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D E C I S I O N
of 19 November 1998

Case Number: T 0883/96 - 3.2.3

Application Number: 92200033.6

Publication Number: 0479775

IPC: F28F 9/18, F25B 39/04, B23/K 1/00, F28F 9/02

Language of the proceedings: EN

Title of invention:
Condenser

Applicant:
SHOWA ALUMINUM KABUSHIKI KAISHA

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 123(2)

Keyword:
"Amendments - added subject-matter (no)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0883/96 - 3.2.3

D E C I S I O N
of the Technical Board of Appeal 3.2.3
of 19 November 1998

Appellant: SHOWA ALUMINUM KABUSHIKI KAISHA
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Decision under appeal: Decision of the Examining Division 2.3.01.074 of the European Patent Office dated 30 April 1996 refusing European patent application No. 92 200 033.6 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: C. T. Wilson
Members: H. Andrä
M. K. S. Aúz Castro

Summary of Facts and Submissions

I. European patent application No. 92 200 033.6 filed as a divisional application to application No. 89 202 415.9 on 27 July 1987 and published on 8 April 1992 under No. 0 479 775, was refused by a decision of the Examining Division dated 30 April 1996.

II. The decision was based on Claim 1 submitted by letter of 14 July 1994 and on Claims 2 to 14 submitted by letter of 16 September 1993. The reason given for the refusal was that the subject-matter of independent Claim 1 extended beyond the content of the application as filed, contrary to Article 123(2) EPC.

III. An appeal was lodged against this decision on 26 June 1996 together with payment of the appeal fee.

The Statement of Grounds of Appeal was submitted on 6 September 1996 together with new Claims 1 and 2 according to an auxiliary request.

IV. In its communications dated 4 March 1997 and 6 March 1998 the Board set out its provisional evaluation according to which the independent Claims 1 both of the main request and of the auxiliary request did not comply with the requirement of Article 123(2) EPC.

V. In the oral proceedings of 19 November 1998 before the Board the Appellant filed new Claims 1 to 8 according to the main request and according to an auxiliary request as well as amended pages 2 and 3 of the description and requested that the decision under appeal be set aside and a patent be granted on the basis of the main or the auxiliary request.

The Appellant submitted that the subject-matter of the independent claims of both the main and the auxiliary request comply with the requirement of Article 123(2) EPC.

IV. Independent Claim 1 according to the main request reads as follows:

"1. A condenser for liquefying gaseous coolant in an air conditioning system of an automobile after the system has compressed the coolant, the condenser comprising a plurality of flat tubular elements (11) defining flow paths and disposed in a spaced, substantially parallel relation, each element (11) including at least one inside wall, a plurality of fin members (12), each fin member (12) being disposed between adjacent tubular elements (11), a pair of headers (13, 14) disposed in a spaced, substantially parallel relation at opposite ends of the tubular elements (11), the one and/or the other header (13, 14) defining a coolant inlet and a coolant outlet for the condenser, each header (13, 14) being a substantially round, elongate member and defining, for each tubular element (11), an opening (15) through which it receives the tubular element and establishes fluid communication with the element, at least one partitioning plate (20, 21) mounted in one of the headers (13, 14) transversely of the header to divide the inside opening of the header, characterised in that each header (13, 14) comprises a header pipe which is made of a brazing sheet composed of a core sheet (13a) and a brazing agent layer (13b) coated on at least one surface of the core sheet (13a) and having side portions extending longitudinally and abutment-bonded to each other, wherein the opposite ends of the tubular elements (11) are inserted in slits (15) provided in the header pipes and liquid-tightly brazed therein, and in that the or each partitioning plate (20, 21) includes a

partitioning portion (20a) which is generally co-extensive with the inside opening of the header (13, 14) and a protruding portion (20b) which extends into an aperture formed in the header through which the partitioning plate (20, 21) is inserted into the header (13, 14) the partitioning plate (20, 21) being liquid-tightly brazed in the header (13, 14), the coolant flowing from the inlet (16) into one header (13) and makes a first pass through a plurality of the tubes (11) to the other header (14), the coolant also making a final pass through a plurality of tubes (11) to the outlet (18), the tubular elements (11) and headers (13, 14) forming a first zone which receives gaseous coolant from the inlet (16) and a final zone through which the coolant flows before discharging through the outlet (18), the effective cross sectional area of the flow paths defined by the tubular elements (11) through which the coolant makes the final pass being smaller than the effective cross sectional area of the flow paths of those through which the coolant makes the first pass."

Reasons for the Decision

1. The appeal is admissible.

2. *Main request*

2.1 The application was rejected on the ground that the feature of Claim 1 that the or each partitioning plate includes a partitioning portion which is generally co-extensive with the inside opening of the header and a protruding portion which extends into an aperture formed in the header, has not been disclosed in the original application. According to the contested decision, what is actually disclosed in the original

application is a disc-shaped partitioning plate including a circular "partitioning" portion and a circular "protruding" portion filling a semi-circular slit formed in the header and being flush with the outer surface of the header. According to Claim 1, the aperture in the header could have any convenient shape other than a semi-circular slit and the protruding portion could be of rectangular shape or have a diameter greater than the outside diameter of the header.

2.2 It is correct that the specific disclosure of the partition plate/header system as described on page 8, lines 17 to 31 of the original description and in Figure 3 of the original drawings relates to a disc-shaped partition plate (20) having a smaller circular portion (20a) with a diameter corresponding to the inside diameter of the header pipe (13a) and a larger circular portion (20b) with a diameter corresponding to the outside diameter of the header pipe, the larger diameter portion (20b) being inserted and soldered in a semi-circular slit (28) provided in the header pipe.

The problem to be solved by these features when starting out from the relevant prior art as described by US-A-1 958 226 consists in saving labour and time in assembling the condenser (see page 2, lines 13 to 17 and page 8, lines 27 to 32 of the original description). This problem is solved by inserting the partitioning plates in the slits of the headers, the headers and/or these plates being provided with layers of soldering substances so that the soldering joint between them can be performed simultaneously with the soldering of the tubes to the headers.

In order to solve the above-cited problem, it is clear to the skilled person that the slit in the header has not to be exactly semi-circular. A shorter or longer slit than a semi-circular one would also lead to a sufficiently strong and labour-saving soldering joint. Analogously, an exact correspondence of the shape and in particular the diameter of the partitioning plate and the header is also no prerequisite for solving the cited problem. What is relevant are the features that the partitioning plate is mounted in the respective header transversely of the header to divide the inside opening of the header, that the partitioning plate includes a partitioning portion which is generally co-extensive with the inside opening of the header and a protruding portion which extends into an aperture formed in the wall of the header and that a brazing joint is provided between the header and the partitioning plate. As a further indication that it is not the particular, that is semi-circular, shape of the header slit and, respectively, the partitioning plate portions that were regarded to be important for solving the problem but the fact that the partition is inserted in the header through a slit as such, reference is made to page 2, penultimate paragraph of the original description.

For the foregoing reasons the Board considers that the above-cited feature on which rejection of the application was based, has to be regarded as originally disclosed.

2.3 As compared to Claim 1 underlying the decision under appeal the following further features have been incorporated in Claim 1:

(a) each header comprises a header pipe which is made of a brazing sheet composed of a core sheet and a brazing agent layer coated on at least one surface

of the core sheet and having side portions extending longitudinally and abutment-bonded to each other wherein the opposite ends of the tubular elements are inserted in slits provided in the header pipes and liquid-tightly brazed therein.

(b) the partitioning plate includes a protruding portion which extends into an aperture formed in the header through which the partitioning plate is inserted into the header.

(c) the partitioning plate is liquid-tightly brazed in the header.

Having regard to the disclosure of feature (a) reference is made to page 3, paragraph 1 of the original description and the original Claim 1. Feature (b) derives from page 8, lines 21 to 27 in connection with Figure 3 of the original description and drawings, respectively.

As regards the disclosure of feature (c), page 8, lines 27 to 31 of the original description reads: "The headers 13, 14 and the partitions 20, 21 are preferably provided with layers of soldering substances as described above...". The reference to "above" in this phrase can only refer to the soldering joint between the headers and the tubes and/or between the fins and the tubes. The relevant passage in this respect is found on page 7, lines 30 to 32 which indicates that in order to join the tubes 11 to the headers 13, 14 the tubes or the headers or both are previously provided with a layer of soldering substance on their adjoining surfaces. It follows therefrom with regard to the header-partition joint that the headers and/or the partitions are provided with a layer/layers of soldering substances whereby as pointed out on page 8,

lines 32 to 35 of the original description the avoidance of leakage of coolant is aimed at. Feature (c) has therefore also a basis in the originally filed application.

Summing up, the Board comes to the conclusion that the subject-matter of Claim 1 according to the main request does not extend beyond the content of the application as filed (Article 123(2) EPC).

3. *Auxiliary request*

Since Claim 1 according to the main request is found to comply with the requirement of Article 123(2) EPC it is not necessary to consider the auxiliary request.

4. *Further prosecution*

The examination of the application, in particular as to the issues of novelty and inventive step, has not yet been completed by the first instance. The Board considers it appropriate to remit the case to the first instance for further prosecution on the basis of the claims according to the main request (Article 111(1) EPC). In this regard the document JP-U-57-38169 cited in the opposition proceedings of the earlier application No. 89 202 415.9 (publication No. 0 360 362) should also be considered.

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 on the basis of Claims 1 to 8 filed as main request in oral proceedings.

The Registrar: The Chairman:

S. Fabiani C. T. Wilson