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Datasheet for the decision of 2 February 2022

Case Number: T 0160/19 - 3.3.05

Application Number: 10168279.7

Publication Number: 2402288

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Language of the proceedings: EN

Title of invention:
CLEANING EQUIPMENT FOR GAS SCRUBBER FLUID

Patent Proprietor:
Alfa Laval Corporate AB

Opponent:
GEA Mechanical Equipment GmbH

Headword:
Cleaning equipment/Alfa Laval

Relevant legal provisions:
EPC Art. 56, 123(2)
RPBA Art. 12(4)
RPBA 2020 Art. 12(2), 25(2)

Keyword:
Inventive step - main request (no) - obvious modification
Amendments - auxiliary requests - extension beyond the content of the application as filed (yes) - undisclosed disclaimer
Late-filed request - request identical to request not admitted in first instance proceedings - admitted (no)

Decisions cited:
G 0001/03, G 0007/93

Catchword:

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Beschwerdekammern

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Case Number: T 0160/19 - 3.3.05

D E C I S I O N
of Technical Board of Appeal 3.3.05
of 2 February 2022

Appellant: (Patent Proprietor)	Alfa Laval Corporate AB Box 73 221 00 Lund (SE)
Representative:	Alfa Laval Attorneys Alfa Laval Corporate AB Patent Department P.O. Box 73 221 00 Lund (SE)
Respondent: (Opponent)	GEA Mechanical Equipment GmbH Werner-Habig-Strasse 1 59302 Oelde (DE)
Representative:	Specht, Peter Loesenbeck - Specht - Dantz Patent- und Rechtsanwälte Am Zwinger 2 33602 Bielefeld (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 23 November 2018 revoking European patent No. 2402288 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	E. Bendl
Members:	T. Burkhardt
	O. Loizou

Summary of Facts and Submissions

I. The patent proprietor's (appellant's) appeal lies from the opposition division's decision to revoke European patent 2 402 288.

II. The following documents were among those discussed at the opposition stage:

E3 "Separatoren und Dekanter für die Aufbereitung von Betriebsmitteln", Westfalia Separator Mineraloil Systems GmbH, GEA Geschäftsbereich Mechanische Trenntechnik, pages 3-5, 8-13 and 16-19, indicating on the last page the code "9997-9406-000/1099 dt. Stu"

E4 EP 2 364 760 A1

E7 DE 27 15 082 A1

E16 Sworn statement by Dr Witte dated 20 July 2018

III. Independent claim 1 of the main request dated 10 January 2018 considered in the impugned decision (identical to claim 1 of the current main request) reads as follows:

"1. Use of a disc stack centrifugal separator in a cleaning equipment for polluted scrubber fluid from an exhaust gas scrubber fluid loop (9) to separate at least a pollutant phase and a cleaned scrubber fluid from polluted scrubber fluid being bled off from the exhaust gas scrubber fluid loop (9), wherein the

scrubber fluid is water, and wherein the cleaning equipment comprises

means for bleeding off part of the polluted scrubber fluid from the scrubber fluid loop (9) and thereby removing said part of the polluted scrubber fluid from the scrubber fluid loop for disposal,

the disc stack centrifugal separator (12, 12') for separating at least the pollutant phase and the cleaned scrubber fluid from said part of the polluted scrubber fluid, which separator comprises a rotor (13, 13') enclosing a separation space (14, 14') with a stack of separating discs (15, 15'), a separator inlet (11, 11') for said part of the polluted scrubber fluid extending into said separating space, a first separator outlet (16, 16') for cleaned scrubber fluid extending from said separating space, and a second separator outlet (17, 17') for the pollutant phase extending from said separating space, which cleaning equipment further comprises means for conducting said part of the polluted scrubber fluid to the separator inlet, and

means for discharging the cleaned scrubber fluid from the first separator outlet, and

means for collecting the pollutant phase from the second separator outlet."

IV. Together with the statement setting out the grounds for appeal, auxiliary requests 1 to 6 were filed.

Claim 1 of auxiliary request 1 further comprises, after "... being bled off from the exhaust gas scrubber fluid loop (9)", the disclaimer "the cleaned scrubber fluid not being reintroduced into the scrubber fluid loop (9)".

V. Compared with the main request, claim 1 of auxiliary request 2 further comprises, at the same passage as

claim 1 of auxiliary request 1, the feature "wherein the pollutant phase comprises oil and solid particles and is denser than the cleaned scrubber fluid".

VI. Compared with the main request, claim 1 of auxiliary request 3 further comprises, at the end of the claim, the feature "wherein the first separator outlet (16, 16') leads to the outside of a ship for discharge, and wherein the second separator outlet (17) is connected to a storage tank for the pollutant phase".

VII. Auxiliary request 4 combines the amendments of auxiliary requests 1 and 2.

VIII. Auxiliary request 5 combines the amendments of auxiliary requests 1 and 3.

IX. Auxiliary request 6 combines the amendments of auxiliary requests 1, 2 and 3.

X. The appellant's arguments, where relevant to the present decision, may be summarised as follows:

Documents E3 and E16 were late-filed and should not be considered.

The skilled person starting from E7 would not contemplate using the disc stack centrifugal separator of E3. Even if they did, the separator in E3 was incompatible with the process of E7.

Claim 1 excluded prior-art cleaning equipment where a portion of a bled-off "part of the polluted scrubber fluid" was recycled to the gas scrubber fluid loop (and thus unsuitable for disposal). By contrast, several portions of the bled-off stream 17 in the figure of E7

were recycled to the exhaust gas scrubber fluid loop, namely sludge 22, decantate 23, concentrated slurry 40 or water vapour 36.

The undisclosed disclaimer in claim 1 of auxiliary request 1 re-established novelty in the event that the board considers E4 novelty-destroying for the main request.

Regarding auxiliary request 2, adhesion was inherently involved when oil and solid particles remained together in the same phase. The amendment relating to a pollutant phase which is denser than the cleaned scrubber fluid therefore has a basis in the application as originally filed.

The opposition division incorrectly exercised its discretion by not considering then auxiliary request 8. Auxiliary request 3 corresponded to that request and was therefore to be admitted.

Auxiliary requests 4 to 6 were also to be considered.

XI. The opponent's (respondent's) arguments relevant to the present decision are reflected in the reasons below.

XII. The appellant requested that the decision under appeal be set aside and that the patent be maintained as amended on the basis of the claims of the main request, as filed by letter dated 10 January 2018 together with amended paragraphs [0022] and [0043] of the description filed with the statement setting out the grounds of appeal, or, in the alternative, on the basis of one of auxiliary requests 1 to 6, filed together with amended paragraphs [0022] and [0043] of the description with the statement of grounds of appeal. The appellant

requested that unamended paragraphs [0022] and [0043] be restored in the event that these amendments did not meet the requirements of Article 123(2) EPC.

The respondent requested that the appeal be dismissed.

Reasons for the Decision

1. Admissibility/consideration of documents E3 and E16

The appellant considers documents E3 and E16 to be late-filed and requests that they are not considered.

The respondent submitted brochure E3 with the notice of opposition and offered a witness if the public availability was contested, which was not the case initially.

In its summons to oral proceedings, the opposition division then expressed doubts as to the publication date and "circumstances of the publication" of E3.

In response, and still in the opposition proceedings, the respondent submitted declaration E16.

E16 explains the meaning of the label "9997-9406-000/1099 dt. Stu" at the bottom of the last page of E3:

- "9997-9406-000" is the number of the printed document.
- "1099" is the printing date, i.e. October 1999 (which is almost ten years before the effective date of the patent in suit).

- "dt." refers to the (German) language.
- "Stu" refers to the printing firm.

In line with established case law and for want of any evidence to the contrary, there is no doubt that brochure E3 was made publicly available before the effective date of the patent in suit (Case Law of the Boards of Appeal, 9th ed., 2019, I.C.3.2.1(c)).

E3 and E16 are consequently considered in the appeal proceedings (Article 12(2) RPBA 2020).

Main request

While the claims of the main request are the same as those considered in the decision under appeal, the appellant has amended paragraphs [0022] and [0043] of the description by deleting the alternative of returning the "cleaned scrubber fluid" to the "scrubber fluid loop (9)".

2. Claim interpretation

2.1 The feature

> "means for bleeding off *part* of the polluted scrubber fluid from the scrubber fluid loop (9) and thereby removing *said part* of the polluted scrubber fluid from the scrubber fluid loop *for disposal*"

in claim 1 of the main request (emphasis added by the board) requires that the cleaning equipment is at least *suitable* for the disposal of the *entire* "part of the polluted scrubber fluid" that has been bled off.

In other words, claim 1 excludes any prior-art cleaning equipment where a portion of the bled-off "part of the

polluted scrubber fluid" is recycled to the gas scrubber fluid loop.

Paragraphs [0022] and [0043] of the description have been amended accordingly.

2.2 This interpretation does not contradict the passages of the description of the patent in suit in which only a portion of the bled-off polluted scrubber fluid is explicitly disposed of (e.g. the "polluted phase"), at least not as long as the remaining portion is not recycled to the "scrubber fluid loop".

Moreover, the term "disposal" in claim 1 encompasses both direct disposal and indirect disposal (e.g. with separation of the polluted scrubber fluid in a separator).

3. Inventive step

3.1 The invention relates to the use of a disc stack centrifugal separator in a gas cleaning equipment.

3.2 E7 (see the figure and Example 3) relates to the use of a separator (in the form of decantation in the clarifier (3)) in gas cleaning equipment comprising a scrubber (pre-washer 1), with water 13 as the scrubber fluid. The stream 17 is bled off from an exhaust gas scrubber fluid loop (pre-washer 1, line 14).

According to the penultimate paragraph on page 11 of E7, the function of the separator 3 is to remove solid particles.

The bled-off part is separated in a separator 3 into a pollutant phase (22), which is collected, and a cleaned scrubber fluid (21), which is discharged.

According to the penultimate paragraph of page 11, the cleaning equipment has two alternative operating modes:

(i) When the dust content of the gas to be treated 12 renders continuous separation in the separator 3 necessary, the recycle line 18 is used.

(ii) Only the excess liquid is bled off via the line 17 and clarified in the separator 3.

The latter alternative, where the line 18 is not used (i.e. no portion of the bled-off stream 17 is recycled to the scrubber fluid loop), is the common one ("Gewöhnlich").

Since E7 relates to the same technical field as the patent in suit and has a considerable number of features in common with claim 1, it is a reasonable starting point for assessing inventive step. This has not been contested.

3.3 According to the patent in suit, the problem to be solved is to minimise the environmental impact of the cleaning equipment, to improve the cleaning of the scrubber fluid, to minimise the amount of waste material to be handled and disposed of, and to minimise the need for servicing (paragraphs [0009] and [0010]).

3.4 However, since the solids are concentrated in a portion of the bled-off stream in E7 too, i.e. in the sludge 22, this problem is also solved in E7.

Consequently, the technical problem has to be reformulated in a less ambitious way, typically as providing an alternative.

However, in the appellant's view, the problem to be solved is to provide a use in which excess polluted scrubber fluid from the exhaust gas scrubber fluid loop is reduced more efficiently.

3.5 The proposed solution to this problem is the use in claim 1, which is characterised in that the separator is a disc stack centrifugal separator comprising a rotor and separating discs.

3.6 Even if the appellant's definition of the problem to be solved were accepted, and this technical problem were assumed to be successfully solved, the solution as claimed would be obvious.

The penultimate paragraph on page 11 of E7 indicates that the separator in the process of the figure can alternatively be a centrifuge. The skilled person knows that the phase separation is more efficient in a centrifuge than in a sedimentation tank because of the increased acceleration.

Contrary to the appellant's assertion, the skilled person looking for a suitable centrifuge to be used in the process in E7 would contemplate the disc stack centrifugal separator on page 17 of E3.

E3 also aims at removing solid particles from washing fluids (page 3, "... für die Pflege, Reinigung und Aufbereitung von ... Waschlauge, Waschwasser und Entfettungsbäder"; [translation by the board: "... for care, cleaning and processing of ... suds, wash water

and soak cleaning baths"]; page 12, "Entfernung von festen oder flüssigen Komponenten" [translation by the board: "removal of solid or liquid components"]; page 17, "Der Einsatzbereich umfaßt die Reinigung und Entölung von stark alkalischen und sauren Reinigungsflüssigkeiten" [translation by the board: "the range of applications comprises the cleaning and de-fatting of highly alkaline and acidic cleaning solutions"]).

Moreover, the last paragraph of the right-hand column on page 12 of E3 describes that the addition of a disc package ("Einbau eines Tellerpaketes") results in an increase of the effective surface ("große Klärfläche") and thereby in an increased throughput ("bei hoher Durchsatzleistung").

3.7 The appellant argued that the centrifuge in E3 was incompatible with the process in E7 because:

- it had to be suitable to carry out both operating modes mentioned above under point3.2, and
- it had only two outlets while the separation device 3 in E7 required three (i.e. for the streams 18, 21 and 22, respectively).

This argument is, however, not convincing.

As indicated, the penultimate paragraph on page 11 of E7 already indicates that the separator in the process of the figure can be a centrifuge instead of a sedimentation tank 3. The skilled person knows how to split the fluid from the separator outlet 13 of the figure on page 17 of E3 into the two streams 18 and 21 and how to enable or disable a flow through the line 18.

3.8 The appellant moreover argued that the sludge 22 and the decantate in E7 were not disposed of but were used in the combustion (first full paragraph on page 12) and thereby recycled - albeit as dust - to the scrubber fluid loop.

However, the combustion of the sludge 22 and of the decantate 23 is clearly a specific form of "disposal".

Moreover, the arrival of *dust* generated during this combustion into the scrubber fluid loop 14 via the flue gas 12 cannot be construed as recycling a portion of the polluted scrubber fluid to the fluid loop (see the interpretation in point2.1 above). The dust is in an entirely different state from the polluted scrubber fluid and is thus not a portion of it.

3.9 The same reasoning applies to concentrated slurry 40, which is also potentially returned to the combustion (end of the paragraph bridging pages 12 and 13).

3.10 Similar reasoning also applies to the potential recycling of water vapour emanating from the stream 36 back to the fresh water supply 13 in E7 as one of two alternatives (paragraph bridging pages 12 and 13).

Even if the skilled person chose the alternative of recycling the water vapour in condensed form (and not the second alternative where the water vapour is sent into the atmosphere), this form of recycling is not excluded by claim 1 of the patent in suit. Since condensed water vapour is not polluted any longer, recycling it cannot be construed as recycling a part of the "*polluted* scrubber fluid" either.

3.11 Consequently, the subject-matter of claim 1 is not inventive in view of a combination of E7 with E3 (Article 56 EPC).

Auxiliary requests

In the respondent's view, none of the auxiliary requests should be considered, in particular since they, *inter alia*, had not been previously submitted during the opposition.

The appellant argued that the auxiliary requests filed with the statement setting out the grounds of appeal were a response to the decision under appeal.

As a preliminary remark, auxiliary request 3 is the only request that is identical to a request considered in the decision under appeal.

4. Compared with the main request, claim 1 of auxiliary request 1 further comprises the disclaimer "the cleaned scrubber fluid not being reintroduced into the scrubber fluid loop (9)".

According to the appellant this was an undisclosed disclaimer introduced to re-establish novelty over E4, a document under Article 54(3) EPC, if necessary, in line with G 1/03.

However, while E4 discloses a "bleeding-off part [e.g. Figure 1 (7, 10, 8)] of the polluted scrubber fluid from the scrubber fluid loop [(1, 4, 5, 6, 17, 18, 3)]", this bled-off part is not suitable "for disposal" since a portion of it is recycled back to the fluid

loop (namely via the first separator outlet 14 and the buffer inlet 16).

Consequently, the subject-matter of claim 1 of the main request is already novel in view of E4 and the disclaimer cannot re-establish novelty.

This has not been contested.

Hence, the disclaimer does not fulfil criterion 2.2 of the headnote of G 1/03. Consequently, auxiliary request 1 does not meet the requirements of Article 123(2) EPC.

The question of whether the auxiliary request is admissible can therefore be left unanswered.

5. Compared with the main request, claim 1 of auxiliary request 2 further comprises the feature "wherein the pollutant phase comprises oil and solid particles and is denser than the cleaned scrubber fluid".

This feature is indeed disclosed on page 4, lines 12 to 15 of the application as originally filed, but only in combination with the fact that the oil "tend[s] to adhere to denser solid particles in the fluid" (line 13).

While adhesion is indeed one of the possible mechanisms causing the oil to combine with the solid particles in the heavier pollutant phase - although oil is generally even lighter than the aqueous phase ("the scrubber fluid is water" according to claim 1) - it is not the only one.

Another reason why the (light) oil could remain with the (heavy) solid particles is, for example, that the oil is simply entrapped within the solid phase. This mechanism is different from adhesion and is not disclosed in the application as originally filed. However, since claim 1 of auxiliary request 2 also encompasses that situation, it violates Article 123(2) EPC.

In this regard, the appellant remarked that the opposition division had concluded in the parallel opposition case EP 15 166 210.3 that the requirements of Article 123(2) EPC were met.

Notwithstanding the fact that the board is not bound by that decision, the two cases are not necessarily comparable. Contrary to the case in hand, the independent claim of the parallel case specifically deals with exhaust gases from diesel engines, which somewhat restricts the nature and properties of the oil and solid particles and possibly also the mechanisms that cause the two to combine.

6. Auxiliary request 3, claim 1 of which comprises the new features "the first separator outlet ... leads to the outside of a ship" and "the second separator outlet ... is connected to a storage tank for the pollutant phase", corresponds to auxiliary request 8 considered in the decision under appeal.

The opposition division did not admit this request (see point 10.2 of the minutes).

The appellant argued that this request should have been admitted since it was a legitimate reaction to a new argument brought up at the oral proceedings; while the

appellant acknowledged *in principle* that novelty over E4 had been an issue as early as in the summons to oral proceedings at the opposition stage, paragraph [0022] of the patent in suit *specifically* had not been mentioned prior to the oral proceedings.

However, the opposition division did not admit this request since introducing features from the description at that late stage was unforeseeable and would have left the respondent in the unfair position of having to deal with new amendments (decision under appeal, point 4).

Therefore, the opposition division applied its discretion in accordance with the correct principles and not in an unreasonable way (see G 7/93, reasons 2.6).

Consequently, this request is not admitted (Articles 25(2) RPBA 2020 and 12(4) RPBA 2007).

7. Auxiliary requests 4 to 6 also contain the undisclosed disclaimer of auxiliary request 1, among other things, so they do not meet the requirements of Article 123(2) EPC either (see point 4. above).

It has not been contested that the situation is identical to that of auxiliary request 1.

8. This reasoning applies *mutatis mutandis* to the requests not containing the amendments in paragraphs [0022] and [0043] of the description. Therefore, the question as to whether these amendments to the description meet the requirements of Article 123(2) EPC may therefore be left unanswered.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

L. Malécot-Grob E. Bendl

Decision electronically authenticated