

**Internal distribution code:**

- (A) [ - ] Publication in OJ
- (B) [ - ] To Chairmen and Members
- (C) [ - ] To Chairmen
- (D) [ X ] No distribution

**Datasheet for the decision  
of 21 June 2021**

**Case Number:** T 1178/17 - 3.2.04

**Application Number:** 09719504.4

**Publication Number:** 2254454

**IPC:** A47L15/42

**Language of the proceedings:** EN

**Title of invention:**

CONVEYOR DISHWASHER AND METHOD OF OPERATING A CONVEYOR  
DISHWASHER

**Patent Proprietor:**

Premark FEG L.L.C.

**Opponent:**

MEIKO Maschinenbau GmbH & Co. KG

**Headword:**

**Relevant legal provisions:**

EPC Art. 56

RPBA Art. 12(4)

**Keyword:**

Inventive step - (no)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**

**Boards of Appeal**

**Chambres de recours**

Boards of Appeal of the  
European Patent Office  
Richard-Reitzner-Allee 8  
85540 Haar  
GERMANY  
Tel. +49 (0)89 2399-0  
Fax +49 (0)89 2399-4465

**Case Number: T 1178/17 - 3.2.04**

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.04**  
**of 21 June 2021**

**Appellant:** MEIKO Maschinenbau GmbH & Co. KG  
(Opponent) Englerstrasse 3  
77652 Offenburg (DE)

**Representative:** Altmann Stöbel Dick Patentanwälte PartG mbB  
Dudenstrasse 46  
68167 Mannheim (DE)

**Respondent:** Premark FEG L.L.C.  
(Patent Proprietor) 1300 North Market Street, Suite 504  
Wilmington, Delaware 19801 (US)

**Representative:** Trinks, Ole  
Meissner Bolte Patentanwälte  
Rechtsanwälte Partnerschaft mbB  
Postfach 10 26 05  
86016 Augsburg (DE)

**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
8 March 2017 concerning maintenance of the  
European Patent No. 2254454 in amended form.**

**Composition of the Board:**

**Chairman** A. de Vries  
**Members:** G. Martin Gonzalez  
W. Van der Eijk

## Summary of Facts and Submissions

I. The appeal was filed by the appellant-opponent against the interlocutory decision of the opposition division to maintain the patent in amended form.

II. In preparation for oral proceedings the board issued a communication, dated 6 February 2020, setting out its provisional opinion on the relevant issues.

Oral proceedings by videoconference were held on 21 June 2021 before the board.

III. In the present decision, reference is made to the following documents:

E4 EP 1 192 893 A2

E8 R. Brodmann: "Comfort contra Energiekosten", Salz & Technik 7/98, pages 35-36.

IV. The appellant-opponent requests that the decision under appeal be set aside and that the European patent No 2254454 be revoked, or that auxiliarily the case be remitted to the opposition division.

The respondent-proprietor requests that the appeal be dismissed and the patent thus be maintained as upheld by the opposition division (main request) or, auxiliarily, maintained on the basis of new auxiliary request 1, as filed with a letter dated 28 April 2020, or one of auxiliary requests 1-5, as filed with a letter dated 5 December 2017.

V. Independent claim 1 of the relevant requests reads as follows:

(a) Main request (as upheld by the opposition division)

"Conveyor dishwasher for cleaning wash-ware, the conveyor dishwasher (1) having at least one wash zone (6, 7, 8, 9) and at least one final-rinse zone (10) and also a control arrangement (36), wherein a wash-ware detector (34) is provided, and is designed to sense the type of wash-ware which is to be treated; and in that the control arrangement (36) is designed to assign each type of wash-ware sensed to a previously defined or definable wash-ware group, the control arrangement (36) is also designed to select automatically, for each wash-ware group, a previously defined or definable treatment programme by which the type of wash-ware assigned to the wash-ware group is to be treated in the at least one wash zone (6, 7, 8, 9), and to set the process parameters associated with the treatment programme selected; and/or that the control arrangement (36) is also designed to select automatically, for each wash-ware group, a previously defined or definable treatment programme by which the type of wash-ware assigned to the wash-ware group is to be treated in the at least one final-rinse zone (10), and to set the process parameters associated with the treatment programme selected, characterized in that the wash-ware detector (34) has at least one detector device (35) directly sensing the size, shape and/or material of the wash-ware to be treated, the control arrangement (36) being designed to detect at least some of the following wash-ware with reference to the type of wash-ware sensed:

- plates produced from porcelain or a porcelain-like material;
- cups produced from porcelain or a porcelain-like material, glass or a glass-like material;
- bowls produced from porcelain or a porcelain-like material, glass or a glass-like material;
- trays, or tray-like articles, produced from a plastic material;
- containers, in particular GN containers, produced from a metal, in particular from stainless steel;
- pots produced from a metal, in particular from stainless steel;
- pans produced from a metal, in particular from stainless steel;
- cutlery or items of cutlery produced from a metal, in particular from stainless steel; and/or
- drinking glasses produced from glass or a glass-like material,

wherein the control arrangement (36) is designed to assign the following wash-ware to a first wash-ware group: plates produced from porcelain or a porcelain-like material and plates and bowls produced from porcelain, a porcelain-like material, glass or a glass-like material; and/or

in that the control arrangement (36) is designed to assign the following wash-ware to a second wash-ware group: containers, in particular GN containers, pots and pans produced from a metal, in particular from stainless steel; and/or

in that the control arrangement (36) is designed to assign the following wash-ware to a third wash-ware group; trays, and tray-like articles, produced from a plastic material; and/or

wherein the control arrangement (36) is designed to assign the following wash-ware to a fourth wash-ware

group: drinking glasses produced from glass or a glass-like material; and/or  
wherein the control arrangement (36) is designed to assign the following wash-ware to a fifth wash-ware group: cutlery and items of cutlery produced from a metal, in particular from stainless steel."

(b) New auxiliary request 1, filed on 28 April 2020

Claim 1 as in the main request, with a modified characterizing portion requiring all recited features, that is no feature being optional, as follows (emphasis added by the board to indicate modified text):

"...characterized in that  
the wash-ware detector (34) has at least one detector device (35) directly sensing the size, shape and/or material of the wash-ware to be treated,  
the control arrangement (36) being designed to detect ~~at least some of~~ the following wash-ware with reference to the type of wash-ware sensed:

- plates produced...
- cutlery or items of cutlery produced from a metal, in particular from stainless steel; and/or
- drinking glasses produced from glass or a glass-like material,

wherein the control arrangement (36) is designed to assign the following wash-ware to a first wash-ware group:...

..or a glass-like material; and/or  
~~in that~~ wherein the control arrangement (36)...  
..., in particular from stainless steel; and/or  
~~in that~~ wherein the control arrangement...  
..., produced from a plastic material; and/or  
wherein the control arrangement (36)...

..drinking glasses produced from glass or a glass-like material; and/or wherein the control arrangement (36) is designed to assign the following wash-ware to a fifth wash-ware group: cutlery and items of cutlery produced from a metal, in particular from stainless steel."

(c) Auxiliary requests 1-5, filed on 5 December 2017

Claim 1 of all requests include amendments that further restrict their subject-matter vis-à-vis claim 1 of the main request. The substance of those amendments was not subject of discussion during these appeal proceedings.

VI. The appellant-opponent argues as follows:

The subject-matter of upheld claim 1 (main request) lacks an inventive step in the light of E8 and E4. The new auxiliary request 1 is late and should not be admitted. Whether admissible or not, its claim 1 also lacks inventive step in the light of the above evidence.

VII. The respondent-proprietor argues as follows:

Claim 1 of the main request involves an inventive step over the cited prior art. The new auxiliary request 1 is admissible and its claim 1 also involves an inventive step. Auxiliary requests 1-5 should also be admitted. They represent a further clearer differentiation of the claimed subject-matter from the cited prior art.



## **Reasons for the Decision**

1. The appeal is admissible
2. Background

The invention is concerned with a conveyor dishwasher having at least a wash zone and a final-rinse zone and a corresponding method of operation, see specification paragraphs [0001]-[0003]. The invention aims at achieving reduction in the consumption of resources (water, chemicals and energy) while providing good results for all types of wash-ware, see specification paragraph [0011]. To this end, a detector directly senses the size, shape and/or material of the wash-ware, assigning them to different wash-ware groups (e.g. first group: plates of porcelain or porcelain-like material, and plates and bowls of porcelain, porcelain-like material, glass or glass-like material). A control arrangement selects automatically for each wash-ware group a specific treatment programme for each treatment zone. The treatment programmes can be better adapted for reduction of consumption for each wash-ware type at each treatment zone, see specification paragraphs [0012]-[0014].

3. Main request - Inventive step
- 3.1 The appellant-opponent contests the positive conclusion of the opposition division that claim 1 involves an inventive step, see impugned decision, points 3.3.4-3.5.

3.2 The contested claim 1 is directed to a conveyor dishwasher. A conveyor dishwasher in the sense of the contested patent includes both generally known types, flight-type and basket or rack conveyor dishwashers, see paragraph [0002] of the specification:  
"Accordingly, the invention relates, in particular, to a flight-type dishwasher (warewasher) or a rack conveyor dishwasher (warewasher)."

The claim moreover has a number of "and/or" and "at least" optional features. As a consequence its subject-matter also encompasses conveyor dishwashers that are limited to only one of these and/or, at-least, features.

In this sense, a conveyor dishwasher having at least a wash zone and a final-rinse zone with the following features would also fall under the scope of claim 1: a detector directly sensing at least one of size, shape and/or material of the wash-ware and a control arrangement assigning them to a wash-ware group and selecting automatically for that wash-ware group a specific treatment programme either for the wash zone or for the final-rinse zone.

The board notes that the contested claim requires directly sensing size, shape or material. Therefore indirect sensing, e.g. through a bar code on the wash-ware basket or rack is excluded.

3.3 It is not in dispute that E8 can be a suitable starting point for the assessment of inventive step. Document E8 describes a conveyor dishwasher with a washing zone ("Wasch-Zone") and a rinsing zone ("Spül-Zone"), see figure on page 36. Just as in the patent, the dishwasher of E8 can take the form of a rack or of a

flight-type conveyor, see page 35, right column "Korb- und Bandautomatenbereich", and the figure on page 35 showing a flight-type as well as various references to conveyed rack or racks ("Korb", "Körbe"; on page 35, middle and right columns). The document further describes an optional wash-ware detection system, see page 36, section 2, "Geschirrererkennung". According to that section, the system detects porcelain ware and selects a different, lower dosing of washing agent for that type of wash-ware, i.e. a specific treatment programme for the wash zone.

- 3.4 As explained in the following, the claimed dishwasher differs from that of E8 in that it specifically requires *direct* sensing and in the particular definition of the wash-ware groups.
- 3.4.1 E8 provides no information as to how the detection is effected or any details of the sensor used. Specifying that this is done by directly sensing the wash ware can thus be seen as a possible realisation of the detection arrangement of the known dishwasher described in E8.
- 3.4.2 The contested claim also differs from the dishwasher in E8 in the particular definition of the wash-ware groups sensed and assigned by the control arrangement. None of these groups correspond exactly to the two groups of ware made of porcelain and plastics, mentioned in E8 by way of example. Claim 1 defines for instance the first wash-ware group as plates produced from porcelain or a porcelain-like material and plates and bowls produced from porcelain, a porcelain-like material, glass or a glass-like material, which does not exactly match the group disclosed in E8, wash-ware of porcelain material.

As stated it is already known from E8 to differentiate between different types of wash-ware (in order to treat them differently). A new or different grouping of the wash-ware may be seen as a further refinement or optimization of this idea, assuming that the different groups will also be treated differently although this is not specified in the claim. The respondent-proprietor was also unable to identify any additional technical effect in the particular definition of each wash-ware group of granted claim 1.

3.4.3 From the above it is apparent that the two differing features - direct sensing to realize the teaching of E8 on the one hand, a different grouping of wash-ware to refine or optimize differentiated treatment, on the other - are different in nature and in effect. They are thus unrelated and can be treated separately for inventive step.

3.5 Starting with the second of the differences, the associated partial problem can be formulated as further refining or optimizing the differential treatment of different types of wash-ware.

This idea of different treatment for different types of wash-ware (as well as to the degree of soiling) is however very well known in the field of dishwashers. For this very purpose domestic appliances offer different washing programs, as well as having different baskets with different spraying arrangements for different wash ware. It is also well known in commercially used dishwashers as acknowledged in the patent itself, paragraph [0004] of the patent and as illustrated by the prior art cited in paragraphs [0008] and [0009], as well as by E8. Indeed, E8 itself describes in section 2 the advantages of treating the

different types of wash-ware differently, as it saves energy and washing agent, see for instance second paragraph in section 2 of page 36.

The idea is thus very well known, and how exactly the wash-ware groups are defined according to type, material or degree of soiling is normally a matter of routine optimization. That appears to be the case here also, where not one of the groups, other than allowing subsequent differentiated treatment, can be seen to do so in a special or out of the ordinary way, as also acknowledged by the respondent. This is so independent of the exact nature of the group or the number of different groups. For the skilled person wishing to refine the device of E8 such routine optimization is obvious. Thus, this differing feature does not involve an inventive step.

- 3.6 Turning now to the differing feature of direct sensing, the associated technical problem can be formulated as how to realize the detection in the E8 device. The skilled person intent on realizing a wash-ware sensor in the dishwasher of E8 would naturally consider the teachings of E4, in the related field of household dishwashers and relating to sensing of wash-ware.

The board in this respect considers, contrary to the respondent-proprietor's submissions, that the skilled person, an engineer developing commercially used dishwashers, would most certainly have a good knowledge of the more readily available and ubiquitous domestic dishwashers, not least because they share a substantial amount of core technology. Therefore, they would naturally, as a matter of course, consider the teachings in that field.

3.6.1 Document E4 describes direct sensing wash-ware passing through a light curtain 11 between upper light sources 12 and lower light sensors 13, see abstract. E4 teaches that this sensing device and associated electronics can determine the different types of incoming wash-ware, so that the appropriate treatment program can be automatically selected, see E4 abstract and paragraph [0014], lines 16-21. E4 also teaches the use of different wash-ware groups, see for instance paragraph [0015] where dishes, cups, glass ware or cutlery are suggested. As explained in paragraph [0007] of E4, the gist of the invention is that the system identifies types of wash-ware loaded into the dishwasher to automatically choose an optimised wash program. This teaching is not restricted to any particular wash-ware group but is one of general character. It generally teaches the use of direct sensing by a light curtain for optimisation of the dishwasher through wash-ware sensing and corresponding classification or grouping.

Hence the skilled person when seeking to realise the dishwasher and method described in E8 would consider the use of a light curtain as that taught by E4 to that end as a matter of obviousness.

3.6.2 The board is also convinced that the skilled person would have no difficulty, beyond routine design, to adapt the light curtain sensor of E4 to function with the passing racks or passing wash-ware directly to the conveyor type dishwasher of E8. While the conditions in a tunnel conveyor machine may be different to those in a household dishwasher with a static washing compartment, the skilled person, an engineer involved in the design and development of automatic dishwashers, possesses the relevant common general knowledge in

sensing and automation technology for such a routine adaptation. In E4 also the items, once loaded into baskets, must be moved through the light curtain into the compartment for detection, so that this arrangement can be easily adapted to a dishwasher in which items are conveyed continuously into the cleaning tunnel. Indeed, the patent itself, see paragraph 0039, mentions light curtains as a possible mode of realisation.

3.7 As neither differing feature is seen to involve an inventive step, the board concludes that claim 1 of the main request (as upheld by the opposition division) does not involve an inventive step in the sense of Article 56 EPC. The impugned decision must thus be set aside.

4. New auxiliary request 1, filed on 28 April 2020

Without prejudice to the question of admissibility of this request, it is immediately apparent to the board that the subject-matter of claim 1 of this request also lacks in inventive step over the combination of E8 and E4. New claim 1 replaces each *and/or* from the claim wording by an *and* so that it now requires sensing and assignment for all groups. However, as follows from section 3.5 above, neither the nature nor the number of groups is seen to add anything special beyond further obviously refining or optimizing the differentiated treatment of wash-ware.

5. Auxiliary requests 1-5, filed on 5 December 2017.

The board set out its preliminary opinion in its written communication in respect of admission of these requests:

*"The respondent-proprietor has filed five auxiliary requests. However no argument is given as to how the new claims might address any of the issues on file.*

*The Board is thus inclined to disregard these requests, for which the respondent-proprietor has failed to state their complete case, Article 12(4) with Article 12(2) RPBA."*

The respondent-proprietor refrained in their written response as well as during the oral proceedings from further comment on this issue. Absent any further submission from the respondent-proprietor the board saw no reason to change its point of view. It thus decided not to admit these auxiliary requests, Article 12(4) RPBA 2007.

6. For the above reasons the Board finds that the decision was wrong in concluding inventive step and that therefore it must be put aside. Consequently, taking into consideration the amendments made by the respondent-proprietor, the patent and the invention to which it relates do not meet the requirements of the Convention and the patent must be revoked pursuant to Article 101(3) (b) EPC.



**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:



G. Magouliotis

A. de Vries

Decision electronically authenticated