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Datasheet for the decision of 26 August 2021

Case Number: T 0894/19 - 3.5.03

Application Number: 06121538.0

Publication Number: 1906699

IPC: H04R25/00, H04R25/02

Language of the proceedings: EN

Title of invention:
Hearing device and earpiece

Patent Proprietor:
Oticon A/S

Opponent:
Sonova AG

Headword:
Rotatable snapping connection/OTICON

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - all requests (no): non-application of the "could-would approach" to equally likely technical solutions

Decisions cited:
T 0012/07, T 1968/08, T 1045/12

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Case Number: T 0894/19 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 26 August 2021

Appellant: (Opponent)	Sonova AG Laubisrütistrasse 28 8712 Stäfa (CH)
Representative:	Schwan Schorer & Partner mbB Patentanwälte Bauerstraße 22 80796 München (DE)
Respondent: (Patent Proprietor)	Oticon A/S Kongebakken 9 2765 Smørum (DK)
Representative:	Cohausz & Florack Patent- & Rechtsanwälte Partnerschaftsgesellschaft mbB Bleichstraße 14 40211 Düsseldorf (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 29 January 2019 concerning maintenance of the European Patent No. 1906699 in amended form.**

Composition of the Board:

Chair	K. Bengi-Akyürek
Members:	K. Peirs
	R. Romandini

Summary of Facts and Submissions

I. The appeal is against the interlocutory decision of the opposition division to maintain the patent in amended form according to the proprietor's "auxiliary request 2". The main request and auxiliary request 1 were deemed to be not allowable for added subject-matter (Article 123(2) EPC).

II. A communication was issued pursuant to Article 15(1) RPBA 2020 including the board's preliminary opinion, having regard to the following prior-art document:

D1: US 7 110 562 B1.

III. Oral proceedings before the board were held on 26 August 2021.

IV. The appellant (opponent) requests that the decision under appeal be set aside and that the patent be revoked.

V. The respondent (patent proprietor) requests that

- as a **main request**, the appeal be dismissed;
- in the alternative, the patent be maintained in amended form according to one of **two auxiliary requests**.

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

VII. Claim 1 of the **main request** (claim 1 of the patent as maintained by the opposition division) reads as follows:

"A hearing device (10) comprising a BTE unit (12) adapted to convert and process sound to an electrical signal and a tubular element (14) adapted to communicate said electrical signal to an earpiece (16), wherein said earpiece (16) comprises a canal element (24) adapted to provide a tight fit of said earpiece (16) in an ear canal and a speaker element (20),

characterized in that

said canal element (24) comprises snapping means (32), and said speaker element (20) comprises a circumferential ridge section (30), which is adapted to snap into engagement with said snapping means (32) thereby maintaining said speaker element (20) in the canal element (24) in an axially fixed position within a bore (34) of said canal element (24), while allowing rotational movement of said speaker element (20) in said canal element (24)."

VIII. Claim 1 of **auxiliary request 1** reads as follows (amendments vis-à-vis claim 1 of the main request emphasised by the board):

"A hearing device (10) comprising an earpiece (16) and a BTE unit (12) adapted to convert and process sound to an electrical signal and a tubular element (14) adapted to communicate said electrical signal to ~~an~~ said earpiece (16), wherein said earpiece (16) comprises a canal element (24) adapted to provide a tight fit of said earpiece (16) in an ear canal and a speaker element (20),

characterized in that

said canal element (24) comprises snapping means (32), and said speaker element (20) comprises a circumferential ridge section (30), which is adapted to snap into engagement with said snapping means (32)

thereby maintaining said speaker element (20) in the canal element (24) in an axially fixed position within a bore (34) of said canal element (24), while allowing rotational movement of said speaker element (20) in said canal element (24)."

IX. Claim 1 of **auxiliary request 2** reads as follows (amendments vis-à-vis claim 1 of the main request emphasised by the board):

"A hearing device (10) comprising a BTE unit (12) adapted to convert and process sound to an electrical signal and a tubular element (14) adapted to communicate said electrical signal to an earpiece (16), wherein said earpiece (16) comprises a canal element (24) adapted to provide a tight fit of said earpiece (16) in an ear canal and a speaker element (20),

characterized in that

said canal element (24) comprises snapping means (32), and said speaker element (20) comprises a circumferential ridge section (30), which is adapted to snap into engagement with said snapping means (32) thereby maintaining said speaker element (20) in the canal element (24) in an axially fixed position within a bore (34) of said canal element (24), while allowing rotational movement of said speaker element (20) ~~in~~ within said canal element (24) relative to the earpiece (16)."

Reasons for the Decision

1. *Technical background*

The present invention concerns a hearing aid comprising

a behind-the-ear (BTE) unit having tubular element 14 connected to receiver or "speaker element" 20, which receiver is held in in-the-ear (ITE) unit or "canal element" 24. ITE unit 24 has snapping means 32 which engage with circumferential ridge section 30 of receiver 20 (see Fig. 2 below). According to the underlying description, by enabling rotation of the speaker within the canal element, an advantageous fitting of the BTE unit relative to the earpiece would be achieved (see page 9, lines 12 to 14 of the application as filed).

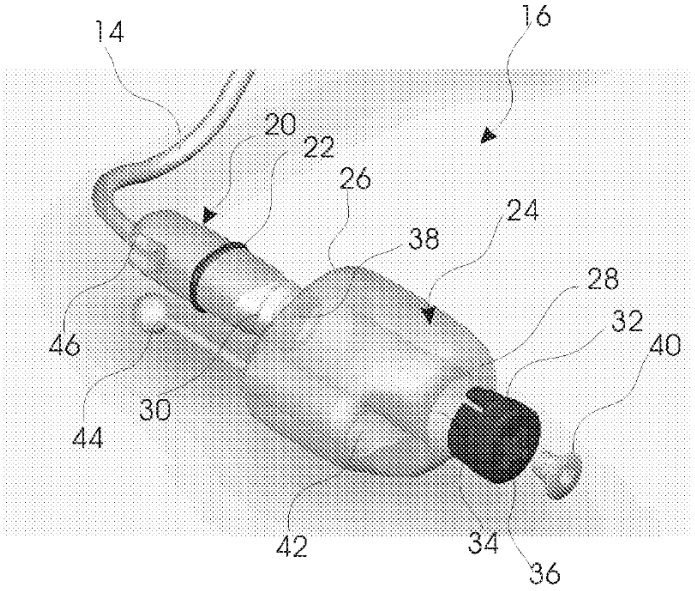


FIG. 2

2. *Main request and auxiliary request 1: claim 1 - features*

2.1 Claim 1 of the **main request** comprises the following features (as labelled by the board):

(a) A hearing device comprising a BTE unit adapted to convert and process sound to an electrical signal and a tubular element adapted to communicate said electrical signal to an earpiece,

(b) wherein said earpiece comprises a canal element adapted to provide a tight fit of said earpiece in an ear canal and a speaker element,
(c) wherein said canal element comprises snapping means,
(d) wherein said speaker element comprises a circumferential ridge section, which is adapted to snap into engagement with said snapping means thereby maintaining said speaker element in the canal element in an axially fixed position within a bore of said canal element, while allowing rotational movement of said speaker element in said canal element.

2.2 Claim 1 of **auxiliary request 1** differs from claim 1 of the main request in that it further specifies that

(e) the hearing device comprises the earpiece.

2.3 The subject-matter of claim 1 of the main request therefore encompasses that of claim 1 of auxiliary request 1.

3. *Main request and auxiliary request 1: claim 1 - inventive step*

Since the subject-matter set out in claim 1 of the main request includes that of claim 1 of auxiliary request 1 (cf. point 2.3 above), the inventive-step analysis provided for the latter in points 3.1 to 3.6 below applies *a fortiori* to the former.

3.1 Taking prior-art document **D1** as the most promising starting point for assessing inventive step of claim 1 of **auxiliary request 1**, the parties concurred that this document discloses **features (a), (b) and (e)**, which the

board, in view of Figures 15A to 15F and column 20, line 10 to column 21, line 3 of D1, does not challenge.

3.2 For the sake of argument, the board adopts the respondent's point of view that **feature (c)** is not shown in D1. Moreover, there was consent between the parties that **feature (d)** is not disclosed in D1.

Referring to Figures 15B and 15F of D1 as reproduced below, the board notes regarding this latter feature that the passage at lines 47 to 61 of column 20 of D1 teaches to insert locking pin 1514 through collar 1513 such as to cause an "interference fit" between flange 1515 and tube 1512.

FIG. 15F

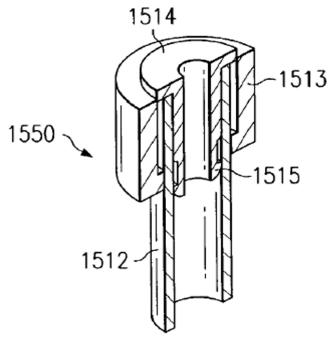
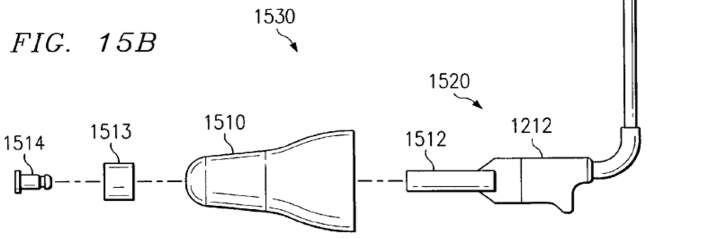


FIG. 15B



This interference fit *deforms* the outer wall of tube 1512 and *locks* ear mould or "canal element" 1510 onto speaker element 1212 *through frictional force*. Due to this deformation and frictional force, speaker element 1212 of D1 can indeed not rotate in ear mould 1510, contrary to feature (d).

3.3 The technical effect associated with features (c) and (d) was extensively discussed at the oral proceedings before the board. The board concludes from that discussion that features (c) and (d) in fact yield the **technical effect** of providing for an easy and a reliable connection between the canal element and the speaker element while allowing for an adjustable positioning of the speaker element.

3.4 The respondent noted in view of features (c) and (d) that the tubular element of feature (a) is mounted between two fixed positions on the user's head, namely, at one end, the "BTE unit" and, at the other end, the "earpiece". As a result, torque forces arose in this tubular element. The respondent considered that the snapping connection of features (c) and (d) mitigated the transmission of these torque forces from the tubular element onto the earpiece.

The board does not find this to be credible over the whole scope claimed because the respondent's consideration relates to the connection of the tubular element onto the canal element, whereas features (c) and (d) merely concern the mounting of the speaker element into the canal element. For the same reason and in view of the lack of further details as to the structural interrelationship between the BTE unit, the tubular element, the speaker and the snapping element, it is also not considered credible that features (c) and (d) would bring about the more general technical effect of *improving the mechanical fitting of the hearing device to the user's ear*.

3.5 The corresponding **objective technical problem** can thus be framed as *"how to provide for an easy and a reliable connection between the canal element and the speaker*

element in D1 that allows for an adjustable positioning of the speaker element".

The respondent's argument that this objective technical problem would point towards the solution of features (c) and (d) could not convince the board: an easy and a reliable connection that still allows for some adjustable positioning is not necessarily implemented using a snapping connection as required by features (c) and (d). Clamping a speaker element between several arms or pins also provides for such a connection: the placement of the speaker element will typically still be adjustable at least to some extent, e.g. via a translational and/or rotational movement. The same applies to mounting the speaker element by means of a resilient suspension such as a flex circuit or a flexible sleeve.

3.6 The relevant **skilled person** tasked with the objective technical problem described in point 3.5 above belongs to the field of "hearing devices". Based on their common general knowledge, this skilled person is aware of several solutions to the objective technical problem posed, such as the clamping or resiliently suspending mentioned in point 3.5 above or the rotatable snapping connection of features (c) and (d). The skilled person also knows the respective advantages and disadvantages of each of these solutions. The configuration of features (c) and (d) therefore represents a mere obvious and consequently non-inventive selection among a number of known and equally likely possibilities (see e.g. T 1045/12, Reasons 4.7.7). In such cases, the "could-would approach" normally does not apply (see e.g. T 12/07, Reasons 4.1.6; T 1968/08, Reasons 5.5). To consider all of the solutions that are equally obvious, it is sufficient that the skilled person *could*

recognise the solutions concerned without inventive efforts: a separate pointer is then not required for this purpose.

The respondent argued that Figure 15B of D1 comprises many possible connections which the skilled person could have changed to solve the objective technical problem posed and that there would be no reason why the skilled person would have considered specifically the connection of the speaker element to the canal element. The board agrees, however, with the appellant that the skilled person would have primarily focused on the connection between tube 1512 connecting speaker element 1212 to ear mould 1510 to solve the above objective technical problem because this is the most prominent connection in Figure 15B of D1.

3.7 Hence, claim 1 of the main request and of auxiliary request 1 does not involve an inventive step (Article 56 EPC).

4. *Auxiliary request 2: claim 1 - inventive step*

4.1 Claim 1 of **auxiliary request 2** differs from claim 1 of the main request in that the expression "in said canal element" at the end of feature (d) is replaced by the expression "within said canal element (24) relative to the earpiece".

4.2 Consequently, the reasoning provided for claim 1 of the main request and auxiliary request 1 in point 3 above is not affected by this replacement.

4.3 As a result, claim 1 of auxiliary request 2 also does not 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 patent is revoked.

The Registrar: The Chair:

B. Brückner K. Bengi-Akyürek

Decision electronically authenticated