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- (71) **Applicant: 3NT MEDICAL LTD.** [IL/IL]; 22 Hamelacha St., Building 3, Entrance B, POB 11384, 4809169 Rosh Ha'ayin (IL).
- (72) **Inventors: BENDORY, Ehud;** 8 Hanadiv Street, 4648512 Herzliya (IL). **BENDORY, Eran;** 19 Rotem Street, 7179902 Maccabim Re' Ut (IL).

MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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(54) **Title:** EAR ENDOSCOPE WITH A COUPLER OR WITH A TOOL GUIDE AND ASSOCIATED SURGICAL METHODS

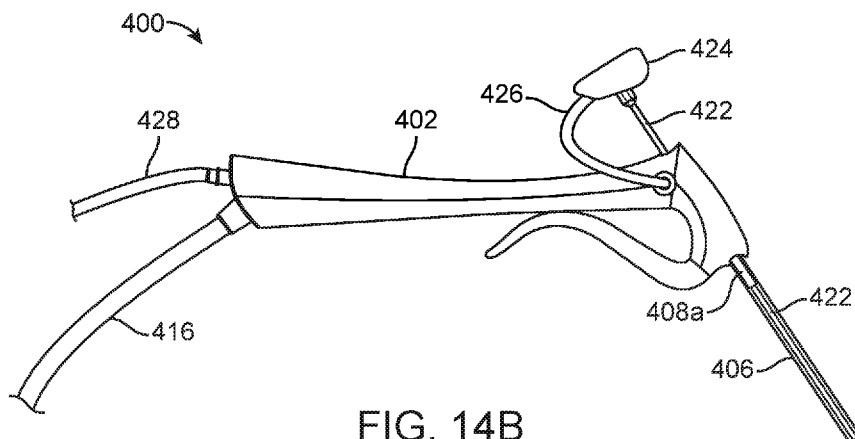


FIG. 14B

(57) **Abstract:** An ear endoscope device (400) for use in a surgical procedure in an ear includes a handle (402), a visualization shaft (406) extending from the handle, a tool guide extending from the handle parallel to the visualization shaft and configured to guide a tool into the ear with the visualization shaft, an imaging sensor at a distal end of the visualization shaft and a light source. In some embodiments, the ear endoscope is combined with a suction device. In other embodiments, it may be combined with another tool.



INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2018/001025

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61B1/00 A61B1/227
ADD.
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
A61B
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2012/253125 A1 (SLENER DALE E [US] ET AL) 4 October 2012 (2012-10-04) paragraph [0019] - paragraph [0027] paragraph [0034] - paragraph [0035] paragraph [0050] - paragraph [0057]; figures 1, 5A, 5B	1,4-8
Y	US 2016/073855 A1 (FARR MINA [US] ET AL) 17 March 2016 (2016-03-17) paragraph [0002] - paragraph [0004] paragraph [0039] - paragraph [0044] paragraph [0069] - paragraph [0078]; figures 1, 2, 8, 11 ----- -/--	1-5,9

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 30 November 2018	Date of mailing of the international search report 29/01/2019
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Sigurd, Karin
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INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2018/001025

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2016/108229 A1 (TYTO CARE LTD [IL]) 7 July 2016 (2016-07-07) paragraph [0109] - paragraph [0112] paragraph [0150] - paragraph [0154]; figures 9A, 9B, 13 -----	1-9
A	US 2003/164952 A1 (DEICHMANN NIKOLAJ [DK] ET AL) 4 September 2003 (2003-09-04) paragraph [0083] - paragraph [0087] paragraph [0100] - paragraph [0103]; figures 9, 11 -----	1-9

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2018/001025

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
US 2012253125	A1	04-10-2012	AU 2008219489 A1	04-09-2008
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			US 2018000336 A1	04-01-2018
			WO 2016108229 A1	07-07-2016

US 2003164952	A1	04-09-2003	NONE	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2018/001025

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: 10-17, 29-33
because they relate to subject matter not required to be searched by this Authority, namely:
see FURTHER INFORMATION sheet PCT/ISA/210
2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-9

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9

A device for visualizing a surgical procedure in the ear, the device comprising a shaft having a bend with an angle of 90-155°, an outer diameter of no more than 2.5 mm and a length of 30-80 mm.

2. claims: 18-28

An ear endoscope device for use in a surgical procedure in an ear, the device comprising a tool guide extending parallel to a visualization shaft and configured to guide a tool into the ear with the visualization shaft.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Claims Nos.: 10-17, 29-33

Claims 10-17 relate to a method for performing a surgical procedure in an ear of a patient, including the steps of advancing a distal end of an ear endoscope into the ear of a patient and of using a tool to facilitate or perform at least part of a surgical procedure. Claims 29-33 relate to a method for performing a surgical procedure in an ear canal of a patient, including the steps of advancing a distal end of an ear endoscope into a patient's ear canal and of applying suction in the ear canal with a suction device. As these are methods for treatment of the human or animal body by surgery, the International Searching Authority is not required to search the subject-matter of claims 10-17 and 29-33 according Rule 39.1(iv) PCT.