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D E C I S I O N
of 22 May 2006

Case Number: T 0935/05 - 3.2.04

Application Number: 00112677.0

Publication Number: 1164269

IPC: F01P 7/04

Language of the proceedings: EN

Title of invention:
Cooling fin arrangement

Applicant:
BorgWarner Inc.

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 54(1), 111(1)

Keyword:
"Novelty (yes)"
"Burden of proof"
"Remittal to the first instance (yes)"

Decisions cited:
-

Catchword:
-



Case Number: T 0935/05 - 3.2.04

D E C I S I O N
of the Technical Board of Appeal 3.2.04
of 22 May 2006

Appellant: BorgWarner Inc.
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Representative: Kügele, Bernhard
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 20. April 2005
refusing European application No. 00112677.0
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: M. Ceyte
Members: C. Scheibling
C. Heath

Summary of Facts and Submissions

I. This appeal is against the decision of the Examining Division posted 20 April 2005 to refuse the patent application. The Examining Division considered that the subject-matter of claims 1 and 6 filed with letter of 10 February 2003 was not novel over the prior art cited in the application. The Appellant's notice of appeal, the statement setting out the grounds of appeal and the appeal fee were all received on 2 June 2005.

II. Prior art which plays a role in the present proceedings:

D1: DE-A-195 11 665

The prior art as disclosed in the patent application page 1, line 23 to page 3, line 2 with respect to Figure 2.

III. The Appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of one of the set of claims according to the main request, the first or the second auxiliary request, all filed with letter of 24 March 2006.

He mainly argued as follows:

Claim 1 has been amended to define that each formation has a bar-like shape that extends in a direction essentially perpendicular to the flow direction of the cooling fluid. This amendment is derivable from the description and figure 4 of the application. The prior art described in the patent application does not disclose turbulence-creating formations provided in the cooling fin arrangement so as to obtain a non-laminar flow of said cooling fluid along said fins. D1 does not

teach or suggest a configuration in which each formation has a bar shape and extends along the fin surface in a direction substantially perpendicular to the flow direction of the cooling fluid.

IV. Claims 1 and 5 according to the main request read as follows:

"1. A cooling fin arrangement on a cooling fluid-receiving surface of an object (5) made of heat conductive material such as a portion of a containment in which heat is produced and is to be dissipated by means of said fin arrangement, comprising a plurality of cooling fins (15) arranged in a manner so as to obtain that said fluid flow at least partially moves in between said fins (15), and turbulence-creating formations (20) provided in said cooling fin arrangement so as to obtain a non-laminar flow of said cooling fluid along said fins, said turbulence-creating formations being integrally formed with said fins, and characterized in that each formation (20) has a bar-like shape that extends along a side surface of a said fin (15), in a direction essentially perpendicular to the flow direction of the cooling fluid."

"5. A containment (5) of heat conductive material of/for a device which produces heat during operation of said device, wherein the outer surface of said containment comprises an arrangement of cooling fins (15) according to any one of claims 1-4, wherein said cooling fins extend in any desired pattern over said outer surface and which represent a plurality of webs which are connected at one of their edges with said outer surface of said containment, extending

essentially perpendicular therefrom, said web-like cooling fins comprising said turbulence-creating formations (20) on at least one of their two flat faces so as to obtain that the flow of a cooling fluid along surfaces forming channels created by more or less parallel webs, is turbulent."

Reasons for the Decision

1. The appeal is admissible.
2. *Amendments - main request:*
 - 2.1 Claim 1 according to the main request differs from claim 1 as originally filed in that a part of the features of claim 4 as originally filed has been added, in that it is now specified that "each formation has a bar like shape" and in that "in a direction" has been added before "essentially perpendicular". The addition of parts of claim 4 and of "in a direction" is not objectionable. The feature "each formation has a bar like shape" is disclosed in the description as originally filed, page 7, lines 1, 2 and 16, 17 and figure 4.

Thus, claim 1 meets the requirements of Articles 84 and 123(2) EPC.

- 2.2 Claim 5 according to the main request differs from claim 8 as originally filed in that it has been redrafted to refer back to claims 1 to 4.

This amendment meets the requirements of Article 84 and Article 123(2) EPC.

3. *Novelty - main request:*

- 3.1 The Examining Division considered that the subject-matter of claim 1 lacks novelty with respect to the prior art cited in the application (page 1, lines 23 to 27; page 2, line 21 to page 3, line 13; Figures 1 and 2).

Figure 2 of the application shows a prior art cooling fin arrangement. These cooling fins exhibit rounded bar-like shaped elements, which extend in perpendicular direction to the air flow. However, there is no indication in the corresponding passage of the description that these elements can create turbulence so that the flow of the cooling fluid along the fins is non-laminar. On the contrary, it is clear from the description that this prior art has been cited to illustrate a laminar flow configuration. Thus, without additional information and solely based on Figure 2, the statement that the elements shown therein create turbulence so as to obtain a non-laminar flow of said cooling fluid is merely speculative.

In this respect it is observed that in examining proceedings the Appellant (applicant) apparently filed a calculation sheet demonstrating that the rounded bars shown in Figure 2 could not create turbulence. He also pointed out that the inventors who had carried out measurements of the turbulence in the cooling air flow of clutch covers according to Figures 2 and 4 (prior art and invention) and had plotted the results in

Figure 5 of the patent application, did not have found that the rounded bars of Figure 2 were susceptible to create a certain degree of turbulence.

In accordance with general principles, the burden of proof in establishing facts is to be borne by the person who asserts these facts, i.e. the Applicant or the Examining Division in examination proceedings. The Examining Division may assert that the rounded bars of Figure 2 illustrating a prior art clutch cover could create turbulence. However, if the Applicant challenges such facts and produces relevant evidence in support of his assertion and if the Examining Division, which is not in a position to carry out counter-experiments, is unable to refute the evidence, then the Appellant should be given the benefit of doubt and a decision should be taken in his favour.

3.2 D1 discloses formations that can be arranged side by side (column 5, lines 39; claim 2) but which all have a three-dimensional tapered triangular shape. Thus, D1 does neither disclose that each formation has a bar like shape, nor shows that said bars extend in a direction essentially perpendicular to the flow direction of the cooling fluid.

3.3 Thus, novelty of the subject-matter of claim 1 of the main request is given with respect to the prior art as shown in Figure 2 of the application and with respect of D1. The same applies to the subject-matter of claim 5 which contains all the features of claim 1. None of the other documents mentioned in the search report has been cited against novelty and the Board is

satisfied that novelty is also given with respect to said other documents.

4. *Further processing:*

4.1 Since proceedings before the Boards of Appeal are primarily concerned with the examination of the contested decision, remittal of the case to the first instance in accordance with Article 111(1) EPC is normally considered by the Boards in cases where the first instance issues a decision solely upon a particular issue (novelty) and leaves the substantive issue regarding inventive step (Article 56 EPC) undecided.

4.2 The Board therefore considers it appropriate to make use of its discretionary power under Article 111(1) EPC and remits the case to the first instance for consideration of the undecided issue.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance for further prosecution.

The registrar:

The Chairman:

G. Magouliotis

M. Ceyte