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Datasheet for the decision of 23 April 2013

Case Number: T 2331/08 - 3.3.05

Application Number: 02078688.5

Publication Number: 1273335

IPC: B01D 45/14, B04B 5/12, B04B 5/08, F01M 13/04

Language of the proceedings: EN

Title of invention:
A method of cleaning crankcase gas and apparatus therefor

Patent Proprietor:
Alfa Laval Corporate AB

Opponents:
3Nine AB
MAHLE International GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 76(1)
EPC R. 103(1)(a)

Keyword:
"Extension beyond the content of the earlier application as filed (yes)"
"Reimbursement of appeal fee (no)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 2331/08 - 3.3.05

D E C I S I O N
of the Technical Board of Appeal 3.3.05
of 23 April 2013

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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 20 October 2008 revoking European patent No. 1273335 pursuant to Article 101(3)(b) EPC.

Composition of the Board:

Chairman: G. Raths
Members: G. Glod
C. Vallet

Summary of Facts and Submissions

I. The present appeal lies from the decision of the opposition division to revoke the patent EP 1273335 pursuant to Article 101(2) and Article 101(3)(b) EPC on the ground of Article 100(c) EPC. EP-A-1273335 was a divisional application based on the original parent application published as WO-A-0136103.

II. The opposition division considered that the subject-matter of claims 1 and 8 of the main request (patent as granted) and of the corresponding independent method and apparatus claims of auxiliary requests 1 to 4 were not unambiguously derivable from the parent application WO-A-0136103 due to the omission of the feature "along paths forming an angle with said generatrices".

III. The patent proprietor's (hereafter: appellant) notice of appeal and the grounds for appeal were received by letters dated 10 December 2008 and 6 February 2009, respectively.

IV. With the letter received on 14 March 2009, respondent 1 (opponent 1) replied to the notice of appeal.

V. With the letter of 4 June 2009, respondent 2 (opponent 2) sent its comments to the notice of appeal.

VI. The parties were summoned to oral proceedings scheduled for 23 April 2013 on 5 February 2013. The provisional non-binding opinion of the Board was attached to the summons.

VII. With the letter of 13 March 2013, the appellant requested a change to the date set for oral proceedings.

VIII. A notification sent by fax on 18 March 2013 informed the parties that the request for change of date could not be granted. The reasons were given in the notification.

IX. With the letter of 22 March 2013 the appellant made further submissions and filed six auxiliary requests.

X. Oral proceedings took place on 23 April 2013. During the oral proceedings the appellant submitted a new main request and withdrew the previous main request and the auxiliary requests 1 to 6.

XI. The appellant's arguments submitted in writing and during oral proceedings can be summarized as follows:

At the beginning of the oral proceedings, the opposition division decided to introduce the late filed ground of opposition 100(c) into the proceedings without giving the proprietor the possibility to comment thereon.

The original parent application (WO-A-0136103) disclosed two inventive aspects, a first of these inventive aspects being directed to an improved method and apparatus for cleaning gas from solid or liquid particles of larger density which is generally and broadly applicable, whereas the second inventive aspect was directed more specifically to providing an improved method and apparatus adapted for cleaning oil and soot particles from crankcase gases in connection with

internal combustion engines. With respect to the second aspect, the invention proposed the use of a technique for cleaning crankcase gases that was previously known per se but had not been taught or suggested for cleaning crankcase gases, and as supplementary proposal an improvement to this technique was suggested. Page 3, lines 1 to 20 of WO-A-0136103 set out the method suggested for crankcase gas cleaning. The skilled person would recognize that this method would allow to clean crankcase gases successfully and better than the prior art crankcase gas cleaning methods. The feature "along paths forming an angle with said generatrices" would not be necessary to improve the efficiency.

An improvement could also be made to crankcase gas cleaning methods, in accordance with the object of the present invention, by merely utilising the previously known technique in crankcase gas cleaning. No modification or improvement to the previously known technique itself would be required in this respect. The previously known technique would simply be utilised in a particular way (specifically, it is utilised to clean crankcase gas). In a separate inventive aspect the previously known technique itself would be improved. Accordingly, where the previously known technique would merely be utilised (i.e. without any improvement), there would clearly be no requirement for the two features namely, the caption of particles moving along generatrices of discs along paths forming an angle with said generatrices and the throwing of particles in limited areas, recited on page 4 of the parent application to be present.

Most particles of the crankcase gas would be liquid. For the separation of the liquid particles from crankcase gases, an improvement with respect to known apparatuses for cleaning crankcase gases could already be obtained by using the previously known techniques for dust separation. A further improvement could be obtained by the above mentioned two features disclosed on page 4, lines 21 to 30 of the original parent application, but said features would not be essential for the treatment of gas containing liquid particles.

It would be indicated on page 7, lines 18 to 20 that the liquid particles already coalesce on the separation discs to larger drops. Coalescence of drops would thus not only occur due to the presence of ribs, but also due to drops being deposited on the surfaces of the separation discs and being subsequently thrown onto the wall of the housing. Clearly, as drops are thrown onto the wall, they would accumulate and coalesce on the wall, and form progressively larger drops of liquid/oil in a film which would then run downwardly on the wall under the action of gravity. The ribs would not be required in order to allow this to happen.

This would also be confirmed by the passage on page 12 (lines 28 to 29) where it was again disclosed that liquid particles coalesce to larger particles while moving in contact with the separation discs. A further support for such an interpretation was on page 14, lines 26 to 29.

The skilled person would appreciate that, for the separation of liquid from the gas, the main effect was due to the coalescence of the liquid on the separation

discs and that this effect was further enhanced by the presence of ribs. The ribs would only be important for the separation of solid particles from gas.

Thus it was unambiguously derivable for the skilled person that crankcase gas that mainly comprised liquid particles could be treated by a method not having the above mentioned two features disclosed on page 4, lines 21 to 30 of the parent application.

XII. The respondents' (opponents') arguments can be summarized as follows:

XIII. The opposition division would have correctly exercised its right under Article 114(1) EPC to introduce the fresh ground of opposition under Article 100(c) EPC. There would be no disclosure in the original parent application concerning the cleaning of crankcase gases wherein the separating discs do not have elongated guiding members extending in an angle with the generatrices of the separating discs. There would be no disclosure whatsoever in the application regarding a problem and a solution of cleaning crankcase gases which would be supported and described by a second independent invention wherein the separating discs do not have elongated guiding members extending in an angle with the generatrices of the separating discs. There would not even be a single example of such an embodiment described and shown or otherwise disclosed in the basic documents.

It would be unambiguously derivable from the parent application that the feature "along paths forming an angle with said generatrices" was an essential feature

for the conduct of the process according to the invention and that it could not be omitted from the claims. The current interpretation of the original parent application would be an ex post facto analysis trying to read the application such that the desired result could be obtained. The original application would not disclose a different effect for liquid particles than for solid particles (as illustrated by the passage on page 7, lines 18 to 26).

XIV. Requests:

The appellant requested the decision under appeal be set aside and that the patent be maintained on the basis of the main request filed during the oral proceedings. In addition the refund of the appeal fee was requested.

Respondent 1 (opponent 1) requested that the appeal be dismissed or that, auxiliarily, the case be prosecuted in the light of Art. 100(a) EPC in front of the board of appeal or remitted to the first instance for further prosecution.

Respondent 2 (opponent 2) requested that the appeal be dismissed.

XV. Claim 1 of the main request reads as follows:

"1. A method of cleaning crankcase gas, coming from a combustion engine, from oil particles suspended therein and having a larger density than the crankcase gas, characterized in that

- a rotor (8) is kept rotating around a rotational axis (R) in a chamber (2), that is delimited by a stationary surrounding wall, of a housing (1) having a gas inlet connection (3) for supply of crankcase gas to be cleaned, a gas outlet connection (4) for discharge of cleaned crankcase gas and an oil outlet connection (5) for discharge of separated oil, said rotor comprising a stack of conical separation discs (22) arranged coaxially with each other and concentrically with said rotation axis and being provided with radially outer surrounding edges situated in said chamber (2) and facing the stationary surrounding wall,
- the crankcase gas to be cleaned is conducted through interspaces formed between the separation discs (22) from gas inlets to gas outlets situated at different distances from the rotational axis (R) of the rotor, so that the crankcase gas is caused to rotate with the rotor and the oil particles, thereby, as a consequence of upcoming centrifugal force are brought into contact with the insides of the separation discs (22), crankcase gas freed from oil particles being conducted from said gas outlets to said gas outlet connection (4),
- separated oil by the rotation of the rotor is first brought to move a distance in contact with the separation discs (22) substantially along generatrices thereof towards said surrounding edges and after that is thrown from the separation discs towards and against said surrounding wall, separated oil being allowed to run downwardly on said surrounding wall and being conducted to said oil outlet connection (5) from which it is discharged.

Reasons for the Decision

1. Art 76(1) EPC

1.1 It has to be determined whether the subject-matter of claims 1 to 7 of the single request is unambiguously derivable from the original parent application WO-A-0136103.

1.2 The original parent application relates to a method and an apparatus for cleaning of gas (see page 1, lines 3 to 4). The object of the invention is disclosed on page 2, lines 26 to 30:

"*The object of the present invention primarily is to accomplish a method of cleaning gases, particularly crankcase gases, which is substantially more effective than the above described gas cleaning methods. It is suggested that a certain previously known technique, other than the one mentioned above* ***for cleaning of crankcase gases,*** *is* ***utilised and improved***". (Emphasis added by the Board).

From this passage the skilled person understands that previously known techniques have to be improved for being suitable for the cleaning of crankcase gases.

1.3 Page 3, lines 1 to 20 discloses the treatment steps of the previously known technology without giving any indication that said steps are sufficient for cleaning crankcase gases. It is noted that in said treatment steps the wording *"gas to be cleaned"* is used and not

the wording *"crankcase gas"* so that the skilled person understands this passage as a general description of the essential treatment steps of the previously known technique. It is the Board's view that the skilled person cannot unambiguously derive therefrom that such a known technology would be suitable for the treatment of crankcase gases.

1.4 Page 3, line 22 to page 4, line 16 further describes prior art relating to the known technology that relates to the separation of dust from gas and thus also to the treatment of gas in general.

1.5 The continuation to these passages in the parent application as filed (page 4, lines 18 to 30) reads:

"*For improvement of the separation efficiency upon use of this previously known technique it is suggested according to the invention*
- (a) that separated particles moving in contact with the separation discs substantially along the generatrices thereof are caught and conducted, together with other particles caught in a similar way, further towards the said surrounding edges of the separation discs along paths forming an angle with said generatrices and
- (b) that separated particles are caused to leave said paths and are thrown from the separation discs substantially only in limited areas spaces from each other along the surrounding edges of the respective separation discs." ((a) and (b) added by the Board; hereafter steps (a) and (b))

1.6 The skilled person thus understands from all these passages that the previously known technique used for the treatment of gases containing dust can be utilised for the treatment of crankcase gases under the condition that the technique is improved. The improvement requires the two steps (a) and (b), which are essential.

1.7 No distinction is made in these passages between the removal of solid particles or liquid particles from the gas to be cleaned.

1.8 It is unambiguous to the Board that the expression "*utilised and improved*" on page 2, line 30 requires that the technique is utilised and is improved. The improvement is not represented as something optional or preferable. This is also in line with the fact that the improvement is represented as being according to the invention on page 4, lines 18 to 19. Therefore the steps (a) and (b) required for improvement have to be considered as inextricably linked to a method of treatment of crankcase gas.

1.9 That steps (a) and (b) need to be present for the treatment of the crankcase gas is fully in line with the rest of the description of the original parent application. No passage can be recognized that would be contrary to such an interpretation and would suggest that steps (a) and (b) could be omitted for the treatment of crankcase gas.

1.10 It is made clear on page 5 (first paragraph) that the improvement allows particles which have once been separated from the gas to remain separated (page 5,

lines 2 to 5). This is due to the guiding or conducting members that ensure that the particles are agglomerated or coalesced to larger particles (see page 5, lines 7 to 11). These guiding or conducting members allow the particles to move along paths forming an angle with the generatrices of the separation disc (see page 6, lines 27 to 28). The first paragraph on page 5 does not make a distinction between solid particles and liquid particles since it explicitly refers to both type of particles in the sentence "*In an agglomerated form or as relatively large drops the separated particles*..." (page 5, lines 11 to 12). The skilled person therefore understands from said paragraph that the guiding and conducting members allow the solid particles to agglomerate and the liquid particles to coalesce to large drops such that they remain separated from the gas. No mention is made in this passage that this result can also be obtained without the guiding or conducting members for liquid particles.

1.11 It is true that it is disclosed on page 7, lines 18 to 20 that liquid particles will coalesce on the separation discs to larger drops, but there is no indication there that these drops are large enough for remaining separated from the gas. Rather, it is disclosed that the drops coalesced on the separation discs will coalesce to even larger drops when moving along the conducting members (see page 7, lines 20 to 21). The same is disclosed for solid particles (see page 7, lines 23 to 25). So, no distinction is made between liquid and solid particles and no teaching is given in said passages that the coalescence on the separation disc only is sufficient for obtaining drops being large enough.

1.12 Also on page 8, lines 4 to 8 it emphasized that the correct distribution of the conducting members assures that all particles having got into contact with the separation disc agglomerate or coalesce with other particles to larger units. This is again an indication that conducting members and consequently a path of the separated particles forming an angle with the generatrices of the separation discs are key for obtaining the large particles.

1.13 Again, there is a disclosure on page 12, lines 28 to 29 that the separated liquid particles coalesce to larger particles while moving in contact with the separation discs. However, it is referred to the following passage in the same paragraph (page 12, line 29 to page 13, line 6): "*Further such coalescense occurs when the liquid particles move further on along the ribs 26 towards the surrounding edges of the separation discs. This latter movement also occurs by influence of centrifugal force. When the liquid particles reach the surrounding edges of the separation discs the coalescense has proceeded* ***so far that the liquid is thrown out of the rotor in the form of relatively large liquid drops.*** *These liquid drops hit the surrounding wall of the housing 1...*" (Emphasis added by the Board).

From this passage the skilled person learns that it is the combination of coalescence on the separation discs and along the ribs that allows to obtain particles being large enough. There is no disclosure that the coalescence on the separation discs alone proceeds so far as to allow the drops to hit the surrounding wall.

1.14 The paragraph bridging page 14 with page 15 also discloses that agglomeration on the separation discs can be obtained. But, again it refers to the spacing members and does not distinguish between liquid and solid particles. It is emphasized that the drops have to be so large that they will not be entrained out of the housing by the gas.

1.15 In summary, it is unambiguous that it is the intention of the invention disclosed in the original application to ensure that the particles remain separated from the gas. To guarantee this, the particles (drops or aggregates) thrown from the separation discs have to be large enough not to be entrained again by gas flowing through the space through which the particles have to pass on their way from the rotor to the surrounding stationary surrounding wall. This is obtained by the coalescence or aggregation of the particles on the separation discs and further on the guiding members such as ribs.

There is no disclosure that the coalescence of the liquid particles on the separation discs only would be sufficient to allow the particles to remain separated from the gas. Consequently, there is no disclosure that this result can be obtained when omitting steps (a) and (b) (see point 1.5). The skilled person would therefore understand from the whole disclosure of the original parent application that crankcase gases can only be treated if the particles that are separated from the gas remain separated. For this to occur, steps (a) and (b) need to be present.

1.16 Therefore, the subject-matter of claim 1 is not unambiguously derivable from the original parent application, since it relates to a method for cleaning crankcase gas not comprising steps (a) and (b). The requirements of Article 76(1) EPC are not met.

2. Reimbursement of the appeal fee.

Rule 103(1)(a) stipulates as a condition for reimbursement of the appeal fee that the appeal must be allowable. In the present case, this condition is not fulfilled so that the request must be rejected.

Order

For these reasons it is decided that:

The appeal is dismissed.

The request for refund of the appeal fee is rejected.

The Registrar The Chairman

B. Atienza Vivancos G. Raths