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**Datasheet for the decision
of 13 February 2018**

Case Number: T 0092/14 - 3.5.03

Application Number: 09161628.4

Publication Number: 2131610

IPC: H04R25/00

Language of the proceedings: EN

Title of invention:

Compression and mixing for hearing assistance devices

Patent Proprietor:

Starkey Laboratories, Inc.

Opponents:

Sonova AG
Widex A/S
GN Resound A/S
Oticon A/S

Headword:

Compression and mixing for hearing assistance devices/STARKEY

Relevant legal provisions:

EPC Art. 54
RPBA Art. 12(2), 12(4)

Keyword:

Novelty - main request (no)

Admissibility - auxiliary requests (no)



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Case Number: T 0092/14 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 13 February 2018

Appellants:
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Decision under appeal:

**Decision of the Opposition Division of the
European Patent Office posted on
21 November 2013 rejecting the opposition filed
against European patent No. 2131610 pursuant to
Article 101(2) EPC**

Composition of the Board:

Chairman F. van der Voort
Members: K. Schenkel
 O. Loizou

Summary of Facts and Submissions

- I. This case concerns the appeal filed by the joint opponents, hereinafter the appellants, against the decision of the opposition division to reject their opposition against European patent No. 2 131 610.
- II. The opposition was based on the ground for opposition pursuant to Article 100(a) EPC.
- III. The opposition division held that the subject-matter of claims 1 and 12 was both novel and inventive.

In its decision, the opposition division referred *inter alia* to the following prior art document:

D12: EP 1 236 377 B1.

- IV. In their statement of grounds of appeal, the appellants requested that the decision under appeal be set aside and that the patent be revoked. Further, oral proceedings were conditionally requested.
- V. In its reply dated 10 August 2014, the respondent-proprietor, hereinafter the respondent, requested that the appeal be dismissed (main request) or, in the alternative, that the patent be maintained on the basis of the set of claims of one of auxiliary requests I, II, III, IV, V, VI and VII as filed with the reply, the auxiliary requests being identical to those filed during the opposition proceedings. Further, oral proceedings were conditionally requested. Arguments were provided in support of novelty and inventive step in respect of the subject-matter of independent claims 1 and 12 as granted (main request). With respect to the auxiliary requests, only the amendments made to the

claims as compared to the claims as granted and the basis for these amendments in the application as published were indicated.

- VI. With a letter dated 10 February 2015, the appellants responded to the reply.
- VII. In a communication following a summons to oral proceedings, the board gave its preliminary opinion that, *inter alia*, the subject-matter of claims 1 and 12 of the main request was not new having regard to the disclosure of D12 or D13 and did not involve an inventive step when starting from the disclosure of D12 or D13 and taking into account the teaching of D1 or D2.
- VIII. In response to the board's communication, the appellants maintained their request that the opposed patent be revoked in its entirety and provided further arguments in respect of the respondent's main request and auxiliary requests.

The respondent informed the board that it would not be attending the oral proceedings.

- IX. Oral proceedings took place on 13 February 2018 in the absence of the respondent.

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

The respondent had requested in writing that the appeal be dismissed (main request) or, in the alternative, that the patent be maintained on the basis of the set of claims of one of auxiliary requests I, II, III, IV,

V, VI and VII as filed with its reply to the statement of grounds of appeal.

At the end of the oral proceedings, after deliberation by the board, the chairman announced the board's decision.

X. Claim 1 as granted (main request) reads as follows:

"An apparatus for processing sound for a hearing assistance device placed at a wearer's ear, the apparatus comprising:

 a receiver adapted to receive signals from a sound environment;

 a processor connected to the receiver, the processor adapted to process received signals to isolate individual sound source components;

 a compressor connected to the processor, the compressor adapted to compress the individual sound source components;

 a mixer connected to the compressor, the mixer adapted to mix the compressed sound source components to produce a mixed output signal; and

 a speaker connected to the mixer, the speaker integrated with the hearing assistance device and adapted to output the mixed output signal at the wearer's ear."

XI. In view of the board's decision, it is not necessary to reproduce the wording of any of the claims of the auxiliary requests.

Reasons for the Decision

1. *Main request - novelty (Articles 52(1) and 54 EPC)*

1.1 Claim interpretation

The subject-matter of claim 1 is directed to an apparatus for processing sound for a hearing assistance device, in which the apparatus includes, *inter alia*, a processor adapted to process received signals to isolate individual sound source components, a compressor adapted to compress each of the sound source components, and a mixer adapted to mix the compressed sound source components.

The board notes that, whilst according to claim 1 the processor is adapted to process received signals "to isolate individual sound source components", the claim does not define any limitations on how isolation is to be performed, for example on the basis of which criteria. The board thus interprets the claim broadly, such that isolation may be based on the respective frequency or frequency ranges of the individual sound source components.

Further, in line with the respondent's interpretation, the board understands the term "compress" in the context of claim 1 as referring to reducing the dynamic range of a signal.

1.2 D12 discloses a hearing compensation system 8 for the hearing impaired, which includes an input transducer 10 and a plurality of bandpass filters 14-n, each of which is followed by a multiplicative AGC (automatic gain control) circuit 16-n (see paragraphs [0029], [0038] and [0043] and Fig. 1). The output signals of the multiplicative AGC circuits 16-n are summed together and provided to an output transducer 18 (*ibid.*). The multiplicative AGC circuits 16-n may also perform a compression function (column 14, lines 43 to 45).

Further, the output transducer 18 may be an earphone transducer, which implies that in such a case the transducer is part of a hearing assistance device placed at the wearer's ear and is adapted to output the summed signal at the wearer's ear (column 11, lines 24 to 31).

D12, using the language of claim 1, thus discloses an apparatus for processing sound for a hearing assistance device placed at a wearer's ear ("earphone transducer"), the apparatus comprising:

- a receiver ("input transducer") adapted to receive signals from a sound environment;

- a processor ("plurality of bandpass filters") connected to the receiver, the processor being adapted to process received signals to isolate individual sound source components;

- a compressor ("plurality of multiplicative AGC circuits") connected to the processor, the compressor being adapted to compress the individual sound source components;

- a mixer connected to the compressor, the mixer being adapted to mix the compressed sound source components to produce a mixed output signal (summing together the outputs of the multiplicative AGC circuits implies a mixer; Fig. 1 and column 11, lines 21 to 24, "summing junction 17-1"); and

- a speaker ("output transducer") connected to the mixer, the speaker being integrated with the hearing assistance device and adapted to output the mixed output signal at the wearer's ear.

1.3 The respondent argued in writing that D12 did not disclose "a separation by source, i.e. a separation into various individual sound source components as required by claims 1 and 12 of the opposed patent",

since, in D12, the input signal was separated only by frequency. Similarly, in its decision, the opposition division held that D12 did not show "a separation by sources" (see point 8.1 and point 8.3, last paragraph).

The board notes however that claim 1 refers to the isolation of individual "sound source components" (underlining added by the board), which is to be distinguished from the isolation of individual sound sources, since the term "sound source components" may also refer to different components of a single sound source, for example different frequency components. Further, for the sake of argument, in a listening situation in which the respective frequencies or frequency ranges of two sound sources are different, isolation based on frequency would in any case result in isolation of the two individual sound sources. The board further notes that neither the claims nor the description provide a definition of isolation which would exclude separation by frequency as done in D12.

The respondent further argued in writing that D12 did not disclose that compression was separately applied to different sound source components, since in D12 gain was applied to a single signal, albeit frequency-specific, which might include contributions from different sound sources.

Again, the board notes that the term "sound source components" does not exclude different frequency components from a single source and that, in the case of sources producing sounds with different frequencies in the apparatus of D12, gains will be separately applied to the signals of different sound sources.

1.4 The board therefore concludes that the subject-matter of claim 1 of the main request lacks novelty (Articles 52(1) and 54 EPC). The main request is therefore not allowable.

2. *Auxiliary requests I to VII - admissibility*
(Article 12(2), (4) RPBA)

2.1 Auxiliary requests I to VII are identical to those filed during the opposition proceedings in response to the summons to attend oral proceedings. However, the opposition division did not further consider these requests at any stage. Nor was the admissibility of these requests decided on by the opposition division. Indeed, in view of its decision to reject the opposition, there was no need for the opposition division to consider these issues.

2.2 Article 12(2) RPBA stipulates that the reply shall contain a party's complete case and shall set out clearly and concisely the reasons why it is requested that the decision under appeal be amended, and that it should specify expressly all the facts, arguments and evidence relied on.

Further, Article 12(4) RPBA states:

"Without prejudice to the power of the Board to hold inadmissible facts, evidence or requests which could have been presented or were not admitted in the first instance proceedings, everything presented by the parties under (1) shall be taken into account by the Board if and to the extent it relates to the case under appeal and meets the requirements in (2)." (board's underlining). Hence, each request requires proper

substantiation within the meaning of Article 12(2) RPBA.

2.3 The respondent's reply dated 10 August 2014 does not include any substantiation as to why the claims of the auxiliary requests comply with Article 52(1) EPC in conjunction with Articles 54 and 56 EPC. Nor was compliance with Article 52(1) EPC immediately apparent to the board.

2.4 The board, exercising its discretion pursuant to Article 12(4) RPBA, therefore did not admit auxiliary requests I to VII into the appeal proceedings.

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. Rauh

F. van der Voort

Decision electronically authenticated