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**Datasheet for the decision
of 9 January 2015**

Case Number: T 2537/11 - 3.2.05

Application Number: 05813920.5

Publication Number: 1819526

IPC: B42D15/00

Language of the proceedings: EN

Title of invention:

Improved hologram

Patent Proprietor:

De La Rue International Limited

Opponent:

Giesecke & Devrient GmbH

Relevant legal provisions:

EPC 1973 Art. 54, 56, 100(c)

Keyword:

Novelty - (yes)
Inventive step - (yes)
Grounds for opposition -
fresh ground for opposition (not admitted)



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Case Number: T 2537/11 - 3.2.05

D E C I S I O N
of Technical Board of Appeal 3.2.05
of 9 January 2015

Appellant II:
(Patent Proprietor)

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Decision under appeal:

**Interlocutory decision of the Opposition
Division of the European Patent Office posted on
7 October 2011 concerning maintenance of the
European Patent No. 1819526 in amended form.**

Composition of the Board:

Chairman M. Poock
Members: S. Bridge
G. Weiss

Summary of Facts and Submissions

- I. The appeals are directed against the interlocutory decision of the opposition division proposing to maintain European patent No. 1 819 526 in amended form.

An opposition had been filed against the patent as a whole based on Article 100(a) EPC (lack of novelty, Article 54 EPC 1973, and lack of inventive step, Article 56 EPC 1973).

- II. Oral proceedings were held before the board of appeal on 9 January 2015.

- III. Appellant I (opponent) requested that the decision under appeal be set aside and that the European patent be revoked.

Appellant II (patent proprietor) requested that the decision under appeal be set aside and that the patent in suit be maintained on the basis of the patent as granted (main request) or on the basis of the respective sets of claims filed as auxiliary requests 1 to 4 with letter dated 28 June 2012.

- IV. Claim 1 as granted reads as follows:

"A security device comprising first and second holographic or diffraction effect generating structures recorded in respective sets of substantially non-overlapping regions of a record medium, the regions of one set being interleaved with regions of the other set, whereby both interleaved line structures are substantially non-visible to the unaided eye,

whereby the security device generates two or more holographic images or diffractive images which to the naked eye overlap but which are viewed from separate viewing directions around the device and normally seen by tilting the device, and whereby each holographic image or diffraction effect in a viewing direction is generated in whole or part by the holographic or diffraction effect generating structure associated with a respective set of interleaved lines, **characterized in that** at least one of the holographic or diffraction effect generating structures includes one or more holographically or lithographically recorded continuous boundary lines, wherein each boundary line has a line width below 100µm, and extends at least partly along a boundary of the holographic image or diffraction effect generating structure."

V. The following document is referred to in the present decision:

E1: WO-A-99/59036.

VI. The arguments of appellant I (opponent) in the written and oral proceedings can be summarised as follows:

Though broad, the wording of claim 1 is clear and thus does not require interpretation in the light of the description. In particular, claim 1 does not make any statements about an overlap of the boundary line with the holographic or diffraction effect generating structures of the other image.

Document E1 discloses a boundary line around the letter A in Figure 1(C) and this boundary line should be visible. The subject-matter of claim 1 merely specifies that the width of the boundary line must be below

100 μ m. This does not mean that the boundary line is necessarily invisible, because in high contrast image the limiting resolution of the eye is around 20 μ m (document E1, page 6, lines 5 to 8). Thus, the subject-matter of claim 1 is not new.

The boundary line around the letter A in Figure 1(C) also extends along the base of the letter A and at least this part of it is thus both continuous and parallel to the interleaved structure. In order to avoid increased manufacturing costs, the interleaved structure will be kept simple. For this reason, it is implicit in document E1 that this boundary line is at most as wide as any element of the interleaved structure, and, because the interleaved structure is not visible, it is also implicit in document E1 that this boundary line has a line width below 100 μ m. Thus, the subject-matter of claim 1 is not new.

A boundary line cutting across several elements of the interleaved structure in an area where there are no holographic or diffraction effect generating structures of the other image is shown, for example, in the bottom left hand corner of the letter A in Figure 1(A) of document E1. According to Figure 1(A), such a boundary line is continuous because it is not interrupted by interleaved holographic or diffraction effect structures of any other image. Thus, the subject-matter of claim 1 is not new.

Document E1 constitutes the closest prior art. If the board does not share the above view on novelty, the subject-matter of claim 1 only differs therefrom in that the width of the boundary line is below 100 μ m. The effect of this difference is that the line is not visible. As the means for making a line not visible are

known as such (e. g. document E1, page 6, line 2 to 8), the skilled person will arrive immediately at the subject-matter of claim 1 without having to perform an inventive step.

The fresh ground for opposition under Article 100(c) EPC 1973 should be introduced into the appeal proceedings with respect to the patent as granted, concerning the use of the term "*boundary*".

VII. The arguments of appellant II (patent proprietor) in the written and oral proceedings can be summarised as follows:

The claim must be understood in the context of the patent as a whole. Thus, the boundary line constitutes an addition to the interleaved structure containing the holographic or diffraction effect generating structures of the image whose blurring with loss of edge definition is to be counteracted by the addition of bespoke boundary line.

The boundary around the letter A shown in Figure 1(C) does not constitute such a boundary line. Furthermore, the boundary line is not continuous, because it is interrupted by the interleaved holographic structures of the second image, namely the letter B (Figures 1(A) and 1(D)). Therefore, the subject-matter of claim 1 as granted is new.

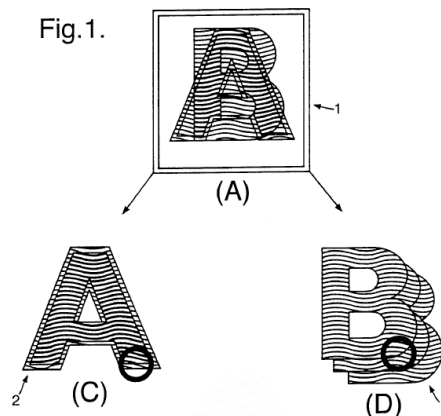
Although the means for making a line invisible may be known as such, there is no motivation for a skilled person to go against the purpose of document E1 which is to provide a visible colour switching effect. Therefore, the subject-matter of claim 1 as granted involves an inventive step.

Appellant II does not give its consent regarding the introduction of the fresh ground for opposition under Article 100(c) EPC 1973.

Reasons for the Decision

1. *Claim 1 as granted - Novelty (Article 54 EPC 1973)*

Document E1 is cited in terms of its patent family member EP 1 078 302 in the patent in suit (paragraphs [0006], [0007], [0021] and [0022]). It was not contested that document E1 discloses all the features of the preamble of claim 1 as granted.



Document E1 discloses "a two channel holographic device 1 with two image channels showing overlapping switching graphics holograms A and B (Figure 1A), each channel being recorded as a set of very fine lines 2,3 (shown illustratively in Figures 1C and 1D as these line structures would normally be beneath the normal visual resolution and thus normally not visible) so that each area of the image only contains one diffractive structure with, for example, the images switching on left to right tilting" (page 17, lines 28 to 36).

Document E1 does not discuss the boundary line apparent around the letter A in Figure 1(C) and therefore does

not directly and unambiguously disclose that the width of this boundary line should be below 100µm.

The first argument advanced on behalf of appellant I, that claim 1 of the patent in suit as granted does not necessarily require the boundary line to be invisible, compares the claimed subject-matter to the prior art while starting from the claimed subject-matter - instead of starting from the prior art - and therefore cannot answer the question of novelty of the claimed subject-matter.

With respect to the second argument advanced on behalf of appellant I, the relationship of the boundary line apparent around the letter A in Figure 1(C) to the elements of the interleaved structure is not discussed in document E1. Thus, there is no basis in document E1, that this boundary line is at most as wide as an element of the interleaved structure. Furthermore, as brought to the parties' attention during the oral proceedings, a hologram differs from a photograph in that the holographic structures responsible for generating the letter A as shown in Figure 1(C) will be distributed over the whole area available for holographically recording this letter A. In particular, this also applies to the boundary around the letter A. The holographic structures rendering the boundary line apparent around the letter A in Figure 1(C) will thus not be limited to those element of the interleaved structure which appear underneath it in Figure 1(C). The skilled person will also consider Figure 1 only as an illustration for communicating the ideas of the invention of document E1 and not as portraying the physical locality of where individual features of the resulting holographic image are recorded in terms of holographic structures. According to document E1,

Figure 1 only represents a two channel holographic device 1 such that these holographic structures generating the letter A are themselves masked into an interleaved structure required for accommodating the second holographic image (the letter B in Figures 1(A) and 1(D)) in the intervening spaces of this interleaved structure (page 17, lines 28 to 36).

The third argument advanced on behalf of appellant I, concerns a boundary line cutting across several elements of the interleaved structure in an area where there are no holographic or diffraction effect generating structures of the other image. Appellant I considers that such a boundary line is shown in the bottom left hand corner of the letter A in Figure 1(A) where there is no overlap with the letter B which constitutes the other image of the two channel hologram 1. However, other than stating that Figure 1 represents a two channel holographic device 1 as well as setting out the principle of interleaving the holographic structures generating the respective images, document E1 remains silent as to the particular arrangement, if any, arising in the bottom left hand corner of the letter A in Figure 1(A). As already argued above, Figure 1 is merely for illustrative purposes and thus cannot be on its own accepted as a direct and unambiguous disclosure of the particular disposition of the holographic or diffraction effect generating structures alleged on behalf of appellant I.

The subject-matter of claim 1 as granted is therefore new (Article 54 EPC 1973).

2. Claim 1 as granted - Inventive step - Article 56 EPC 1973

Document E1 constitutes the closest prior art from which the subject-matter of claim 1 as granted is distinguished in that "*each boundary line has a line width below 100µm*".

The technical effect of lines with a width below 100µm is that they are indiscernible or barely discernible to the unaided eye (paragraph [0015] of the patent as published). This technical effect is also known as such from document E1 (page 5, line 33 to page 6, line 8).

However, the purpose of the invention disclosed in document E1 is to enhance the visibility and efficiency of a security hologram (page 4, lines 7 to 12), i. e. to be visible and provide the optical effect of colour switches (page 17, line 28 to page 18, line 21). If the boundary apparent around the letter A in Figure 1(C) were not visible, it could not provide the required optical effect of colour switches (page 17, line 28 to page 18, line 21).

In consequence, although the means for rendering a line indiscernible or barely discernible to the unaided eye are known as such, applying these to the boundary line apparent in Figure 1(C) of document E1 goes against the teaching of that document. Thus, as also advanced on behalf of appellant II, the skilled person has no motivation to do so, so that the argument of appellant I is based on hindsight.

In consequence, the subject-matter of claim 1 as granted involves an inventive step and meets the requirement of Article 56 EPC 1973.

3. Fresh ground for opposition

Appellant I (opponent) requested the fresh ground for opposition under Article 100(c) EPC 1973 be introduced into the appeal proceedings with respect to the patent as granted.

Since appellant II (patent proprietor) did not give its consent, the new ground of opposition under Article 100(c) EPC 1973 cannot be admitted into the proceedings in accordance with G 10/91 (OJ EPO 1993, 420, point 18 of the Reasons).

Order

For these reasons it is decided that:

1. The appeal of appellant I (opponent) is dismissed.
2. The decision under appeal is set aside.
3. The patent is maintained as granted.

The Registrar:

The Chairman:



D. Meyfarth

M. Poock

Decision electronically authenticated