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Datasheet for the decision of 2 December 2020

Case Number: T 0948/16 - 3.5.03

Application Number: 07821151.3

Publication Number: 2082614

IPC: H04R25/00

Language of the proceedings: EN

Title of invention:
Hearing aid having an occlusion reduction unit, and method for occlusion reduction

Patent Proprietor:
Sivantos GmbH

Opponents:
GN Resound A/S / Octicon A/S

Headword:
Hearing aid with occlusion reduction I/SIVANTOS

Relevant legal provisions:
EPC Art. 123(2)
RPBA Art. 12(4)
RPBA 2020 Art. 12(8)

Keyword:
Decision in written proceedings: cancellation of oral proceedings following respondent's announcement of non-attendance
Added subject-matter - main request (yes): unallowable intermediate generalisation
Admittance of requests - auxiliary requests 1 to 3 (no)

Decisions cited:
T 0003/90

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Case Number: T 0948/16 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 2 December 2020

Appellants: (Opponents)	GN Resound A/S / Octicon A/S Lautrupbjerg7/Kongebakken 9 2750 Ballerup/2765 Smørum (DK)
Representative:	Aera A/S Gammel Kongevej 60, 18th floor 1850 Frederiksberg C (DK)
Respondent: (Patent Proprietor)	Sivantos GmbH Henri-Dunant-Straße 100 91058 Erlangen (DE)
Representative:	FDST Patentanwälte Nordostpark 16 90411 Nürnberg (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 18 February 2016 rejecting the opposition filed against European patent No. 2082614 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chair	K. Bengi-Akyürek
Members:	T. Snell
	R. Romandini

Summary of Facts and Submissions

I. This case concerns the appeal of three joint opponents (henceforth, "appellant") against the decision of the opposition division rejecting the opposition. The opponents invoked the grounds for opposition pursuant to Articles 100(a), (b) and (c) EPC.

II. The appellant requests that the decision under appeal be set aside and that the patent be revoked.

III. The patent proprietor (henceforth, "respondent") requests that the appeal be dismissed (**main request**), or, alternatively, that the patent be maintained in amended form on the basis of one of **auxiliary requests 1 to 3** submitted with the reply to the statement of grounds of appeal.

IV. One of the three joint opponents ("Widex A/S") has withdrawn their opposition (cf. their letter dated 14 March 2019) and is therefore no longer party to these proceedings.

V. Both parties conditionally requested oral proceedings.

VI. The board summoned the parties to oral proceedings. In a preliminary opinion under Article 15(1) RPBA 2020, the board raised several objections concerning non-compliance with Articles 83 and 123(2) EPC with respect to claim 1 of the main request, and remarked that if these objections were confirmed, there would also appear to be no point in admitting the auxiliary requests on file.

VII. With a submission dated 16 November 2020, the respondent indicated that they intended to let the patent lapse by dint of non-payment of renewal fees in all states where the patent was valid. They also stated that they did not intend to attend the oral proceedings, and withdrew their conditional request for oral proceedings. No comments regarding the substantive issues were submitted.

VIII. Oral proceedings before the board were then cancelled.

IX. Claim 1 as granted (claim 1 of the **main request**) reads as follows:

"A method for reduction of occlusion effects in an acoustic appliance (1) which closes an auditory channel,

wherein an audio signal (S) in a transmission path of the acoustic appliance (1) is processed by a signal processing unit and is emitted via an output transducer (R), which is arranged in the auditory channel, as an acoustic signal,

wherein a sound signal (Y) is detected by an auditory channel microphone (M) and is supplied to a variable loop filter (B) which is arranged in a feedback loop of an occlusion reduction unit (10) of the acoustic appliance (1) and whose output signal (T) is injected into the transmission path of the audio signal (S),

characterized in that

a change of a transducer transfer function (RVM) of a path from an input of the output transducer (R) to an output of the auditory channel microphone (M), the

transducer transfer function (RVM) being the product of a transfer function of the output transducer (R), of a transfer function of an auditory channel volume (V) and of a transfer function of the auditory channel microphone (M), is observed on the basis of an input signal (W) to the output transducer (R) and of a further signal (X, Z) tapped off from the transmission path of the audio signal (S) or from the feedback loop,

wherein the loop filter (B) is adaptively readjusted in the event of the change of the transducer transfer function (RVM), in order to compensate effects on the occlusion reduction unit (10) which are caused by the change of the transducer transfer function (RVM) to optimize the occlusion reduction."

Reasons for the Decision

1. *Decision in written proceedings*

Where oral proceedings are appointed upon a party's request and that party subsequently expresses its intention not to attend (cf. point VII above), such statement is considered to be equivalent to a withdrawal of the request for oral proceedings (see e.g. T 3/90, OJ 1992, 737, Reasons, point 1).

As, moreover, the board did not consider holding oral proceedings to be expedient or necessary (cf. Article 116(1) EPC), the arranged oral proceedings before the board were cancelled and a decision handed down in written proceedings (Article 12(8) RPBA 2020).

2. *Technical context*

2.1 The present patent concerns an acoustic appliance such as a hearing aid with an "occlusion reduction unit" for reducing "occlusion effects". Occlusion effects cause the perception of the wearer's own voice to be louder and more distorted than normal.

2.2 The occlusion reduction unit essentially comprises a feedback loop (cf. Fig. 1 of the patent) consisting of a microphone, with transfer function M, placed in the auditory channel. The microphone generates an output signal Z, which is then filtered by a filter B and subtracted from a signal X in the transmission path of an incoming audio signal S. The resulting signal W is fed to an output transducer with transfer function R. A transfer function V represents the "auditory channel volume", i.e. the auditory path between the transducer R and the microphone M. An occlusion signal OS is shown as added to the signal in the auditory channel.

2.3 The amount of occlusion reduction is directly dependent on the transfer function product RVM (cf. paragraph [0032] of the patent). This product, and changes in it, can be used to optimise the signal processing (e.g. the coefficients of the filter B) with regard to occlusion reduction.

3. Main request - claim 1 - Articles 100(c) and 123(2) EPC

3.1 The characterising part of **claim 1 as granted** includes the feature that

> "*a change of a transducer transfer function (RVM)* ... is observed on the basis of an input signal (W) to the output transducer (R) and of a further signal (X, Z) tapped off from the

transmission path of the audio signal (S) or from the feedback loop" (board's italics).

In other words, the change of transducer function is observed based either on the signals W and X (X being the signal tapped off from the transmission path of the audio signal), or the signals W and Z (Z being the signal tapped off from the feedback loop).

3.2 The corresponding feature of **claim 1 as originally filed** reads:

"*a transfer function (RVM)* of the path from the input of the output transducer (R) to the output of the auditory channel microphone (M), or an occlusion transfer function (Y/OS) *being observed* on the basis of an input signal (W) to the output transducer (R) and a further signal (X, Z) from the transmission path of the audio signal (S) or from the feedback loop" (board's italics).

3.3 In accordance with claim 1 as originally filed, *a transfer function (RVM)* is observed (i.e. the transfer function is first obtained), whereas in claim 1 as granted, a *change of a transfer function* is observed. However, it is not necessary to obtain the transfer function itself in order to infer *a change* of the transfer function on the basis of the values W and X or Z (cf. point 3.5 below).

Consequently, claim 1 as granted is broader than claim 1 as filed. No direct and unambiguous basis for the broadening of claim 1 can be found in the application documents as filed.

3.4 In this respect, apart from one embodiment referred to in point 3.5 below, changes in the transfer function RVM based on the signals W and X or Z apparently involve obtaining the transfer function itself (cf. e.g. page 11, lines 21-26, page 13, lines 26-28, page 13, line 37 - page 14, line 2, page 16, lines 22-25, page 17, lines 9-11 and 17-22 of the underlying description as filed).

3.5 The board can at most identify the passage on page 15, line 20 ff. of the description as filed as concerning an embodiment not requiring the transfer function RVM itself to be observed. However, this embodiment is more specific than the wording of present claim 1, since it requires comparing the amplitudes of the signals W and Z with stored reference values. Compared with this embodiment, claim 1 concerns an unallowable intermediate generalisation.

3.6 Claim 1 of the main request therefore does not comply with Article 123(2) EPC.

4. Auxiliary requests 1 to 3 - admittance (Article 12(4) RPBA 2007)

4.1 None of the present **auxiliary requests 1 to 3** were submitted during the opposition proceedings, although they could have been e.g. in response to the notice of opposition. Therefore, their admittance is at the discretion of the board (Article 12(4) RPBA 2007).

4.2 In the board's preliminary opinion under Article 15(1) RPBA 2020, it was indicated that claim 1 of each auxiliary request respectively did not appear to clearly overcome all the objections raised by the board in connection with Articles 123(2) and 83 EPC, and that

if these objections were confirmed, it appeared that there would be no point in admitting the auxiliary requests (cf. point VI above).

4.3 The respondent did not reply in substance (see point VII above). Further, by indicating that the patent would be allowed to lapse by non-payment of renewal fees and that it did not intend to attend the oral proceedings, the respondent has shown a lack of interest in pursuing the case.

4.4 Consequently, the board sees no logic in admitting and examining the auxiliary requests now, all the more so as the respondent has not actively responded to the board's remark on the likelihood that the auxiliary requests would not be admitted, or otherwise indicated a current interest in a decision maintaining the patent in amended form, despite the intention to let the patent lapse.

4.5 Under these circumstances, the board decides that the auxiliary requests are not to be admitted into the appeal proceedings (Article 12(4) RPBA 2007).

5. Conclusion

As there is no allowable claim request, it follows that the opposed patent must be revoked.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chair:

B. Brückner K. Bengi-Akyürek

Decision electronically authenticated