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**Datasheet for the decision  
of 7 October 2021**

**Case Number:** T 1938/17 - 3.4.03

**Application Number:** 08161123.8

**Publication Number:** 2037327

**IPC:** G03G15/08, G03G15/00

**Language of the proceedings:** EN

**Title of invention:**

Image forming apparatus and the use of a developing device

**Patent Proprietor:**

HP Printing Korea Co., Ltd.

**Opponent:**

ABACUS Patentanwälte

**Headword:**

**Relevant legal provisions:**

EPC Art. 100(a), 100(b), 100(c), 52(1), 54, 56, 83, 84, 123(2)  
EPC R. 103(1)(a)

**Keyword:**

Sufficiency of disclosure - (yes)  
Claims - clarity - main request (yes)  
Amendments - allowable (yes)  
Inventive step - (yes)  
Reimbursement of appeal fee - (no) - appealed decision  
reasoned (yes)

**Decisions cited:**

G 0003/14, T 2001/12

**Catchword:**



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Case Number: T 1938/17 - 3.4.03

**D E C I S I O N**  
**of Technical Board of Appeal 3.4.03**  
**of 7 October 2021**

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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
28 June 2017 concerning maintenance of the  
European Patent No. 2037327 in amended form.**

**Composition of the Board:**

**Chairman** G. Eliasson  
**Members:** J. Thomas  
T. Bokor

## **Summary of Facts and Submissions**

- I. The appeal of the appellant (opponent) concerns the interlocutory decision of the opposition division to maintain European patent No. 2 037 327 as amended during the opposition proceedings (Article 101(3)(a) EPC).
- II. The opposition had been filed against the patent as a whole. Grounds of opposition were insufficiency of disclosure, lack of novelty and lack of inventive step (Articles 100 (a) and (b), 52(1), 54, 56 and 83 EPC).
- III. The appellant requested the decision be set aside and the European patent be revoked in its entirety. Oral proceedings were requested as an auxiliary measure. Reimbursement of the appeal fee was requested due to alleged substantial procedural violations by the opposition division.
- IV. The respondent (patent proprietor) requested that the appeal be dismissed and the European patent be maintained according to the interlocutory decision. Oral proceedings were requested as an auxiliary measure. First to fourth auxiliary requests were filed with letter dated 07 June 2021. They also requested that the case not be remitted to the opposition division in case the Board agreed to the alleged substantial procedural violations, but that a final decision be taken instead.
- V. The Board sent a communication pursuant to Article 15(1) RPBA 2020 dated 05 May 2021.

- VI. With letter dated 18 August 2021 the appellant withdrew their request for oral proceedings and informed the Board that they will not attend oral proceedings if they should take place.
- VII. As a result, the oral proceedings scheduled for 02 September 2021 were cancelled.
- VIII. The following documents are referred to in this decision which were already cited during the opposition procedure:

E5: US 2007 189 781 A1;  
E8: US 2005 078 978 A1;  
E10: US 7 082 276 B2;  
E25: US 6 898 402 B2;  
E28: US 2006 059 487 A1;  
O8: vibration test protocol, submitted on  
8 October 2014.

In relation to a prior use of printer series "Samsung" SCX4500, SCX4501, ML-1630, ML-1631 and corresponding cartridges (in the following referred to as "prior use "Samsung" "), the following collection of documents and evidence were cited during the opposition proceedings in order to substantiate the prior use:

- O1: Collection of copies of web pages; 17 pages;  
published around August/September 2007; submitted  
on 8 June 2012;
- O2: Collection of photos of a printer Samsung ML-1631;  
6 pages; submitted on 8 June 2012;
- O3: Collection of pictures of a printer  
Samsung SCX-4501 K, 5 pages; submitted on  
27 September 2013

- O4: Purchase receipts for printer models Samsung ML-1631 K and SCX-4501 K, 2 pages, submitted on 27 September 2013;
- O6: Sworn affidavit by Hui Jin, dated 25 July 2013, submitted on 27 September 2013;
- O7: Photo documentation of printer family SCX-4501/ML-1630, 6 pages; submitted on 26 March 2015; (referred to as B7 in the decision under appeal);
- O8: English translation of label SCX-4501; 1 page; submitted on 26 March 2015 (referred to as B8 in the decision under appeal);
- O9: Collection of copies of web pages linking cartridges for Samsung SCX-4501 and Samsung ML-1630; 44 pages; submitted on 26 March 2015 (referred to as B9 in the decision under appeal);
- E29: "Annex to the submission of 13 January 2017"; 16 pages; illustrated explanation of printer SCX-4501 K and cartridge ML-D1630; submitted on 13 January 2017;
- E30: User's Guide of Samsung SCX-4500 Series "Monochrome Laser Multifunction", submitted on 13 January 2017.

IX. Claim 1 of the main request reads as follows, whereby the references to the individual features OA to OF have been added by the Board according to what was used in the procedure so far:

- OA** *Use of a developing device with an image forming apparatus (1), the developing device (100) comprising:*
- OB** *a driving force reception unit (160) disposed at one side of the developing device (100) to receive a driving force from the image forming apparatus (1); and*

- OC** a power reception unit (170) disposed at an other side to receive an electric power from the image forming apparatus (1);
- OD** further comprising a memory unit (180) disposed at a rear end (101) of the developing device (100) with respect to a direction of mounting of the developing device (100) during mounting thereof to a main body (10) of the image forming apparatus (1);
- OE** wherein the memory unit (180) is disposed closer to the power reception unit (170) than to the driving force reception unit (160);
- OF** characterised by comprising a developing roller (140) disposed at a front end of the developing device (100) with respect to the direction of mounting of the developing device (100).

X. Claim 9 of the main request reads as follows whereby the references to the individual features OF1 to OF3 have been added by the Board according to what was used in the procedure so far whereby the labels were changed from O to OF in order not to confound them with the prior art documents O1 to O3:

- OF1** An image forming apparatus (1) comprising a main body (10) configured to receive the developing device (100) according to any preceding claim,
- OF2** wherein the main body (10) includes a main body cover (11) disposed at a rear portion of the developing device (100) with respect to the mounting direction of the developing device (100), and
- OF3** wherein the main body cover (11) has terminal contact points (13) arranged to be electrically connected with the memory unit (180), when using

*said developing device according to any preceding claim.*

XI. The appellant's arguments, insofar as they are relevant to the present decision, may be summarised as follows:

(a) Insufficiency of disclosure

The appellant essentially referred to their arguments presented in their letter of 13 January 2017. The "gap rings" were missing in the definition of the claims and the whole application, although they were the true origin of the vibrations (see point 2. "Sufficiency of disclosure (Article 100(b) EPC)" of the statement setting out the grounds of appeal). The opposition division did neither sufficiently consider the problem of vibrations related to the gap rings nor the appellant's arguments presented in the letter of 13 January 2017 in relation to the disclosure of document O8.

(b) Lack of clarity

Amended claim 1 (and amended claim 9) lacked clarity introduced by amendment, namely by the feature "the front end of the developing device (100) with respect to the direction of mounting". This expression was not as such in the granted claims, where it was only related to the rear end. Since a similarity of the terms "front end" and "rear end" was not supported in the original application documents (see statement setting out the grounds of appeal, point 3, third paragraph), the expression should be examined for clarity. Also, the decision G 3/14 had been interpreted too



broadly by the opposition division (see statement setting out the grounds of appeal, point 3, fourth paragraph) because all amended formulations should be examined for clarity and could not be excluded from it solely because of an alleged similarity with other terms.

(c) Unallowable amendments

Unallowable amendments occurred in three points (see statement setting out the grounds of appeal, points 4.1, 4.2 and 4.3):

- the mounting direction was taken out of the figures which was not directly and unambiguously disclosed as defined in claim 1,
- the introduced feature OF in relation to the features OB and OC constituted an unallowable intermediate generalisation and
- the technical function of the different units defined in claim 1 was inextricably linked to the solved problem being a reduction of the vibrations. However, the reduction of vibration was closely linked to the specific arrangement which was not originally disclosed as presently defined in claim 1.

(d) Lack of inventive step

- (i) Document E10 as closest prior art

The argumentation of the opposition division was flawed, because the features OC, OE and OF were design features (i. e. aesthetic features) which could not contribute to an inventive step as they did not solve a technical problem (see statement

setting out the grounds of appeal, page 11, first and fourth paragraph). Features OC and OE were missing in document E10 (see statement setting out the grounds of appeal, page 10, fifth paragraph). Feature OF should be considered disclosed in document E10 (see statement setting out the grounds of appeal, page 10, fourth and fifth paragraphs). It should at least be considered separately from features OC and OE, because different problems were solved by feature OF on the one side and features OC and OE on the other side. At the best, feature OE could perhaps solve the basic technical problem how to reduce vibrations at the memory unit if the origin of the vibrations was the developing roller (see statement setting out the grounds of appeal, page 11, sixth paragraph). However, the most basic and straightforward solution obvious to the skilled person was to increase the distance between the origin of the vibrations (developing roller) and the place where they were unwanted (memory unit) (see statement setting out the grounds of appeal, page 12, first and second paragraphs). Therefore, starting from document E10 the skilled person would arrive at the claimed subject-matter in an obvious way.

In addition, the skilled person would however not make any difference between cartridges with and without photosensitive rollers and would therefore consider the content of document E8, so that document E8 would render the missing feature OE obvious to the skilled person (see statement setting out the grounds of appeal, page 13, third and fourth paragraphs).

Also the combination of the teaching of document E10 with those of the prior use "Samsung" was obvious for the skilled person (see statement setting out the grounds of appeal, page 12, penultimate and last paragraph and page 13, fifth paragraph).

(ii) Document E25 as closest prior art

Document E25 disclosed features OA, OB and OF. Feature OC was implicitly disclosed by document E25, only features OD and OE are missing. Due to the construction in which the photoconductive roller and the developing roller were kept at a certain distance, there had to be an electrical potential between both rollers. This required a power reception unit (feature OC). However, claim 1 was vague about the spatial placement of the power reception unit. Since feature OC solved a different technical problem than features OD and OE, it was to be treated separately. The proposed solution for feature OC was trivial to the skilled person. The technical problem solved by features OD and OE was the provision of a data storage on the developing device and the solution thereto was obvious from the prior use "Samsung". The prior use "Samsung" could be combined with the teaching of document E25 because the differences of the two different cartridge types were irrelevant and the characteristics related to the memory units were independent from the cartridge type. The skilled person would also consider the teaching of document E5 because again the cartridge type was not important for the memory unit and the skilled person would look at document E5 instead of missing an important clue to a solution.

Hence, starting from document E25 the subject-matter defined in claim 1 was obvious in combination with either the prior use "Samsung" or the teaching of document E5.

(iii) Prior use "Samsung" as closest prior art

The combination of the teaching of the prior use "Samsung" with the ones of documents E25 or E28, in particular for solving the technical problem to increase the resource efficiency (emerging from the technical problem solved by the feature OF missing in prior use "Samsung"), was obvious to the skilled person. The solution was the relocation of the long-lasting photoconductive roller from the easily detachable part comprising parts with much shorter lifetime (which must be regularly replaced) to the fixed part of the image forming apparatus.

(e) Reimbursement of the appeal fee

Two substantial procedural violations were allegedly committed by the opposition division (Rule 103(1) (a) EPC):

- The opposition division ignored in its decision concerning the "sufficiency of disclosure" (Article 83 EPC) (reasons of the decision, point 4 with sub-points) the appellant's argument presented by an "extended, substantive and thoroughly founded discussion of the disclosure of O8" in the letter of 13 January 2017.
- The opposition division refused to examine the clarity of feature OF, which is introduced in the

wording of the claim by amendment, due to a too broad application and interpretation of G 3/14.

XII. The respondent's arguments, insofar as they are relevant to the present decision, may be summarised as follows:

(a) Insufficiency of disclosure

The whole discussion in relation to document O8 about the gap rings and the associated vibrations only served to illustrate the structural differences between process cartridges and developing cartridges (see reply to the statement setting out the grounds of appeal, point 4.5). The gap rings were one of many straightforward options for the non-contact developing method known to the skilled person (see reply to the statement setting out the grounds of appeal, points 4.9 and 4.10). Since neither the subject-matter defined in the present claim 1 nor the patent in suit generally distinguished between the two options of a contact or a non-contact developing method, the teaching of the patent applied to both methods (see reply to the statement setting out the grounds of appeal, point 4.12). Therefore, the whole argumentation of the appellant linked to the gap rings was irrelevant for the question of sufficiency of disclosure. The skilled person knew how to implement the defined structural units in the claimed developing device in order to use it in the image forming apparatus.

(b) Lack of clarity

The amended feature objected by the appellant was not open for clarity examination because it was already formulated in the combination of claim 1 with claim 4 as granted. Moreover, the amendment was clear (see reply to the statement setting out the grounds of appeal, point 5.5).

(c) Unallowable amendments

All amendments were directly and unambiguously disclosed in the originally filed documents. The term "rear end" was cited throughout the application documents (see reply to the statement setting out the grounds of appeal, point 6.3.2). Also, the figures disclosed without doubt that the developing roller was disposed at the opposite end of the cartridge with respect to the memory unit. As mentioned in the reply under point 6.3.3, the figures and the related passages of the description indicated the location of the driving reception unit and of the power reception unit at either side of the developing roller at the front end. Therefore, the requirements of Article 123(2) EPC were fulfilled.

(d) Inventive step

(i) Document E10 as closest prior art

Document E10 did not disclose features OC, OE and OF. The technical effect provided by these features was a reduced exposure of the memory unit to heat and vibration from the developing roller. Starting from document E10, the skilled person would not reconfigure the shown device because serious reconfigurations were necessary in this kind of

rotary type printer in which the cartridges were disposed in a rotary drum.

The skilled person would also not consider the teaching of document E8, which dealt with process cartridges because this would require significant structural reconfigurations of the different structural units. In addition, vibrational problems were particular to developing cartridges which were, compared to the process cartridges, generally lighter and therefore more susceptible to vibrations.

Hence, the skilled person would neither arrive at the defined subject-matter in an obvious way using the common general knowledge nor consider document E8 in the given context. The skilled person would also not consider document E25 because it is silent about memory units or the like.

(ii) Document E25 as closest prior art

Document E25 did not disclose features OC, OD and OE. At least features OD and OE provided the technical effect of a reliable data communication of the memory unit at a location less exposed to vibration and heat from the driving force reception unit. The provided solution was not obvious to the skilled person from document E25 alone because document E25 was silent about a memory unit. The skilled person would also not combine the teaching of document E25 with prior art relating to process cartridges. Hence, an inventive step could not be denied when starting from document E25.

(iii) Prior us "Samsung" as closest prior art

The skilled person would never combine teachings of a developing cartridge with those of a process cartridge without using hindsight (see reply to the statement setting out the grounds of appeal, points 9.6.5 and 9.6.6). The skilled person would also not convert a process cartridge to a developing cartridge by removing the photoconductive roller, since these types of cartridges are incompatible.

(e) Reimbursement of the appeal fee

The decision (reasons of the decision, points 4.6 and 4.7) discussed the use and consequences of the gap rings with reference to the opponent's letter of 15 October 2014. This letter discussed the arguments concerning gap rings in relation with the vibrations for the first time in response to document O8. Therefore, no substantial procedural violation occurred, because the allegedly ignored argument was considered by the opposition division by reference to the letter of 15 October 2014.

As regards the clarity objection, neither was the impugned feature open to a clarity examination, nor was the term itself unclear (see also the respondent's arguments under point (c) below).

## **Reasons for the Decision**

### **1. Decision in written proceedings**

Following the appellant's statement not to attend the oral proceedings, and because the Board found that all grounds, evidence and arguments for a decision on the main request had been presented and were in favour of



the respondent, the oral proceedings scheduled for 02 September 2021 were cancelled. The decision is therefore issued in writing (Article 12(8) RPBA 2020) on the basis of the requests, grounds, arguments and evidence present on file and considering the Board's preliminary opinion.

2. **The invention.**

The invention concerns the use of a developing device with an image forming apparatus whereby the developing device ([0001] of the patent) comprises a driving force reception unit, a power reception unit, a developing roller and a memory unit (claim 1). In order to reduce the vibrations at the memory unit, the memory unit is biased towards the power reception unit such that the distance between the memory unit and the driving force reception unit is increased and the three units - the power reception unit, driving force reception and the memory unit - are placed at the most suitable distance from each other ([0068] and [0069] of the patent). In parallel, this positioning also decreases the length of the harness connection between the power reception unit and the memory unit so that the production costs and adverse effects of heat or of electromagnetic waves caused by the harness are reduced ([0070] of the patent).

3. **Claim interpretation**

3.1 The claim category and the thereto linked interpretation of claim 1 was questioned by the appellant as discussed under point 5.2 of the statement setting out the grounds of appeal.

- 3.2 The Board interprets the wording of the claims as follows: The claims have to be understood according to their wording and within the whole context of the originally filed documents. On that basis, claim 1 concerns "the use of a developing device together with a image forming apparatus" whereby the used developing device must provide all features defined by features OB to OF. An arbitrary developing device without features OB to OF, even if it fits in the image forming apparatus, is not covered by the wording of the claims. The use of the defined developing device integrated in or mounted to the image forming device when being used for producing an image provides the technical effect of a reduction of vibrations and thus less exposure of the memory unit to potential damage.
- 3.3 The expression of "direction of mounting" as defined in features OD and OF is only used to define spatial relationships of the developing device, in particular the specific direction indicated in the figures by arrow "A". The wording used in claim 1 remains however without any further consequence for the claim category which is the "use of the developing device when mounted to the image forming apparatus".
- 3.4 Also, the meaning of "rear end" and "front end" does not need any further interpretation. These terms correspond to the rear end side and the front end side of an approximately box-shaped developing device as shown in figure 1. The arrow "A" indicates the direction of mounting in order to distinguish the front end from the rear end. This is also supported by the original description page 7, lines 8 to 10 (corresponding to [0023] of the patent in suit).

3.5 Furthermore, the appellant's argument that "[s]tructural features of the developing device that do not directly relate to the image forming as such should be ignored when assessing inventive step" (statement setting out the grounds of the appeal, page 9, last sentence of the fifth paragraph) does not persuade the Board. The definition of the "use of the device" according to claim 1 requires a device with all features defined in the wording of the claim.

4. **Clarity - Article 84 EPC**

4.1 Feature OF was amended during the opposition procedure, the reason for which the appellant considered it - in compliance with G 3/14 - to be open for examination with respect to clarity (Article 84 EPC).

4.2 The concerned feature OF, namely the "front end of the developing device (100) with respect to the direction of mounting", was however already present in the granted claims 1 and 4 referring to the "rear end (101) of the developing device (100) with respect to the direction of mounting" and the "front end" respectively. Therefore, the only amendment in feature OF which could be considered open for clarity examination is the location of the developing roller at said front end, but not the definition of the front end itself. The position of the developing roller at the front end is, however, a broad definition, without being unclear as such. Therefore, this feature which might at best be examined for clarity within the meaning of G 3/14 does not contravene Article 84 EPC.

5. **Sufficiency of disclosure - Article 100(b) and 83 EPC**

- 5.1 In the statement setting out the grounds of appeal, the appellant objected under section "2. Sufficiency of disclosure (Article 100(b) EPC)" solely the fact that the opposition division did not consider the missing "gap rings" and the thereto related vibrational problem. According to the appellant's understanding, the opposition division did consider neither the problem of vibrations - in particular those provoked by the gap rings - nor the appellant's arguments presented in the letter of 13 January 2017 in relation to the disclosure of document 08 concerning the vibrations and the gap rings. However, they were of the opinion that a correct consideration of the vibration problem was crucial, as this had consequences for the argumentation of inventive step.
- 5.2 The Board finds that the opposition division considered the arguments concerning the gap rings in relation to the vibrations even though not explicitly referring to the opponent's letter of 13 January 2017. In this letter (page 12, second paragraph), the objections with respect to Article 83 EPC were made only as a side remark. This side remark referred to the arguments previously presented in the letter of 15 October 2014 (paragraph "D"), which were considered by the opposition division (reasons of the decision, points 4.6 and 4.7). Hence, the side remark evoked in the letter of 13 January 2017 represents consequently only a repetition of the previously mentioned arguments presented in the letter of 15 October 2014 which were duly considered by the opposition division.
- 5.3 As to the content, the whole patent is silent about the use of any gap rings. The patent only teaches that for avoidance of an unstable connection to the memory unit due to the vibrations, the memory unit should be placed

"relatively far from the driving force reception unit" ([0056] of the patent in suit).

The possible use of gap rings and the related vibrations were only one illustrative realisation presented by the respondent. In the reply to the statement setting out the grounds of appeal, points 4.9 to 4.14, the respondent indicated that the gap rings were one of many straightforward options for the non-contact developing method known to the skilled person.

- 5.4 Since neither the subject-matter defined in the present claim 1 nor the patent in suit generally distinguishes between the two options of a contact or a non-contact developing method and since the gap rings are not mentioned in the patent or the original application documents at all, the discussion about the gap rings and the thereto related vibrational problem is without consequence to the question of sufficiency of disclosure in the patent in suit. Hence, the arguments of the appellant relating to gap rings are irrelevant for the question of sufficiency of disclosure. The appellant's arguments are relevant either for clarity (essential feature missing) or for novelty and/or inventive step (concerning the problem of vibration solved with or without the gap rings), but not for the question of sufficiency of disclosure (see also T 2001/12).

In addition, the Board finds that the subject-matter defined in any of claims 1 to 9 taken together with the description and the figures, in particular figure 3, provides sufficient information for implementing the use of a developing device with an image forming apparatus according to the wording of the claims.

Consequently, the invention, as defined in the claims, is disclosed sufficiently clear and complete in order to be carried out by a person skilled in the art.

6. **Added subject-matter - Article 100(c) and 123(2) EPC**

6.1 Claim 1 has been amended during the examination and the opposition proceedings.

6.2 During examination proceedings features OB, OC and OE were added and parts of feature OA and OD were modified.

The necessary basis for these amendments are provided in the originally filed claims 1 and 3 and on page 7, lines 8 to 10 of the description as originally filed.

6.3 During opposition proceedings feature OD was amended and feature OF was added. Both amendments fulfil the requirements of Article 123(2) EPC for the following reasons.

6.3.1 Basis for the amendments of features OD and OF are provided as follows:

- feature OD: page 7, lines 8 to 10 of the description as originally filed;
- feature OF: figure 3 as originally filed and page 8, lines 5 to 9, 17 to 21 and 22 to 25, page 12, lines 18 to 24 and page 12, line 29 to page 13 line 3 of the description as originally filed.

On that basis the Board concludes the following:

6.3.2 The "front end" and the "rear end", which are directly linked to each other as being opposite one to the

other, are directly and unambiguously disclosed by the combination of figure 3 with the description as originally filed, page 3, lines 18 to 23 and page 7, lines 8 to 17.

The "direction of mounting" was already present in the original claim 1 with respect to the "rear end". The use of the same wording of the "direction of mounting" now for the "front end" is inextricably related to the "rear end" and is therefore considered to be directly and unambiguously disclosed.

Looking at the front end and the rear end in figure 3 together with the developing roller, the position of the developing roller is also directly and unambiguously disclosed "at a front end of the developing device (100) with respect to the direction of mounting of the developing device (100)" whereby the direction of mounting is clearly defined by arrow "A" (see figure 3 and page 7, lines 8 to 10 of the originally filed description).

- 6.3.3 The fact that the exact positions of the driving force reception unit, the power reception unit and the developing roller as well as their relation to each other are not precisely defined in the claim as shown in figure 3 does also not present an unallowable intermediate generalisation for the following reasons.

The driving force reception unit and the power reception unit are arranged on two different sides of the developing device. Considering the present context of the application, the skilled person understands directly and unambiguously that the "one side" and "an other side" can be nothing different than the two lateral sides of the developing device as shown in

figure 3. It was already present in the originally filed claim 3 that the positions of the power reception unit and the driving force reception unit along these lateral sides were not further defined, as in claim 1.

- 6.3.4 Finally, the skilled person realises that the developing roller positioned at the front end of the developing device is not required for the correct functioning of the device with the driving force reception unit and the power reception unit are arranged along a common axis. The driving force reception unit and the power reception unit can be arranged as defined in the original claim 3 somewhere along the respective sides without any of the three units losing any of their functionality.

Hence, the patent as amended complies with Article 123(2) EPC.

**7. Inventive step - Article 100(a) and 56 EPC**

**7.1 Document E10 as closest prior art**

7.1.1 Document E10 is selected as closest prior art, which relates to an image forming apparatus to which a developing device using developing cartridges can be mounted.

7.1.2 The subject-matter defined in present claim 1 differs from the teaching of document E10 by the features OC, OE and OF as will be shown in the following.

7.1.3 Document E10 discloses a developing device with an image forming apparatus (Title), and consequently also the use of this device. The developing device (230) comprises a driving force reception unit (234) disposed



at one side of the developing device (230) to receive a driving force from the image forming apparatus (column 24, line 16 to 20; Figure 34); ~~and a power reception unit disposed at an other side to receive an electric power from the image forming apparatus.~~ The developing device (230) further comprises a memory unit (260) ~~disposed at a rear end of the developing device with respect to a direction of mounting of the developing device during mounting thereof to a main body of the image forming apparatus; wherein the memory unit is disposed closer to the power reception unit than to the driving force reception unit.~~ The developing device ~~further comprises a developing roller disposed at a front end of the developing device with respect to the direction of mounting of the developing device.~~

- 7.1.4 It is undisputed that document E10 does not disclose features OC and OE.
  
- 7.1.5 With regard to feature OF, the appellant argued that feature OF was disclosed in figure 33 of document E10 because the developing roller was located in the front half of the developing device and could be temporarily located at the front end of the device during assembly, as shown in figure 38 of document E10 (see statement setting out the grounds of appeal, page 10, third and fourth paragraphs). As pointed out by the opposition division under point 12.3.1.2 of the decision, the opinion of which was already shared by the Board in its communication (page 19, first paragraph), the developing roller cannot be considered to be positioned at the front end of the developing cartridge. A front end is not to be confused with the front half of a device because "an end" is a final part of something and not one half of something. Also, a possible temporary position of the developing roller at the

front end of the cartridge during assembly can only be seen in figure 38 if it is over-interpreted.

- 7.1.6 Based on these three distinguishing features, obviousness cannot be convincingly argued with document E10 as closest prior art, as will be shown in the following.
- 7.1.7 The three distinguishing features OC, OE and OF have the technical effect to reduce or even prevent the vibrational impact on the memory unit in order not to impair the functioning of the memory unit. Therefore, these features solve the technical problem of improved damage prevention of the memory unit and of a prevention of poor connections between the terminals of the memory unit and a main body of an image forming apparatus ([0016] of the patent in suit).
- 7.1.8 Regarding the appellant's arguments that the location of the power reception unit was only a design feature and should not be considered for any inventive step argumentation because it did not contribute to the technical effect of a reduction of the vibrations, the Board comes to a different conclusion: even though the location of the power reception unit might not *per se* be directly related to reducing vibrations, it serves not only as a reference location in order to define the spatial relationship between the developing roller and the driving force reception unit, but also to arrange the three units at a certain distance. Thereby damage prevention is improved due to the reduced impact of one unit to the other. In addition, the separation of the power reception unit from the driving force reception unit has implications on the heat generated in the device providing further advantages. Therefore, the definition in claim 1 of the power reception unit

including its position in relation to the other structural units is justified from a technical point of view, and therefore cannot be ignored as a "simple design choice".

- 7.1.9 It should also be mentioned that the image forming apparatus shown in document E10, even though it uses developing cartridges, is a rotary type printer in which the cartridges are placed in a rotary drum as opposed to the linear process cartridges used in the patent in suit.
- 7.1.10 On that basis, starting with document E10 as closest prior art, the skilled person has no obvious incentive to rearrange the structural parts in the shown rotary-type printer in order to arrive at the claimed subject-matter using only the common general knowledge. Serious reconfigurations would be necessary in order to modify the printer using a rotary cartridge drum as shown in document E10 into a printer suitable for receiving linear cartridges in which the developing roller is located at the front end of the developing device.
- 7.1.11 The skilled person would also not consider the teaching of document E8, which deals with process cartridges and not developing cartridges, since also here significant structural reconfigurations of the different structural units would be required. In addition, vibrational problems are particular to developing cartridges which are, compared to the process cartridges, generally lighter and therefore more susceptible to vibrations. Therefore, the skilled person faced with the task to improve the device of document E10 would have no reason to consider document E8, and even if document E8 were considered, extensive, non-obvious structural

rearrangements would have been required in order to arrive at the claimed subject-matter.

7.1.12 Finally, the skilled person would also have no reason to consult document E25, since it is silent about memory units or the like.

## 7.2 **Document E25 as closest prior art**

7.2.1 Alternatively, document E25 may also be considered as closest prior art as it relates to a similar developing device used in an image forming apparatus using developing cartridges.

7.2.2 Document E25 discloses a developing device with an image forming apparatus (title), the developing device (title, figure 5) comprising a driving force reception unit (310, 320) disposed at one side of the developing device (figure 5) to receive a driving force from the image forming apparatus (figure 5); ~~and a power reception unit disposed at an other side to receive an electric power from the image forming apparatus; further comprising a memory unit disposed at a rear end of the developing device with respect to a direction of mounting of the developing device ) during mounting thereof to a main body of the image forming apparatus; wherein the memory unit is disposed closer to the power reception unit than to the driving force reception unit.~~ The developing device further comprises a developing roller (131, figures 4 and 5) disposed at a front end of the developing device (figures 4 and 5) ~~with respect to the direction of mounting of the developing device.~~

Feature OF is considered disclosed in document E25 even though no mounting direction is explicitly defined. The

position of the developing roller as shown in figures 4 and 5 corresponds to the same position of the developing roller as in the patent in suit.

The alleged implicit disclosure of feature OC (a power reception unit) cannot be seen by the Board. Even though a power supply is most probably provided for the motor of the developing device, it is not implicit that the power is supplied from the imaging device and the position of the power receiving unit "at an other side" is even less implicit.

Therefore, features OC, OD and OE present the distinguishing features when starting from document E25 as closest prior art.

7.2.3 Based on these three distinguishing features, the Board does not see a convincing argument for obviousness when starting from document E25 as closest prior art as will be shown in the following.

The distinguishing features OC, OD and OE provide the technical effect of an increased damage prevention of the memory unit and prevent the terminals from poor connections ([0016] of the patent in suit).

The solution to this technical problem is not obvious to the skilled person by combining the teaching of document E25 with the one of prior use "Samsung" as alleged by the appellant for the following reasons.

First, it is doubtful, whether the skilled person would consider the teaching of prior use "Samsung" at all in the given context for improving the device of document E25. The technical problem which is to be solved is specific for developing cartridges as used in document

E25, whereas in prior use "Samsung" process cartridges with a photosensitive roller are used. The technical problem of vibrations does not arise for process cartridges as already mentioned above in section 7.1.11. Therefore, the Board is of the opinion that the skilled person would not look for solutions to the posed technical problem in image forming apparatus using process cartridges as it is the case for prior use "Samsung".

If, however, the skilled person would still do so, the combination of the teaching of document E25 with prior use "Samsung" would at least not provide any guidance as to the location of the power reception unit as defined in claim 1. The provision of the power reception unit on another side than the side where the driving force reception unit is located is not shown in any of these documents. The position of the power reception unit is in the given context also not a simple design feature because the power reception unit's position is clearly intended to optimally select the distances between the three units defined by features OB, OC and OE as mentioned also above under point 3.5. In this way, the memory unit is oriented towards the power reception unit and away from the further driving force reception unit.

Starting from document E25 and combining this teaching with the prior use "Samsung", it would rather appear more obvious to provide the power reception unit on the same side together with the driving force reception unit due to the electrical connections. This, however, would be leading away from the solution defined in claim 1.

7.3 **Prior use "Samsung" as closest prior art**

Prior use "Samsung" was presented as a further closest prior art. This prior use, which was not questioned by the respondent, relates to an image forming apparatus using process cartridges instead of developing cartridges. However, the line of argumentation starting from prior use "Samsung" is not further considered, since its choice as the closest prior art is, as will be detailed in the following, inappropriate.

Process cartridge type printers and developing cartridge type printers are significantly different categories of printers which are incompatible with each other. A developing cartridge cannot be used in a process cartridge type printer and vice versa. Major constructional modifications of a printer and its cartridges would be necessary to transform a process cartridge type cartridge and printer into a developing cartridge type cartridge and printer and vice versa. Therefore, the skilled person would not consider an image forming apparatus using process cartridges for arriving at the claimed subject-matter.

**8. Reimbursement of the appeal fee**

Rule 103(1) (a) EPC only foresees a reimbursement of the appeal fee where the appeal is allowed. Since this is not the case, the request for reimbursement of the appeal fee under Rule 103(1) (a) EPC cannot be granted.

Additionally, the reasons why the alleged substantial procedural violations did not convince the Board have already been set out above as follows:

- The appellant's argument concerning the implications of the gap rings and presented by an

"extended, substantive and thoroughly founded discussion of the disclosure of O8" (see statement setting out the grounds of appeal, page 2, fifth paragraph) in the letter of 13 January 2017, was not ignored by the opposition division but considered in their decision as explained above under points 5.1 and 5.2.

- Feature OF has been considered by the opposition division, but the part open for examination according to G 3/14 did not lack clarity (see points 4.1 and 4.2 above).

## **9. Conclusion**

9.1 The Board concludes that

- claim 1 of the main request fulfils the requirements of Articles 83, 84 and 123(2) EPC and
- the subject-matter defined in claim 1 of the main request and the invention to which it relates is new and involves an inventive step within the meaning of Articles 52(1), 54 and 56 EPC.

9.2 Claims 2 to 9 of the main request also satisfy the requirements of the EPC, in particular the defined subject-matter involves an inventive step at least by reason of their dependence on claim 1.

9.3 The Board is satisfied that the description has been suitably adapted to the claims of the main request.

9.4 In the light of this conclusion, it is unnecessary for the Board to examine the auxiliary requests.



**Order**

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

The appeal is dismissed.

The Registrar:

The Chairman:



S. Sánchez Chiquero

G. Eliasson

Decision electronically authenticated