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# Datasheet for the decision of 20 January 2009

**Case Number:** T 1919/06 - 3.2.03

**Application Number:** 04075788.2

**Publication Number:** 1462748

**IPC:** F28D 1/02

**Language of the proceedings:** EN

**Title of invention:**
Improved radiator

**Applicant:**
Jaga, naamloze vennootschap

**Opponent:**
-

**Headword:**
-

**Relevant legal provisions:**
EPC Art. 52(1), 54, 83

**Keyword:**
"Novelty - Claim 1 of Main Request (no)"
"Sufficiency of Disclosure - subject-matter of auxiliary request (no)"

**Decisions cited:**
-

**Catchword:**
-

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**Case Number:** T 1919/06 **-** 3.2.03

# D E C I S I O N
**of the Technical Board of Appeal 3.2.03**
**of 20 January 2009**

**Appellant:** Jaga, naamloze vennootschap
Verbindingslaan z/n.
B-3590 Diepenbeek (BE)

**Representative:** Donné, Eddy
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**Decision under appeal:** **Decision of the Examining Division of the European Patent Office posted 10 July 2006 refusing European application No. 04075788.2 pursuant to Article 97(1) EPC.**

**Composition of the Board:**

**Chairman:** U. Krause
**Members:** G. Ashley
K. Garnett

## Summary of Facts and Submissions

I. European patent application EP-A-1 462 748 concerns a radiator comprising a heat exchanger in an open housing.

The Examining Division considered that the radiator of claims 1 of the main request and both auxiliary requests lacked novelty with respect to DE-C-823 497 (D2). In addition, the amendment made to claim 1 of the first auxiliary request was held to be contrary to Article 123(2) EPC, and the amendment to claim 1 of the second auxiliary request was considered to lack clarity (Article 84 EPC). The decision was therefore taken to refuse the application.

In the provisional opinion accompanying the summons to oral proceedings, the Examining Division also expressed the view that the subject-matter of claim 1 lacked novelty in light of DE-A-42 09 963 (D1) and EP-A-1 411 303 (D5).

The Examining Division posted the decision on 10 July 2006; the Appellant (Applicant) filed notice of appeal on 8 September 2006, paying the appeal fee at the same time; a statement containing the grounds of appeal was filed on 20 November 2006.

II. In accordance with Article 15(1) of the Rules of Procedure of the Boards of Appeal, the Board issued a summons to attend oral proceedings on 20 January 2009 together with a preliminary opinion concerning novelty, inventive step and the requirements under Articles 84 and 83 EPC. In a letter dated 8 October 2007, the Appellant informed the Board that it would not be

attending the oral proceedings. Oral proceedings were nevertheless held in the absence of the Appellant.

III. Requests

The Appellant requested that the decision under appeal be set aside and a patent granted on the basis of the main request, alternatively the sole auxiliary request, both filed with the grounds of appeal.

IV. Claims

(a) Claim 1 of the main request corresponds to claim 1 of the main request before the Examining Division, and reads as follows:

"1. Improved radiator of the type which consists of a heat exchanger (2) provided in an open housing (3) and which mainly consists of one or several pipes (7-8) onto which one or several series of lamellae (9) are provided at mutual distances (A) from each other, characterized in that the distance (A) between the lamellae (9) amounts to at least three millimeters, and in that at least one fan (15) is provided above the heat exchanger (2), which fan (15) draws in air through the heat exchanger (2), whereby the space in the housing (3) above the at least one fan (15) is free from other heat exchangers and whereby the radiator (1) is provided with a switch (20) to switch between an operation with forced air circulation and an operation with natural convection, only by switching on and off the motor (18) of the fan (15) or fans."

(b) Claim 1 of the auxiliary request corresponds to claim 1 of the second auxiliary request before the Examining Division; it reads as claim 1 of the main request together with the following additional feature:

"…whereby the fan is such that it has no or practically no negative influence on the natural convection functioning of the heat exchanger (2), so that the radiator (1) can function unhindered with natural convection when the fan (15) or fans is or are switched off."

(c) Dependant claims 2 to 10 concern preferred embodiments of the radiator of claims 1 of the main and auxiliary requests.

V. Submissions of the Appellant

*Main Request*

(a) Document D2

The Appellant argued that D2 does not disclose a switch for switching operation only by switching the motor of the fan. Although the flaps automatically change in one direction by virtue of gravity, in order to change in the other direction, it is necessary to either actuate electromagnets or change the position of the flaps manually.

(b) Documents D1 and D5

Concerning the opinion expressed by the Examining Division that there was a lack of novelty in light of D1 and D5, the Appellant submitted the following.

Document D1 does not disclose switching between an operation with forced air circulation and an operation with natural convection by just activating the switch of the fan motor.

In response to the citation of document D5 as prior art under Article 54(3) EPC, the feature that "the space in the housing above at least one of fan (15) is free from other heat exchangers" has been introduced, which distinguishes the claimed radiator from D5.

The radiator of claim 1 of the main request is thus novel with respect to D1, D2 and D5.

*Auxiliary Request*

Concerning the objection of the Examining Division that the expression "no or practically no negative influence on the natural convection functioning" is not clear, the Appellant argued that the skilled person would consider that the expression refers to an influence in the order of less than a few percent. The fact that the fan has a negative influence of less than 3% of the total heat capacity of the radiator working in natural convection mode would be recognised by the skilled person as differentiating the claimed radiator from those disclosed in the cited prior art.

## Reasons for the Decision

1. The appeal is admissible.

*Main Request*

2. Article 123(2) EPC

Compared with claim 1 of the application as originally filed, claim 1 of the main request defines the space in the housing above the fan(s) as being free from other heat exchangers. Support for this amendment can be found in the figures. Whilst it is not always the case that support for the absence of a feature can be derived from the figures, it is considered that in the present case a skilled person would clearly recognise, especially from Figure 2, that the space above the fan(s) does not contain any heat exchangers.

Claim 1 has also been amended to require that the radiator has a switch that enables switching between forced air circulation and natural convection only by switching on/off the motor of the fan(s). The application as originally filed discloses that fans (15) are connected via a switch (see paragraph [0019] of the published application), and that the fans (15) can be switched off, as a result of which the radiator automatically switches back to natural convention (paragraph [0030]).

The amendments are thus disclosed in the application as originally filed, thereby meeting the requirements of Article 123(2) EPC.

3. Novelty (Article 54 EPC)

3.1 Document D1

D1 concerns radiators for buses and describes an embodiment (see Figure 8 and column 4, lines 22 to 34), which is provided with a fan. According to D1, the fan and its housing sit on top of the radiator, and this has the advantage that the fan need only be attached for the winter months. The Appellant is correct in arguing that D1 fails to disclose explicitly switching between forced air circulation and natural convection by just switching the switch of the fan motor.

3.2 Document D5

D5 was cited as prior art under Article 54(3) EPC. According to claim 1, there is no heat exchanger in the space above the fan(s); thus, the fan(s) draw the air through the heat exchanger. In D5 the heat exchangers are positioned downstream (or "above") the fans, which consequently blow air through the heat exchangers. The different arrangement of heat exchangers and fan(s) defined in claim 1 mean that the claimed subject-matter is novel over D5.

3.3 Document D2

The contested decision is based on lack of novelty with respect to D2. The radiator of D2 is equipped with a heat exchanger (a) and an electrically-powered fan (g). When fan (g) is switched off, a flap is in position (f) (see Figure 1) and warm air rising by natural

convection by-passes the fan. When fan (g) is switched on, the flap is moved, for example by means of electromagnets, to position (d), thereby directing the rising air to the fan.

The Appellant argues that D2 does not teach switching between forced air circulation and natural convection by just switching the switch of the fan motor, since it is also necessary to operate the flap. The Examining Division considered this feature to be disclosed in D2 because switching between the two modes of heating occurs merely by activating the switch that switches the motor on and off.

It is clear that in D2 the flap must be operated, in its simplest form by hand (page 2, line 56), in order to change between the two types of heating. D2 also discloses that when the switch for the fan motor is operated it may also have a further function, namely activating a mechanism, such as one based on electromagnets, for moving the flap (see page 2, lines 56 to 74).

Claim 1 requires that switching between forced air circulation and natural convection is brought about "only by switching on and off the motor of the fan or fans". Paragraph [0030] of the published application merely refers to switching off and discloses that when taken as a basis for the word "only" in the claim, this means that no action other than switching off the fans need be taken in order to return to natural convection mode. However, this is also the case for the embodiment described at lines 64 to 74 of D2, where it is said that by switching off the current for the fan, the flap

returns automatically to the natural convection position. Hence there is no difference between the radiator as defined in claim 1 and that of D2, and the requirements of Article 54 EPC concerning novelty are not met.

*Auxiliary Request*

4. Article 83 EPC

4.1 Claim 1 of the auxiliary request defines the following additional feature:

"…, whereby the fan is such that it has no or practically no negative influence on the natural convection functioning of the heat exchanger (2), so that the radiator (1) can function unhindered with natural convection when the fan (15) or fans is or are switched off."

4.2 The Examining Division was of the view that the expression "no or practically no negative influence" is not clear, contrary to Article 84 EPC. In addition, it was not apparent to the Examining Division how "unhindered" functioning of natural convection could be achieved, since the presence of fan(s) above the heat exchanger will always inhibit natural convection to a certain degree.

Although not explicitly stated in the contested decision, the latter objection clearly falls within the ambit of Article 83 EPC, which requires that the invention be disclosed in a manner sufficiently clear

and complete for it to be carried out by a person skilled in the art.

4.3 The Board shares the view of the Examining Division that the requirements of Article 83 EPC are not met. In particular, the additional feature is simply a statement of the desired effect, without providing any indication as to how the effect might be achieved. It would be expected that placing a fan above the heat exchanger amounts to an obstruction that inevitably has an adverse effect on the natural convection of warm air. So how is it that the fan(s) of the present application have, in the wording of the claim, no or practically no negative influence?

The Appellant argues that the combination of a fan with a specific shape combined with a heat exchanger of certain dimensions results in low heat losses. However, the application provides little information about the fans, merely stating that they are of the axial type, equipped with a screw and fixed in a housing by means of spokes (paragraph [0019]). The heat exchanger is said to be formed from two parallel U-shaped pipes provided with a series of lamellae having a spacing of at least 3 mm and a thickness between 15 one-hundredths of a millimetre and one millimetre (paragraphs [0013] and [0014]). However, it is not clear how flow of air through the fan, when the fan is not operating, is improved by a heat exchanger having a certain inter-lamellae spacing, particularly as the heat exchanger is upstream of the fan.

4.4 Since the claim itself provides no indication as to how the desired effect can be achieved, and nothing further

can be derived from the application, a skilled person using general knowledge is unable to carry out the invention, contrary to Article 83 EPC.

5. Summary

Since claims 1 of the main request and the auxiliary request fail to meet the requirements of the EPC, for lack of novelty (Articles 52(1) and 54 EPC) and incomplete disclosure (Article 83 EPC) respectively, the appeal cannot be upheld.

## Order

## For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

A. Counillon U. Krause