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**Datasheet for the decision
of 4 June 2019**

Case Number: T 0907/16 - 3.3.06

Application Number: 08774456.1

Publication Number: 2173845

IPC: C11D3/386, D06F39/02

Language of the proceedings: EN

Title of invention:
Sequential enzyme delivery system

Patent Proprietors:

Unilever PLC
Unilever N.V.

Opponents:

The Procter & Gamble Company
BSH Hausgeräte GmbH

Headword:

Sequential enzyme delivery system / UNILEVER

Relevant legal provisions:

EPC Art. 56
RPBA Art. 13(1), 13(3)

Keyword:

Inventive step (main request and auxiliary requests 1 to 8A'):
no
Admissibility of auxiliary request 9 filed during oral
proceedings: no

Decisions cited:

Catchword:



Beschwerdekammern

Boards of Appeal

Chambres de recours

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Case Number: T 0907/16 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 4 June 2019

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Decision under appeal:

**Interlocutory decision of the Opposition
Division of the European Patent Office posted on
11 February 2016 maintaining European Patent
No. 2173845 in amended form.**

Composition of the Board:

Chairman J.-M. Schwaller

Members: L. Li Voti

J. Hoppe

Summary of Facts and Submissions

- I. The appeals of the proprietors and of both opponents are against the interlocutory decision of the Opposition Division to maintain European patent Nr. 2 173 845 in amended form.
- II. With their grounds of appeal the proprietors filed eight sets of claims as auxiliary requests 1 to 8.
- III. The opponents raised objections under Articles 54 and 56 EPC, and in their replies to the proprietors' appeal they contested the admissibility of the auxiliary requests and raised objections under Articles 123(2), 123(3), 83, 84, 54 and 56 EPC and Rule 80 EPC against these requests.
- IV. In reply to the board's preliminary opinion that claim 1 as granted appeared to lack novelty and inventive step over document D16 (WO 02/077353 A1), the proprietors filed new auxiliary requests 1A, 3A, 5A, 6', 7', 8', 8A and 8A'.
- V. At the oral proceedings, the proprietors filed a new auxiliary request 9, which was not admitted by the board. At the closure of the debate the final requests of the parties were the following:

The proprietors requested that the decision under appeal be set aside and that the patent be maintained as granted, or auxiliarily, that the patent be maintained on the basis of one of the auxiliary requests (AR) in the following order: AR 1, AR 1A, AR 2, AR 3, AR 3A, AR 4, AR 5, AR 5A, AR 6, AR 6', AR 7, AR 7', AR 8, AR 8', AR 8A, AR 8A' and AR 9;

where AR 1 to AR 8 were filed on 21 June 2016; AR 1A, 3A, 5A, 6', 7', 8', 8A and 8A' were filed on 9 April 2019; and AR 9 was filed on 4 June 2019.

The opponents requested that the decision under appeal be set aside and the patent be revoked.

VI. Claim 1 of the patent as granted (**main request**) reads as follows: *"1. A washing machine incorporating a sequential treatment device for sequentially treating fabrics with at least first and second enzymes, the device comprising a plurality of separate chambers containing respectively first and second enzymes, from which chambers the enzymes are sequentially dispensed characterised in that the first enzyme(s) comprise a protease and the second enzyme(s) comprise one or more enzymes of a different family to the first enzyme."*

Claim 1 according to auxiliary request 1 (**AR 1**) differs from claim 1 as granted in that it additionally reads: **"and the device is configured to sequentially dispense the first enzyme(s) before the second enzyme(s)"**.

Claim 1 according to auxiliary request 1A (**AR 1A**) differs from claim 1 according to AR1 in that it further requires that *"the or each second enzyme(s) ~~comprise one or more enzymes~~ is/are of a different family to the proteases(s) of the first enzyme"* (further amendments made apparent by the board).

Claim 1 according to auxiliary request 2 (**AR 2**) concerns the **use of** a washing machine with the features of claim 1 as granted.

Claim 1 according to auxiliary request 3 (**AR 3**) differs from claim 1 according to AR 2 by the feature **"wherein**

the first enzyme(s) is/are dispensed before the second enzyme(s) ".

Claim 1 according to auxiliary request 3A (**AR 3A**) differs from claim 1 according to AR 3 in that it further requires that "*the or each second enzyme(s) ~~comprise one or more enzymes~~ is/are of a different family to the proteases(s) of the first enzyme"*".

Each claim 1 according to auxiliary requests 4, 5 and 5A (**AR 4, AR 5 and AR 5A**) differs from claim 1 according to AR 2, AR3 and AR 3A, respectively, in that it further requires that "***the second enzyme comprises one or more lipolytic enzymes***".

Each claim 1 according to auxiliary requests 6, 7, 8 and 8A (**AR 6, AR 7, AR 8 and AR 8A**) differs from claim 1 as granted or from that according to AR 2, AR 3 and AR 3A, respectively, by the additional feature: "***wherein the sequential treatment device comprises the drawer of a washing machine***".

Each claim 1 according to auxiliary requests 6', 7', 8' and 8A' (**AR 6', AR 7', AR 8' and AR 8A'**) differs from claim 1 according to AR 6, AR 7, AR 8 and AR 8A, respectively, in that it reads "... *comprises the drawer of athe washing machine*" (amendment made apparent by the board) .

Claim 1 according to auxiliary request 9 (**AR 9**) reads as follows (amendments with respect to claim 1 as granted made apparent by the board) :

"1. A washing machine incorporating a sequential treatment device for sequentially treating fabrics with at least first and second enzymes, the device

comprising a dispensing drawer having ~~plurality of~~ separate pre-wash and main wash chambers containing respectively first and second enzymes, from which chambers the enzymes are sequentially dispensed characterised in that the first enzyme(s) ~~comprise a~~ are protease(s) and the second enzyme(s) are lipase(s) ~~comprise one or more enzymes of a different family to the first enzyme,~~ and the device is configured to sequentially dispense the first enzyme(s) before the second enzyme(s)".

Reasons for the Decision

1. Main request (patent as granted) - Preliminary remark regarding interpretation of claim 1
 - 1.1 Independently of whether the proprietors' interpretation of the wording "first and second enzyme" (that the sequential treatment device was configured to dispense the first enzyme before the second enzyme) is correct or not, the board adopts this interpretation, since claim 1 as granted anyway lacks inventive step as explained below.
 - 1.2 As regards the wording of claim 1 requiring that "the first enzyme(s) **comprise** a protease and the second enzyme(s) **comprise** one or more enzymes of a different family to the first enzyme", the parties agreed that this wording allowed that the second enzyme could be as well a protease of a different family to that of the first enzyme(s) protease. Moreover, said wording allowed that the first enzyme(s) comprise, for example, further enzymes - such as lipase - in addition to the protease and that the second enzyme(s) comprise also a protease and a lipase, with the restriction that at least one of these enzymes be of a different family

from those of the first enzymes, so that both first and second enzymes may be proteases or may comprise mixtures of lipase and proteases.

2. *Inventive step of claim 1 (Article 56 EPC)*

2.1 According to paragraph [0004] of the patent, the problem underlying the alleged invention is to provide an improved washing/stain removal process.

2.2 It was common ground among the parties that D16 represents the closest prior art and thus the most suitable starting point for the discussion of inventive step. The board shares this view, since D16 concerns (see page 2, fourth full paragraph; page 3, second and third full paragraphs) the same technical field and purpose as the patent, in particular a washing machine containing a dosing system enabling the sequential delivery of different enzymes including protease in order to improve the washing soil removal efficiency.

According to D16, page 3, third full paragraph, the dosing system contains a plurality of chambers containing different enzymes and enables the dosing of different enzymes at different times in order to avoid any negative influence of an enzyme over the other and to improve their cleaning efficiency. In particular, according to D16, pages 2 and 10, last full paragraphs, protease may be added, for example, after lipase.

2.3 As regards the technical problem underlying the invention, the board notes that the tests in examples 1 and 2 of the patent appear to show a better washing performance, if at all, when protease is added as the first enzyme to a washing liquor and lipase as the second enzyme, however after the rinsing operation, in

comparison to a test wherein both enzymes are added together to the washing liquor. However, these examples do not show any advantage over D16, wherein lipase and protease are already dispensed **separately and at different times** into the wash liquor, or wherein lipase is dispensed before protease.

Since, as explained above, claim 1 moreover includes embodiments wherein both enzymes can be proteases, or mixtures of protease and lipase, there is no evidence for any advantage of these embodiments over those in D16. By the way it is not plausible that any cleaning advantage can be obtained by using only one class of enzymes (protease) instead of two different classes of enzymes (with each being able to remove a different kind of soil), or by using a mixture of lipase and protease, since these are known to interact negatively and thereby provide a less optimal cleaning performance.

It follows from the above considerations that no improvement over D16 has been made credible over the entire breadth of claim 1. The technical problem has thus to be reformulated in the less ambitious terms of the provision of a further washing machine incorporating a sequential treatment device and suitable for providing a washing/stain removal process involving the use of a plurality of enzymes including protease. It is undisputed that this technical problem is solved by the subject-matter of claim 1 at issue.

- 2.4 Since, as explained above, D16 (page 2, fourth full paragraph and page 3, third full paragraph) discloses a washing machine incorporating a sequential treatment device comprising a plurality of separate chambers containing different first and second enzymes, with

preferably the second enzyme(s) being protease, it remains to be decided whether it was obvious for the skilled person faced with the above technical problem, to use a protease or a mixture of enzymes comprising protease as a first enzyme, and as the second enzyme, for example, a protease belonging to a different family to the first one, or a mixture of enzymes comprising such a protease.

For the board, as already indicated in its preliminary opinion, it would have been obvious for the skilled person to try any possible sequence of known detergent enzymes depending on the kind of soil to be removed. For example, for cleaning mainly proteolytic soil it would have been obvious - this being common general knowledge - to use compositions containing prevalently protease as enzyme(s), as alternative to the sequence of enzymes specifically suggested in D16. It would also have been obvious to use the dosing system of D16 for dispensing in the wash liquor as first and second enzymes only known proteases suitable for laundry washing and belonging to different families, and so arrive without inventive skill at a washing machine having all the features of claim 1 at issue.

2.5 The board thus concludes that the subject-matter of claim 1 as granted does not involve inventive step (Article 56 EPC) over D16 taken into combination with common general knowledge.

3. Auxiliary requests 1 and 1A

3.1 Claim 1 of these requests differs from claim 1 as granted in that it requires that the sequential treatment device be configured to dispense the first enzyme before the second enzyme (AR 1), and

additionally in that the or each second enzyme belongs to a different family to the first enzyme (AR 1A).

3.2 These additional features having already been discussed above with respect to the main request, the same reasons as above apply, so that the subject-matter of claim 1 of these requests lacks inventive step either.

4. Auxiliary requests 2, 3 and 3A

4.1 Claim 1 according to AR 2 concerns the use of a washing machine according to the main request, whilst AR 3 and 3A require additionally that the first enzyme be dispensed before the second enzyme and (AR 3A) that the or each second enzyme belongs to a different family of the first enzyme.

4.2 As explained above with respect to the main request, D16 discloses the use of a washing machine incorporating a sequential treatment device comprising a plurality of separate chambers containing different first and second enzymes. Regarding the additional features of AR 3 and AR 3A, these were already discussed with respect to the main request.

It follows that, for the same reasons as those given above, claim 1 of each of these requests lacks inventive step.

5. Auxiliary requests 4, 5 and 5A

5.1 Claim 1 of these auxiliary requests differs from claim 1 according to AR 2, 3 and 3A, respectively, in that the second enzyme must comprise a lipolytic enzyme.

- 5.2 As explained above such claims encompass the case wherein the first and second enzymes can both comprise a protease and a lipase, for which composition no advantage over D16 has been made credible.
- 5.3 As already indicated in the board's preliminary opinion, the skilled person looking for alternative applications of the washing machine disclosed in D16, would have tried any possible sequence of known detergent enzymes and enzyme mixtures, depending on the kind of soil to be removed. Even though D16 suggests preferably to add separately lipase and protease, it would have been obvious for the skilled person, not looking for an improvement over D16 but only for an alternative application thereof, to try the dosing system of D16 for sequential dispensing at different times different mixtures of known detergent enzymes such as lipases and proteases of different families, in order to compensate some expectable loss of efficiency due to the negative interaction of the two enzymes discussed in this document, and so arrive without inventive skill at the subject-matter of claim 1 according to these requests, which thus lacks inventive step under Article 56 EPC.
6. Auxiliary requests 6, 6', 7, 7', 8, 8', 8A and 8A'
- 6.1 Each claim 1 according to these requests differs from claim 1 as granted or from that according to AR 2, AR 3 and AR 3A, respectively, only in that the sequential treatment device comprises the drawer of a/the washing machine.
- 6.2 The board notes that it is not in dispute that known household washing machines contain a drawer having separate compartments, for example for pre-wash and

main wash, which are able to sequentially dispense detergent compositions. Also the decision under appeal (points 8.3.2 and 8.7.1) acknowledges that prior art household washing machines containing a drawer having separate compartments were able to sequentially dispense detergent compositions.

As to the use of a drawer as sequential treatment device the patent in suit does not show any advantage over the closest prior art D16 which, instead, suggests (page 10, third full paragraph) the use as sequential treatment device of a dosing ball within the washing drum of the washing machine.

- 6.3 It is nevertheless the board's conviction that it would have been directly apparent to the skilled person, with the knowledge of the advantages obtained in D16 by dispensing different detergent enzymes at different times during the wash, that the drawer of a washing machine having pre-wash and main wash compartments is also suitable for dispensing sequentially compositions containing different enzymes. In the board's view such a different implementation of the teaching of D16 would thus not tantamount to any inventive merit.
- 6.4 Therefore the same reasoning exposed above in the discussion of the inventive step of the previous requests applies also to these requests, with the consequence that each claim 1 according to these requests thus lacks inventive step (Article 56 EPC).
7. Since all the requests discussed above are to be rejected on the ground of lack of inventive step there is no need to discuss the other objections raised against them or to take a decision on their admissibility.

8. Admissibility of auxiliary request 9

8.1 This request was filed during oral proceedings allegedly as a reaction to the discussion on inventive step, especially because of the interpretation of the expressions "first enzyme comprising" and "second enzyme comprising", and in order to better limit the invention to embodiments reflecting the examples of the patent in suit. The amendments to claim 1, namely a dispensing drawer having separate pre-wash and main wash chambers containing respectively protease(s) as first enzymes and lipase(s) as second enzymes, consist mainly of features taken from the description.

8.2 The board notes that the interpretation of the expressions "first enzyme comprising" and "second enzyme comprising" was already an issue in opposition (see grounds of opposition by opponent 1: page 2, first paragraph before last and page 3, second paragraph as well as opponent 1' grounds of appeal: page 4, second and fourth full paragraphs) and in the board's preliminary opinion. This interpretation was indeed explicitly accepted by the proprietors in their reply of 9 April 2019 (page 2, first and second full paragraphs before last) to the board's communication.

8.3 The inventive step objection based on D16 had moreover already been exposed in the board's communication, but the proprietors did not submit any counter-argument in their letter of 9 April 2019, nor did they file any auxiliary request addressing this point.

8.4 The board furthermore notes that the present request does not appear to overcome at first sight the inventive step deficiency discussed with respect to the previous requests, because the proposed claim 1 still

has an open language "pre-wash and main wash chambers **containing** ... first and second enzymes" which thus does not exclude the presence of further enzymes.

8.5 Eventually, it is to be noted that the amended claim 1 contains features taken from the description, which had not yet been specifically discussed by the parties. Therefore, the admission of such a request might have rendered necessary a postponement of oral proceedings or even a remittal of the case, which would be contrary to the requirements of Article 13(3) RPBA.

8.6 Therefore the board decided not to admit this request.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



D. Magliano

J.-M. Schwaller

Decision electronically authenticated