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**Datasheet for the decision
of 20 January 2010**

Case Number: T 1095/07 - 3.4.03

Application Number: 95904656.6

Publication Number: 0738408

IPC: G07D 7/00

Language of the proceedings: EN

Title of invention:

Detection of counterfeit objects, for instance counterfeit banknotes

Patentee:

MEI, Inc.

Opponent:

DE LA RUE INTERNATIONAL LIMITED

Headword:

-

Relevant legal provisions:

EPC Art. 123(2)

Relevant legal provisions (EPC 1973):

EPC Art. 56

Keyword:

"Added subject-matter (no)"

"Inventive step (no)"

Decisions cited:

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Catchword:

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Case Number: T 1095/07 - 3.4.03

D E C I S I O N
of the Technical Board of Appeal 3.4.03
of 20 January 2010

Appellant: DE LA RUE INTERNATIONAL LIMITED
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Respondent: MEI, Inc.
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
16 May 2007 concerning maintenance of European
patent No. 0738408 in amended form.

Composition of the Board:

Chairman: G. Eliasson
Members: R. Q. Bekkering
J. Van Moer

Summary of Facts and Submissions

- I. This is an appeal by the opponent as sole appellant against the maintenance of EP 738 408 in amended form.
- II. The appellant opponent requested the revocation of the patent in its entirety.
- III. No requests or other submissions were received from the respondent proprietor. Accordingly, it is understood that the respondent proprietor seeks dismissal of the appeal and maintenance of the patent in amended form as per the decision under appeal.
- IV. Claim 1 as maintained in amended form reads as follows:

"Apparatus for detecting counterfeit banknotes comprising a transparent plate (102), means (104) for illuminating a test object through said transparent plate (102) with ultraviolet light, a detector (105,106) for providing a first signal indicative of the reflectivity of the object within a first wavelength band and a second signal indicative of the fluorescence of the object within a second wavelength band different from said first wavelength band, and decision means (122,124,142,146,148,152; 734,736,738) responsive to said first signal, said second signal and a third signal indicative of a reference light level dependent on the intensity of the light emitted by the illuminating means but not dependent on the test object, said decision means being operable for deciding whether said object is a genuine banknote, and for providing an appropriate indication, wherein said third signal is

obtained from the light reflected from the plate when no test object is present".

Independent claims 27 and 29 are directed to a method of detecting counterfeit banknotes and to a method for detecting counterfeit documents, respectively.

V. Reference is made to the following documents:

D1: WO 90 07165 A

D3: US 4 296 326 A

D7: WO 91 03031 A

D8: EP 0 083 062 A

VI. The appellant opponent in substance provided the following arguments:

Claim 1 as amended and maintained by the opposition division contravened Article 123(2) EPC. The alleged basis for the amendment suggested by the opposition division was in claims 3, 5 and 6 of the application as originally filed. However, claim 5 was dependent on claim 4. Claim 4 required that the detector comprised first and second photocells positioned to receive light from the object and arranged to be sensitive to light only in the first wavelength band and light only in the second wavelength band. These features had been completely omitted from claim 1 as maintained. The patent specification itself provided no alternative structures in this connection and thus the amendment was contrary to Article 123(2) EPC.

Furthermore, claim 1 was not inventive in view of a combination of documents D1, D3 or D8, and D7. The opposition division suggested that it would be difficult and therefore not obvious to modify the D1 construction to incorporate the solution of D7. However, in fact, only minor changes would be needed in the construction of D1.

Reasons for the Decision

1. The appeal is admissible.

2. *Amendments*

Claim 1 as amended and maintained by the opposition division is in substance based on claims 1, 3, 5 and 6 as originally filed, as held in the decision under appeal.

The appellant opponent argued that since claim 5 as originally filed was dependent on original claim 4, the features of claim 4, according to which the detector comprises first and second photocells positioned to receive light from the object and arranged to be sensitive to light only in the first wavelength band and light only in the second wavelength band, should have been included in amended claim 1. These features, however, had been completely omitted from claim 1 as amended. As the patent specification itself provided no alternative structures in this connection, the amendment was believed to be contrary to Article 123(2) EPC.

It is however noted that according to the description as filed it would be possible to modify this embodiment so that only one sensor is used, eg by making the measurements in succession and switching filters (description as originally filed, page 19, lines 14 to 16).

Accordingly, in the board's judgement the omission of the features of original claim 4 is justified and claim 1 as maintained does not contain subject-matter which extends beyond the content of the application as filed (Article 123(2) EPC).

3. *Novelty, inventive step*

3.1 *Document D1*

Document D1 discloses an apparatus for detecting counterfeit objects such as banknotes representing the closest prior art (see page 1, first paragraph).

The apparatus of document D1 comprises an ultraviolet lamp (9) for illuminating the banknote (19) with ultraviolet light, photodiodes (11,12) for detecting (white) light emitted by the banknote and for detecting light emitted by a reference (13) made of phosphor coated glass providing a reference light level relating to the UV lamp, and logic circuitry (5) for comparing the detected light coming from the banknote with the detected reference light level, for deciding whether the banknote is a genuine banknote and for providing an appropriate indication (see figures 2a to 2c and

corresponding description; page 4, lines 13 to 18 and lines 32, 33; page 5, line 33 to page 6, line 19).

Accordingly, using the terminology of claim 1, D1 discloses an apparatus for detecting counterfeit banknotes comprising means for illuminating a test object with ultraviolet light, a detector for providing a signal indicative of the fluorescence of the object within a given wavelength band, and decision means responsive to said signal and a further signal indicative of a reference light level dependent on the intensity of the light emitted by the illuminating means but not dependent on the test object, said decision means being operable for deciding whether said object is a genuine banknote, and for providing an appropriate indication.

Not disclosed in D1 is the provision of still a further signal indicative of the reflectivity of the object within a wavelength band different from the wavelength band of the fluorescence.

Furthermore, D1 does not disclose the provision of a transparent plate, illuminating the test object through the transparent plate and the fact that the signal indicative of the reference light level is obtained from the light reflected from the plate when no test object is present.

Accordingly, the subject-matter of claim 1 is new over document D1, Novelty, in fact is not contested by the appellant.

3.2 The effect of the above first difference is a more accurate detection of counterfeit banknotes. The objective problem to be solved relative to D1 thus is to provide a more accurate detection of counterfeit banknotes.

The effect of the above second difference is an alternative, simple generation of the signal indicative of the reference light level. The objective problem to be solved relative to D1 in this respect is to generate the signal indicative of the reference light level in an alternative, simple way.

These two different objective problems are independent from each other and may thus be treated as separate partial problems for the purposes of assessing inventive step.

3.3 The solution to the first partial problem, the provision of a signal indicative to reflectivity in addition to the signal indicative to fluorescence, is rendered obvious by document D3, in which both a signal indicative of reflectivity and a signal indicative to fluorescence is used to reliably detect counterfeit banknotes (D3, column 4, lines 6 to 29). Hence, the board concurs with the opposition division on this point (see point 5.3 of the reasons in the decision under appeal).

3.4 The solution to the second partial problem is considered to be rendered obvious by document D7. In document D7 both the light source K and all detectors D1-D6 are positioned inside a housing (not shown in the drawings) which on its underside is provided with a

glass window G. The bill advancing track is situated below said glass window. The glass window G prevents dust from entering the sensor housing (page 8, last paragraph). Furthermore, in document D7 a correction method for the zero point, ie the reference light level of the lamp, is suggested in which when no paper bill is present under the sensor, the sensor is permitted to look toward a non-reflecting background. As an example this may be an empty space, or a black rubber roller of the type used for transporting the bills. The light received by the detectors in a phase without a bank note under the sensor, is therefore only the reflected light from the glass window at the bottom. Ordinary glass will reflect about 10% of the light coming from the lamp. The detectors see this light, and this is used as a reference for the measurements. It turns out that such a method results in extremely stable measurements, even when the glass window is a little dusty or dirty on the outside (paragraph bridging pages 10 and 11).

As far as the argument in the decision under appeal is concerned, that there is no hint in D1 to cover the aperture 55 by a glass plate or take out the reference 13, it is noted that this is irrelevant for inventive step as such a hint, or indeed any hint to modify the disclosed apparatus in accordance with the solution as claimed, can hardly be expected to be found in D1. Neither can the argument convince that the modifications to the apparatus of D1 would be so extensive to keep the skilled person from making them. The provision of a glass plate to cover the compartment 53 is simple and as such suggested in D7 as advantageous both for preventing dust from entering the

compartment and for providing the reference light level, as discussed above. In particular, reference 13 in D1 could be replaced by a glass plate, or indeed the separate compartment 49 could be dispensed with altogether, and the reference light level could be determined by measuring reflectivity, in addition to fluorescence, in compartment 53 covered by a glass plate, as would be readily apparent to the skilled person.

- 3.5 Accordingly, the subject-matter of claim 1, having regard to the state of the art, would be obvious to a person skilled in the art and thus lacks an inventive step in the sense of Article 56 EPC 1973.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

Registrar

Chair

S. Sánchez Chiquero

G. Eliasson