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Case Number: T 0193/16 - 3.2.01

Application Number: 06834423.3

Publication Number: 1961591

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Language of the proceedings: EN

Title of invention:
AIR CONDITIONER

Patent Proprietor:
Calsonic Kansei Corporation

Opponent:
MAHLE International GmbH

Headword:

Relevant legal provisions:
EPC Art. 83, 54

Keyword:
Sufficiency of disclosure (yes)
Novelty (yes)

Decisions cited:

Catchword:

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Case Number: T 0193/16 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 17 October 2018

Appellant: (Opponent)	MAHLE International GmbH Pragstrasse 26-46 70376 Stuttgart (DE)
Representative:	BRP Renaud & Partner mbB Rechtsanwälte Patentanwälte Steuerberater Königstraße 28 70173 Stuttgart (DE)
Respondent: (Patent Proprietor)	Calsonic Kansei Corporation 2-1917, Nisshin-cho, Kita-ku Saitama-shi Saitama 331-8501 (JP)
Representative:	Grünecker Patent- und Rechtsanwälte PartG mbB Leopoldstraße 4 80802 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 16 November 2015 rejecting the opposition filed against European patent No. 1961591 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	G. Pricolo
Members:	C. Narcisi
	P. Guntz

Summary of Facts and Submissions

I. The opposition against European patent No. 1 961 591 was rejected by the decision of the Opposition Division posted on 16 November 2015. Against the decision an appeal was lodged by the Opponent on 26 January 2016 and the appeal fee was paid. The statement of grounds of appeal was filed on 29 March 2016.

II. Oral proceedings took place on 17 October 2018. The Appellant (Opponent) requested that the decision under appeal be set aside and that the patent be revoked. The Respondent (Patentee) did not attend the oral proceedings as already advised with letter dated 13 September 2018. The Respondent has requested in writing that the appeal be dismissed and the patent be maintained as granted (main request) or, in the alternative, that the patent be maintained in amended form on the basis of the auxiliary request as filed on 10 August 2016.

III. Claim 1 as granted reads as follows:

"An air conditioner including, on a downstream side of a cooling evaporator (1), a mixing chamber (6) to which a warm air path (4) having a heating heat exchanger (2) being composed of a hot-water circulation-type heat exchanger (2) that generates heat by circulating hot water, and a bypass path (5) bypassing the warm air path (4) are connected, and in which downstream sides of the warm air path (4) and the bypass path (5) merge together to mix flows of air coming therethrough, and a blowout path (7) connected to the mixing chamber (6), the air conditioner comprising:
an auxiliary heater (3) provided at a position in which warm air having passed through the heat exchanger (2)

has a first air speed, the auxiliary heater (3) being disposed in series with the heat exchanger (2), wherein a portion of the warm air passes through the auxiliary heater (3),
characterized in that
another portion of the warm air passes through an area in which a second air speed is slower than the first air speed to bypass the auxiliary heater (3), and
a hot water inlet (13) of the hot-water circulation-type heat exchanger (2) is disposed lower than a position opposite to an inlet (4a) of the warm air path (4), a hot water outlet (14) of the hot-water circulation-type heat exchanger (2) is disposed at a position opposite to the inlet (4a) of the warm air path (4), and the hot water flows from a lower region to an upper region of the heat exchanger (2)."

IV. The Appellant's arguments may be summarized as follows:

The subject-matter of claim 1 in conjunction with the patent specification does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by the skilled person. Indeed, the feature reading "another portion of the warm air passes through an area in which a second air speed is slower than the first air speed to bypass the auxiliary heater (3)" (hereinafter designated as feature (i)) cannot be put into effect, for this is a functional feature implying a causal relation between the second air speed being slower than the first air speed, such that the auxiliary heater is bypassed by said "another portion of the warm air". However, the practical implementation of this functional feature is not disclosed in the patent specification (hereinafter designated as EP-B).

The subject-matter of claim 1 lacks novelty over E1, given that the contentious feature reading "another portion of the warm air passes through an area in which a second air speed is slower than the first air speed to bypass the auxiliary heater (3)", and in particular the further features reading "a hot water outlet (14) of the hot-water circulation-type heat exchanger (2) is disposed at a position opposite to the inlet (4a) of the warm air path (4)" (hereinafter designated as feature (ii)) and "a mixing chamber (6) to which a warm air path (4) having a heating heat exchanger (2) being composed of a hot-water circulation-type heat exchanger (2) that generates heat by circulating hot water, and a bypass path (5) bypassing the warm air path (4) are connected, and in which downstream sides of the warm air path (4) and the bypass (5) merge together to mix flows of air coming therethrough" (hereinafter designated as feature (iii)) are all known from E1 (the remaining features being likewise known from E1).

As to feature (i), according to a first line of argument it results from the fact that in the air conditioner of E1 the air speed proximate to the (opened) air mix door 53 (see figure 2) is lower than the air speed of the air flowing through the auxiliary heater 54. In effect, with increasing lateral or transverse distance from the warm air path 50, 51 (or from separating walls 37, 46 delimiting the air paths 50, 51) and from the air flow passing therethrough (generated by air blowers 34, 35) the air speed decreases correspondingly, and is obviously lower than the speed of the air in warm air path 50 traversing the auxiliary heater.

According to a second line of argument feature (i) results from a specific operation mode described on column 10 of E1 ("Bi-Level-Luftauslaβ-Betriebsart"). In this operation mode the defroster air opening 55 is merely open to a small extent and the air mixing door 49a (giving access to the mixing chamber connected to warm air flow path 50) is closed, such that defroster air provided by warm air flow path 51 (not passing through auxiliary heater 54) cannot enter the mixing chamber and is blown out only through defroster air opening 55. At the same time, air flowing through warm air flow path 50 (passing through auxiliary heater 54) exits through air openings 58 and 61, connected to said mixing chamber. According to this operation mode defroster air flow amounts to 15% and air flow through openings 58 and 61 amounts to 85 % of totally flowing air quantity. Hence air speed bypassing the auxiliary heater is smaller than speed of air passing through the same.

Concerning feature (ii), this is derivable from figure 2 of E1, showing an arrow indicating outflowing warm water leaving from an upper part of heater 45, the inlet of the warm air path being represented by the upstream outer surface of the heat exchanger 45.

Concerning feature (iii), said mixing chamber (see above) is derivable from figure 2 (on the right side of auxiliary heater 54) and is directly connected to warm air path 50 (see above) on the one hand, and to warm air path 51 by means of air mixing door 49a (see above). The permanent direct connection between warm air path 50 and said mixing chamber ensures that feature (iii) is fulfilled in E1.

V. The Respondent's arguments may be summarized as follows:

The subject-matter of claim 1 in conjunction with the description in the patent specification discloses the invention in a manner sufficiently clear and complete for it to be put into effect by the skilled person. Indeed, it is clear that due to its longer flow path, said "another portion of the warm air" (i.e. second portion of the warm air, see feature (i)) is caused to flow with a lower velocity than the first portion of the warm air.

The subject-matter of claim 1 is new over E1 since at least feature (i) is not derivable from E1.

Reasons for the Decision

1. The appeal is admissible.

2. The subject-matter of claim 1 in conjunction with the disclosure of EP-B meets the requirements of Article 83 EPC. The Board shares the Respondent's view in that said "another portion of the warm air" (see feature (i)) is made to flow with a lower speed than said "a portion of the warm air" (i.e. first portion of warm air) in essence due to the considerably longer flow path (implying a higher flow resistance). This is clearly corroborated by the disclosure of EP-B (see [0009], [0019]; figure 1), stating that the flow resistance of the warm air path 4 including both the heat exchanger and the auxiliary heater is reduced (as compared to the prior art; see discussion in paragraph [0005]), whilst (as a consequence) the flow resistance

of the warm air path bypassing the auxiliary heater is increased (as compared to the prior art).

3. The subject-matter of claim 1 is new over E1, as aforementioned features (i) to (iii) are not disclosed therein.

Starting with feature (iii), it reads in particular "a mixing chamber ..., in which downstream sides of the warm air path (4) and the bypass (5) merge together to mix flows of air coming therethrough". Since (according to claim 1) said warm air path includes both "a portion of the warm air" passing through the auxiliary heater and "another portion of the warm air" (see feature (i)) bypassing the same, "a downstream side" of the warm air path has to be construed as a downstream side of both portions of warm air flow, which according to feature (iii) are mixed in the mixing chamber with the cold air from the bypass path 5 (if air mix door 8 is open). In addition, this is the only technically possible and reasonable interpretation of feature (iii) (when considered in conjunction with feature (i)), as there is no support and no disclosure in EP-B for the alternative interpretation entailing that at least one of said "a portion of the warm air" and "another portion of the warm air" is diverted from said warm air path, thereby not flowing to said downstream side and into the mixing chamber.
For these reasons the Appellant's second line of argument fails, given that in the mentioned operating mode disclosed in E1 the air mixing door 49a (giving access to the mixing chamber connected to warm air flow path 50) is closed (E1, column 10, lines 30-38), such that defroster air provided by warm air flow path 51 (not passing through auxiliary heater 54), and corresponding to said "another portion of the warm air"

bypassing the auxiliary heater as claimed, cannot enter the mixing chamber. Thus feature (iii) read in conjunction with feature (i) is not fulfilled.

The Appellant's first line of argument likewise fails, for regardless of whether or not the air speed proximate to the (opened) air mix door 53 (see figure 2) is lower than the air speed of the air flowing through the auxiliary heater 54 (as alleged by the Appellant), the air flow passing through (opened) air mix door 53 in E1 consists of cold air (see e.g. E1, column 10, lines 14-22) (not heated by either the heat exchanger or the auxiliary heater), which anyway cannot be equated with anyone of said portions of warm air according to features (iii) and (i) of claim 1. Therefore, feature (i) in conjunction with feature (iii) is not fulfilled.

Finally, feature (ii) is also not derivable from E1. In particular, E1 does not define or depict in the figures the specific location of the inlet to the warm air path. Similarly, the exact position of the hot water outlet of the hot-water circulation-type heat exchanger is not defined and illustrated in E1. In addition, even regarding the upstream outer surface of the heat exchanger 45 as defining said inlet of the warm air path, it would nevertheless not be possible to identify in the disclosure of E1 a location of the hot water outlet corresponding to and fulfilling feature (ii).

For the above stated reasons the subject-matter of claim 1 is new over E1 (Article 54 EPC).

4. The subject-matter of claim 1 involves an inventive step in view of E1. The Board concurs with the appealed decision (see Findings, point 8.2) and with the

Respondent's arguments (see letter dated 10 August 2016, point 1.4) in that E1 does not suggest or render obvious the warm air path configuration implied by claim 1 (as implied in particular by features (i), (ii) and (iii)), leading to a lower air speed for the air flow bypassing the auxiliary heater and a higher air speed for the air flow passing through the auxiliary heater. The Appellant did not submit either in the written appeal proceedings or during oral proceedings any substantive arguments based on lack of inventive step. Indeed, even the latest submissions by the Appellant (i.e. letter filed on 10 July 2018) included merely new arguments based on lack of novelty (see above second line of argument).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

A. Vottner G. Pricolo

Decision electronically authenticated