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HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, 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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**Declarations under Rule 4.17:**

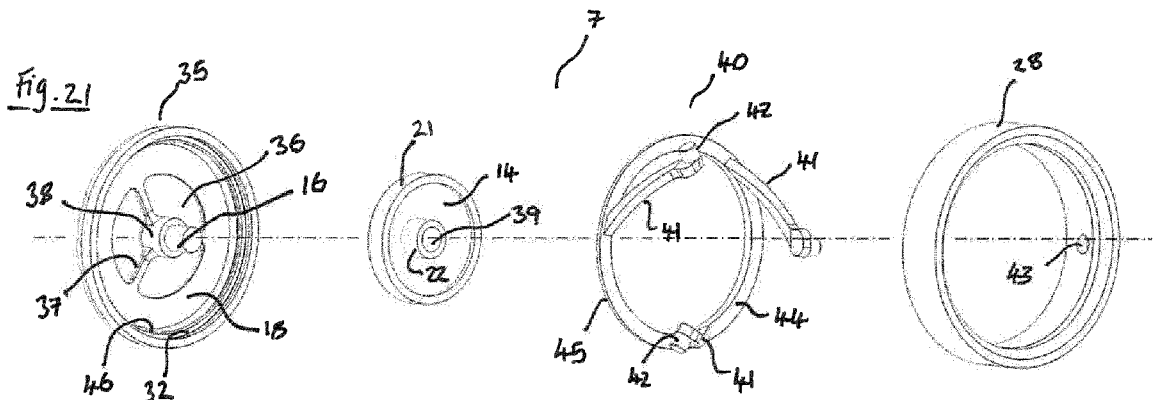
— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

**Published:**

— with international search report (Art. 21(3))  
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:  
23 July 2020 (23.07.2020)

(54) Title: AN IMPROVED SPEAKING VALVE



(57) Abstract: A speaking valve for use with a tracheostomy and voice prosthesis, that, in a first configuration, allows inspiration and expiration through the valve; and in a second configuration resists expiration. Increasing the pressure difference across the valve by increasing the rate of expiration to a predetermined threshold causes the valve to transition into the second configuration; and in the second configuration the valve continues to resist expiration until a predetermined negative pressure difference across the valve causes it to transition back into the first configuration.

WO 2020/109174 A3

INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2019/082282

A. CLASSIFICATION OF SUBJECT MATTER  
INV. A61M16/04  
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)  
A61M

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, BIOSIS, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/89618 A1 (ATOS MEDICAL AB [SE]; PERSSON JAN OVE [SE]) 29 November 2001 (2001-11-29) abstract; claims 1-14; figures 1-3 page 6, paragraph 2 - page 8, paragraph 1 -----	1-8
A	WO 2010/114372 A2 (UNIV GRONINGEN [NL]; GRONINGEN ACAD ZIEKENHUIS [NL] ET AL.) 7 October 2010 (2010-10-07) the whole document -----	1-8
A	DE 299 13 116 U1 (HITTEL JENS PETER [DE]) 27 January 2000 (2000-01-27) the whole document -----	1-8
A	EP 0 222 509 A2 (HANSA MEDICAL PRODUCTS INC [US]) 20 May 1987 (1987-05-20) the whole document -----	1-8
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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
- "E" earlier application or patent but published on or after the international filing date
- "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)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"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

"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

"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

"&" document member of the same patent family

Date of the actual completion of the international search  14 February 2020	Date of mailing of the international search report  23/06/2020
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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  Weijland, Albert
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# INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2019/082282

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2017/319813 A1 (VOLGYESI GEORGE [CA]) 9 November 2017 (2017-11-09) the whole document -----	1-8

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP2019/082282

## 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.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
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.:

1-8

### 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: 1-8

A speaking valve to allow inspiration and controllable expiration

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2. claims: 9-14

A valve element suitable for use in a speaking valve

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/EP2019/082282
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0189618	A1	29-11-2001	NONE
		AT 280608 T	15-11-2004
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		US 2012090621 A1	19-04-2012
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		WO 2010114372 A2	07-10-2010
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DE 29913116	U1	27-01-2000	NONE
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EP 0222509	A2	20-05-1987	NONE
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US 2017319813	A1	09-11-2017	NONE
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