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**Datasheet for the decision  
of 6 June 2024**

**Case Number:** T 0139/20 - 3.4.03

**Application Number:** 14725518.6

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B42D25/29

**Language of the proceedings:** EN

**Title of invention:**

SECURITY DOCUMENTS AND METHODS OF MANUFACTURE

**Patent Proprietor:**

De La Rue International Limited

**Opponents:**

CCL Secure Pty Ltd  
Leonhard Kurz Stiftung & Co. KG

**Relevant legal provisions:**

EPC Art. 52(1), 56, 111(1)  
RPBA 2020 Art. 11, 13(1), 13(2)

**Keyword:**

Inventive step - claims 1 and 9 as granted - (no)  
Remittal to the department of first instance - (no)  
Amendment after summons - exceptional circumstances (no)

**Decisions cited:**

T 0607/17, T 1006/21



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Case Number: T 0139/20 - 3.4.03

**D E C I S I O N**  
**of Technical Board of Appeal 3.4.03**  
**of 6 June 2024**

**Appellant 1:** CCL Secure Pty Ltd  
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**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted on  
25 November 2019 rejecting the oppositions filed  
against European patent No. 2 996 886 pursuant  
to Article 101(2) EPC.**

**Composition of the Board:**

**Chairman**            T. Häusser  
**Members:**            M. Ley  
                              G. Decker

## **Summary of Facts and Submissions**

- I. The appeals of appellants 1 and 2 (opponents 1 and 2) are against the decision of the opposition division rejecting the oppositions against European patent EP 2 996 886 pursuant to Article 101(2) EPC.
- II. The oppositions were based on the grounds for opposition mentioned in Article 100(a), (b) and (c) EPC.
- III. In the impugned decision, the following documents were cited *inter alia*:
- D4 WO 92/16378  
D5 WO 2011/116425 A1  
D8 WO 2010/042999 A1  
D13 WO 2009/062229 A1
- IV. The opposition division held that none of the grounds for opposition prejudiced the maintenance of the patent. In particular, the subject-matter of claims 1 and 9 as granted involved an inventive step (Article 56 EPC) over document D13.
- V. Appellants 1 and 2 request that the decision be set aside and the the patent be revoked.
- VI. The respondent (patent proprietor) requests as a main request that the appeals be dismissed, i.e. that the patent be maintained as granted. Alternatively, it requests as a first auxiliary request that the decision under appeal be set aside and a patent be maintained on the basis of the claims according to the first auxiliary request filed as twelfth auxiliary request

with the reply to the statement of grounds of appeal. As a second auxiliary request, it requests that the case be remitted to the opposition division for further prosecution. As third to fifth auxiliary requests, it requests that the decision under appeal be set aside and a patent be maintained on the basis of the claims according to the third to fifth auxiliary requests filed as fifteenth to seventeenth auxiliary requests with the letter dated 13 February 2024.

VII. Claim 1 as granted has the following wording (feature labelling according to the parties' submissions):

**A** A plurality of security documents, each of the plurality of security documents comprising:

**B** a polymer substrate having first and second surfaces,

**C** at least one opacifying layer on the first and/or second surface of the substrate, and a plurality of laterally-spaced window regions, each window region being defined by a gap in at least one of the opacifying layer(s), at least one of the opacifying layers being present between the laterally-spaced window regions,

**D** each of the plurality of window regions containing a security device comprising at least an optically variable effect generating relief structure on the first or second surface of the substrate, each of the respective security devices exhibiting an optically variable effect of different appearance from one another,

**E** wherein the respective relief structures are formed in a layer of curable material applied to the surface of the substrate,

**F** and the respective relief structures on at least one surface of the substrate are in register with one another such that the relief structures have substantially the same position with respect to one another on each of the plurality of security documents.

Claim 9 as granted has the following wording (feature labelling according to the parties' submissions):

**A'** A method of manufacturing a security document, comprising:

**B'** providing a polymer substrate, and then, in any order:

**C'** (a) applying at least one opacifying layer to the first and/or second surface of the substrate, whereby a plurality of laterally-spaced window regions are defined by corresponding gaps in the at least one opacifying layer, at least one of the opacifying layers being present between the laterally-spaced window regions; and

**D'** (b) providing a security device in each window region by at least forming an optically variable effect generating relief structure on the first or second surface of the substrate, each of the respective security devices exhibiting an optically variable effect of different appearance from one another;

**E'** wherein in step (b) each optically variable effect generating relief structure is formed using a cast-cure process comprising:

(b1) applying a layer of curable material to the first or second surface of the substrate within each window region;

(b2) forming the respective relief structures in the surface of the curable material; and

(b3) curing the curable material such that the respective relief structures are fixed;

where steps (b2) and (b3) may be performed simultaneously or sequentially;

**F'** and wherein a plurality of the optically variable effect generating relief structures are formed in respective window regions on the same surface of the substrate using a common cast-cure process.

VIII. Claim 1 according to the first auxiliary request is identical to claim 9 as granted.

IX. Claim 1 according to the third auxiliary request corresponds to claim 9 as granted, wherein the conjunction "and" is deleted in feature F' and the following feature is added after feature F':

**G'** and wherein in step (b2) of the common cast-cure process, the respective relief structures on the same surface of the substrate within at least two window regions are formed in a single forming step.

X. Claim 1 according to the fourth auxiliary request corresponds to claim 1 according to the third auxiliary request, wherein feature E' is amended as follows (underlining of the additions over E' by the board):



**E'AR4** wherein in step (b) each optically variable effect generating relief structure is formed using a cast-cure process comprising:

(b1) applying a layer of curable material to the first or second surface of the substrate within each window region, wherein the layer of curable material is discontinuous between window regions;

(b2) forming the respective relief structures in the surface of the curable material, wherein the optically variable effect generating relief structures of the respective security devices are different; and

(b3) curing the curable material such that the respective relief structures are fixed;

where steps (b2) and (b3) may be performed simultaneously or sequentially;

XI. Claim 1 according to the fifth auxiliary request corresponds to claim 1 according to the fourth auxiliary request, wherein features C', D', E'AR4 and F' are amended as follows (highlighting of the amendments by the board):

**C'AR5** [...], wherein the plurality of window regions comprises at least three window regions, the at least three window regions not lying on a straight line;

**D'AR5** (b) providing a security device in each window region by at least forming an optically variable effect generating relief structure on the first ~~or second~~ surface of the substrate, each of the respective security devices exhibiting an optically variable effect of different appearance from one another;

**E'AR5** wherein in step (b) each optically variable effect generating relief structure is formed using a cast-cure process comprising:

(b1) applying a layer of curable material to the first ~~or second~~ surface of the substrate within each window region, wherein the layer of curable material is discontinuous between window regions;  
[...]

**F'AR5** ~~and wherein a plurality of~~ the optically variable effect generating relief structures are formed in respective window regions on the ~~same~~ first surface of the substrate using a common cast-cure process;

XII. The parties' relevant arguments can be summarised as follows:

(a) The appellants argued that the subject-matter of claim 1 did not involve an inventive step (Article 56 EPC) over document D13 in view of document D5.

The case should not be remitted to the opposition division for further prosecution and the third to fifth auxiliary requests should not be admitted into the appeal proceedings.

(b) The respondent argued that an inventive step of the independent claims 1 and 9 as granted should be acknowledged.

In view of the appellants' new interpretation of the meaning of the term "common cast-cure process" in the statements of grounds of appeal, the case should be remitted to the opposition division for further prosecution, in case the board accepted said interpretation. The third to fifth auxiliary requests should be admitted into the appeal proceedings as they were filed in view of said new interpretation.

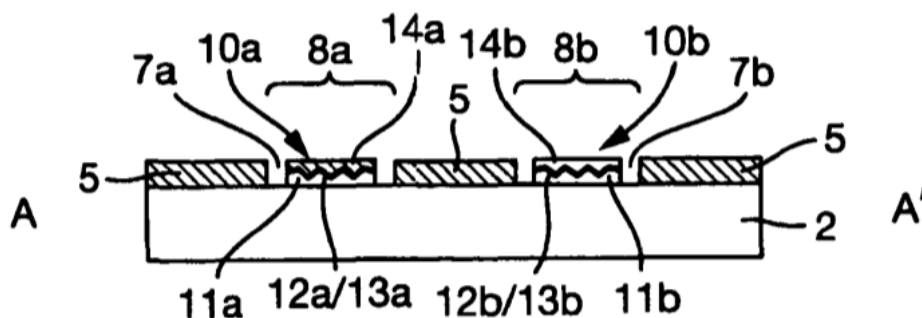
### Reasons for the Decision

1. The invention

The present invention relates to security documents such as banknotes, currency, identification documents, passports, cheques, visas, certificates and the like, and methods for their manufacture. The invention relates particularly to such documents having polymer substrates, such as polymer banknotes, and the provision of security devices thereon, the security devices incorporating optically variable effect generating relief structures such as holograms, diffraction gratings, moire magnifiers, lenticular devices and similar, see paragraph [0001] of the opposed patent.

Known security documents having polymeric substrates have been provided with single window-located security devices. By providing each security document with a plurality of spaced window regions each containing a different security device, the difficulty of counterfeiting the document is significantly increased thereby enhancing the security of the document, see paragraph [0007] and Figure 1(b) of the opposed patent (reproduced below).

**Fig. 1(b)**



The respective relief structures could be formed in the surface of the polymer substrate, e.g. embossed directly into the polymer substrate surface or an embossable layer provided thereon. As claimed, the respective relief structures are formed in a layer of curable material applied to the surface of the substrate, preferably by a cast-cure technique, see paragraph [0015] of the opposed patent.

The respective relief structures are registered to one another such that their relative positions do not significantly change between one document and another of the same series. This can be achieved using a common cast-cure process to form the relief structures, see paragraph [0014] of the opposed patent.

2. Main request - claims 1 and 9 as granted - inventive step
  - 2.1 The opposition division held that document D13 did not disclose features E and F of claim 1 and features E' and F' of claim 9 (see point 18.2.3 of the Reasons). It pointed out that an absolute registration between different relief structures was not an inherent feature of all security documents, as e.g. evidenced by D4. The opposition division acknowledged an inventive step based on both distinguishing features.
  - 2.2 For appellant 1 the objective technical problem solved by the allegedly novel features of claim 1 and claim 9 was to provide an alternative way of providing relief structures (on a windowed security device). The solution was found in the common general knowledge and in D5 (at least).

Appellant 1 argued that on page 3 of D13 under the heading "Security Device or Feature" it was disclosed

that security devices and features might be provided by deforming the substrate or one or more layers applied to the substrate. It was envisaged in D13 that relief structures might be formed in a layer of curable material by a cast-cure process, which was known, see paragraphs [0003] of the opposed patent and D5.

With respect to feature F, the passage of D4 cited by the opposition division was not relevant for the individual structures of D13. Feature F did not require any specific process (e.g. a process using a single embossing die or roller) to produce the security devices "in register" and did not define any specific precision of the registration. The skilled person knew that the registration of features on a security document or at least the fact that features should "have substantially the same position with respect to one another on each of [a] plurality of security documents" was a key consideration. At least the gaps in the same opacifying layer of D13 were inherently in register because they were in effect printed by the same roller. The wording of feature F did not imply the use of a single casting surface, which was presented in the patent as only one possible way of manufacture.

Regarding the term "common cast-cure process" according to feature F', appellant 1 argued that an individual cast-cure process might involve casting and then curing one feature at a time. A common cast-cure process therefore could include multiple casting steps (to create multiple features) carried out before a single curing step, e.g. using multiple embossing rollers, see also the wording of feature E' ("steps (b2) and (b3) may be performed simultaneously or sequentially"). Embossing using a single roller was only one possibility of carrying out step (b2), see paragraph

[0041] of the opposed patent or granted claim 14. D5 disclosed a common-cast cure process according to claim 9. The passage on page 25, lines 18 to 29 did not mean that only the printing was performed in register, but it was also recognised that embossing and curing of the curable ink could be performed as part of a printing process. As in D5 the windows were in register and the security elements were in register with the windows, the security devices had to be in register with one another as well.

- 2.3 In its statement setting out the grounds of appeal, appellant 2 explained in detail why D13 rendered obvious the subject-matter of granted claims 1 and 9.

The distinguishing features with respect to claims 1 and 9 were features E, F, E' and F', respectively.

The implementation of security devices in register to one to another was an inherent feature of security documents, which the skilled person would automatically implement. Figure 2 of D13 showed a banknote (D13, page 12, lines 8 to 13). It was clear to the skilled person that for all banknotes of a same series, the position of the security devices was the same. There was no technical contribution of feature F, which should therefore be ignored when formulating an objective technical problem.

Appellant 2 further argued that feature F was not limited to any specific register tolerances and did not imply that a process using only a single embossing surface of a single embossing cylinder was used in the manufacture. Paragraphs [0014], [0033], [0041], [0099] and [0106] of the opposed patent made it clear that the use of a single embossing cylinder is only one option

to produce security devices in register according to feature F. In any case, the skilled person would arrive at feature F by combining D13 with D5 (page 23, lines 6 to 13; page 8, line 6 to page 9, line 24; page 25, lines 1 to 29; page 24). In particular, appellant 2 referred to page 25, lines 1 to 29 of D5 and argued that a higher register accuracy within the window regions was achieved in comparison to manufacturing processes using a transfer sheet, which was the objective of the claimed invention according to paragraph [0007] of the opposed patent. Page 23, lines 20 to 22 of D5 disclosed an embodiment with the security elements 413 and 415 on the same surface of the polymer substrate 411. Page 25, lines 4 to 17 of D5 disclosed manufacturing of relief structures with a roller cylinder, which corresponded to the one mentioned in paragraphs [0041], [0099] and [0100] of the opposed patent. Hence, feature F was disclosed in D5.

Appellant 2 argued that the term "common cast-cure process" according to feature F' did not imply the use of one single embossing cylinder. Multiple embossing tools were not excluded. Paragraphs [0039] and [0041] of the opposed patent mentioned the simultaneous formation of surface reliefs, which was only possible with two embossing tools.

Regarding feature E, D13 disclosed that security devices were formed by embossing the substrate surface (page 13, lines 12 to 14 and 20 to 22). The objective technical problem associated with feature E was to provide an alternative way of providing relief structures. Forming relief structures in a layer of curable material applied to the surface of the substrate was obvious in view of the common general

knowledge of the skilled person and in view of D5 (page 25, lines 4 to 12).

- 2.4 The respondent agreed with the opposition division that D13 did not disclose features E, F, E' and F'.

According to D4 (page 2, lines 11 to 22), certain types of optically variable effect generating relief structures required no register at all. According to D8 (page 4, lines 16 to 20), conventionally, security documents provided with devices in different areas of the banknote had done this to accommodate large tolerances in the positioning of those devices. It was therefore clear that registration between the relief structures of security devices in different windows of a security document was not something inherent to a security document and so this feature was novel over D13.

With respect to the term "in register" in feature F, the respondent argued that it referred to a "high quality registration" obtained by a common cast-cure process, i.e. a process using one single casting surface (e.g. one casting cylinder). As such feature F was linked to the common cast-cure process according to feature F'. Reference was made to paragraphs [0033], [0041], [0099] and [0106] of the opposed patent, which disclosed the link between the claimed "registration" and a "common cast-cure process". The prior art and, in particular, document D13 did not disclose the degree of registration according to feature F and did not disclose a common cure-cast process according to feature F'. The high degree of registration improved the security of the document.



The term "substantially the same position" in feature F would therefore be understood to relate to the tolerances of the process used, e.g. the common cast-cure process. The claimed "registration" was directly visible in the plurality of documents by comparison of the positions of the relief structures on the different documents within said plurality of documents.

The respondent disagreed with the appellants that a common cast-cure process according to feature F' would cover a process with separate casting steps and a single curing step. A common cast-cure process formed the relief structures using the same casting surface in order to precisely register the relief structures to one another, see paragraphs [0014], [0033], [0039], [0041], [0042] and [0099] of the opposed patent. The term "common cast-cure process" meant that both casting and curing were performed in common to all security devices. This was in contrast to an individual cast-cure process, see paragraph [0039] of the opposed patent drawing the distinction between individual cast-cure processes, each with their own set of steps for applying the material, forming the material and then curing, and a common cast-cure process which - as it is clearly stated - provided that the relief structures were formed together. The term "common" thus referred to both casting and curing.

Dependent claim 14 as granted specified that in a common cast-cure process there might be separate forming steps, e.g. when the casting surface is a casting cylinder, see e.g. Figure 9 and paragraph [0041] of the opposed patent. In the case of Figure 9 of the opposed patent, for example, the relief structures were not formed simultaneously while one single casting surface was used. Claim 14 as granted

was thus not inconsistent with the use of one single casting surface.

The distinguishing features provided the technical effect of increased security because the relief structures were registered to one another and those relief structures determined the display of the optically variable effects exhibited by those devices.

The skilled person would not consider it obvious to register the relief structures to one another, nor would they know how to do this, i.e. by a common cast-cure process, to lead them to implement the security devices as relief structures in a layer of curable material. A common cast-cure process as claimed was not cited in the prior art.

In D5 (page 25, lines 18 to 29) registering had been provided for security devices in windows of polymer banknotes by registering the curable material in which the relief structures were formed, rather than the relief structures themselves. D5 was silent about registering the relief structures or a common cast-cure process. It would not be possible to use such a process to produce the lenses and image elements shown in Figures 1 to 12 of D5. Page 25, lines 18 to 29 indicated that security devices were formed by printing a curable ink onto a sheet and embossing and curing the ink so as to achieve security features more accurately in register with the windows. Said passage merely indicated that the printing was performed in register.

The appellants had not cited any disclosure of registering relief structures to one another in different devices in different windows of a security document. Therefore, the suggestion that this would

automatically occur to the skilled person appeared to be based on nothing other than hindsight knowledge of the present invention.

Page 24, line 10 to page 25, line 29 and Figure 12 of D5 did not disclose a common cast-cure process as separate embossing cylinders were used. The disclosure of a "seamless cylinder" on page 24, lines 10 to 11 was not related to the passage on page 25, lines 20 to 23. A cylinder carrying one type of pattern was described, see also page 24, lines 25 and 29, page 25, lines 6, 9 and 17. The patterns in D5 had to be embossed by different rollers. The improvement in accuracy mentioned in page 25, lines 7 and 8 was related to the cylinder being seamless. A common cast-cure process was not disclosed in D5.

Even if the skilled person were to consider the positioning of relief structures as a way to enhance security, none of the cited prior art documents would enable the skilled person to make this change. None of the prior art documents taught the skilled person how they could register relief structures in different windows to one another. Certainly, none of the documents disclosed the technique of a common cast-cure process for forming the relief structures in register with one another, as required by claim 9.

The subject-matter of both independent claims thus involved an inventive step.

2.5 The board is convinced that the subject-matter of claims 1 and 9 as granted lacks an inventive step.

Hence, the ground for opposition under Article 100(a) EPC in combination with Articles 52(1) and 56 EPC prejudices the maintenance of the patent.

#### 2.5.1 Disclosure of document D13

The board shares the view that D13 discloses (in the wording of claim 1 as granted) a plurality of security documents (page 1, lines 8 to 13; page 12, lines 8 to 10; Figures 2 and 3), each of the plurality of security documents comprising:

a polymer substrate (31; page 12, lines 14 to 20; page 1, lines 18 to 24; Figure 3) having first and second surfaces (Figure 3),

at least one opacifying layer (34, 35, 36, 37) on the first and second surface of the substrate (Figure 3), and a plurality of laterally-spaced window regions (40, 50, 60, 70, 80, 90, 100, 110), each window region being defined by a gap in at least one of the opacifying layers (Figure 3; page 12, lines 21 to 26; page 2, line 29 to page 3, line 2), at least one of the opacifying layers being present between the laterally-spaced window regions (Figures 2 and 3),

each of the plurality of window regions (40, 50, 60, 70, 80, 90, 100, 110) containing a security device (42, 52, 62, 72, 82, 92, 102, 112; page 12, lines 10 to 13 and lines 21 to 26; page 3, line 4 to page 5, line 13) comprising at least an optically variable effect generating relief structure on the first and second surface of the substrate (page 14, line 10 to page 15, line 18; page 3, lines 13 to 25; page 4, lines 24 to 32), each of the respective security devices exhibiting an optically variable effect of different appearance from one another (e.g. devices 62 and 112;

page 14, line 10 to page 15, line 18, "optically variable device (OVD)"; page 15, lines 12 to 18).

The board notes that the wording of feature C requires that a security document has a plurality of laterally-spaced window regions, each window region being defined by a gap in at least one of the opacifying layer(s), at least one of the opacifying layers being present between the laterally-spaced window regions, wherein each of said window regions contains a security device according to feature D. The term "laterally-spaced" is defined in paragraph [0008] of the patent and is in accordance with what the skilled person would normally understand by this term.

From the wording of claim 1, the window regions of said plurality of laterally-spaced window regions and the security devices associated thereto are on a same surface of the substrate. In other words, claim 1 requires that on one of the first or second substrate surfaces, at least two laterally-spaced window regions and at least two corresponding security devices are positioned. This arrangement is clearly disclosed in D13. This does not exclude further window regions and/or security devices on the opposite side of the substrate or even window regions without any security documents. The question raised by the appellants whether a broader meaning should be given to the wording of feature C can thus be left unanswered.

Hence, D13 discloses features A to D of granted claim 1 and features A' to D' of granted claim 9.

#### 2.5.2 Distinguishing features E and E'

In D13, the respective relief structures are formed in the surface of the substrate (see e.g. page 15, line 24

to 26; page 13, lines 12 to 14 and lines 20 to 22). Page 3, lines 7 to 9 discloses that the security devices can be made "by deforming the substrate of the security document or in or on one or more layers applied to the base substrate". A curable material is however not mentioned. This is not disputed by the parties.

Thus, D13 does not disclose features E and E', because at least a curing step of a curable material applied to the substrate is not disclosed in D13.

### 2.5.3 Allegedly distinguishing feature F

For the board, the wording "in register with one another such that the relief structures have substantially the same position with respect to one another" in feature F means that the relief structures are on their predetermined positions and have a predetermined positional relationship within the tolerances of the process used to manufacture them. Claim 1 thus requires that this positional relationship is the same for two security documents (e.g. two banknotes) or does not "significantly change between one document and another of the same series", see paragraph [0014] of the opposed patent. The positions of the security devices in register are reliably and accurately replicated on each of the plurality of security documents, see paragraph [0064] of the opposed patent. This ensures that the appearance of each security document will match to a highly accurate degree, see paragraph [0099] of the opposed patent.

The board is convinced that the wording of feature F implies neither a specific degree of registration nor a specific method to produce the relief structures. As

pointed out by the appellants, the opposed patent discloses that a cast-cure process using one single embossing tool (e.g. an embossing cylinder) is only one possible way to produce the claimed security devices, see paragraphs [0014] ("This can be achieved using a common cast-cure process to form the relief structures, ... "), [0033] ("This can be achieved for example by forming the relief structures in one common cast-cure process ...", [0041], ("... preferably a single embossing step."), [0099], ("However, the use of a common cast cure process to form multiple relief structures on at least one side of the document (preferably all of the security reliefs provided on that side of the document) is strongly preferred."). It is undisputed that a common cast-cure process (using e.g. a roller) is one possible way of providing two relief structures "in register with one another". However, it is not the only way of providing at least two security devices on the surface of a security document's substrate such that their position is (substantially) the same for a large number of security documents. Hence, a link between the relief structures "in register" and a particular manufacturing method, as alleged by the respondent, cannot be derived from the wording of claim 1.

Therefore, with respect to feature F, it is clear for the skilled person that D13 concerns the mass production of the banknotes shown in Figure 2, see title; page 1, lines 8 to 16; page 7, lines 18 to 26; page 12, lines 8 to 13. The skilled person would understand that these banknotes are produced in an identical way such that the positional relationship of security devices (and of the window regions) is substantially identical for all banknotes (i.e. within the tolerances of the manufacturing process used). In

other words, in D13, the respective relief structures on at least one surface of the substrate are in register with one another such that the relief structures have substantially the same position with respect to one another on each of the plurality of security documents. The argument that other documents mentioned by the respondent (i.e. D4 and D8) might disclose that in some cases registration is less crucial, appears irrelevant.

Feature F is thus disclosed in D13 and is not a distinguishing feature.

#### 2.5.4 Distinguishing feature F'

The board concurs with the parties that the term "common cast-cure process" is not a technical term generally used in the technical field of the present invention and thus has to be interpreted for assessing inventive step.

The board agrees with the appellants that the wording of claim 9 does not require that a single embossing cylinder has to be used to provide all the relief structures. From paragraphs [0014], [0033], [0041], [0099], and [0106] of the patent the board derives that one possible way of implementing a "common cast-cure process" is to use one embossing cylinder as shown e.g. in Figure 9 of the opposed patent. The term "common cast-cure process" is however not limited to processes according to this arrangement.

According to paragraph [0039], lines 1 to 3, of the opposed patent, individual cast-cure processes each including steps (b1), (b2) and (b3) may be performed to form each of the security devices. Hence, in a method



using individual cast-cure processes, a first layer of curable material is applied to the surface of the substrate within a first window region, a first relief structure is formed in the surface of the curable material which is then cured so that said first relief structures is fixed. The same steps are repeated afterwards for a second relief structure in a second window region. Said relief structures are thus formed individually or independently one from another.

In contrast, according to paragraph [0039], lines 3 to 7, of the opposed patent, a plurality of optically variable effect generating relief structures as claimed are formed in respective window regions on the same surface of the substrate using a common cast-cure process, preferably simultaneously. This method achieves accurate registration between the relief structures since they are formed together in the same process. Hence, according to the opposed patent, relief structures are formed using a "common cast-cure process" when they are formed in the same process. In other words, one could say that the term "common" refers to the term "process". As explicitly stated in paragraph [0039] ("preferably simultaneously") a simultaneous formation of relief structures is not mandatory, see also granted claim 14. Hence, the term "common cast-cure process" relates to a sequence of process steps to produce a plurality of "optically variable effect generating relief structures" as a result. While the opposed patent discloses the use of one single embossing cylinder (see e.g. Figure 9), the use of multiple embossing surfaces or tools (e.g. multiple embossing cylinders) and e.g. one curing step is not excluded. Insofar, the board concurs with the appellants.

In any case, as no curing is disclosed in D13, a common cast-cure process is not known from D13. Thus, feature F' is a distinguishing feature over D13.

2.5.5 Objective technical problem solved by feature E and obviousness of the subject-matter of claim 1

The appellants argued that it would be obvious to provide the relief structures in a layer of curable material applied to the surface of the substrate. The board notes that the respondent did not question these submissions regarding feature E, but focused on features F and F' in its reply to the statements setting out the grounds of appeal as well as during the oral proceedings.

The board concurs with the appellants that the objective technical problem associated to feature E is to provide alternative relief structures. It is noted that the opposed patent discloses two possibilities (i.e. an embossed substrate surface as in D13 or an embossed layer of curable material as now claimed), see original claims 9 and 10. No particular advantage associated to the now claimed alternative is mentioned in the opposed patent.

As pointed out by the appellants, page 3, lines 7 to 9 of D13 already states that the security devices can be made "by deforming the substrate of the security document or in or on one or more layers applied to the base substrate". Providing security devices by embossing and curing a curable layer on a polymer substrate is known, as pointed out by appellant 1, e.g. from D5 (page 25, lines 1 to 29).

In particular, the skilled person would learn from D5 that relief structures in multiple window regions are formed by providing an embossable UV curable ink in said window regions, by embossing said ink by using a cylinder or roller and by curing the embossed ink. The skilled person, wishing to solve the objective technical problem of providing alternative relief structures, would apply this teaching to the device of D13 and manufacture the embossed security devices of D13 by using a cast-cure process comprising:

- applying a layer of curable material to the first or second surface of the substrate within each window region of D13;
- forming the respective relief structures in the surface of the curable material; and
- curing the curable material such that the respective relief structures are fixed.

The skilled person would thus implement the respective relief structures in a layer of curable material applied to the surface of the substrate in accordance with feature E.

Consequently, the subject-matter of claim 1 as granted does not involve an inventive step (Articles 52(1) and 56 EPC).

#### 2.5.6 Obviousness of the subject-matter of claim 9

As pointed out in section 2.5.5 above, it would be obvious for the skilled person to form the relief structures of D13 using a cast-cure process comprising steps (b1) to (b3). Hence, the skilled person would arrive, without exercising any inventive skill, at a method including features (A') to (E') by a combination

of document D13 with document D5.

In D5 the passages on page 8, line 8 to page 9, line 24; page 23, lines 6 to 30; page 24, line 10 to page 25, line 29 disclose that relief formations are embossed into radiation curable layers applied to surfaces on the same side of the substrate forming the security document. The apparatus for embossing the UV curable ink to form the embossed structures may include a shim or a seamless roller, see page 23, lines 28 to 30. In particular, the passage on page 25, lines 1 to 29 discloses that embossed relief structure security devices are formed by printing a transparent radiation curable ink onto a sheet, embossing the ink while still soft and simultaneously curing the ink with radiation. This allows multiple security features to be formed in a sheet of banknotes or other security documents. The board shares the appellants' view that, since in D5 the windows are in register and the security elements are in register with the windows, the security devices have to be in register with one another. As all relief structures are embossed and cured in a same process, a "common cast-cure process" according to the board's understanding of feature F' is disclosed in D5. Whether one or multiple shims or rollers are used is not relevant.

Hence, when implementing a method according to D5 in D13, the skilled person would arrive at a method wherein a plurality of the optically variable effect generating relief structures are formed in respective window regions on the same surface of the substrate using a common cast-cure process, i.e. a method according to features A' to F'.

Thus, the subject-matter of claim 9 as granted does not involve an inventive step.

- 2.5.7 In summary, the board comes to the conclusion that the skilled person would arrive at the subject-matter of claim 1 using a method in accordance with claim 9.

Therefore, the subject-matter of both independent claims lacks an inventive step (Articles 52(1) and 56 EPC) and the ground for opposition under Article 100(a) EPC prejudices the maintenance of the patent as granted.

3. First auxiliary request

Claim 1 of the first auxiliary request is identical to claim 9 as granted. For the reasons given above, an inventive step (Articles 52(1) and 56 EPC) is not acknowledged by the board.

4. Second request - remittal to the opposition division

- 4.1 According to Article 111(1) EPC, the board may either exercise any power within the competence of the department which was responsible for the decision appealed or remit the case to that department for further prosecution. According to Article 11 RPBA, the board should not remit a case to the department whose decision was appealed for further prosecution, unless special reasons present themselves for doing so.

- 4.2 During the oral proceedings, the respondent justified its request for a remittal to the opposition division by the new interpretation of feature F' provided by the appellants in the statement setting out the grounds of appeal. The opposition division should deal with the

lower ranking requests in light of said new interpretation. Reference was made to the Case Law of the Boards of Appeal, 10th Edition, 2022, V.A.9.3.2 d) and 9.3.3 and decision T 607/17.

- 4.3 The appellants argued that the impugned decision had already dealt with the interpretation of claim 1, see point 15.2 of the Reasons. There was no new interpretation and no reason to remit the case for further prosecution. This would be detrimental to procedural economy. The appellants also submitted that the amendments made to the lower ranking requests do not concern disputed feature F'. The appellants questioned also the admittance under Article 13(2) RPBA of the respondent's request for remittal because it was late-filed.
- 4.4 The board notes that the discretionary decision under Article 111(1) EPC to remit a case or not is to be taken ex officio at any time of the appeal proceedings and is therefore not dependent on any request by a party. The board agrees with decision T 1006/21, Catchword 1 and Reasons 23 and 24, that a request for remittal made by a party is therefore not subject to the provisions of Article 12 and 13 RPBA.
- 4.5 The meaning of the term "common cast-cure process", the disclosure of documents D5 and D13 as well as their possible combination have been discussed before the opposition division, see points 15.2, 18.1.4 and 18.2.3 of the Reasons of the impugned decision. Insofar, the present case differs from decision T 607/17, because the board competent in that case interpreted the wording of multiple features of claim 1 differently from the opposition division, namely in a substantially broader sense; the meaning of at least some of said

features was not questioned by the opponent. Hence, the board is not aware of any special reasons for remitting the case to the opposition division. In line with the rule set out in Article 11 RPBA, the board decided to exercise its discretion under Article 111(1) EPC by not remitting the case to the opposition division.

5. Third to fifth auxiliary requests - admittance under Article 13(2) and (1) RPBA
  - 5.1 According to Article 13(2) RPBA, any amendment to a party's appeal case made after notification of a communication under Article 15, paragraph 1, is, in principle, not to be taken into account unless there are exceptional circumstances, which have been justified with cogent reasons by the party concerned. When exercising its discretion under Article 13(2) RPBA, the board may also consider the criteria set out in Article 13(1) RPBA. One of these criteria is whether the party submitting an amendment has demonstrated that this amendment, *prima facie*, overcomes the issues raised in the appeal proceedings.
  - 5.2 The respondent justified the late filing of the third to fifth auxiliary requests by the issue in respect of the meaning of the term "common cast-cure process". The inclusion of feature G' should address this point. The respondent added that the interpretation of said term used by the appellants significantly changed over the course of the opposition proceedings.
  - 5.3 The board is however of the view that the meaning of "common cast-cure process" was already disputed in the opponent 1's letter dated 1 August 2019, page 8, final paragraph or pages 11, 12 and 15 in the context of the discussion of the content of the prior art. The meaning

of the term "common cast-cure process", the disclosure of documents D5 and D13 as well as their possible combination have also been discussed in the impugned decision, see points 15.2, 18.1.4 and 18.2.3. Clearly, both appellants questioned the respondent's understanding of said term already in their respective statements setting out the grounds of appeal (see e.g. sections 1.12 to 1.15, 4.3.7, 4.3.8 and 4.4.9 for appellant 1; see e.g. sections 4.1.6 and 5.3.11 for appellant 2).

Hence, the board is not convinced that there are exceptional circumstances that would justify the submission of auxiliary requests only after notification of the board's communication under Article 15(1) RPBA.

Moreover, as pointed out by the appellants, it is also questionable whether feature G' clearly reflects the respondent's view that a common cast-cure process involves a single casting surface for producing plural relief structures. The number of embossing tools is manifestly not limited. It *prima facie* appears that the amendments are not suitable to overcome the issues raised against claim 9 as granted.

Thus, the board decides not to take the third to fifth auxiliary requests into account under Articles 13(2) and (1) RPBA.

## 6. Conclusion

As no admissible and allowable request is on file, the patent must be revoked.



**Order**

**For these reasons it is decided that:**

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

The Registrar:

The Chairman:



L. Stridde

T. Häusser

Decision electronically authenticated