

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2017/073107

A. CLASSIFICATION OF SUBJECT MATTER

A61F 11/00 (2006.01) i; A61N 7/00 (2006.01) i

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)

A61F, A61N

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)

CNPAT, CNKI, EPODOC, WPI: 耳聋, 听觉, 耳病, 超声波, 超音波, 脉冲, 信号, 延时, 阵列, 阵元, 序列, 聚焦, 换能器, 穿戴, deaf, ear, ultraso+, superso+, wearable, hearing-impaired, signal, focus, array, serial, list, transducer, time

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| Y | CN 104490517 A (QINHUANGDAO GAHA MEDICAL ELECTRONIC INSTRUMENT CO., LTD.), 08 April 2015 (08.04.2015), description, paragraphs [0020]-[0022], and figures 1-3 | 1-10 |
| Y | CN 104548390 A (SHENZHEN INSTITUTES OF ADVANCED TECHNOLOGY, CHINESE ACADEMY OF SCIENCES), 29 April 2015 (29.04.2015), description, paragraphs [0132]-[0143], and figure 6 | 1-10 |
| A | CN 201676079 U (ZHANG, Xin), 22 December 2010 (22.12.2010), entire document | 1-10 |
| A | WO 2007119505 A1 (NAT. INST. OF ADVANCED IND. SCIEN. AND TECHNOLOGY), 25 October 2007 (25.10.2007), entire document | 1-10 |
| A | US 6068590 A (HEARING INNOVATIONS INC.), 30 May 2000 (30.05.2000), entire document | 1-10 |
| A | US 2012245406 A1 (AGHAMOHAMADI, A.M.), 27 September 2012 (27.09.2012), entire document | 1-10 |

Further documents are listed in the continuation of Box C.

See patent family annex.

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| <p>* Special categories of cited documents:</p> <p>“A” document defining the general state of the art which is not considered to be of particular relevance</p> <p>“E” earlier application or patent but published on or after the international filing date</p> <p>“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)</p> <p>“O” document referring to an oral disclosure, use, exhibition or other means</p> <p>“P” document published prior to the international filing date but later than the priority date claimed</p> | <p>“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</p> <p>“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</p> <p>“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</p> <p>“&” document member of the same patent family</p> |
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| Date of the actual completion of the international search 04 September 2017 | Date of mailing of the international search report 27 September 2017 |
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| <p>Name and mailing address of the ISA State Intellectual Property Office of the P. R. China No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088, China Facsimile No. (86-10) 62019451</p> | <p>Authorized officer HU, Jinyun Telephone No. (86-10) 62413536</p> |
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| A | WO 2015142764 A1 (THYNC. INC.), 24 September 2015 (24.09.2015), entire document | 1-10 |

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2017/073107

| Patent Documents referred in the Report | Publication Date | Patent Family | Publication Date |
|---|-------------------|------------------|-------------------|
| CN 104490517 A | 08 April 2015 | None | |
| CN 104548390 A | 29 April 2015 | WO 2016101487 A1 | 30 June 2016 |
| CN 201676079 U | 22 December 2010 | None | |
| WO 2007119505 A1 | 25 October 2007 | JP 4963035 B2 | 27 June 2012 |
| | | JP 2007282820 A | 01 November 2007 |
| US 6068590 A | 30 May 2000 | CA 2248666 A1 | 24 April 1999 |
| | | EP 0912073 A2 | 28 April 1999 |
| | | JP H11262481 A | 28 September 1999 |
| US 2012245406 A1 | 27 September 2012 | None | |
| WO 2015142764 A1 | 24 September 2015 | US 2017080255 A1 | 23 March 2017 |
| | | EP 3119534 A1 | 25 January 2017 |