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**Datasheet for the decision
of 18 October 2006**

Case Number: T 0513/05 - 3.4.03

Application Number: 94101987.9

Publication Number: 0610917

IPC: G07D 7/00

Language of the proceedings: EN

Title of invention:

Anti-counterfeit security device for documents in general

Patentee:

MANTEGAZZA ANTONIO ARTI GRAFICHE S.r.l.

Opponent:

GIESECKE & DEVRIENT GmbH

Headword:

-

Relevant legal provisions:

EPC Art. 56

EPC R. 57a

Keyword:

-

Decisions cited:

T 1149/97

Catchword:

-



Case Number: T 0513/05 - 3.4.03

D E C I S I O N
of the Technical Board of Appeal 3.4.03
of 18 October 2006

Appellant: MANTEGAZZA ANTONIO ARTI GRAFICHE S.r.l.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 17 February 2005
revoking European patent No. 0610917 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chair: R. G. O'Connell
Members: G. Eliasson
T. Bokor

Summary of Facts and Submissions

I. This is an appeal against the revocation of European patent No. 0 610 917 on the ground of lack of an inventive step.

II. In the opposition procedure, the following prior art documents, among others, were cited:

D1: WO 92 11 142 A;

D2: EP 0 310 707 A; and

E2: EP 0 498 186 A.

III. At oral proceedings before the board, the parties made the following requests:

The appellant proprietor requests that the decision under appeal be set aside and that the patent be maintained in the following version:

Description:

columns 1, 2 of the patent as granted,
columns 3 to 5 filed during oral proceedings,

Claims:

1 to 3 filed during oral proceedings

Drawings:

Figures 1 and 2 filed during oral proceedings.

IV. Claim 1 under consideration has the same wording as claim 1 as granted and reads as follows (labelling introduced by the board):

- "1.(a) An anti-counterfeit security device for documents in general,
- (b) comprising a tape-like supporting element supporting, on at least one of its surfaces:
- (c) a first security element constituted by regions arranged in succession to generate a coded signal; and
- (d) a second security element visually detectable in transmitted light;
- characterized in that
- (e) said regions of the first security element are made of an ink containing iron dust which can be statically detected by magnetoresistors,
- (f) said coded signal being decoded by said magnetoresistors,
- and in that
- (gh) said second security element is arranged on at least some of said regions and is constituted by portions of at least some of said regions which are free from said ink containing iron dust that can be statically detected by said magnetoresistors,
- (i) in order to form graphics markings that can be perceived optically in transmitted light."

V. The arguments of the appellant proprietor can be summarized as follows:

- (a) The patent solved the problem of providing a security device having magnetic regions which can be detected using static detection means. The selection of ink containing iron dust for the magnetic regions was made for the reason that they can be detected statically by magnetoresistors.

None of the cited prior art documents suggested magnetoresistors for static detection of magnetic regions.

- (b) Document D1 disclosed in Figure 2 a sequence of magnetic regions which did not form any coding. Furthermore, since the possibility of using resistance measurement was emphasised in document D1, the skilled person would never contemplate omitting the metal layer in the device of document D1.
- (c) Document E2 taught that iron dust was not suitable for generation of coded signals (see column 2, lines 25 to 50). Therefore, a skilled person would not use the teaching of document E2 on the device of documents D1.

VI. The arguments of the respondent opponent can be summarized as follows:

- (a) The features in claim 1 referring to detection of the magnetic regions using magnetoresistors did not have any limiting effect on claim 1, since firstly, the presence of iron powder could be detected by other means as well and secondly, any material having magnetic properties could be detected by magnetoresistors.
- (b) The subject matter of claim 1 differed from the security device of document D1, Figure 2, in that (i) the magnetic regions were formed of ink containing iron dust; and (ii) the graphic elements were formed in the magnetic regions.

- (c) The above features were not functionally interrelated and could therefore be treated separately when assessing inventive step. The technical problems with respect to document D1 related to (I) selecting a suitable material for forming the magnetic regions as document D1 did not specify the material; and (II) incorporating negative text in the security element while simplifying the process.
- (d) Document E2 stated on column 2, lines 25 to 50 several advantages of using ink containing iron powder for the magnetic regions in anti-counterfeit security elements. The fact that iron has almost no remanence was irrelevant for the use in a security element of the type known from document D1. Therefore, the skilled person would use the teaching of document E2 to form the magnetic regions in the security element of document D1 with ink containing iron dust.
- (e) In order to simplify the process of producing the security element of document D1 (problem (II)), the skilled person would omit the metal layer and form the graphic symbols in the magnetic regions using negative printing techniques, as document D1 on page 12, line 31 to page 13, line 5 suggested the latter.
- (f) Alternatively, using document D2 as starting point, the subject matter of claim 1 did not involve an inventive step, since the skilled person would use the teaching from document D1 to introduce

negative print which would be most suitably placed in the magnetic regions of the device of document D2. The use of ink containing iron dust for the magnetic regions would be obvious from document E2 as document D2 did not specify the material of the magnetic regions.

Reasons for the Decision

1. The appeal is admissible.
2. *Amendments*
 - 2.1 With respect to the patent as granted, the embodiment of Figure 3 has been deleted with the consequence that dependent claims 2 and 5 to 7 and paragraphs 0039 to 0042 as well as the reference to Figure 3 in paragraph 0028 of the patent as granted have been deleted. Reference numeral "30" in claim 1 as granted referring to Figure 3 has likewise been removed.
 - 2.2 In the decision under appeal, the term "said second security element is arranged on at least some of said regions" in feature (gh) of claim 1 as granted was construed to cover the case where the graphic symbols constituting the second security element were not formed within any of the regions made of ink containing iron dust. Such an interpretation, which went beyond a strictly literal interpretation of claim 1, could arguably be justified by the fact that the embodiment of Figure 3 and the corresponding dependent claims 2 and 5 to 7 as granted related to a security device where all the graphic symbols were formed in a region

made of "normal ink" (see patent specification, Figure 3 and paragraph 0042).

- 2.3 The amendments have thus the effect that there is no longer any justification for construing the term "said second security element is arranged on at least some of said regions" in feature (gh) to encompass the case where the second security element in form of graphic symbols is not arranged on at least one region made of ink containing iron dust. As a result, the scope of protection conferred by claim 1 is narrower than that construed by the examining division. It is worthwhile to note that the present case represents a valid converse of T 1149/97 ((OJ EPC 2000, 259), reasons 6.1.12) in which reinstatement of previously deleted features of the description was found to contravene Article 123(3) EPC.

The above amendments thus have the effect of narrowing the scope of claim 1 to seek to overcome the objection of lack of inventive step raised in the decision under appeal. The amendments therefore are considered to be "occasioned by grounds of opposition" as required by Rule 57a EPC.

The amendments therefore meet the requirements of Article 123(2) and (3) EPC and Rule 57a EPC.

3. *Novelty and inventive step*

- 3.1 In the decision under appeal, the opposition division was of the opinion that the features "iron dust, which can be statically detected by magneto resistors" (feature (e)) and "said coded signal being decoded by

magneto resistors" (feature (f)) in claim 1 as granted should be considered functional features without a limiting effect on the subject matter of claim 1, since ink containing iron dust inherently had the property of being detectable statically by magneto resistors.

3.1.1 Feature (f) specifies an activity (decoding by magneto resistors) whereas claim 1 is directed to a device. The board agrees with the respondent opponent that the above-mentioned features refer to the use of the device of claim 1, and therefore, these features can only be seen as limiting to the extent that the device has to be suitable for that use (see "Case Law of the Boards of Appeal, 4th Edition 2001", Chapter I.C.5.3.3). In the present case this means that claim 1 requires the first security element of the claimed device to be susceptible of detection by magnetoresistors. The purpose of having magnetic regions in an anti-counterfeit security element is to use the detection of these magnetic regions as a means of authenticating the document on which the security element is placed. Consequently, such magnetic regions must be susceptible of being detected. The appellant proprietor could also not provide any convincing reasons why magnetoresistors could not be used for detecting the magnetic regions of the prior art security elements.

It follows from the above that the references to detection by magnetoresistors in claim 1 (features (e) and (f)) will not be considered a limiting feature with respect to prior art security elements having magnetic regions.

3.2 Document D1 discloses an anti-counterfeit security element for documents which can be checked in at least three different ways: visually through markings on the security element which are visible in transmitted light; by measurement of electrical conductivity of the security element; and by measurement of magnetic properties of magnetic regions in the security element (see page 4, lines 1 to 11). Several different examples of the security element are disclosed in document D1:

(A) In a first example, the security element comprises a transparent foil 10 on which alternating metallic regions 3 and magnetic regions 4 are formed (see page 7, lines 1 to 24; figure 2). Graphic markings 5 which can be perceived in transmitted light are formed by selectively removing portions of the metal layer 3. The magnetic regions are made of ink containing a magnetic material. The device is formed by blanket depositing a metal layer 3 over a supporting element 1, selectively removing portions of the metal layer 3 to form graphical markings 5, and depositing the magnetic regions in regions free from graphical markings. Alternatively, the magnetic regions 4 can be formed as continuous strips along the edges of the filament spaced away from the graphical markings (see Figure 3).

(B) In a further example, the magnetic region 4 and a metallic layer may be sandwiched between the tape-like supporting element 10 and a metallic layer 3 (see Figures 4 to 8; page 8, line 4 to page 9, line 13). Both the magnetic region 4 and the metallic layer 3 are blanket deposited over the

supporting element 10 and the graphical markings 5 are formed by selectively removing portions of the magnetic region 4 and the metallic layer 3.

(C) Finally, it is indicated in document D1 that a single layer made of electrically conductive and magnetic ink could be printed on the supporting element where the graphic symbols are formed in the form of negative print. As a further variation, a transparent conductive layer on the supporting element could be blanket deposited before the layer of magnetic ink is printed (see page 12, line 31 to page 13, line 17).

3.2.1 Claim 1 specifies that the magnetic regions "generate a coded signal". Although document D1 does not explicitly mention a "coded signal", this term is very broad. The board therefore agrees with the respondent opponent that the successive arrangement of magnetic regions in embodiment (A) of document D1 should be considered as generating a coded signal. Consequently, the device of claim 1 differs from that of document D1 in that:

- (i) the magnetic regions are formed of ink containing iron dust, whereas document D1 does not disclose the composition of the magnetic ink; and
- (ii) document D1 does not disclose the combination of features (c) and (gh) of claim 1: In example (A), the magnetic regions 4 are arranged in succession (feature (c)) but the graphic markings 5 are not formed on the magnetic regions (feature (gh)). In example (B), the graphic markings 5 are formed on the magnetic region 4 (feature (gh)), but the

magnetic region 4 is here in form of a single layer extending across the entire surface of the supporting element (D1, page 8, lines 20 to 23). In example (C), the magnetic region 4 must also be in form of a single layer covering the entire surface of the supporting element, since otherwise, the electrical conductivity along the security element could not be carried out.

3.2.2 In the decision under appeal, the opposition division was of the opinion that example (A) of document D1 disclosed both features (c) and (gh). This assessment was based on an interpretation of claim 1 in the light of the embodiment of Figure 3 of the patent as granted (see item 2.2 above). As stated under item 2.3 above, as any disclosure relating to the embodiment of figure 3 has been removed, there is no longer any justification for construing feature (gh) to encompass the case where the second security element in form of graphic symbols is not arranged on at least one region made of ink containing iron dust.

3.3 Document D2 discloses magnetic coding in a security element having magnetic regions 5, 10 which are spaced from each other (see abstract, and Figures). The spacing and/or thickness of the magnetic regions are varied to form a code (see column 2, lines 36 to 39; column 5, lines 47 to 52; column 6, lines 43 to 53). The magnetic regions are covered with a layer of covering paint 6 to conceal the magnetic coding (column 4, lines 35 to 42).

3.3.1 The device of claim 1 differs from that of document D2 in that (i) the magnetic regions are made of ink

containing iron dust, whereas document D2 does not specify the material of the magnetic regions; and (iii) no graphic markings for visual detection in transmitted light are formed in the device of document D2.

3.4 Document E2 discloses a security element having magnetic regions 3 made of ink containing iron dust in combination with a lamination of a metal layer 4 on a plastic foil 2 (see column 2, lines 25 to 50; column 3, lines 36 to 45; column 4, lines 14 to 17 and 23 to 24). Similar to the device of document D1, the security element comprises a transparent supporting element 1 on which a metal layer 4 is blanket deposited. Graphic markings which can be perceived in transmitted light are formed by selectively removing portions of the metal layer 4. Magnetic regions 3 made of ink containing iron dust are formed as continuous strips along the edges of the filament (see Figure 3). Alternatively, it is possible to blanket deposit a very thin layer of ink containing iron dust over the metal layer including the graphic markings, where the thin magnetic ink layer is sufficiently transparent for the graphic markings to be perceived in transmitted light (column 4, lines 40 to 47).

3.4.1 The device of claim 1 differs from that of document E2 in that (iv) the magnetic regions are arranged in succession (feature (c)), whereas document E2 either discloses two magnetic regions formed in parallel along the edges of the security element or a blanket deposited single magnetic layer; and that (ii) the graphic markings (said second security element) is arranged on at least some of the magnetic regions and is constituted by portions of at least some of the

magnetic regions which are free from the ink containing iron dust. In document E2, the graphic markings are made in the metal layer and the magnetic regions are either formed at the edges of the device spaced away from the graphic markings (column 4, lines 35 to 39) or the magnetic region is formed over the entire security device, including the graphic markings (column 4, lines 40 to 47).

3.5 Thus, the subject matter of claim 1 is new within the meaning of Article 54 EPC.

3.6 The embodiment of Figure 2 in document D1 is considered closest prior art. As mentioned above, the subject matter of claim 1 differs from that of document D1, Figure 2 in that (i) the magnetic regions are formed of ink containing iron dust, whereas document D1 does not disclose the composition of the magnetic ink; and (ii) the graphic markings are formed on the magnetic regions, whereas in document D1 the graphic markings 5 are formed on the metal layer 3.

Having regard to document D1 the technical problem addressed by the claimed invention relates to (I) finding a suitable material for the magnetic regions as document D1 does not disclose any material; and (II) simplifying the manufacturing of an anti-counterfeit security device having magnetic and optical security elements.

3.7 The board agrees with the respondent opponent that the above technical problems are mutually independent thus allowing them to be treated separately in the

assessment of inventive step (see "Case Law, 4th Edition", Chapter I.D.6.4.2).

3.8 The board is of the opinion that the skilled person having regard to the teaching of document E2 would consider ink containing iron dust as an obvious alternative for solving problem (I), as the latter document gives several good reasons for choosing iron dust as the magnetic material, such as having a light greyish colour and not being easily detected by simple means (see E2, column 2, lines 25 to 50). As to the solution of the second problem (II), however, the skilled person starting from the device of document D1, Figure 2 would not be able to arrive at the claimed subject matter without employing inventive skills:

3.8.1 The graphic markings in the device of document D1 are formed in the metallic layer and the magnetic layer is formed on the metallic layer after the graphic markings are formed. This configuration prevents the formation of the graphic markings in the magnetic layer. Although document D1 discloses embodiments where the magnetic layer is formed below the metallic layer and where the graphic markings are formed by removing portions of the metallic and magnetic layers, this embodiment has a continuous magnetic layer (see item 3.2 (B) above). Although the arrangement in succession of magnetic regions in Figure 2 can be considered to "generate a coded signal", as specified in claim 1 (see item 3.2.1 above), the purpose of this arrangement was not to enable the generation of a magnetic code, but rather to allow magnetic regions and regions with graphic markings to be present on the same security element (cf. page 7, lines 19 to 22).

- 3.8.2 Furthermore, the security elements disclosed in document D1 were designed with the requirement that electrical conduction should be a detectable property of the security element, a property which presupposes the presence of a continuous, electrically conductive layer, such as the metal layer 3, on the transparent foil. Therefore, the alternative embodiment (C) of document D1 discussed above have to be understood in the context of having the magnetic region in form of a single, continuous layer on the entire surface of the security element (see item 3.2 (C) above).
- 3.9 Although document D2 discloses a security element having a plurality of magnetic regions forming a code, a combination of the teaching of document D2 with that of document D1 would however not result in a security element having the graphic marking formed in the magnetic regions: Document D2 teaches that the magnetic regions 5 should be covered by an opaque layer of ink 6 in order to conceal the arrangement of the magnetic regions (column 5, lines 35 to 42). Since the ink layer 6 has to be formed after the magnetic regions are formed, the graphic markings could only be introduced in form of negative print in regions of the ink layer 6 where no magnetic regions 5 are formed. Otherwise, the magnetic regions 5 would prevent light transmission through the graphic markings.
- 3.10 The respondent opponent argued that document D2 could also be considered as closest prior art in the assessment of inventive step (see item VI(f) above). Having regard to the differences referred to in item 3.3.1 above between the subject matter of claim 1 and

the device of document D2, the technical problems relate to (I) finding a suitable material for the magnetic regions as document D2 does not disclose any material; and (III) introducing an additional optical security element in addition to the magnetic security element.

As discussed in connection with document D1 above, the skilled person would consider the teaching of document E2 for the solution of problem I. As to the solution of problem III, both documents D1 and E2 disclose graphic markings which can be perceived optically in transmitted light. For the same reasons as given under item 3.9 above, however, the skilled person applying the teaching of either document D1 or E2 to the device of document D2 would not arrive at a security device where graphic markings ("second security element") in form of negative print would be formed on at least one of the magnetic regions ("said regions of the first security element"). The graphic markings could only be introduced in form of negative print in regions 11 of the ink layer 6 where no magnetic regions 5 are formed in order to allow the graphic markings to be perceived in transmitted light (see D2, Figures 3 to 5).

- 3.11 For the above reasons, in the board's judgement, the subject matter of claim 1 is to be considered as involving an inventive step within the meaning of Article 56 EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance with the order to maintain the patent in the following version:

Description:

columns 1, 2 of the patent as granted,
columns 3 to 5 filed during oral proceedings,

Claims:

1 to 3 filed during oral proceedings

Drawings:

Figures 1 and 2 filed during oral proceedings.

Registrar

Chair

S. Sánchez Chiquero

R. G. O'Connell