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**Datasheet for the decision  
of 28 September 2023**

**Case Number:** T 3277/19 - 3.2.06

**Application Number:** 14182924.2

**Publication Number:** 2990523

**IPC:** D06F58/20, D06F58/02

**Language of the proceedings:** EN

**Title of invention:**

Heat pump laundry dryer

**Patent Proprietor:**

Electrolux Appliances Aktiebolag

**Opponent:**

Whirlpool EMEA S.p.A.

**Headword:**

**Relevant legal provisions:**

EPC Art. 100(a), 56

RPBA 2020 Art. 15(2)(b), 15a(2)

**Keyword:**

Inventive step - main request (no) - auxiliary requests 1a new  
and 5 (no)

Oral proceedings in person, despite requests of the parties  
for oral proceedings by videoconference

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**

**Boards of Appeal**

**Chambres de recours**

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Case Number: T 3277/19 - 3.2.06

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.06**  
**of 28 September 2023**

**Appellant:** Whirlpool EMEA S.p.A.  
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**Respondent:** Electrolux Appliances Aktiebolag  
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**Representative:** Electrolux Group Patents  
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**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted on  
12 November 2019 rejecting the opposition filed  
against European patent No. 2990523 pursuant to  
Article 101(2) EPC**

**Composition of the Board:**

**Chairman** M. Harrison  
**Members:** P. Cipriano  
M. Blasi

## **Summary of Facts and Submissions**

- I. An appeal was filed by the appellant (opponent) against the decision of the opposition division rejecting the opposition to European patent No. 2 990 523. It requested that the decision under appeal be set aside and the patent be revoked. It also requested oral proceedings.
- II. With its reply, the respondent (patent proprietor) requested that the appeal be dismissed or, as an auxiliary measure, that the patent be maintained in amended form according to one of the set of claims of auxiliary requests filed therewith in the following order 2-1-1a-3-4-5-6.
- III. The following documents, referred to by the appellant in its statement of grounds of appeal, are relevant to the present decision:  
E5 EP 2 570 546 A1  
E7 printscreen of the on-line encyclopaedia  
Encyclopedia of Mathematics corresponding to the item  
"Monotone function"
- IV. The Board issued a summons to oral proceedings on 31 March 2022.
- V. With letter dated 22 March 2023, after notification of the summons to oral proceedings before the Board, the respondent filed sets of claims of further auxiliary requests 1 new, 1a new and 5 new and changed the order of the auxiliary requests to the following 2-1(or 1 new)-1a(or 1a new)-5-5 new-6-3-4.

- VI. With letters dated 11 January 2023 and 26 June 2023 the appellant requested that oral proceedings be held by videoconference. In its first letter, the appellant also requested, in the event that oral proceedings would be held in person, to attend the oral proceedings by videoconference as stipulated in Article 15a(2) RPBA 2020.
- VII. With letter dated 7 July 2023 the respondent also requested that the oral proceedings be held by videoconference.
- VIII. The Board issued a communication under Article 15(1) RPBA 2020 containing its provisional opinion, in which it indicated *inter alia* that the subject-matter of claim 1 of the main request and of auxiliary requests 1a new and 5 did not involve an inventive step. The Board also stated that the format for oral proceedings would remain in-person on the EPO premises and explained why.
- IX. Oral proceedings were held before the Board on 28 September 2023 on the EPO premises, during which the appellant withdrew its objection under Article 100(b) EPC and the respondent withdrew all the claim requests with the exception of the main request and of auxiliary requests 1a new and 5.

At the close of the oral proceedings, the requests of the parties were as follows:

- The appellant requested that the decision under appeal be set aside and the patent be revoked.
  
- The respondent requested that the appellant's appeal be dismissed, implying that the opposition be rejected

and the patent be upheld as granted (main request), or alternatively, that the patent be maintained in amended form on the basis of the set of claims of auxiliary request 1a new filed with letter dated 22 March 2023 or of auxiliary request 5 resubmitted with the statement of grounds of appeal.

X. Claim 1 of the main request reads as follows (feature numbering according to item 13 of the impugned decision or item 1.3 of the statement of grounds of appeal):

"a. A laundry dryer (1) including:

b. - a casing (2), rotatably supporting a drum (3) for receiving a load to be dried, said drum being apt to rotate around a rotational axis (R), said casing (2) including

c. • a basement (24) defining a basement plane (X, Y) and in which a first longitudinal half (24 first half) and a second longitudinal half (24 second half) of said basement (24) are identifiable by means of a first plane (P1) perpendicular to said basement plane (X, Y) and passing through said rotational axis (R) of the drum (3);

d. - A [sic] process air conduit (18) in fluid communication with the drum (3) where a process air stream is apt to flow;

e. - A [sic] heat pump system (30) having a heat pump circuit in which a refrigerant can flow, said heat pump circuit including

f. a first heat exchanger (31) where the refrigerant is cooled off and the process air is heated up, and

g. a second heat exchanger (32) where the refrigerant is heated up and the process air is cooled off;

h. said first heat exchanger (31) and/or said second heat exchanger being arranged in the process air conduit (18) within said first longitudinal half (24 first half) of said basement (24) for the majority of their respective volumes in order to perform heat exchange between said refrigerant flowing in said heat pump circuit and said process air;

i. - Said [sic] process air conduit (18) including a basement process air duct formed in said basement (24), said basement process air duct comprising a basement duct portion (28) channeling said process air between a condenser process air exit (28in) where process air exits from said first heat exchanger (31) and a basement process air outlet (19) where process air exits said basement (24),

j. - said basement process air outlet (19) being located within said second longitudinal half (24 second half) of said basement (24);

k. said basement duct portion (28) including one or more duct walls (28w) which in a section along a sectioning plane (PT) parallel to said basement plane (X, Y) defines an inner curve (28b) and an outer curve (28a), said outer curve (28a) being the curve closer to the rear wall (21) of the casing (2) among the two curves (28a, 28b);

l. - Wherein [sic] an exit plane (Pex) perpendicular to said basement plane (X, Y) sectioning said basement duct portion (28) at said condenser process air exit

(28in) defines a first basement duct portion section; a basement outlet plane (P19) perpendicular to said basement plane (X, Y) sectioning said basement duct portion (28) at said basement process air outlet (19) defines a second basement duct portion section; and an intermediate plane (P3) perpendicular to said basement plane (X,Y) sectioning said outer curve (28a) of said basement duct portion (28) in a point belonging to said first half (24 first half) of said basement (24) not at said exit plane (Pex) and said inner curve (28b) in a point in either said first or in said second half of said basement defines a third basement duct portion section;

m. - Wherein [sic] each of said first, second and third basement duct portion sections defines a vertical centerline (C) dividing each first, second and third basement duct section in an outer half (28outer) including a point of the outer curve (28a) and an inner half (28inner) including a point of said inner curve (28b), said first basement duct portion section having a first lowest point (LP0) of said outer half (28outer) at a first vertical height (A0), said second basement duct portion section having a second lowest point (LPV) of said outer half (28outer) at a second vertical height (AV) and said third basement duct section having a third lowest point (LP3) of said outer half (28outer) at a third height (A1);

n. said third lowest point (LP3) belonging to said first longitudinal half (24 first half) of said basement (24);

o. characterized in that said first vertical height (A0) is lower than said second vertical height (AV) and



said third vertical height (A1) is comprised between, but not equal to, said first vertical height (A0) and said second vertical height (AV)."

XI. Claim 1 of auxiliary request 1a new differs from claim 1 of the main request in that the following text is appended at the end of the claim:

"- wherein a plurality of intermediate planes (P3) perpendicular to said basement plane (X, Y) sectioning said outer curve (28a) of said basement duct portion (28) in a point belonging said first longitudinal half (24 first half) of said basement (24) not at said exit plane (Pex) and said inner curve (28b) always at the same point in either said first longitudinal half (24 first half) or in said second longitudinal half (24 second half) of said basement (24) defines a family of third basement duct portion sections and a family of third lowest points (LP3) at a third vertical height (A1) in said outer half (28outer) of said third basement duct sections all belonging to said first longitudinal half (24 first half) of said basement;

said family of intermediate planes being selected so that the following intermediate plane (P3) of the family sections the outer curve (28a) of said basement duct portion (28) is in a point closer to said basement outlet plane (P19) than the previous intermediate plane of said family; and

said family of thirds [sic] lowest points (LP3) defines a curve of third vertical heights (A1) which is monotone."

Claim 1 of auxiliary request 5 differs from claim 1 of the main request in that the characterising portion reads as follows:

"characterized in that said first vertical height (A0) is lower than said second vertical height (AV), said third vertical height (A1) is comprised between, but not equal to, said first vertical height (A0) and said second vertical height (AV), a plurality of intermediate planes (P3) perpendicular to said basement plane (X, Y) sectioning said outer curve (28a) of said basement duct portion (28) in a point belonging said first longitudinal half (24 first half) of said basement (24) not at said exit plane (Pex) and said inner curve (28b) always at the same point in either said first longitudinal half (24 first half) or in said second longitudinal half (24 second half) of said basement (24) defines a family of third basement duct portion sections and a family of third lowest points (LP3) at a third vertical height (A1) in said outer half (28outer) of said third basement duct sections all belonging to said first longitudinal half (24 first half) of said basement; said family of intermediate planes being selected so that the following intermediate plane (P3) of the family sections the outer curve (28a) of said basement duct portion (28) is in a point closer to said basement outlet plane (P19) than the previous intermediate plane of said family; and said family of thirds [sic] lowest points (LP3) defines a curve of third vertical heights (A1) which is an increasing monotone curve."

XII. The appellant's arguments may be summarised as follows:

The oral proceedings should be held by videoconference or the appellant should be allowed to attend the oral proceedings held on the premises of the EPO by videoconference.

*Main request - Article 100(a) EPC*

Novelty and inventive step - starting from E5

The skilled person directly and unambiguously derived the features of claim 1 from the embodiment of Figure 4 and paragraph [0014] of E5.

Should E5 not disclose feature o), the provision of three points with different heights as defined in feature o) did not provide a technical effect over the whole claimed range. The objective technical problem was therefore simply to provide an alternative ducting base for the air duct portion.

The skilled person, depending on the circumstances, would have designed the air duct portion including its base in any suitable appropriate manner as a matter of normal design practice.

*Auxiliary request 1a new - Article 56 EPC*

The amendments to claim 1 of auxiliary request 1a new did not allow the claim to be read as a condition that had to be fulfilled at any and all possible sections of the basement duct portion. Only two planes were defined and these planes could be close to each other. In addition, a monotone curve did not necessarily have to rise.

The objective technical problem remained the same as that explained for the main request. Making the base "non flat" at one or more locations was a common design possibility and thus devoid of any inventive merit.

Auxiliary request 5 - Article 56 EPC

The amendments to claim 1 of auxiliary request 5, as with the previous request, did not allow the claim to be read as a condition to be fulfilled by any and all possible sections of the basement duct portion. Again, only two planes were defined and these planes could be very close to each other. In addition, an increasing monotone curve did not necessarily have to rise, as E7 attested, but even if it did necessarily rise, the two planes could be so close to each other that there would be no effect on the air flow along the duct. To add to that, only the base of a duct portion was defined, the rest of the duct shape was not defined.

The objective technical problem remained therefore to provide an alternative base for the air duct portion. To make it non flat with a rising portion was a common design possibility known to the skilled person.

XIII. The respondent's arguments may be summarised as follows:

The oral proceedings should have been held by videoconference, since the "Oktoberfest" made travel arrangements extremely complicated.

*Main request - Article 100(a) EPC*

E5 did not directly and unambiguously disclose feature o) in combination with features i) and j). Also, the wording of claim 1 defined a condition that needed to be met for every intermediate plane section cutting the basement duct.

The objective technical problem was to provide an improved airflow.

None of the available prior art disclosed feature o) in order to improve the airflow.

*Auxiliary request 1a new - Article 56 EPC*

The amendments made to claim 1 when read together with paragraph [0144] made clear that the base of the duct had a constant increase in height, i.e. claim 1 now defined a condition that should be met by any and all intermediate planes. The objective technical problem was now therefore to improve the airflow in at least a partial portion of the base of the duct.

The embodiment of Figures 1 to 5 in E5 as well as paragraph [0030] only disclosed a flat base whilst the one of the patent was always increasing. None of the remaining cited prior art disclosed a gradual increase in the height of the base of the duct either as required by the feature "said family of thirds lowest points (LP3) defines a curve of third vertical heights (A1) which is monotone" of claim 1.

The subject-matter of claim 1 of auxiliary request 1a new was therefore not obvious for the skilled person starting from E5 and using common general knowledge.

*Auxiliary request 5 - Article 56 EPC*

The limitation of claim 1 to "said family of thirds lowest points (LP3) defines a curve of third vertical heights (A1) which is an increasing monotone curve" when read together with paragraphs [0145] and [0146] of the patent made clear that the base part of the

basement duct portion steadily increasing had the effect of improving the airflow.

None of the remaining cited prior art disclosed a gradual increase in the height of the base of the duct as defined in claim 1 of auxiliary request 5, such that the subject-matter of claim 1 of auxiliary request 5 involved an inventive step.

### **Reasons for the Decision**

1. Requests for oral proceedings by videoconference
  - 1.1 Both parties requested that the oral proceedings be held by videoconference. However, the Board did not change the format of the oral proceedings from that as summoned, which thus remained in-person on the EPO premises.
  - 1.2 The Board found that the subject-matter of the proceedings involved complex explanations of the duct's geometry in relation to the visualisation of several virtual planes and intersections, which made in-person proceedings the appropriate format to be used in the present case. This was already explained in item 9 of the Board's communication pursuant to Article 15(1) RPBA 2020 and the parties did not further comment on this at the oral proceedings. Notably, in the oral proceedings itself flipchart drawings (see the minutes) using various colours and simultaneous explanations while developing the drawings on several occasions were made by the appellant, which the Board considers merely confirms why in-person oral proceedings was the appropriate format for these proceedings, despite both parties requesting oral

proceedings by videoconference. Whilst drawings or sketches supporting or helping to illustrate oral submissions could also be made at oral proceedings held by videoconference in a different way, e.g. by sharing the screen or by using the whiteboard, the Board considered in-person oral proceedings the more appropriate and efficient format in the circumstances of the present case, not least since it expected lengthy discussions on issues for which such visual aids might be referred to often and extensively.

This reasoning applied to both parties such that the purpose would have been defeated by letting the appellant attend the oral proceedings by videoconference as provided for in Article 15a(2) RPBA 2020.

The appellant stated in writing that in-person oral proceedings are "much more complicated, time-consuming and expensive" and "cause much more CO<sub>2</sub> emissions than oral proceedings held by videoconference". The Board did not see why in-person oral proceedings could possibly be more complicated, but could follow the other aspects on a general level and seen from a party's perspective. Nevertheless, as regards the present case, these aspects did not outweigh the need to hold oral proceedings in the appropriate format determined by the Board and for the reasons already given.

The appellant's argument that the COVID-19 pandemic "is not yet over" and that postponements may be avoided by holding the proceedings by videoconference, did not outweigh the aspects due to which the Board determined the format to be in-person. Whilst the COVID-19 pandemic is admittedly not over, the incidence of

COVID-19 at the time at which the Board first dealt with the request for oral proceedings by videoconference was very low and the appellant did not show that it was restricted in travelling due to this. Nor was any postponement considered likely or indeed necessary. Should a party nevertheless have been restricted, the Board always had the possibility to alter the format to a videoconference at short notice, even if this may have given rise to other difficulties e.g. to lengthy oral proceedings or difficulties in understanding parties' arguments in relation to the duct geometry.

The appellant's further argument that the videoconference format was suitable since "the appeal proceedings are based on documentary evidence only" is as such incorrect. It is the combination of at least oral and written submissions comprising requests, allegations of fact, objections, arguments, and any documentary evidence which is taken into account in proceedings before the Board, subject to any non-admittance issues. In as far as the appellant's statement was to be understood so as to distinguish the current case from other cases in which evidence would have to be taken by inspection or by hearing witnesses, the Board was nevertheless of the view after taking this argument into consideration that in-person oral proceedings was the appropriate format for the considerations set out above.

- 1.3 The Board is also aware that the "Oktoberfest" (and indeed any trade fairs or other large-scale events) may sometimes make travel and accommodation more complex and expensive, but the respondent did not make this argument before the oral proceedings took place such that it came too late to have any effect on the Board's



decision. Nor indeed was any evidence provided in this regard, albeit the Board accepts that last minute available flights or other transportation options and accommodation are often less numerous. Whether such problems could anyway have been largely mitigated by the respondent in the present case by early booking of e.g. travel arrangements, given the fact that the summons to in-person oral proceedings was issued in March 2022, can also be left undecided.

2. Main request - Novelty and inventive step

2.1 It was only contested between the parties whether E5 disclosed feature o). It was not disputed that the embodiment seen in Figures 1 to 5 of E5 disclosed the features a) to n).

2.2 The Board finds that E5 does not disclose feature o) in combination with the remaining features of claim 1.

Whilst the embodiment of Figures 1 to 5 discloses an air duct extending horizontally in the basement, paragraph [0014] of E5 discloses three possibilities for the way in which the air duct could extend: the air duct extends horizontally in the basement, the air duct extends in a vertical plane adapted to the circumference of the laundry drum or the air duct extends in a vertical and in a horizontal plane.

2.3 Although the passage in paragraph [0014] discloses the possibility of the air duct extending in a vertical plane (and thus rising), this paragraph does not give the skilled person any further specific guidance as to how this could be done, such that the skilled person would not know whether specific aspects of the embodiment of Figures 1 to 5 might have to be modified.

For example, the adaptation to the circumference of the laundry drum when extending in a vertical plane, as suggested in paragraph [0014], could be achieved by modifying only the upper wall of the duct so that the lower wall of the duct could then still be horizontally flat and thus not have points in three different heights as defined in feature o).

In addition, the adaptation to the circumference of the laundry drum as it extends in a vertical plane could also require that the basement duct be formed above the basement such that the duct would not be formed *in* said basement as defined in feature i) of claim 1. The process air outlet would also be in a elevated position and thus possibly not located within the second longitudinal half *of the basement* as defined in feature j) of claim 1.

- 2.4 The skilled person would therefore not directly and unambiguously derive from the disclosure of paragraph [0014] together with the embodiment of Figures 1 to 5 a duct extending in a vertical plane together with all other features defined in claim 1 of the main request.
- 2.5 The subject-matter of claim 1 of the main request is thus novel over E5.
- 2.6 It was then not disputed by the respondent that the embodiment of Figures 1 to 5 in E5 discloses all the features of claim 1 with the exception of feature o).
- 2.7 The respondent argued that the provision of different heights for the first, second and third lowest points had the effect of improving the airflow through the duct as described in paragraphs [0012] and [0014] of

the patent. According to the respondent, the skilled person would read the claim in the light of paragraph [0014] and thus understand that the claim defined not only three points with different heights in the base of the duct, but a continuously rising slope that extended along the duct's length, i.e. the claim did not define three planes, but a condition that should be satisfied by any and all possible intermediate planes between the two limiting planes (Pex and P19) of the duct portion.

This argument is not persuasive. Whilst the skilled person should try to arrive at an interpretation of the claim which is technically sensible and takes into account the whole disclosure of the patent, the skilled person cannot ignore the wording of the claim which is not limited to the description. Thus, the fact that the description in paragraph [0014] concerns the reduction of pressure drops in the duct and discusses the "core of the invention" in regard to a "gently rising shape of the process air duct" and the absence of "sharp corners", this is simply not reflected in the wording of the claims. Similarly, while paragraph [0012] explains the object of the invention as being to improve the flow of the air stream, this bears no relation to the breadth of claim 1.

Features l) and o) of claim 1 define exactly three planes, three sections and three points in a way that makes technical sense, and the Board cannot identify any specific incongruence in the text that would prompt the skilled person to interpret the third plane as a condition that should be met by every intermediate plane. The Board notes that dependent claim 4, as opposed to claim 1, defines "a plurality of intermediate planes" such that it is entirely reasonable to conclude that claim 1 is broader than

dependent claim 4 and that claim 1 merely defines a single intermediate plane.

Claim 1, and in particular feature o), only defines three points at three different heights along the duct and encompasses embodiments in which the base part of the basement duct portion is not smooth or continuously rising but comprises, for example, steps and/or several changes in height. In addition, as also discussed during the oral proceedings, the skilled person knows from common general knowledge that airflow is affected by the whole shape of the duct and not only by its lowest points/parts, which was indeed not contested by the respondent. Hence, without a more specific definition of the shape of the duct walls, it is impossible to ascertain the fluid behaviour and consequently whether an improvement of the airflow might occur or not. The technical effect alleged by the respondent (improving the airflow) is therefore only given for a fraction of the embodiments covered by the claim and not attainable throughout the whole range covered.

2.8 The Board thus finds that the definition of the lowest height at three single points of the surface of the duct cannot alone provide any effect on the airflow passing through it, such that the objective technical problem to be solved compared to E5 is thus to provide an alternative base part for the basement duct.

2.9 Given this objective technical problem, feature o) is nothing more than a mere design choice for the skilled person searching for an alternative for the base of the duct at the relevant date. Such design choices lie within the normal practice of a skilled person, which would have been arrived at merely by applying routine

design measures. The respondent provided no counter-argument to this, when it was discussed, and instead maintained only that the objective technical problem to be solved should be seen differently, i.e. formulated more ambitiously.

- 2.10 The subject-matter of claim 1 of the main request therefore lacks an inventive step. Article 100(a) in conjunction with Article 56 EPC hence prejudices maintenance of the patent as granted. The main request is thus not allowable.
3. Auxiliary request 1a new - inventive step
- 3.1 The Board admitted auxiliary request 1a new into the proceedings, but since it found that the subject-matter of claim 1 of the request lacked an inventive step, the reasons for its admittance can be left aside.
- 3.2 Claim 1 of auxiliary request 1a new defines, *inter alia*, a family of third lowest points defining a curve of third vertical heights which is monotone.
- 3.3 The respondent argued that the term "monotone" in the meaning of the patent could be derived from paragraph [0144] and implied a constant increase in height at least for the part of the lower surface of the duct constituted by the family of third lowest points, and that this constant increase in height had the effect of improving the airflow at least in a portion of the duct.

The Board does not accept these arguments. First, in mathematical terms, a monotonic curve does not have to necessarily rise (or fall) and may include flat sections (as stated e.g. in E7). The reference to the

description paragraph [0144] does not alter this conclusion. But even assuming that it necessarily ascended in the sense indicated in the patent, the claim does not define how many third lowest points there are in the family, nor how far apart these points are arranged (i.e. it does not define a minimum distance between them). The claim therefore encompasses as few as two points separated by a e.g. negligible distance compared to the total length of the basement duct portion.

- 3.4 The respondent also argued that the skilled person would exclude embodiments that do not make technical sense so that a negligible distance would be excluded. However, the claim does not provide any guidance as to any proportions, nor does it prescribe any particular shape. Instead, the conditions to set out the third basement duct portion sections are simply left very broad.
- 3.5 Since the distance between the points of the family can be very small, the Board finds, similarly as for the main request, that the definition of a curve between the at the least two singular points of the surface of the duct constituting a family does not provide any recognisable technical effect on the airflow passing through the duct, even when omitting the fact that the overall cross-section and shape of the rest of the duct is left entirely undefined. Thus, the objective technical problem is, again, merely to provide an alternative base part for the basement duct.
- 3.6 As explained in item 2 above, it is obvious to the skilled person to change the base part of the basement duct in the first longitudinal half as set out in regard to the main request when starting from E5. Since

the distance between the points of the family can be very small, in practice such a changed base part would also necessarily result in a basement duct profile having more than one intermediate third basement duct portion section (i.e. a family) through the resulting lower part of the duct with an intermediate height.

3.7 Therefore, the subject-matter of claim 1 of auxiliary request 1a new also does not involve an inventive step, contrary to the requirement of Article 56 EPC. Auxiliary request 1a new is thus not allowable.

4. Auxiliary request 5 - inventive step

4.1 Claim 1 of auxiliary request 5 was amended to define that the family of third lowest points defines a curve of third vertical heights which is an increasing monotone curve (whereas, in auxiliary request 1a new, the curve was simply monotone).

4.2 The respondent argued that the skilled person would have understood from paragraphs [0145] and [0146] of the patent that an increasing monotone curve would always rise and have no flat sections, and that this condition applied to any possible intermediate third basement duct portion section taken along the basement duct portion. The claim therefore allegedly defined a rising curve along the length of the duct which improved the airflow through the duct.

These arguments are not persuasive. Paragraphs [0145] and [0146] cannot be used to limit the claim beyond the meaning of the claim wording. As the Board explained above in item 3.5, the distance between the sections and the points of the family can essentially be negligible. Regardless of whether an increasing

monotone curve is a specific type of monotone curve that always rises in the flow direction, the claim still does not define that the curve must extend over a meaningful length of the duct portion. The Board cannot therefore arrive at a conclusion different from the one for claim 1 of auxiliary request 1a new, since, in the absence of a more defined duct shape, there is no recognisable effect on the airflow passing through the duct, such that the objective technical problem remains to provide an alternative base part for the basement duct.

- 4.3 As set out in item 2 above in regard to the main request when starting from E5, it is obvious for the skilled person to modify the base part of the basement duct in the first longitudinal half. Since the distance between the points of the family can be very small, in practice such a modification would necessarily result in a basement duct profile having more than one intermediate third basement duct portion sections (i.e. a family) with a base part with an increasing height.
- 4.4 Therefore, the subject-matter of claim 1 of auxiliary request 5 also does not involve an inventive step, contrary to the requirement of Article 56 EPC. Auxiliary request 5 is thus not allowable.
5. In the absence of any request which meets the requirements of the EPC, the patent must be revoked (Article 101(2) and (3)(b) EPC).



**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:



D. Grundner

M. Harrison

Decision electronically authenticated