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**Datasheet for the decision  
of 31 May 2022**

**Case Number:** T 0910/18 - 3.4.03

**Application Number:** 01976162.6

**Publication Number:** 1316073

**IPC:** G07D7/00

**Language of the proceedings:** EN

**Title of invention:**

A CERTIFIED PAPER DISCRIMINATING APPARATUS

**Applicant:**

Bundesdruckerei GmbH

**Headword:**

**Relevant legal provisions:**

EPC Art. 52(1), 123(2)

EPC 1973 Art. 56, 63(1)

**Keyword:**

Inventive step - main request (yes)

Patent granted after expiration of the 20 year term

**Decisions cited:**

T 0036/19

**Catchword:**



**Beschwerdekammern**  
**Boards of Appeal**  
**Chambres de recours**

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Case Number: T 0910/18 - 3.4.03

**D E C I S I O N**  
**of Technical Board of Appeal 3.4.03**  
**of 31 May 2022**

**Appellant:** Bundesdruckerei GmbH  
(Applicant) Kommandantenstraße 18  
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**Representative:** Maser, Jochen  
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**Decision under appeal:** **Decision of the Examining Division of the  
European Patent Office posted on 24 October 2017  
refusing European patent application No.  
01976162.6 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chair** T. Häusser  
**Members:** M. Papastefanou  
E. Mille

## **Summary of Facts and Submissions**

- I. The appeal is against the decision of the examining division refusing the European patent application No. 01 976 162 (published as WO 02/19278 A2).

In the decision under appeal, the examining division exercising its discretion under Rule 137(3) EPC did not admit the then Main Request and Auxiliary Request of the appellant (then applicant) into the proceedings, holding that neither of the requests *prima facie* overcame the objection of lack of inventive step. In addition the Main Request was held to give rise to new objections under Article 123(2) EPC.

- II. Reference is made to the following documents, cited in the impugned decision:

D1: US 5,719,948

D2: DE 197 08 543 A1

- III. The appellant (applicant) requested initially that the decision under appeal be set aside and that a patent be granted on the basis of the Main Request or one of 1st to 3rd Auxiliary Requests, all filed with the statement of the grounds of appeal.

In its preliminary opinion issued in preparation to oral proceedings the board raised objections under Article 84 EPC 1973 against the Main Request.

With the letter of 9 March 2022 the appellant submitted a new Main Request, so that the appellant's final requests are that the decision under appeal be set aside and that a patent be granted on the basis of the

Main Request filed with the letter dated 9 March 2022 or one of the 1st to 3rd Auxiliary Requests filed with the statement of the grounds of appeal.

The Main Request consists of the following application documents:

- **Claims:** no. 1 to 8 filed with letter dated 9 March 2022;
- **Description:** pages 1 to 3 filed with letter dated 9 March 2022, pages 5 to 40 as published;
- **Drawings:** sheets 1/15 to 15/15 as published.

(There is no page 4 in the description).

IV. Claim 1 of the Main Request is worded as follows:

*A method for discriminating the genuineness of a certified paper having a printed protuberant portion (M3) having at least an usual ink portion (M32) and an electroluminescent ink portion (M31) that emits an electroluminescent light being exposed to an alternating current electromagnetic field and reflects a light being illuminated by a light having a specified wavelength, comprising the steps of:*

- *detecting a transport of the certified paper in the alternating electromagnetic field by a certified paper detecting means and operating a light detecting means, when a certified paper detecting means detects the certified paper,*
- *exposing at least a portion of the certified paper to a light emitting element emitting the specified wavelength,*
- *detecting a first light emitted from the electroluminescent ink portion (M31) at a light collecting spot with a first light detecting element configured to produce a first output value*

*waveform corresponding to the intensity of electroluminescent light detected from the electroluminescent ink,*

- *detecting a reflected light from the usual ink portion (M32) at a light collecting spot with a second light detecting element configured to produce a second output value waveform corresponding to the intensity of light detected from the usual ink portion (M32)*
- *discriminating the genuineness of the certified paper based on the first and second output value waveform of the first and second detecting elements,*
- *wherein a LED (54) as the light emitting element is turned on, when the detecting means detect the certified paper, and driving an alternating voltage applying means by an alternating voltage control means to produce an alternating-current electromagnetic field only when the second light detecting element detects the reflected light from the usual ink portion (M32).*

V. Independent claim 5 of the Main request has the following wording:

*A certified paper discriminating apparatus for discriminating the genuineness of a certified paper having a printed protuberant portion (M3) having at least an usual ink portion (M32) and an electroluminescent ink portion (M31) that emits an electroluminescent light being exposed to an alternating current electromagnetic field and reflects a light being illuminated by a light having a specified wavelength, comprising:*

- *a certified paper detecting means to detect the certified paper,*

- *a light detecting means, which is operated when the certified paper detecting means detects the certified paper,*
- *a light emitting element configured to emit the specified wavelength; a first light detecting element for detecting a first light from the electroluminescent ink portion (M31) at a light collecting spot in an environment of an alternating electric field and configured to produce a first output value waveform corresponding to the intensity of electroluminescent light detected from the electroluminescent ink;*
- *a second light detecting element for detecting a reflected light from the usual ink portion (M32) at the light collecting spot and configured to produce a second output value waveform corresponding to the intensity of the light detected from the usual ink portion (M32);*
- *an alternating voltage control means;*
- *an alternating voltage control means is adapted to drive the alternating voltage applying means only when the second light detecting means detects the reflected light from the usual ink portion (M32);*  
*and*
- *a discriminating element for discriminating the genuineness of the certified paper based on the first and second output value waveform of the first and second light detecting elements.*

VI. The appellant argued essentially that the claimed subject-matter of the Main Request did not extend beyond the application as filed and involved an inventive step.

## **Reasons for the Decision**

1. The claimed invention
  - 1.1 The claimed invention relates to a method and an apparatus for discriminating the genuineness of certified papers (e.g. banknotes, securities etc.). The certified papers have a printed protuberant portion (M3) having a first portion (M31) printed with electroluminescent ink which emits light when exposed to an alternating electromagnetic field. The protuberant portion has a second portion (M32) printed with usual (fluorescent) ink that reflects light when it is illuminated with light of a specific wavelength (see Figures 6 and 7A of the published application).
  - 1.2 In order to determine whether such a certified paper is genuine, an apparatus is used which, on the one hand, illuminates the paper with light of a specific wavelength and, on the other hand, generates an alternating electromagnetic field. The apparatus comprises also sensors for detecting the light reflected from the portion of the paper printed with the usual (fluorescent) ink and the light emitted from the portion printed with the electroluminescent ink. The determination of the genuineness is performed on the basis of the intensities of the detected lights.
  - 1.3 A problem in such a method/apparatus is that the certified paper has to be exposed to a high-voltage alternating electromagnetic field in order to cause the electroluminescent ink portion to emit light. Such an exposure can cause damage or deterioration of the certified paper.



- 1.4 The claimed invention proposes to limit the application of the alternating electromagnetic field to the time period needed for the detection of the emitted light. According to the claims, the apparatus applies the electromagnetic field only when light reflected from the usual (fluorescent) ink portion is detected at a specific light collecting spot.

*Main Request*

2. Amendments, Article 123(2) EPC

- 2.1 According to the application, the printed protuberant portion of the certified paper has two portions. One portion (M31) is printed with electroluminescent ink and emits light when exposed to an alternating-current electromagnetic field. The other portion (M32) reflects light when illuminated by a light having a specific wavelength.

This second portion (M32) is printed with an ink which is called in the application interchangeably "fluorescent ink" and "usual ink". For example, on pages 3, 4 and 32 of the description it is named "fluorescent ink" while on pages 5, 14 and 39 it is named "usual ink". In claim 1 as originally filed the term "fluorescent ink" is used, while claim 1 of the Main Request uses the term "usual ink".

The board takes the view that the skilled person would have no problems to distinguish the two ink portions (M31 and M32) and considers that the claim 1 of the Main Request does not extend beyond the application as filed in this respect.

2.2 The feature of claim 1 objected to by the examining division (see points 15 to 18 of the reasons of the decision under appeal) finds a basis in original claim 1, which defines that *the alternating voltage control means drives the alternating voltage applying means only when the light detecting means detects the light from the fluorescent ink.*

The passage in the first paragraph on page 15 contains indeed errors, as also the appellant explained in the statement of the grounds of appeal. The board, however, agrees with the appellant that, when the application is taken as a whole, the skilled reader would readily understand the mistakes in that passage and would not be led to the conclusion that it is the electroluminescent ink portion that reflects the light which triggers the application of the alternating electromagnetic field but the usual (fluorescent) ink portion (see also point 2 of the statement of the grounds of appeal).

2.3 The feature added in claim 1, whereby an *LED (54) as the light emitting element is turned on, when the detecting means detect the certified paper* finds basis on page 25, third and fourth paragraphs of the published application.

2.4 Dependent claims 2, 3 and 4 find a basis on page 11, first full paragraph to page 12, first full paragraph. The light splitting means of claim 2 are explicitly disclosed in the general part of the description on page 3.

2.5 The subject-matter of claims 5 to 8 corresponds to the subject-matter of claims 1 to 4 respectively, whereby the claims are directed to an apparatus instead of a

method. The same basis in the original application as for claims 1 to 4 also serves to support these claims.

2.6 The board is, thus, satisfied that the claims of the Main Request fulfil the requirements of Article 123(2) EPC.

3. Claims (Article 84 EPC 1973)

The board is satisfied that the objections raised in its communication pursuant Article 15(1) RPBA 2020 (see point 4) have been overcome by the amendments carried out:

- Claim 5 has been amended to define that (underlining by the board) "*an alternating voltage control means is adapted to drive the alternating voltage applying means only when the second light detecting means ...*". This overcomes the objections raised in relation to claim 5.
- In both claims 1 and 5 the second alternative of triggering the alternative electromagnetic current field has been deleted. The corresponding objections by the board have thus become moot.
- The description has been adapted to the claims and reflects the claimed inventions.

4. Inventive step (Article 56 EPC 1973)

4.1 In the decision under appeal, the examining division concluded that claim 1 of the then Main Request did not involve an inventive step in view of documents D2 and D1.

- 4.2 Document D2 describes a method and an apparatus for discriminating the genuineness of security documents using an alternating magnetic field. The security documents ("certified paper[s]" in the terminology of the claims) according to D2 comprise electroluminescent security features that emit visible light when placed in an alternating electromagnetic field (see, for example, the abstract). In addition, the security features can be further stimulated to emit light by being irradiated with a light source, e.g. a laser arrangement (see column 10, lines 33 to 39 and Figure 28).
- 4.2.1 In the board's view there are significant differences between the method of claim 1 and the one described in D2. As it can be seen in Figures 22 and 23, according to the method of D2 the discrimination of genuineness of the certified papers is carried out using an apparatus which is operated manually. A banknote 1 (certified paper) is inserted in the slot of the device, the user presses a switch 50 and the device applies an alternating electromagnetic field (see column 10, lines 2-14, "Schalter 50"; Figure 23, "PUSH"). The electroluminescent features of the document emit light that is visible to the user, who can then determine the genuineness of the tested document.
- 4.2.2 Compared to claim 1, therefore, there is no transport of the certified paper nor any detection of it upon insertion in the device. There are no first and second detecting elements configured to produce respective output values corresponding to the intensities of the detected electroluminescent and reflected light because in D2 it is the user who sees the emitted light and decides whether the document is genuine. There is no

discrimination by the apparatus of the genuineness of the certified paper based on these output values. Finally, there is no reflected light at all, since the document comprises only electroluminescent features which emit light when placed in an alternating electromagnetic field and/or irradiated with light.

- 4.2.3 The problem of limiting the exposure of the security document in the alternating-current electromagnetic field does not present itself in D2, since it is the user who triggers the application of the alternating-current electromagnetic field and can decide when and for how long it will be applied.
- 4.2.4 The board considers thus that D2 represents a rather remote starting point for the skilled person, who would have to carry out extensive modifications to its teaching in order to arrive at the claimed invention. The board takes the view that such modifications would change significantly the teaching of D2, for example transforming the described apparatus from a manually operated device to an automatically operated one. In the board's view, such modifications would go beyond what can be considered to be obvious for the skilled person.
- 4.2.5 Even if it were accepted - for the sake of the discussion - that the skilled person would have wished to automate the apparatus of D2 and would have added features for automatically transporting the certified papers within the apparatus, detecting the emitted light and determining the genuineness of the paper based on this detection, there is nothing in D2 or in the skilled person's common general knowledge that would incite the skilled person to implement the triggering of the activation of the alternating-current

electromagnetic field according to claim 1 of the Main Request.

The examining division considered that it would have been obvious for the skilled person to conceive the idea to limit the application of the alternating-current electromagnetic field because *"it [was] generally known to activate components in automated settings only when they are needed (e.g. energy savings, lifetime of components (MTBF))"* (see point 19.5 of the Reasons of the impugned decision).

The board notes that in the present case, the limitation of the application of the alternating-current electromagnetic field is related neither to energy savings nor to the lifetime of components of the apparatus. According to the board's view and taking into account the context of D2 described above, the skilled person would not have considered the idea to limit the application of the electromagnetic field without hindsight.

Finally, even if this conclusion of the examining division were to be accepted, there is nothing in the prior art or in the skilled person's common general knowledge that would provide an indication to the skilled person to apply the specific triggering of the application of the alternating-current electromagnetic field according to claim 1.

- 4.3 As to D1 the board notes that, contrary to the statement of the examining division, the passage in column 2, lines 16 to 26, does not disclose the placement of a certified paper in an alternating electromagnetic field. It merely makes a rather vague references to the state of the art (from the point of

view of D1) and mentions, among others, microwave irradiation of the security documents ("valuable articles" in D1) but there is no mention of an alternating-current electromagnetic field.

In D1 the determination of the genuineness of the certified documents is based on irradiation of fluorescent security features with UV light. There is no mention of any alternating-current electromagnetic field being used for authenticating certified papers nor any suggestion to the skilled person to apply one in the device of D1. The board cannot see how the teaching of D1 - alone or in combination with D2 - would help the skilled person to arrive at the claimed invention without exercising any inventive skill.

- 4.4 The board's conclusion is, therefore, that the subject-matter of claim 1 of the Main Request involves an inventive step within the meaning of Article 56 EPC 1973 as required by Article 52(1) EPC.

The same applies to independent claim 5, which defines a corresponding apparatus. Claims 2 to 4 and 6 to 8 depend on claims 1 and 5, respectively, and are also considered inventive.

5. The description has been adapted to the claims and documents D1 and D2 are mentioned therein.
6. The board's conclusion is, therefore, that application according to the Main Request and the invention to which it relates meet the requirements of the EPC (1973) and a European patent is to be granted according to Article 97(1) EPC. It is therefore not necessary to consider the auxiliary requests.

7. Procedural aspects

7.1 The application was filed in August 2001 and the 20 years of the patent term expired in August 2021 (Article 63(1) EPC 1973). The appellant is aware of this and has explicitly stated that it wanted to pursue the appeal.

7.2 Despite the expiration of the 20 year patent term, a patent can still be granted, as there may exist legal rights derived from it that would be affected by the grant of the patent, such as provisional protection rights conferred by Article 67 EPC upon the publication of the application.

7.3 In this respect the board also refers to decision T 36/19, which states (point 2 of the Reasons):

*The filing date of the present (divisional) application is 28 January 1999. As the term of a European patent amounts to 20 years from the date of filing (Article 63(1) EPC), a patent which may eventually be granted for the present application will have already expired. The Board nevertheless considers that the appellant still has a legitimate interest in the continuation of the grant and the appeal proceedings. Since a European patent application already confers rights after its publication pursuant to Article 67 EPC, a grant decision by the European Patent Office, even if taken only after expiry of the patent term, may become relevant for the determination of these rights.*



## Order

### For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the examining division with the order to grant a patent in the following version:
  - **Claims:** no. 1 to 8 filed with letter dated 9 March 2022;
  - **Description:** pages 1 to 3 filed with letter dated 9 March 2022, pages 5 to 40 as published;
  - **Drawings:** sheets 1/15 to 15/15 as published.

The Registrar:

The Chair:



S. Sánchez Chiquero

T. Häusser

Decision electronically authenticated