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(54) Document, such as a check and the like, with forgery prevention means.

(57) The document, such as a check and the like, with forgery prevention means, comprises a sheet-like element (1) having at least one portion for writing indications (2,3,4). The peculiarity of the document is constituted by the fact that it comprises, in the at least one portion for writing indications, regions (10) printed with an ink which can be erased by chemical and/or mechanical action. These regions give a preset color response when they are illuminated by a light source of preset wavelength in order to visually point out that tampering of parts of these regions has occurred.

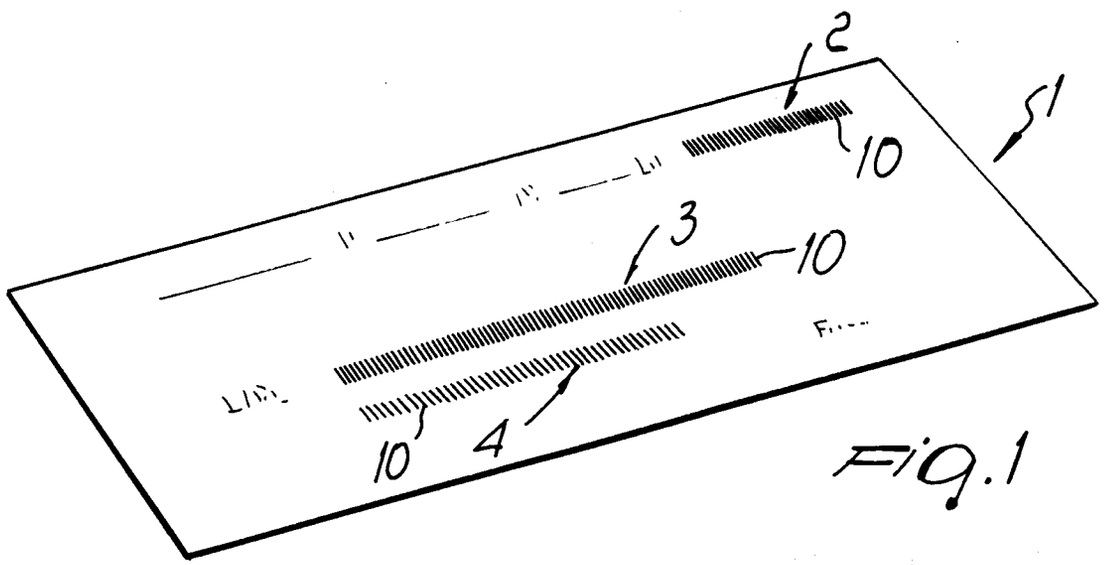

Fig.1

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The present invention relates to a document, such as a check and the like, with forgery prevention means.

As is known, a problem which is currently strongly felt in various fields, and most of all in the case of checks, is the one related to the possibility of preventing the forgery of the document, i.e. the fraudulent alteration of the amounts written on the check.

Currently, delible inks are used, for example, on checks in the region where the digits related to the amount are written, in the region where the amount is written in letters and in the region related to the payee, but these solutions have not always proved themselves able to clearly indicate that forgery has occurred. In fact, not infrequently, after fraudulently tampering with the writing present in these regions, the forger "reconstructs" the region by applying color so as to conceal the tampering.

In this situation, it is therefore not possible to easily and rapidly make sure that forgery has occurred; furthermore, currently there are no means which allow to clearly point out that forgery has occurred.

The aim of the present invention is indeed to solve the above described problem by providing a document, such as a check and the like, with forgery prevention means which allows to detect a forgery, even automatically, clearly pointing out even attempts at concealing forgery.

Within the scope of the above aim, a particular object of the invention is to provide a document wherein the forgery prevention means can be integrated in other elements which are normally provided in a check, so that said means may not be immediately detectable to the naked eye, making it even more difficult to reconstruct the region tampered with.

Another object of the present invention is to provide a document, such as a check or the like, which by virtue of its peculiar characteristics of execution is capable of giving the greatest assurances of reliability and safety in use.

Not least object of the present invention is to provide a document, such as a check and the like, which can be obtained by using printing inks which are easily commercially available.

This aim, the objects mentioned and others which will become apparent hereinafter are achieved by a document, such as a check and the like, with forgery prevention means, according to the invention, which comprises a sheet-like element which has at least one portion for writing indications, characterized in that it comprises, in said at least one portion for writing indications, regions printed with an ink which can be erased by chemical and/or mechanical action, said regions giving a preset color response when they are illuminated by a light source of preset wavelength in order to visually point out that tampering with at least parts of said regions has occurred.

Further characteristics and advantages will become apparent from the description of some preferred but not exclusive embodiments of a document, such as a check and the like, with forgery prevention means, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a schematic perspective view of a check upon which regions all with the same color characteristic are printed;

figure 2 is a perspective view of a check upon which are provided regions alternated with other regions having different characteristics;

figure 3 is a view of a document, such as a check, with mutually overlapping regions.

With reference to the above figures, and in particular to figure 1, the document, such as a check and the like, with forgery prevention means, according to the invention, comprises a sheet-like element, generally designated by the reference numeral 1, which in the specific case of checks can be constituted by a paper sheet with or without a watermark, which defines at least a first portion 2 for indicating the amount in digits, a second portion 3 for indicating the amount in letters, and a third portion 4 for indicating the payee of the check.

An important peculiarity of the document according to the invention is constituted by the fact that regions printed with an ink which can be erased by chemical and/or mechanical action, designated by 10, are applied in said portions or in some of said portions. Said ink is selected so as to have a preset color response when it is illuminated by a light source of preset wavelength.

In this manner, even if tampering has been performed in order to change the digits and/or the writing and the region has been subsequently reconstructed, by applying colors or the like, so as to make the forgery not evident to the eye, it is instead possible to clearly point out said forgery by means of a light source of a very specific type, such as for example a particular wavelength, so that the regions which have not been tampered with will have a certain color response which can be clearly pointed out visually, whereas the forged region cannot have the same color response, since the color does not have the same characteristics as the ink used originally.

According to what is shown in figure 2, the same manufacturing criterion can allow to create a code which can be read, for example by means of a fiber-optics head or similar elements; in this solution, first regions 20 and second regions 21 which have mutually different color responses when illuminated with light sources having preset

wavelengths are provided; thus, essentially, when the first and second regions, which appear to have the same color in normal light, are illuminated by a source having a preset wavelength or two different wavelengths, said first and second regions appear to have mutually different colors and it is possible to obtain such a difference that the optical reading head can detect only the regions which respond to a certain wavelength, thus allowing to create a code which can be read automatically by the machine.

Obviously, if tampering is performed, the detection of said code is no longer possible, and in any case the different color response is immediately pointed out in the presence of the light source at a preset wavelength.

According to what is shown in figure 3, it is possible to provide, in the portions where for example the amounts in digits, the amounts in letters or the payee are indicated, a lower region 30 and an upper region 31 which have the same color, with the difference that the upper region 31 is produced with delible ink which responds to a preset wavelength of the light source, whereas the lower region is produced with indelible ink.

In this embodiment, if forgery is attempted, the forger removes the upper layer, without being immediately aware of the fact, so that upon subsequent verification performed with a light source of preset wavelength, in the region where the upper layer has been removed there will be a different color response which makes the forgery in the preset region immediately evident and obvious.

As can be seen from the above description, it is thus possible, by applying regions with an ink which can be erased by chemical and/or mechanical action and which, if illuminated with a light source having a preset wavelength or wavelengths, has a different color response, to immediately point out that tampering has occurred, since even reconstruction of the region with other types of inks or dyes allows its detection.

It should also be added to the above that it is possible to provide the regions with elements which are not immediately detectable as forgery prevention elements, since said regions might be provided with a normal pattern which constitutes the background of the entire document, so that said regions cannot be immediately distinguished from the other ones.

The document according to the invention thus conceived is susceptible to numerous modifications and variations, all of which are within the scope of the inventive concept.

All the details may furthermore be replaced with other technically equivalent elements.

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

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 scope of each element identified by way of example by such reference signs.

Claims

1. Document, such as a check and the like, with forgery prevention means, which comprises a sheet-like element (1) which has at least one portion (2,3,4) for writing indications, characterized in that it comprises, in said at least one portion for writing indications, regions (10,20,21,30,31) printed with an ink which can be erased by chemical and/or mechanical action, said regions giving a preset color response when they are illuminated by a light source of preset wavelength in order to visually point out that tampering with parts of said regions has occurred.

2. Document, such as a check and the like, with forgery prevention means, which comprises a sheet-like element (1) which has at least one portion (2,3,4) for writing indications, characterized in that it comprises, in said at least one portion for writing indications, first and second regions (20,21) printed with an ink which can be erased by chemical and/or mechanical action, said first and second regions giving a preset and mutually different color response when they are illuminated by a light source of preset wavelength or wavelengths in order to visually point out that tampering with parts of said regions has occurred.

3. Document, such as a check and the like, with forgery prevention means, according to claim 2, characterized in that said first regions (20) and said second regions (21) constitute a code which is detectable by a fiber-optics reading head.

4. Document, such as a check and the like, with forgery prevention means, which comprises a sheet-like element (1) which has at least one portion (2,3,4) for writing indications, characterized in that it comprises, in said at least one portion for writing indications, at least one lower region (30) and at least one upper region (31), said at least one upper region being printed with an ink which can be erased by

chemical and/or mechanical action, said upper region giving a preset color response, which is different from the response of said lower region, when it is illuminated by a light source of preset wavelength in order to visually point out that tampering with at least parts of said upper region has occurred.

5. Document, such as a check and the like, with forgery prevention means, according to claim 4, characterized in that said lower region is produced with indelible ink.

6. Document, such as a check and the like, with forgery prevention means, according to claims 5 or 6, characterized in that said lower region has a coloring which is substantially identical to the coloring of said upper region.

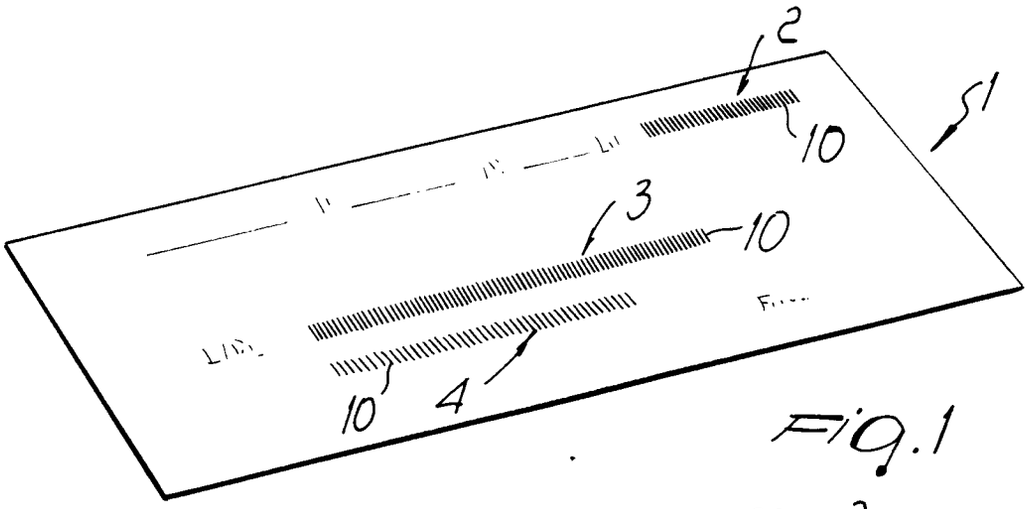

Fig.1

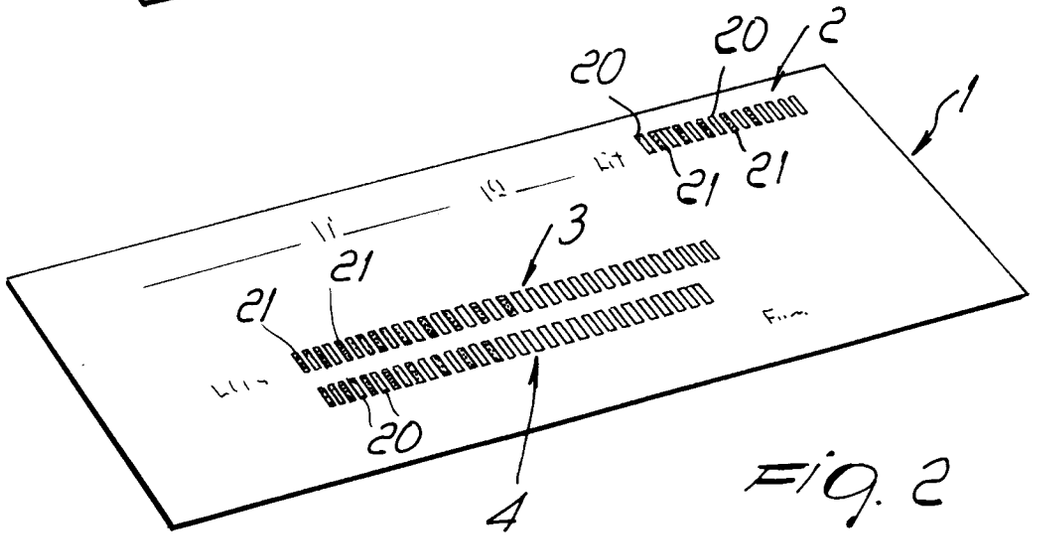

Fig.2

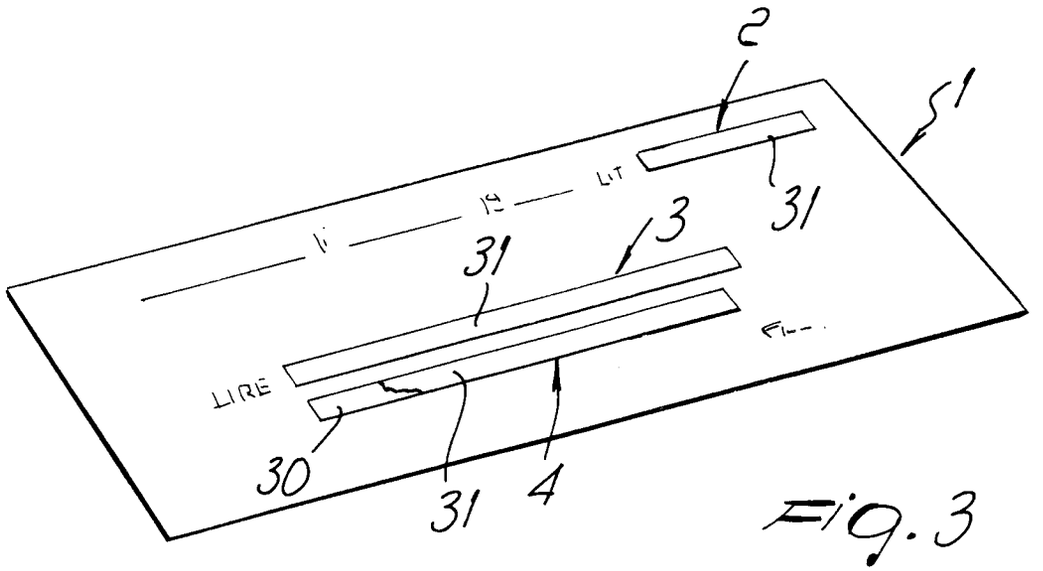

Fig.3

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 92 11 0055

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	DE-A-2 801 015 (JOELLENBECK UND KASTEN GESELLSCHAFT FUER GESCHAEFTSDRUCKSYSTEME MBH) * page 4, line 8 - page 5, line 11; claim 1; figure 1 *	1-6	B41M3/14 B42D15/00
X	US-A-3 400 003 (AMERICAN BANK NOTE COMPANY) * column 1, line 24 - line 37; claim 1; figures 1,2 *	1-6	
X	GB-A-1 425 028 (METAL BOX LIMITED) * page 1, line 80 - page 2, line 11; claim 1 *	1-6	
A	EP-A-0 176 403 (SOTIMAG) * page 4, line 5 - line 35; claim 1; figures 1,2 *	1-6	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

B41M
B42D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	21 SEPTEMBER 1992	BACON A.J.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

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