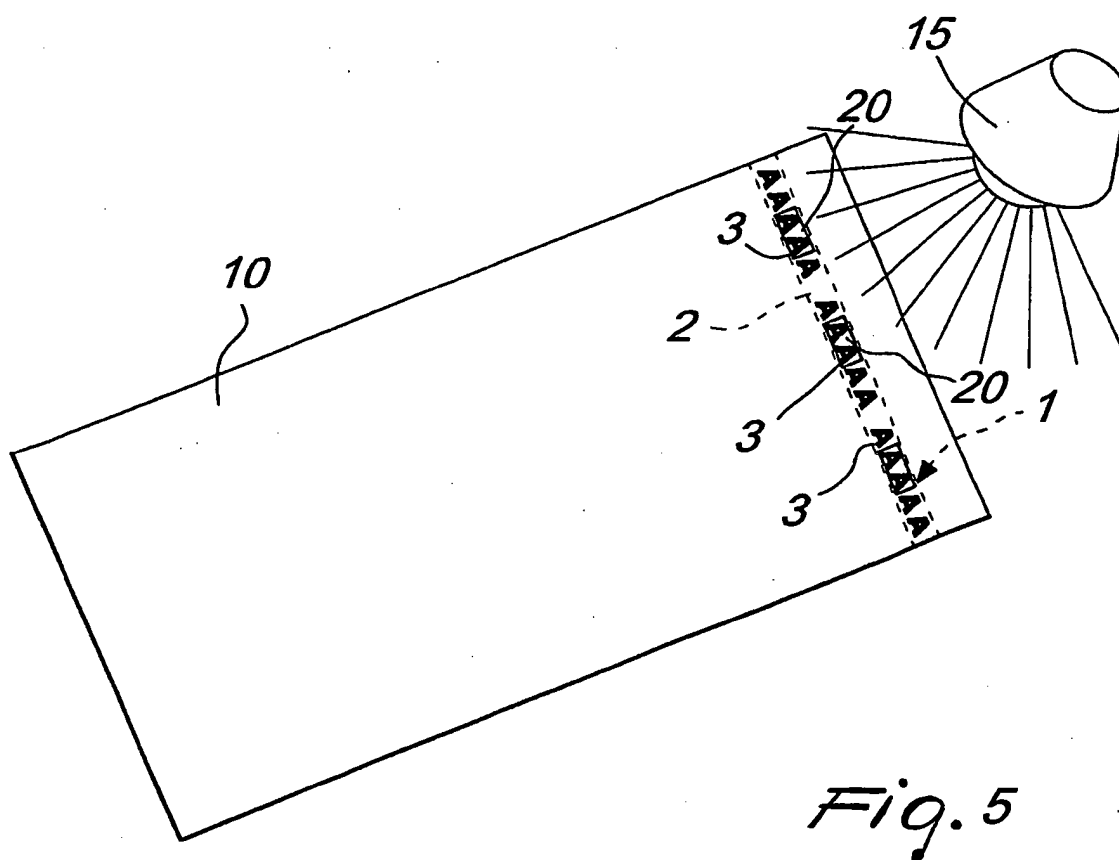
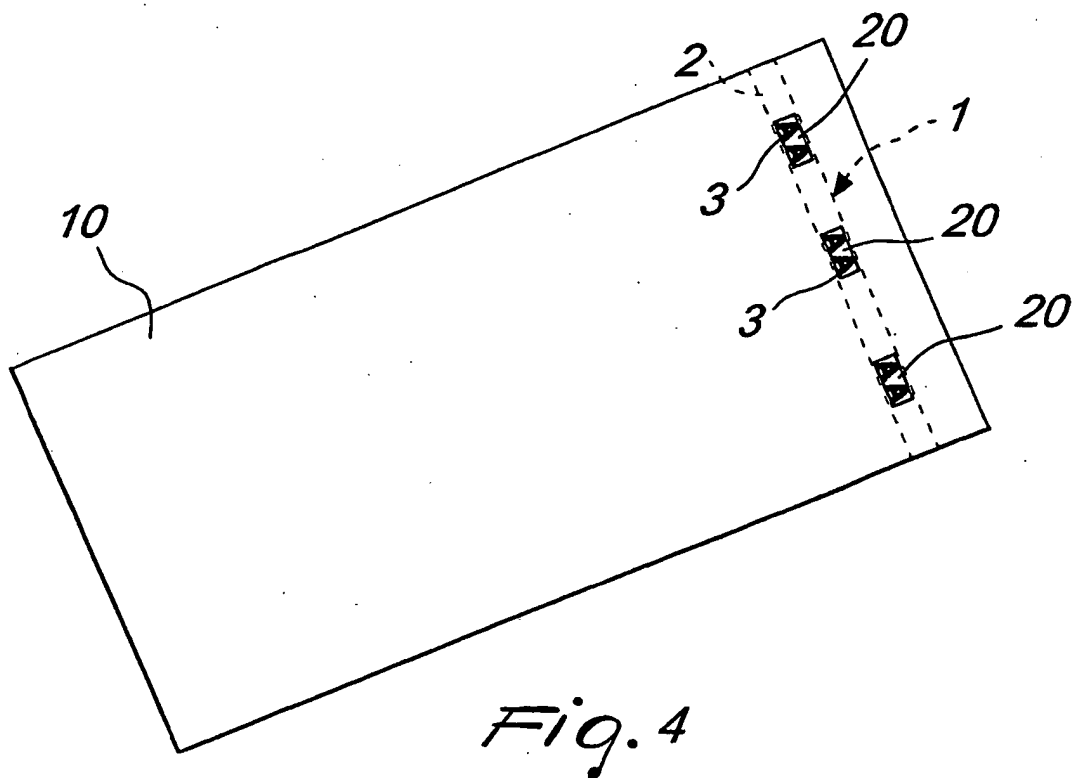
- Merkmale besitzen, für das bloße Auge sichtbar zu sein.
3. Sicherheitselement nach den vorstehenden Ansprüchen, **dadurch gekennzeichnet, dass** die genannten Bereiche (3) Zeichen, grafische Markierungen oder Muster in positiver und/oder negativer Form ausbilden.
 4. Sicherheitselement nach einem oder mehreren der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** die genannten Bereiche (3) fluoreszierende Merkmale von unterschiedlicher Färbung aufweisen.
 5. Sicherheitselement nach einem oder mehreren der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** die genannten Bereiche (3) sowohl durch manuelle Vorrichtungen als auch durch automatische Vorrichtungen nachweisbar sind.
 6. Dokument (10) im Allgemeinen, umfassend ein Sicherheitselement (1), welches wenigstens teilweise in dem genannten Dokument eingebettet ist, **dadurch gekennzeichnet, dass** das genannte Sicherheitselement ein blattartiges Trägerelement (2) umfasst, welches genannte Trägerelement eine einzelne Schicht umfasst, wobei auf wenigstens einer Seite davon Bereiche (3) vorhanden sind, die zueinander perfekt ausgerichtet sind und wenigstens magnetische und fluoreszierende, mit ultraviolettem Licht feststellbare Merkmale besitzen, wobei die Bereiche drei getrennte Merkmale für eine mögliche Nachweisbarkeit vereinen, wobei die Bereiche (3) durch eine Tinte bereitgestellt werden, die magnetische Pigmente und fluoreszierende Pigmente oder Farben umfasst, welche mit ultraviolettem Licht nachgewiesen werden können.

2. Élément de sécurité selon la revendication 1, **caractérisé en ce que** lesdites zones (3) possèdent des caractéristiques de visibilité à l'œil nu.
3. Élément de sécurité selon les revendications précédentes, **caractérisé en ce que** lesdites zones (3) forment des caractères, des marques graphiques, ou des motifs sous forme positive et/ou négative.
4. Élément de sécurité selon une ou plusieurs des revendications précédentes, **caractérisé en ce que** lesdites zones (3) possèdent des caractéristiques fluorescentes de différentes couleurs.
5. Élément de sécurité selon une ou plusieurs des revendications précédentes, **caractérisé en ce que** lesdites zones (3) sont détectables par des dispositifs manuels et par des dispositifs automatiques.
6. Document (10) en général, qui comprend un élément de sécurité (1) qui est au moins partiellement intégré audit document, **caractérisé en ce que** ledit élément de sécurité comprend un élément de support en forme de feuille (2), ledit élément de support comprenant une seule couche sur une face duquel au moins se trouvent des zones (3) qui sont parfaitement alignées les unes avec les autres et qui possèdent au moins des caractéristiques magnétiques et des caractéristiques fluorescentes qui peuvent être détectées avec la lumière ultraviolette, lesdites zones combinant trois caractéristiques distinctes à détectabilité possible, dans lequel les zones (3) sont fournies par une encre qui comprend des pigments magnétiques et des pigments fluorescents ou des couleurs qui peuvent être détectées avec une lumière ultraviolette.

Revendications

1. Élément de sécurité (1) qui peut être appliqué sur des documents et plus particulièrement sur des billets de banque, des documents d'identification, **caractérisé en ce qu'il** comprend un élément de support en forme de feuille (2), ledit élément de support comprend une seule couche sur une face duquel au moins se trouvent des zones (3) qui sont parfaitement alignées les unes avec les autres et qui possèdent au moins des caractéristiques magnétiques et fluorescentes qui peuvent être détectées avec la lumière ultraviolette, lesdites zones combinant trois caractéristiques distinctes à détectabilité possible, dans lequel les zones (3) sont fournies par une encre qui comprend des pigments magnétiques et des pigments fluorescents ou des couleurs qui peuvent être détectées avec une lumière ultraviolette.





REFERENCES CITED IN THE DESCRIPTION

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