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**Datasheet for the decision
of 24 February 2026**

Case Number: T 0978/23 - 3.5.01

Application Number: 15907501.9

Publication Number: 3367863

IPC: A47K17/00, G01H17/00, A47K5/06,
A47K10/26

Language of the proceedings: EN

Title of invention:
PRODUCT USE ACOUSTIC DETERMINATION SYSTEM

Patent Proprietor:
Kimberly-Clark Worldwide, Inc.

Opponent:
OP-HYGIENE IP GmbH

Headword:
Acoustic identification of a dispenser/KIMBERLY-CLARK

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - (first auxiliary request - yes)



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Case Number: T 0978/23 - 3.5.01

D E C I S I O N
of Technical Board of Appeal 3.5.01
of 24 February 2026

Appellant: Kimberly-Clark Worldwide, Inc.
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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
15 March 2023 concerning maintenance of the
European Patent No. 3367863 in amended form.**

Composition of the Board:

Chairwoman A. Wahrenberg
Members: L. Falò
D. Rogers

Summary of Facts and Submissions

- I. Both the patent proprietor and the sole opponent filed an appeal against the decision of the opposition division dated 15 March 2023 to maintain patent EP-B-3 367 863 in amended form according to the second auxiliary request.
- II. In the statement of grounds of appeal, the opponent requested that the decision of the opposition division be set aside and that the patent be revoked on the grounds of Article 100(a) EPC (lack of inventive step) and Article 100(c) EPC. They also requested oral proceedings.
- III. The patent proprietor requested that the decision be set aside and that the patent be maintained as granted (main request) or according to the first auxiliary request filed during the oral proceedings in opposition. Both requests were re-filed with the statement of grounds of appeal. The proprietor also requested oral proceedings.
- IV. In a reply to the patent proprietor's statement of grounds dated 6 December 2023, the opponent further argued lack of inventive step of claims 1 and 12 of the main and first auxiliary request.
- V. In the letter of reply dated 7 December 2023 the proprietor filed auxiliary requests 3 to 11, provided arguments in favour of their allowability, and requested that the opponent's appeal be dismissed.
- VI. Oral proceedings were held as videoconference on 24 February 2026. During the oral proceedings, the

proprietor withdrew their main request and the opponent withdrew their objection under Article 100(c) EPC in respect of the first auxiliary request.

VII. The following documents, cited in the opposition proceedings, are relevant for the present decision:

D2 CA 2 790 366 A1

D5 CA 2 737 012 A1.

VIII. Claim 1 of the first auxiliary request reads as follows:

A system (102) comprising:

a plurality of dispensing devices (104) in an environment, each dispensing device (104) having a consumable product storage area (402) and a dispensing mechanism (404) operatively coupled to the product storage area (402), wherein each dispensing device (104) is configured to store a respective consumable product in the product storage area (402) and to dispense the consumable product through use of the dispensing mechanism (404) to facilitate a hygiene-based process, and wherein actuation of each dispensing device (104) creates an acoustic signal;

an acoustic sensing module (103) configured to sense one or more acoustic signals based on actuation of one or more of the dispensing devices (104), to access acoustic signatures (210) corresponding to the one or more acoustic signals; and

a data collection device (112) configured to communicate with the acoustic sensing module (103) to

store data describing the dispensing devices (104) determined to have been actuated,

characterised in that:

the acoustic sensing module (103) is further configured to determine, on a per dispensing device (104) basis, which of the dispensing devices (104) were actuated based on the sensed one or more acoustic signals and the acoustic signatures (210), and to generate and transmit a low consumable product alert for a given dispensing device (104) based on an analysis of a number of determined actuations for the given dispensing device (104) and a number of actuations corresponding to a threshold depletion level of the consumable product of the given dispensing device (104).

IX. Claim 12 of the first auxiliary request reads as follows:

A method (500) comprising:

sensing acoustic signals in a washroom, wherein each acoustic signal is generated by actuation of a corresponding dispensing device (104) in the washroom and each acoustic signal is different from each other acoustic signal;

in response to sensing an acoustic signal, determining which dispensing device (104) actuated based on a comparison of the sensed acoustic signal to predetermined acoustic signatures (210) of actuating dispensing devices (104);

determining, for at least one of the dispensing devices (104), a number of actuations of the at least one dispensing device (104);

determining, for the at least one of the dispensing devices (104), whether a use state of a consumable product in the at least one dispensing device (104) is in a depletion range based on the determined number of actuations; and

in response to determining the at least one dispensing device (104) is in the depletion range, generating a depletion alert.

Reasons for the Decision

Background

1. The application concerns a system and a method for monitoring devices dispensing consumable products, such as hand towels, tissues, or soap (see [0003] of the published patent). Each dispensing device includes a generator emitting an acoustic signal each time the device is actuated (i.e. the product is dispensed to a user), wherein each acoustic signal is associated with a signal signature stored in a repository [0009], [0032] to [0034]. The system further includes an acoustic sensing module connected to one or more acoustic sensors. When a sensor detects an acoustic signal, the acoustic sensing module determines which dispenser has been actuated by comparing the detected signal to the stored signal signatures ([0010], [0011], [0027], [0047]). By counting the number of times each dispenser has been actuated, the system determines the quantity of product remaining and provides an alert

when said quantity reaches a predetermined minimum threshold ([0053] to [0056]).

2. Claim 1 of auxiliary request 1 defines a system comprising a plurality of dispensing devices and an acoustic sensing module as describe above, and a data collection device.

Claim 12 defines a method comprising, in summary:

sensing acoustic signals in a washroom each acoustic signal being generated by actuation of a corresponding dispensing device;

determining which dispensing device actuated based on a comparison of the sensed acoustic signal to predetermined acoustic signatures;

determining, for at least one of the dispensing devices a number of actuations;

determining whether a use state of a consumable product in the dispensing device is in a depletion range;

and, if the state is in the depleting range, generating a depletion alert.

Auxiliary request 1 - inventive step

3. The opponent argued that claim 1 was not inventive over D2 or a combination of D2 and D5. The opposition division found that claim 1 was inventive, but claim 12 lacked inventive step (Article 56 EPC) in view of the combination of D2 and D5.

Claim 1

4. The opponent argued that, even though claim 1 included a plurality of dispensing devices, the acoustic sensing module sensed "one or more" acoustic signals, and

therefore the claim encompassed sensing a single signal. Moreover, the signal could be identical for all dispensers. Following this interpretation, the opponent held that the features

(1c) an acoustic sensing module (103) configured to sense one or more acoustic signals based on actuation of one or more of the dispensing devices (104), to access acoustic signatures (210) corresponding to the one or more acoustic signals; and

(1e) the acoustic sensing module (103) is further configured to determine, on a per dispensing device (104) basis, which of the dispensing devices (104) were actuated based on the sensed one or more acoustic signals and the acoustic signatures (210),

were anticipated or rendered obvious by D2, which disclosed: a sound sensor sensing a sound produced by a sound generator; means for sensing and identifying a signal and; in the case that only one sound sensor and sound generator were provided, also means for determining the dispensing device emitting the sound. Paragraph [0048] of D2 also implied that the system had the capability to distinguish different dispensers by means of different sound profiles. Reference was also made to paragraph [0071] of D2.

The opponent furthermore argued that D5 disclosed a similar system in which each dispenser transmitted data about the usage of the dispenser to a remote central computer or to the personal computer of the personal dispenser assembly [0073]. The personal computer could also keep track as to the volume of fluid remaining in the reservoir and provide warnings and indications as to the fluid levels in the reservoir [0074], which

disclosed or rendered obvious the features of and generating and transmitting a low consumable product alert.

5. The Board is not convinced by the opponent's interpretation of claim 1.

The system as claimed comprises a plurality of dispensing devices and the acoustic sensing module is adapted to determine, on a "*per dispensing device basis*", which dispensing device has been actuated. This implies that the sensing module is able to identify a plurality of different acoustic signals, each corresponding to a different dispensing device. In this context, the expression "*an acoustic sensing module (103) configured to sense one or more acoustic signals based on actuation of one or more of the one or more dispensing devices (104)*" is interpreted in the sense that, whenever one or more dispensing devices are actuated, one or more corresponding acoustic signals are sensed by the sensing module.

6. D2 discloses in paragraph [0048] sensing and recognising sounds representative of different reservoir bottles which may be connected to a given dispenser. In particular, sounds within specific frequency ranges are used to determine the nature of the fluid being dispensed. However, this does not imply recognising also the dispenser which has been actuated, as the nature of the fluid depends on the type of reservoir, rather than on the dispenser identity.
7. Paragraph [0071] of D2 discloses providing the ability to differentiate a dispenser's sound from other ambient sounds by generating a sound which can be recognised as "emanating from a sounding dispenser" or is

characteristic of "particular sounding dispensers", for example by having a given variance in amplitude or frequency. This does not imply that there is a determination, by the sound sensor, of which dispenser of a plurality has been actuated, but only that the device may distinguish the dispenser's own sound from any other ambient sound.

8. In view of the above, the Board concludes that features 1c and 1e are not disclosed in D2.
9. Furthermore, the Board holds that modifying D2 by introducing these features would not have been obvious for the skilled person. The sound sensors and the control mechanisms of D2 are specific to each dispensing device. Therefore, there is no hint in D2 which would have led the skilled person, when faced with the problem of reliably determining the fluid level in the dispensers, to determine on a per-dispenser basis which dispenser had been actuated, and to do so on the basis of stored acoustic signatures.
10. The features in question are not disclosed in D5 either. D5 discloses the central monitoring of the usage of a plurality of dispensers on the basis of usage data transmitted by each dispenser. However, it does not disclose a sensing module configured according to features (1c) and (1e). Therefore, even when combining D2 and D5, the skilled person would not have arrived at the subject matter of claim 1.
11. The opponent argued during oral proceedings that D2 disclosed in paragraphs [0042] and [0052] an hybrid local/centralised architecture. D5 further confirmed that centralised monitoring architectures were commonly used, as for example in paragraphs [0073], [0017],

claims 16, 27 and Figure 17. This conclusion was also supported by the granted patent, which presented a centralised or distributed implementation of the acoustic sensing module as two implementation alternatives.

12. The Board finds these arguments unconvincing. Even though D2 and D5 disclose connecting a dispenser assembly to a centralised computer monitoring system, they do not disclose determining which dispenser has been actuated. Hence, a mere centralisation of the functionalities disclosed in said documents would not lead the skilled person to the claimed subject matter.
13. The Board therefore concludes that claim 1 is inventive over D2 alone as well as over a combination of D2 and D5. The opponent has not made any further objections against auxiliary request 1 and the Board sees no reason to examine any other requirements of the EPC.

Claim 12

14. Claim 12 of auxiliary request 1 includes the features of "*sensing acoustic signals in a washroom, wherein each acoustic signal is generated by actuation of a corresponding dispensing device*" and, in response, of "*determining which dispensing device (104) actuated based on a comparison of the sensed acoustic signal to predetermined acoustic signatures (210) of actuating dispensing devices (104)*".
15. The opposition division argued that D2 disclosed in paragraph [0047] that a signal could be sent to a central control system which could determine which

dispensing device was actuated based on a comparison of the sensed acoustic signal.

16. The Board does not agree with this interpretation of D2. According to paragraph [0047], a signal may be sent to the central control system if a sound is sensed which does not correspond to one of a plurality of pre-determined frequency ranges, in order to signal to an installer that an incompatible reservoir assembly has been installed. However, this does not imply that the specific dispenser which has been actuated is identified, or that the sensed sound is transmitted to the central control system for dispenser (or even reservoir) identification.
17. During oral proceedings, the opponent argued that the claim was very broad and encompassed a local identification at the dispenser level.
18. The proprietor argued in response that the claim, even when following this interpretation, was still inventive because it included the determination of the specific dispenser which had been actuated, which was not disclosed in prior art.
19. The Board agrees with the proprietor. Since more than one signal are sensed, and each signal is generated by the actuation of a corresponding device, the wording of the claim implies that a plurality of devices are present and, consequently, that it is possible to determine which specific device of the plurality has been actuated based on the stored acoustic signatures. The Board holds that the distinguishing features of the claim (see point 14.) are inventive even if the identification is performed locally, i.e. at dispenser

level, for the reasons discussed above (see points 9. and 10.).

20. Accordingly, the Board finds that claim 12 involves an inventive step over D2 as well as a combination of D2 and D5.

Conclusion

21. The Board concludes that claims 1 and 12 of auxiliary request 1 involve an inventive step (Article 56 EPC).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division with the order to maintain the patent with the following claims and a description to be adapted:
 - Claims 1 to 14 according to auxiliary request 1 filed with a letter dated 26 January 2022.

The Registrar:

The Chairwoman:



T. Buschek

A. Wahrenberg

Decision electronically authenticated