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Datasheet for the decision of 20 October 2016

Case Number: T 2413/12 - 3.2.03

Application Number: 03250318.7

Publication Number: 1331462

IPC: F28D1/03, F28F3/04

Language of the proceedings: EN

Title of invention:
Automotive heat exchanger

Applicant:
Calsonic Kansei UK Limited

Headword:

Relevant legal provisions:
EPC Art. 54
EPC R. 115(2)

Keyword:
Novelty - (no)
Summons to oral proceedings - continuation of proceedings without duly summoned party

Decisions cited:

Catchword:

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Case Number: T 2413/12 - 3.2.03

D E C I S I O N
of Technical Board of Appeal 3.2.03
of 20 October 2016

Appellant: (Applicant)	Calsonic Kansei UK Limited Llethri Road Llanelli, Carmarthenshire SA14 8HU (GB)
Representative:	Davies, Gregory Mark Urquhart-Dykes & Lord LLP 7th Floor Churchill House Churchill Way Cardiff CF10 2HH (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 28 June 2012 refusing European patent application No. 03250318.7 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	G. Ashley
Members:	C. Donnelly
	M.-B. Tardo-Dino

Summary of Facts and Submissions

I. The appeal lies from the decision of the examining division to refuse European Patent application no. 1 331 462.

II. *Decision under appeal*

In its decision refusing the application, the examining division held that the subject-matter of independent claims 1 and 8 according to the main request filed with letter of 28 January 2010, and that of the auxiliary request filed on 11 May 2012 lacked an inventive step in view of a combination of US 1 376 882 (D2 - note US 1 367 882 was erroneously cited in the decision) or US 1 902 320 (D3) with JP 9 178 385 (D5). However, the examining division also questioned the novelty of the subject-matter of both requests with respect to D3 when making an additional "Remark" in paragraph 4 added to the decision.

III. *Requests*

The applicant (hereinafter: the "appellant") requested in writing that:
"the claims are granted in their present form".
The board understands this to mean the claims according to the main request decided upon by the examining division. The appellant also filed an auxiliary request with the grounds of appeal and further requested oral proceedings in the event that the board was minded to reject the main request.

IV. The board informed the appellant of its provisional opinion in a communication pursuant to Article 15(1) RPBA annexed to the summons to oral proceedings.

V. By letter of 19 October 2016 the appellant simply informed the board that it would not be attending the oral proceedings appointed for 20 October 2016 without responding to the points raised in the communication. The oral proceedings were held as scheduled in the absence of the appellant according to Rule 115(2) EPC.

VI. Claim 1 according to the main request reads:

"An automotive heat exchanger (1) comprising respective flowpath arrays (2,3) for a first fluid medium and a second fluid medium comprising air; a series of tubes (2) for the first fluid medium comprising joined mating plates (4,5), the tubes (2) having open ends and a flowpath extending between the open ends, adjacent tubes (2) having spaced external surface portions defining the flowpath array (3) for the air fluid medium, the tubes (2) in the region of their open ends comprise relatively wide open mouth portions provided at the margins of the plates (4,5), leading to a narrower tube width extending between the open ends and wherein the plates comprising a respective tube have overlapping marginal portions (4b,5b) and spanning portions (4a) extending between the marginal portions, wherein, for a respective plate, the overlapping marginal portions (4b,5b) extend substantially perpendicular to the spanning portions (4a), and wherein one or both of the mating plates (4,5) defining each tube (2) comprises a series of co-aligned outwardly projecting ridges (10) provided therealong defining contact zones external of the respective tube (2) for contact with adjacent tubes within the flowpath array (3) for the air medium, the projecting ridges (10) extending transversely to the longitudinal direction of the tubes (2)."

Claim 1 of the auxiliary request filed with the grounds of appeal is essentially identical to claim 1 of the main request except that the projecting ridges (10) extending transversely to the longitudinal direction of the tubes (2) are further specified as being on both plates and "being arranged to abut with the series of ridges on an adjacent plate".

VII. Appellant's submissions

As regards US 1 902 320 (D3), the appellant argued in its written submissions that the ridge or elevation 6 extends inwardly into the waterways (2) and not outwardly as required by the claimed invention. D3 does not disclose or suggest an outwardly extending ridge or series of ridges of any orientation. In D3 the projections into the airways are provided in a circular or tear drop three dimensional form. There is no suggestion in D3 that projections which extend outwardly into the air passageways may provide beneficial and/or variable airflow characteristics.

Reasons for the Decision

1. Novelty

1.1 The board's analysis of the prior art relied upon by the examining division in its decision is as follows:

1.2 US 1 367 882 is clearly not the right document number for D2 since it concerns a car head-light, the correct number is US 1 376 882. This document does not disclose projecting ridges of any kind and is concerned with a complicated array of circular projections which are

designed to allow a horizontal as well as a vertical flow of cooling water in an automobile radiator. As regards D5, the board considers that it is not possible to derive directly and unambiguously from this document whether the transverse ridges shown in figure 7(c) are provided on all of the flat tubes in the heat-exchanger array and, consequently, whether the ridges are co-aligned so as to define contact zones external of the respective tube for contact with adjacent tubes.

1.3 In view of this D3 is considered to be the most promising prior art. This document discloses three embodiments. The first embodiment is illustrated in figures 1 to 6, and a further two embodiments are shown in figures 7 to 12 and 13 to 17 respectively.

1.4 The first embodiment (figures 1 to 6) referred to by the examining division discloses:

an automotive heat exchanger comprising respective flowpath arrays (2,1) for a first fluid medium and a second fluid medium comprising air; a series of tubes (4) for the second fluid medium comprising joined mating plates (3), the tubes (4) having open ends and a flowpath (1) extending between the open ends, adjacent tubes having spaced external surface portions defining the flowpath array (2) for the first fluid medium (water), the tubes in the region of their open ends comprise relatively wide open mouth portions (4) provided at the margins of the plates (3), leading to a narrower tube width extending between the open ends and wherein the plates comprising a respective tube have overlapping marginal portions (7) and spanning portions extending between the marginal portions, wherein, for a respective plate, the overlapping marginal portions extend substantially perpendicular to the spanning

portions, and wherein both of the mating plates (3) defining each tube comprises co-aligned outwardly projecting ridges provided therealong defining contact zones external of the respective tube for contact with adjacent tubes within the flowpath array (2) for the water medium, the projecting ridges (6) extending transversely to the longitudinal direction of the tubes (see page 1, lines 35 to 41 of D3 where it is explicitly stated that "One or more additional strip like elevations, depending on the dimensions of the radiator in the direction of the airflow therethrough, similar and parallel to the aforesaid elevations, may be formed at intervals between the front and rear elevations.").

1.5 The subject-matter of claim 1 differs nominally therefrom in that:

(i) the tubes comprising joining mating plates are for the first fluid medium and the spaced external surface portions of the adjacent tubes defining the flowpath array for the second air fluid medium;

(ii) the outwardly projecting ridges define contact zones external of the respective tube for contact with adjacent tubes within the flowpath array for the air medium (as opposed to the other medium).

1.6 Since there is nothing in the claim which excludes both of the fluids being air (as is the case in figure 1 of the application which is directed at a charge air cooler), the differences lie only in the medium which is flowing through the flowpath into which the ridges protrude.

1.7 In the board's opinion the flowpath through which the water is flowing in D3 would also be suitable for use as an air flow path. Hence, there is no constructional difference between the heat exchanger of D3 and the subject-matter of claim 1 (also see "Case Law of the Boards of Appeal of the EPO", 8th Edition, I.C.8.1.5). This analysis was already expressed in the communication sent by the board in advance of the oral proceedings on which the appellant did not comment.

1.8 Hence, the subject-matter of claim 1 lack novelty and does not meet the requirements of Article 54 EPC.

2. Auxiliary request

2.1 Since the ridges 6 are also arranged to abut against the series of ridges on an adjacent plate (see figures 3,4 and 5 of D3), the subject-matter of claim 1 according to the auxiliary request also lacks novelty. As in the case for the main request, this opinion was expressed in the communication annexed to the summons to oral proceedings and the appellant did not comment.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

C. Spira G. Ashley

Decision electronically authenticated