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**Datasheet for the decision
of 5 May 2009**

Case Number: T 0133/07 - 3.5.03

Application Number: 01610074.5

Publication Number: 1276349

IPC: H04R 25/00

Language of the proceedings: EN

Title of invention:

A hearing aid with a self-test capability

Patentee:

Widex A/S

Opponent:

Siemens Audiologische Technik GmbH

Headword:

Hearing aid/WIDEX

Relevant legal provisions:

EPC Art. 56

Relevant legal provisions (EPC 1973):

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Keyword:

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Decisions cited:

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Catchword:

-



Case Number: T 0133/07 - 3.5.03

D E C I S I O N
of the Technical Board of Appeal 3.5.03
of 5 May 2009

Appellant: Siemens Audiologische Technik GmbH
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Decision under appeal: Decision of the opposition division of the
European Patent Office posted 25 October 2006
rejecting the opposition filed against European
patent No. 1276349 pursuant to Article 102(2)
EPC 1973.

Composition of the Board:

Chairman: A. Clelland
Members: F. van der Voort
R. Moufang
A. Madenach
M.-B. Tardo-Dino

Summary of Facts and Submissions

I. This appeal is against the decision of the opposition division rejecting an opposition filed against European patent No. 1 276 349, which is based on European patent application No. 01610074.5.

II. The opposition was filed against the patent as a whole and on the ground that the claimed subject-matter was either not new or did not involve an inventive step (Article 100(a) EPC).

In the course of the opposition proceedings, reference was made, *inter alia*, to the following document:

D1: US 4 049 930 A.

This document was cited in the European search report and was considered by the opposition division as representing the closest prior art.

III. In the statement of grounds of appeal the appellant (opponent) requested that the decision under appeal be set aside and that the patent be revoked in its entirety. Oral proceedings were conditionally requested.

In respect of the independent claims, i.e. claims 1 and 13 as granted, the appellant argued that the subject-matter lacked an inventive step having regard to the disclosure of D1 and taking into account the common general knowledge ("Fachwissen") of a person skilled in the art of hearing aids.

- IV. In response to the statement of grounds of appeal the respondent (proprietor) argued that the appeal should be dismissed. Oral proceedings were conditionally requested.
- V. In a communication accompanying a summons to attend oral proceedings, the board drew attention to issues to be discussed at the oral proceedings.
- VI. In preparation for the oral proceedings the appellant filed with a letter dated 5 March 2009 the following document as evidence of the common general knowledge:
- D10: US 4 979 506 A
- VII. In preparation for the oral proceedings the respondent filed, with a letter dated 31 March 2009, claims of a first and a second auxiliary request. The respondent further argued that D10 should not be admitted to the appeal proceedings.
- VIII. Oral proceedings were held on 5 May 2009. The appellant requested that the decision under appeal be set aside and that the patent be revoked. The respondent requested that the appeal be dismissed (main request) or, in the alternative, that the decision under appeal be set aside and the patent be maintained in amended form on the basis of claims 1 to 17 of the first auxiliary request or claims 1 to 13 of the second auxiliary request, both auxiliary requests as filed with the letter dated 31 March 2009.

At the end of the oral proceedings the board's decision was announced.

IX. Claim 1 as granted reads as follows:

"A hearing aid (10) having an input transducer (12, 14, 16) for transforming an acoustic input signal into a first electrical signal, a signal processor (28) for compensating a hearing deficiency by generation of a second electrical signal based on the first electrical signal, an output transducer for conversion of the second electrical signal into sound, a probe means (42) for determination of a signal parameter, a plurality of signal switches at respective points in a signal path of the hearing aid (10), and a test controller (44) adapted to control the settings of the signal switches to connect the probe means (42) to a selected first point of the signal path in order to conduct a test procedure of a selected section of the signal path."

Claim 13 as granted reads as follows:

"A method for verifying the functioning of a hearing aid (10), the hearing aid having an input transducer (12, 14, 16) for transforming an acoustic input signal into a first electrical signal, a signal processor (28) for compensating a hearing deficiency by generation of a second electrical signal based on the first electrical signal, an output transducer for conversion of the second electrical signal into sound, and a probe means (42) for determination of a signal parameter, the method comprising providing a plurality of signal switches at respective points in a signal path of the hearing aid extending through the input transducer (12, 14, 16), the signal processor (28) and the output transducer, and using a test controller (44) to control the settings of the signal switches to connect the probe means (42) to a

selected first point of the signal path in order to conduct a test procedure of a selected section of the signal path."

The claims of the first and second auxiliary requests are not relevant to the present decision. Accordingly, neither are reproduced here.

Reasons for the Decision

1. *Interpretation of claim 1*

The term "signal path" in "signal path of the hearing aid" in claim 1 as granted is interpreted by the board as the electrical signal path between the input and output transducers, i.e. between the points where, in use, the first and second electrical signals referred to in claim 1 are present. This interpretation is also in accordance with the definition of a signal path as given in the patent in suit (B-publication, paragraph [0010]) and in independent method claim 13 (see point IX above).

2. *Article 100(a) EPC - inventive step*

2.1 At the oral proceedings it was common ground between the parties that document D1 represented the closest prior art.

2.2 D1 discloses, see Figs 1 and 2, a hearing aid having an input transducer, i.e. microphone 10, for transforming an acoustic input signal into a first electrical signal, a signal processor, i.e. hearing aid amplifier 12, for compensating a hearing deficiency by generating a second

electrical signal based on the first electrical signal, and an output transducer, i.e. ear piece 14, for conversion of the second electrical signal into sound.

The hearing aid further includes a probe means for determining a signal parameter of the hearing aid signal, i.e. differential amplifiers 44, 47 (Fig. 2), a signal switch 20e between the microphone 10 and the amplifier 12, and a test controller 20a, 20c which is adapted to control the setting of the switch 20e such as to exclusively connect a test signal generator 22' to a point of the signal path in order to conduct a test procedure of the signal path (see the abstract and col. 6, lines 6 to 13). The probe means 44, 47 is permanently connected to the output of the hearing aid amplifier 12 (see col. 6, lines 41 to 44, and Fig. 2).

The test signal from the test signal generator 22' may alternatively be applied at a first point in the signal path other than between the microphone 10 and the amplifier 12 by correspondingly locating the switch 20e at that point (col. 3, lines 59 to 65, and col. 8, lines 60 to 64) and, similarly, the probe signal for the probe means 44, 47 may be tapped at a second point in the signal path other than at the output of the amplifier 12 (col. 8, line 65, to col. 9, line 7). Selecting, as in Fig. 2, the input and output terminals of the hearing aid amplifier 12 as the first and second points is preferred, since this permits a detection of a malfunction anywhere in the hearing aid amplifier (col. 3, line 65, to col. 4, line 4).

The board notes that in D1, switches 20c and 20d in Fig. 2 are not in the signal path of the hearing aid,

which extends from the microphone 10, via the switch 20e and the hearing aid amplifier 12, to the ear piece 14, and that the test controller is adapted to control only the setting of signal switch 20e in the signal path. Further, since the probe means 44, 47 is permanently connected to the output of the amplifier 12, the test controller is not for connecting the probe means 44, 47 to a point of the signal path.

2.3 The subject-matter of claim 1 as granted differs from the hearing aid of D1 in that according to claim 1:

- i) a plurality of signal switches is provided at respective points in the signal path of the hearing aid; and
- ii) the test controller is adapted to control the settings of the plurality of signal switches such that the probe means is connected to a selected point of the signal path in order to conduct a test procedure of a selected section of the signal path.

2.4 A technical effect achieved by these distinguishing features is an improved self-test capability of the hearing aid in that different tests can be carried out by successively selecting, by means of the test controller and the switches, different points of the signal path for connection with the probe means, in order to successively conduct test procedures of different sections of the signal path.

2.5 The problem underlying the claimed subject-matter, when starting out from D1, may therefore be seen in improving

the self-test capability of the known hearing aid.

- 2.6 At the oral proceedings the appellant agreed that the above-mentioned features i) and ii) were not disclosed in D1.

However, the appellant argued that D1 hinted at testing several sections of the signal path and that providing a plurality of switches at different locations in the signal path and a controller for controlling these switches, in which the switches are for applying the test signal and for tapping a response signal for the probe means, would have been within the competence of a person ordinarily skilled in the art. In support of these arguments the appellant referred to D10 as evidence of common general knowledge, in which the passages at col. 4, lines 49 to 57, and col. 5, lines 11 to 15 and lines 42 and 43, were considered to be particularly relevant.

- 2.7 The board does not find these arguments convincing for the following reasons.

D1 discloses that either a section of the signal path or the whole signal path is to be tested, whereby, as mentioned above, in the case of a hearing aid the testing of the whole signal path is preferred (col. 3, line 59 to col. 4, line 4, and col. 8, line 57, to col. 9, line 7). In either case, the probe means may be permanently connected to the signal point in question and the switch 20e is to be located in the signal path at the desired point. Hence, in the board's view, D1 neither suggests carrying out test procedures on several different sections of the signal path nor modifying the

hearing aid for that purpose by the introduction of a plurality of signal switches at respective points in the signal path of the hearing aid and by adapting the test controller such as to control the settings of these switches such that the probe means is connected to a selected point of the signal path.

Further, D10 is a single patent document and, as such, does not, at least in the circumstances of the present case, represent the common general knowledge of the person skilled in the art of hearing aids, as would, for example, a textbook, an encyclopaedia, or a handbook. Nor can it be inferred from D10 that the above-mentioned distinguishing features are part of the common general knowledge. The board notes that the passages specifically referred to by the appellant do not concern the background art but the invention as disclosed in D10, which is a communication system which includes self-test means for automatically testing the performance of the communication system and, more specifically, a system for testing the performance of an external programming device used to control and monitor the performance of an implantable device such as a pacemaker (see D10, the abstract and col. 3, lines 40 to 49). D10 does not therefore suffice to demonstrate the common general knowledge of a person skilled in the art of hearing aids.

- 2.8 Since for the above reasons the board is not convinced that the distinguishing features i) and ii) (see point 2.3 above) were part of the common general knowledge of the person skilled in the art at the filing date and since the appellant did not submit any other arguments in support of a lack of inventive step of the subject-matter of claim 1 as granted, the board

concludes that the subject-matter of this claim involves an inventive step having regard to the disclosure of D1 and taking into account the common general knowledge of a person skilled in the art of hearing aids as far as known to the board.

- 2.9 The above reasons in respect of claim 1 as granted apply, *mutatis mutandis*, to the subject-matter of independent method claim 13 as granted (see point IX above). The remaining claims of the patent are dependent either on claim 1 or claim 13.
3. The appellant's request that the decision under appeal be set aside and that the patent be revoked is therefore not allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

D. Magliano

A. S. Clelland