



US00D842456S

(12) **United States Design Patent**  
**Miller et al.**

(10) **Patent No.:** **US D842,456 S**  
(45) **Date of Patent:** **\*\* Mar. 5, 2019**

- (54) **AIRWAY DEVICE**
- (71) Applicants: **INTERSURGICAL AG**, Vaduz (LI);  
**Muhammed Aslam Nasir**, Caddington,  
Bedfordshire (GB)
- (72) Inventors: **Andrew Neil Miller**, Crowthorne (GB);  
**Jane Elizabeth Kemp**, Bristol (GB);  
**Muhammed Aslam Nasir**, Caddington  
(GB)
- (73) Assignees: **INTERSURGICAL AG** (LI);  
**Muhammed Aslam Nasir** (GB)

4,919,126 A	4/1990	Baldon	128/207.14
4,995,388 A	2/1991	Brain	128/207.15
5,054,483 A	10/1991	Marten et al.	128/207.14
5,174,283 A	12/1992	Parker	128/200.26
5,181,505 A	1/1993	Lew	128/200.26
5,241,956 A	9/1993	Brain	128/207.15
5,249,571 A	10/1993	Brain	128/207.14
5,259,371 A	11/1993	Tonrey	128/200.26

(Continued)

**FOREIGN PATENT DOCUMENTS**

AU	B-52036/90	9/1990	A61M 16/04
AU	B-45803/93	2/1994	A61M 16/04

(Continued)

(\*\*) Term: **15 Years**

(21) Appl. No.: **29/548,655**

(22) Filed: **Dec. 15, 2015**

(51) **LOC (11) Cl.** ..... **29-02**

(52) **U.S. Cl.**  
USPC ..... **D24/110.5**

(58) **Field of Classification Search**  
USPC ..... D24/110.1, 110.4, 110.6, 127, 129, 110,  
D24/110.5  
CPC ..... A61M 16/0409; A61M 16/04; A61M  
16/0447; A61M 16/0415; A61M 16/0488;  
A61M 16/0463; A61M 16/0434; A61M  
16/0411

See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

478,582 A	7/1892	Ernold	128/207.14
2,099,127 A	11/1937	Leech	128/207.15
3,443,564 A	5/1969	Oehmig	128/351
3,616,799 A	11/1971	Sparks	128/351
3,734,100 A	5/1973	Walker et al.	128/351
3,968,800 A	7/1976	Vilasi	128/343
3,995,643 A	12/1976	Merav	128/351
4,509,514 A	4/1985	Brain	128/207.15
4,913,139 A	4/1990	Ballew	A61M 16/0488

**OTHER PUBLICATIONS**

Great Britain Combined Search and Examination Report issued in application No. GB1322330.0, dated May 20, 2015 (8 pgs).

(Continued)

*Primary Examiner* — Karen E Kearney  
*Assistant Examiner* — Lilyana Bekic  
(74) *Attorney, Agent, or Firm* — Hayes Soloway P.C.

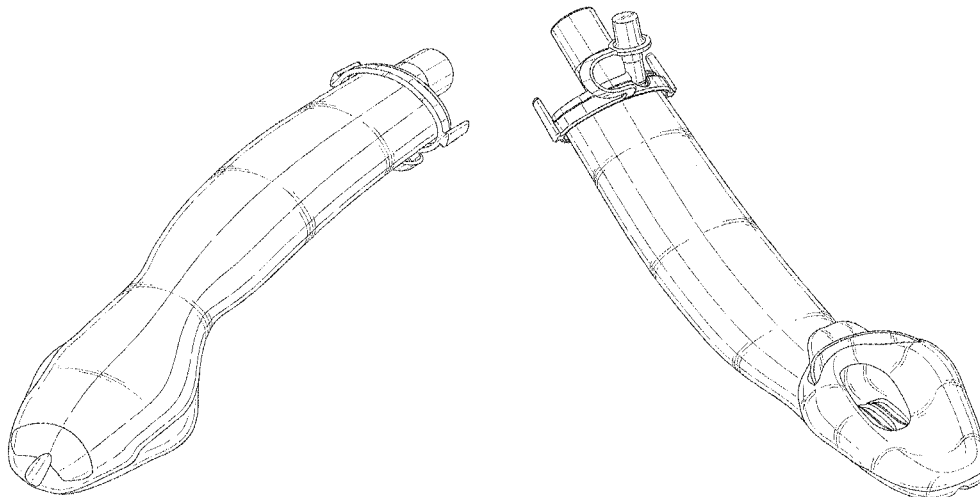
(57) **CLAIM**

The ornamental design for an airway device, as shown and described.

**DESCRIPTION**

FIG. 1 is a top perspective view of an airway device showing our new design;  
FIG. 2 is a bottom perspective view thereof;  
FIG. 3 is a top plan view thereof;  
FIG. 4 is a bottom plan view thereof;  
FIG. 5 is a right side elevational view thereof;  
FIG. 6 is a left side elevational view thereof;  
FIG. 7 is a front perspective view thereof; and,  
FIG. 8 is a rear perspective view thereof.

**1 Claim, 8 Drawing Sheets**



(56)

References Cited

U.S. PATENT DOCUMENTS

5,282,464	A	2/1994	Brain	128/207.15	7,263,998	B2	9/2007	Miller	128/207.15
5,285,778	A	2/1994	Mackin	128/207.15	RE39,938	E	12/2007	Brain	128/207.15
5,297,547	A	3/1994	Brain	128/207.15	7,305,985	B2	12/2007	Brain	128/200.26
5,303,697	A	4/1994	Brain	128/200.26	7,357,845	B2	4/2008	Cook	156/242
5,305,743	A	4/1994	Brain	128/207.15	7,506,648	B2	3/2009	Brain	128/207.15
5,309,906	A	5/1994	LaBombard	128/207.14	D611,138	S	3/2010	Nasir	D24/110.5
5,322,062	A	6/1994	Servas	128/207.14	D615,188	S	5/2010	Nasir	D24/110.5
5,339,805	A	8/1994	Parker	128/200.26	D618,788	S	6/2010	Dubach	D24/110.5
5,355,879	A	10/1994	Brain	128/207.15	7,762,261	B1	7/2010	Fortuna	128/207.14
5,391,248	A	2/1995	Brain	156/242	7,806,119	B2	10/2010	Nasir	128/205.25
5,477,851	A	12/1995	Callaghan et al.	128/207.15	7,896,007	B2	3/2011	Brain	128/207.15
5,584,290	A	12/1996	Brain	128/207.15	7,900,632	B2	3/2011	Cook	128/207.14
5,605,149	A	2/1997	Warters	128/207.14	8,001,964	B2	8/2011	McDonald et al.	128/200.26
5,618,267	A	4/1997	Palestrant	605/53	D650,520	S	12/2011	Timmermans	D27/163
5,623,921	A	4/1997	Kinsinger et al.	128/200.26	8,091,242	B2	1/2012	Teys et al.	30/324
5,632,271	A	5/1997	Brain	128/207.15	8,215,307	B2	7/2012	Nasir	128/207.15
5,653,229	A	8/1997	Greenberg	128/207.15	D665,495	S	8/2012	Nasir	D24/110.5
5,655,519	A	8/1997	Alfery	128/200.26	D668,759	S *	10/2012	Nasir	D24/110
5,682,880	A	11/1997	Brain	128/207.15	D693,920	S	11/2013	Miller	D24/110.5
5,711,293	A	1/1998	Brain	128/200.24	D710,990	S *	8/2014	Brain	A61M 16/00
5,791,341	A	8/1998	Bullard	128/207.15					
5,853,004	A	12/1998	Goodman	128/207.15	D716,937	S *	11/2014	Brain	D24/110.5
5,865,176	A	2/1999	O'Neil	128/207.15	9,265,905	B2	2/2016	Aslam	128/207.15
5,878,745	A	3/1999	Brain	128/207.15	D791,305	S *	7/2017	Poulsen	D24/110.5
5,881,726	A	3/1999	Neame	128/207.15	D809,125	S *	1/2018	Kheong	D24/110
5,896,858	A	4/1999	Brain	128/207.15	2001/0015207	A1	8/2001	Pagan	128/207.15
5,915,383	A	6/1999	Pagan	128/207.15	2001/0025641	A1	10/2001	Doane et al.	128/207.15
5,921,988	A	7/1999	Legrand	606/87	2001/0027793	A1	10/2001	Tielemans	128/848
5,937,859	A	8/1999	Augustine et al.	128/207.15	2002/0010417	A1	1/2002	Bertram	604/96.01
5,937,860	A	8/1999	Cook	128/207.15	2002/0010617	A1	1/2002	Hamaguchi et al.	705/10
5,964,217	A	10/1999	Christopher	128/200.26	2002/0078961	A1	6/2002	Collins	128/207.15
5,976,072	A	11/1999	Greenberg	600/120	2002/0103472	A1	8/2002	Kramer	604/507
5,979,445	A	11/1999	Neame et al.	128/207.15	2002/0108610	A1	8/2002	Christopher	128/200.26
5,988,167	A	11/1999	Kamen	128/207.15	2002/0112728	A1	8/2002	Landuyt	128/207.15
6,003,514	A	12/1999	Pagan	128/207.15	2002/0170556	A1	11/2002	Gaitini	128/200.14
6,055,984	A	5/2000	Brain	128/207.14	2003/0037790	A1	2/2003	Brain	128/207.14
6,070,581	A	6/2000	Augustine et al.	128/207.15	2003/0066532	A1	4/2003	Gobel	128/207.15
6,079,409	A	6/2000	Brain	128/200.26	2003/0101998	A1	6/2003	Zocca et al.	128/207.15
D429,811	S	8/2000	Bermudez	D24/110.5	2003/0136413	A1	7/2003	Brain et al.	128/207.15
6,095,144	A	8/2000	Pagan	128/207.15	2003/0172925	A1	9/2003	Zocca et al.	128/202.22
6,152,136	A	11/2000	Pagan	128/207.15	2003/0172933	A1	9/2003	Nimmo	128/207.14
6,216,696	B1	4/2001	van den Berg	128/207.14	2004/0020488	A1	2/2004	Kniewasser	128/204.18
6,280,675	B1	8/2001	Legrand	264/262	2004/0020491	A1	2/2004	Fortuna	128/207.15
6,311,688	B1	11/2001	Augustine et al.	128/200.26	2004/0060564	A1	4/2004	Brain	A61M 16/00
6,318,367	B1	11/2001	Mongeon	128/207.15	2004/0200479	A1	10/2004	Chang	128/207.14
6,422,239	B1	7/2002	Cook	128/207.15	2005/0016529	A1	1/2005	Cook	128/200.24
6,439,232	B1	8/2002	Brain	128/207.15	2005/0051173	A1	3/2005	Brain	128/207.14
6,474,332	B2	11/2002	Arndt	128/200.26	2005/0051175	A1	3/2005	Brain	128/207.14
6,536,437	B1	3/2003	Dragisic	128/207.18	2005/0066975	A1	3/2005	Brain	128/207.15
6,604,525	B2	8/2003	Pagan	128/207.15	2005/0081861	A1	4/2005	Nashir	128/207.14
6,631,720	B1	10/2003	Brain	128/207.14	2005/0103345	A1	5/2005	Brain	128/207.15
D482,118	S	11/2003	Dave et al.	D24/110	2005/0104255	A1	5/2005	Mejlhede et al.	264/328.1
6,672,305	B2	1/2004	Parker	128/200.26	2005/0199244	A1 *	9/2005	Tateo	A61M 16/04
6,679,263	B2	1/2004	Luchetti et al.	128/207.15					
6,698,430	B2	3/2004	Van Landuyt	128/207.15	2005/0274383	A1	12/2005	Brain	128/207.15
6,705,318	B1	3/2004	Brain	128/207.14	2006/0081245	A1	4/2006	Gould	128/200.26
6,705,321	B2	3/2004	Cook	128/207.15	2006/0207601	A1	9/2006	Nasir	128/207.14
6,705,322	B2	3/2004	Chang	128/207.15	2007/0137651	A1	6/2007	Glassenberg et al.	128/207.15
6,792,948	B2	9/2004	Brain	128/207.14	2008/0142017	A1	6/2008	Brain	128/207.15
6,799,574	B1	10/2004	Collins	128/207.15	2008/0236590	A1	10/2008	Reissmann	128/207.14
6,877,512	B2	4/2005	Imai et al.	128/207.15	2008/0257356	A1 *	10/2008	Swick	A61M 16/04
6,918,388	B2	7/2005	Brain	128/200.26					
6,918,391	B1	7/2005	Moore	128/842	2008/0308109	A1	12/2008	Brain	128/207.14
6,971,382	B1	12/2005	Corso	128/200.26	2009/0090356	A1	4/2009	Cook	128/200.26
7,004,169	B2	2/2006	Brain	128/207.14	2010/0059061	A1	3/2010	Brain	128/207.14
D518,572	S	4/2006	Nasir	D24/110.5	2010/0089393	A1	4/2010	Brain	128/203.12
D518,890	S	4/2006	Nasir	D24/110.5	2010/0126512	A1	5/2010	Nasir	128/207.14
7,040,312	B2	5/2006	Alfery et al.	128/200.26	2010/0147309	A1	6/2010	Cuevas et al.	128/207.14
7,040,322	B2	5/2006	Fortuna	128/207.15	2010/0242957	A1	9/2010	Fortuna	128/202.22
7,047,973	B2	5/2006	Chang	128/207.15	2011/0226256	A1	9/2011	Dubach	
7,096,868	B2	8/2006	Tateo et al.	128/207.15	2011/0265799	A1	11/2011	Lisogurski	128/207.15
7,097,802	B2	8/2006	Brain	264/255	2011/0277772	A1	11/2011	Nasir	128/207.15
7,134,431	B2	11/2006	Brain	128/200.26	2012/0024292	A1	2/2012	Sandmore et al.	128/207.14
7,140,368	B1	11/2006	Collins	128/207.14	2013/0092172	A1	4/2013	Nasir	128/207.15
D542,675	S	5/2007	Luxton et al.	D9/749	2013/0247917	A1	9/2013	Brain	128/207.15
					2013/0269689	A1 *	10/2013	Brain	A61M 16/04
									128/200.26
					2013/0324798	A1	12/2013	Molnar et al.	600/120
					2015/0000672	A1	1/2015	Jassell	128/207.15

(56)

## References Cited

## U.S. PATENT DOCUMENTS

2016/0235934 A1\* 8/2016 Poulsen ..... A61M 16/0409  
 2016/0331918 A1\* 11/2016 Nasir ..... A61M 16/0488  
 2018/0221051 A1\* 8/2018 Durkin ..... A61B 17/3423

## FOREIGN PATENT DOCUMENTS

AU 200076743 5/2001 ..... A61M 16/04  
 CA 1 324 551 11/1993 ..... A61M 16/04  
 CA 2 191 749 12/1995 ..... A61M 16/01  
 CA 2 346 248 4/2000 ..... A61M 16/04  
 CN 1 166 138 11/1997 ..... A61M 16/00  
 CN 1 236 326 11/1999 ..... A61M 16/04  
 CN 1 351 509 5/2002 ..... A61M 16/04  
 DE 42 33 933 4/1993 ..... H02N 2/00  
 DE 43 30 032 4/1994 ..... H02N 2/00  
 DE 195 00 550 7/1996 ..... A61M 16/04  
 DE 299 02 267 7/1999 ..... A61M 16/06  
 DE 201 00 176 5/2001 ..... A61M 16/01  
 DE 202 06 692 8/2002 ..... A61M 16/00  
 EM 000067210-0001 8/2003 ..... A61M 16/04  
 EM 000067210-0002 8/2003 ..... A61M 16/04  
 EM 000197124-0001 6/2004 ..... A61M 16/04  
 EM 000197124-0002 6/2004 ..... A61M 16/04  
 EM 000197124-0003 6/2004 ..... A61M 16/04  
 EM 000197124-0004 6/2004 ..... A61M 16/04  
 EM 000197124-0005 6/2004 ..... A61M 16/04  
 EM 000197124-0006 6/2004 ..... A61M 16/04  
 EM 000180757-0001 7/2004 ..... A61M 16/04  
 EM 000482195-0001 2/2006 ..... A61M 16/04  
 EM 000482195-0002 2/2006 ..... A61M 16/04  
 EP 0 277 797 8/1988 ..... A61M 16/04  
 EP 0 389 272 9/1990 ..... A61M 16/04  
 EP 0 448 878 10/1991 ..... A61M 16/04  
 EP 0 586 717 3/1994 ..... A61M 16/04  
 EP 0 794 807 9/1997 ..... A61M 16/00  
 EP 0 834 331 8/1998 ..... A61M 16/04  
 EP 0 857 492 8/1998 ..... A61M 16/04  
 EP 0 875 260 11/1998 ..... A61M 16/04  
 EP 0 884 061 12/1998 ..... A61M 16/04  
 EP 0 911 049 4/1999 ..... A61M 16/04  
 EP 0 935 971 8/1999 ..... A61M 16/04  
 EP 1 125 595 8/2001 ..... A61M 16/04  
 EP 1504870 2/2005 ..... A61M 16/04  
 EP 1 579 885 9/2005 ..... A61M 16/04  
 EP 1220701 3/2007 ..... A61M 16/04  
 EP 1169077 12/2007 ..... A61M 16/04  
 EP 1 875 937 1/2008 ..... A61M 16/04  
 ES 1 046 206 1/2000 ..... A61M 25/00  
 FR 2 094 264 1/1972 ..... C07C 31/00  
 FR 2 690 018 10/1993 ..... H02N 2/00  
 FR 2 760 186 9/1998 ..... A61F 2/30  
 FR 2 807 307 10/2001 ..... A47J 37/06  
 FR 2 827 482 1/2003 ..... A24B 1/10  
 FR 2 851 107 8/2004 ..... H04M 11/06  
 GB 1 402 255 8/1975 ..... A61M 25/00  
 GB 2 113 348 8/1983 ..... B06B 1/16  
 GB 2 128 561 5/1984 ..... B60R 19/54  
 GB 2 168 256 6/1986 ..... A61M 16/04  
 GB 2 337 020 11/1990 ..... B29D 31/00  
 GB 2 249 959 5/1992 ..... A61M 16/04  
 GB 2 267 034 11/1993 ..... A61M 25/02  
 GB 2 285 765 7/1995 ..... A61M 16/04  
 GB 2 317 342 3/1998 ..... A61M 16/04  
 GB 2 319 182 5/1998 ..... A61M 16/04  
 GB 2 323 292 9/1998 ..... A61M 16/04  
 GB 2 326 009 12/1998 ..... A61M 16/04  
 GB 2 330 312 4/1999 ..... A61M 16/04  
 GB 2 359 996 9/2001 ..... A61M 16/04  
 GB 2 364 644 2/2002 ..... A61M 16/04  
 GB 2 373 188 9/2002 ..... A61M 16/04  
 GB 2 393 399 3/2004 ..... A61M 16/04  
 GB 2 404 863 2/2005 ..... A61M 16/04  
 GB 2 413 963 11/2005 ..... A61M 16/04  
 GB 2438799 12/2007 ..... A61M 16/04  
 GB 2 465 453 5/2010 ..... A61M 16/04

GB 2479823 10/2011 ..... A61M 16/12  
 GB 2481538 12/2011 ..... A61M 16/04  
 GB 2521375 6/2015 ..... A61M 16/04  
 GB 2546167 7/2017 ..... A61M 16/04  
 IE 922073 12/1993 ..... A61M 16/00  
 IT 1224077 9/1990 ..... A61M 16/04  
 JP 3-236858 10/1991 ..... A61M 16/04  
 JP 6/277286 10/1994 ..... A61M 16/04  
 JP 2706567 1/1998 ..... A61B 1/00  
 JP 2007-509154 4/2007 ..... A61K 31/4409  
 TW 224047 11/2004 ..... B29C 45/76  
 WO WO91/12844 9/1991 ..... A61M 16/04  
 WO WO 94/17848 8/1994 ..... A61M 16/04  
 WO WO 95/09665 4/1995 ..... A61M 16/04  
 WO WO 97/12640 4/1997 ..... A61M 16/00  
 WO WO 98/06276 2/1998 ..... A23L 1/30  
 WO WO 98/24498 6/1998 ..... A61M 16/04  
 WO WO 98/50096 11/1998 ..... A61M 16/00  
 WO WO 99/24101 5/1999 ..... A61M 16/00  
 WO WO 99/44665 9/1999 ..... A61M 16/04  
 WO WO 00/09189 2/2000 ..... A61M 16/04  
 WO WO 00/30706 6/2000 ..... A61M 16/04  
 WO WO 00/61213 10/2000 ..... A61M 16/04  
 WO WO0112844 2/2001 ..... C12Q 1/34  
 WO WO 01/13980 3/2001 ..... A61M 16/04  
 WO WO2011131974 10/2001 ..... A61M 16/04  
 WO WO 0197890 12/2001 ..... A61M 16/00  
 WO WO 02/32490 4/2002 ..... A61M 16/04  
 WO WO 03/020340 3/2003 ..... A61M 16/04  
 WO WO 03018094 3/2003 ..... A61M 16/04  
 WO WO 2004/016308 2/2004 ..... A61M 16/04  
 WO WO2004/089453 10/2004 ..... A61M 16/04  
 WO WO 2005/016427 2/2005 ..... A61M 16/04  
 WO WO 2005/041864 5/2005 ..... A61K 31/415  
 WO WO2005099800 10/2005 ..... A61M 16/04  
 WO WO 2006/125986 11/2006 ..... A61M 16/04  
 WO WO 2009/129081 10/2009 ..... A61M 16/04  
 WO WO2009142821 11/2009 ..... A61B 1/31  
 WO WO 2011161473 12/2011 ..... A61M 16/04  
 WO WO2014058840 4/2014 ..... A61M 16/00  
 WO WO2014159522 10/2014 ..... A61M 16/04  
 WO WO2015092404 6/2015 ..... A61M 16/04

## OTHER PUBLICATIONS

Great Britain Combined Search and Examination Report issued in application No. GB1322328.4, dated Feb. 26, 2015 (8 pgs).  
 International Preliminary Report on Patentability issued in application No. PCT/GB2014/053744, dated Jun. 21, 2016 (9 pgs).  
 International Preliminary Report on Patentability issued in application No. PCT/GB2014/053745, dated Jun. 21, 2016 (9 pgs).  
 International Search Report and Written Opinion issued in application No. PCT/GB2014/053745, dated Mar. 11, 2015 (14 pgs).  
 International Search Report and Written Opinion issued in application No. PCT/GB2014/053744, dated Jul. 14, 2015 (15 pgs).  
 Office Action issued in U.S. Appl. No. 14/375,109, dated Aug. 10, 2016 (49 pgs).  
 Great Britain Combined Search and Examination Report Issued in Corresponding Application No. GB1621321.7, Dated May 4, 2017 (5 Pages).  
 Great Britain Examination Report Issued in Corresponding Application No. GB1322330.0, Dated Mar. 8, 2016 (3 pages).  
 European Patent Office Examination Report Issued in Corresponding Application No. 14824070.8, Dated Apr. 24, 2017 (9 pages).  
 Official Action issued in U.S. Appl. No. 14/375,109, dated Jun. 23, 2017 (10 pgs).  
 Office Action issued in U.S. Appl. No. 12/627,844, dated May 5, 2016 (33 pgs).  
 Notice of Allowance issued in U.S. Appl. No. 14/315,149, dated Aug. 30, 2016 (16 pgs).  
 Office Action issued in U.S. Appl. No. 14/375,109, dated Nov. 7, 2016 (17 pgs).  
 Office Action issued in U.S. Appl. No. 12/627,844, dated Jan. 27, 2017 (28 pgs).  
 U.S. Appl. No. 10/983,199, filed Nov. 5, 2004.  
 U.S. Appl. No. 10/568,362, filed Feb. 14, 2006.

(56)

**References Cited**

## OTHER PUBLICATIONS

- U.S. Appl. No. 12/627,844, filed Nov. 30, 2009.  
 U.S. Appl. No. 29/353,658, filed Jan. 12, 2010.  
 U.S. Appl. No. 12/680,731, filed Mar. 29, 2010.  
 U.S. Appl. No. 12/859,169, filed Aug. 18, 2010.  
 U.S. Appl. No. 13/130,555, filed May 20, 2011.  
 U.S. Appl. No. 29/402,009, filed Sep. 19, 2011.  
 U.S. Appl. No. 29/407,461, filed Nov. 29, 2011.  
 U.S. Appl. No. 13/403,806, filed Feb. 23, 2012.  
 U.S. Appl. No. 29/416,561, filed Mar. 23, 2012.  
 U.S. Appl. No. 29/428,284, filed Jul. 27, 2012.  
 U.S. Appl. No. 13/805,956, filed Dec. 20, 2012.  
 U.S. Appl. No. 29/449,900, filed Mar. 15, 2013.  
 U.S. Appl. No. 29/475,489, filed Dec. 3, 2013.  
 U.S. Appl. No. 14/315,141, filed Jun. 25, 2014.  
 U.S. Appl. No. 14/315,149, filed Jun. 25, 2014.  
 U.S. Appl. No. 14/375,109, filed Jul. 28, 2014.  
 U.S. Appl. No. 29/512,931, filed Dec. 23, 2014.  
 U.S. Appl. No. 29/512,932, filed Dec. 23, 2014.  
 U.S. Appl. No. 12/627,844, filed Nov. 30, 2009, Nasir.  
 U.S. Appl. No. 29/428,284, filed Jul. 27, 2012, Nasir et al.  
 U.S. Appl. No. 13/805,956, filed Dec. 20, 2012, Nasir et al.  
 U.S. Appl. No. 14/315,149, filed Jun. 25, 2014, Nasir.  
 U.S. Appl. No. 14/375,109, filed Jul. 28, 2014, Jassell et al.  
 U.S. Appl. No. 29/512,931, filed Dec. 23, 2014, Nasir et al.  
 U.S. Appl. No. 29/512,932, filed Dec. 23, 2014, Nasir et al.  
 "The Development of the Laryngeal Mask—a Brief History of the Invention, Early Clinical Studies and Experimental Work from Which the Laryngeal Mask Evolved" A.I.J. Brain, European Journal of Anesthesiology, 1991, Supplement 4, pp. 5-17.  
 Combined Search and Examination Report issued in corresponding application No. GB1110775.2, dated Oct. 18, 2011 (8 pgs).  
 Combined Search and Examination Report issued in corresponding application No. GB0718849.3, dated Oct. 29, 2007 (4 pgs).  
 Combined Search and Examination Report issued in corresponding application No. GB0502519.2, dated Sep. 13, 2005 (6 pgs).  
 Combined Search and Examination Report issued in corresponding application No. GB1019839.8, dated Dec. 1, 2010 (2 pgs).  
 Combined Search and Examination Report issued in corresponding application No. GB 0418050.1, dated Nov. 29, 2004 (7 pgs).  
 Combined Search and Examination Report issued in related application No. GB1301478.2, dated May 23, 2013 (5 pgs).  
 Examination Report issued in corresponding application No. 09 756 353.0-1257, dated Aug. 17, 2012 (5 pgs).  
 Extended European Search Report and Written Opinion issued in corresponding EPO application No. 07019251.3, dated Feb. 1, 2008 (8 pgs).  
 First Office Action issued in corresponding Chinese application No. 200480023382.4, dated Aug. 22, 2008 (15 pgs).  
 International Search Authority issued in corresponding PCT application PCT/GB03/03577 dated, Dec. 9, 2003 (5 pgs).  
 International Search Report and Written Opinion issued in Applicant's corresponding UK Patent Application Serial No. GB0817776.8, dated Jan. 8, 2009 (6 pgs).  
 International Search Report and Written Opinion issued in corresponding application No. PCT/GB2011/051203, dated Jul. 12, 2011 (14 pgs).  
 International Search Report and Written Opinion issued in corresponding application No. PCT/GB2011/051203, dated Dec. 7, 2011 (15 pgs).  
 International Search Report and Written Opinion issued in corresponding PCT application No. PCT/GB2009/051574, dated Jun. 7, 2010 (28 pgs).  
 International Search Report and Written Opinion issued in related application No. PCT/GB2013/050180, dated May 7, 2013 (13 pgs).  
 International Search Report issued in corresponding PCT application PCT/GB03/03577 dated Aug. 14, 2003 (9 pgs).  
 Invitation to Pay Additional Fees with International Search Report issued in corresponding application No. PCT/GB2004/003481, dated Nov. 12, 2004 (8 pgs).  
 Japanese Office Action (no translation) issued in related application No. 2012-38633, dated Apr. 23, 2013 (2 pgs).  
 Letter from IP Australia regarding third party application for re-examination dated Sep. 21, 2011 involving corresponding application No. 2008207412 (2 pgs).  
 Notice for Reasons for Rejection issued in corresponding Japanese application No. 2006/523053, dated Nov. 8, 2010, with English translation (4 pgs).  
 Notice of Allowance issued in U.S. Appl. No. 13/805,956, dated Dec. 21, 2015 (26 pgs).  
 Notice of Allowance issued in U.S. Appl. No. 14/315,141, dated Nov. 13, 2015 (36 pgs).  
 Notice of Allowance issued in U.S. Appl. No. 14/315,149, dated Mar. 11, 2016 (42 pgs).  
 Notice of Allowance issued in U.S. Appl. No. 29/428,284, dated Mar. 8, 2016 (17 pgs).  
 Notice of Allowance issued in related U.S. Appl. No. 13/403,806, dated Mar. 12, 2014 (16 pgs).  
 Notice of Allowance issued in related U.S. Appl. No. 29/416,561, dated May 9, 2014 (7 pgs).  
 Notice of Allowance issued in related U.S. Appl. No. 29/449,900, dated Jul. 24, 2013 (11 pgs).  
 Notice of Allowance issued in related U.S. Appl. No. 29/407,461, dated Jun. 12, 2013 (26 pgs).  
 Office Action issued in U.S. Appl. No. 12/627,844, dated Sep. 17, 2015 (26 pgs).  
 Office Action issued in U.S. Appl. No. 29/353,658 dated Aug. 19, 2011 (10 pgs).  
 Office Action issued in U.S. Appl. No. 29/428,284, dated Mar. 19, 2015 (6 pgs).  
 Office Action issued in U.S. Appl. No. 29/428,284, dated Nov. 10, 2015 (5 pgs).  
 Office Action issued in U.S. Appl. No. 29/512,931, dated Mar. 8, 2016 (8 pgs).  
 Office Action issued in U.S. Appl. No. 29/512,931, dated Nov. 23, 2015 (20 pgs).  
 Office Action issued in U.S. Appl. No. 29/512,932, dated Mar. 8, 2016 (8 pgs).  
 Office Action issued in U.S. Appl. No. 29/512,932, dated Nov. 19, 2015 (19 pgs).  
 Office Action issued in related U.S. Appl. No. 12/627,844, dated Feb. 28, 2014 (22 pgs).  
 Office Action issued in related U.S. Appl. No. 12/627,844, dated Oct. 23, 2014 (38 pgs).  
 Office Action issued in related U.S. Appl. No. 13/130,555, dated Jun. 20, 2014 (36 pgs).  
 Office Action issued in related U.S. Appl. No. 13/403,806, dated Apr. 25, 2013 (6 pgs).  
 Office Action issued in related U.S. Appl. No. 13/403,806, dated Aug. 15, 2013 (45 pgs).  
 Office Action issued in related U.S. Appl. No. 29/428,284, dated Oct. 6, 2014 (66 pgs).  
 Office Action issued in related U.S. Appl. No. 29/475,489, dated Jun. 20, 2014 (25 pgs).  
 Office Action issued in related U.S. Appl. No. 29/475,489, dated Dec. 4, 2014 (13 pgs).  
 PCT International Search Report, PCT Application Serial No. PCT/GB2008/050880, dated Jan. 14, 2009 (20 pgs).  
 UK Search Report issued in corresponding application No. GB1110775.2, dated Oct. 18, 2011 (8 pgs).  
 U.S. Official Action dated Feb. 14, 2013, issued in U.S. Appl. No. 29/407,461 (21 pgs).  
 U.S. Appl. No. 15/106,239, filed Jun. 17, 2016.  
 U.S. Appl. No. 15/106,243, filed Jun. 17, 2016.  
 U.S. Appl. No. 15/106,239, filed Jun. 17, 2016, Nasir et al.  
 U.S. Appl. No. 15/106,243, filed Jun. 17, 2016, Nasir et al.  
 Great Britain Combined Search and Examination Report issued in application No. GB1800914.2, dated Feb. 2, 2018 (6 pgs).  
 Notice of Allowance issued in U.S. Appl. No. 14/375,109, dated Feb. 9, 2018 (8 pgs).

(56)

**References Cited**

OTHER PUBLICATIONS

Office Action issued in U.S. Appl. No. 14/375,109, dated Dec. 15, 2017 (17 pgs).

\* cited by examiner

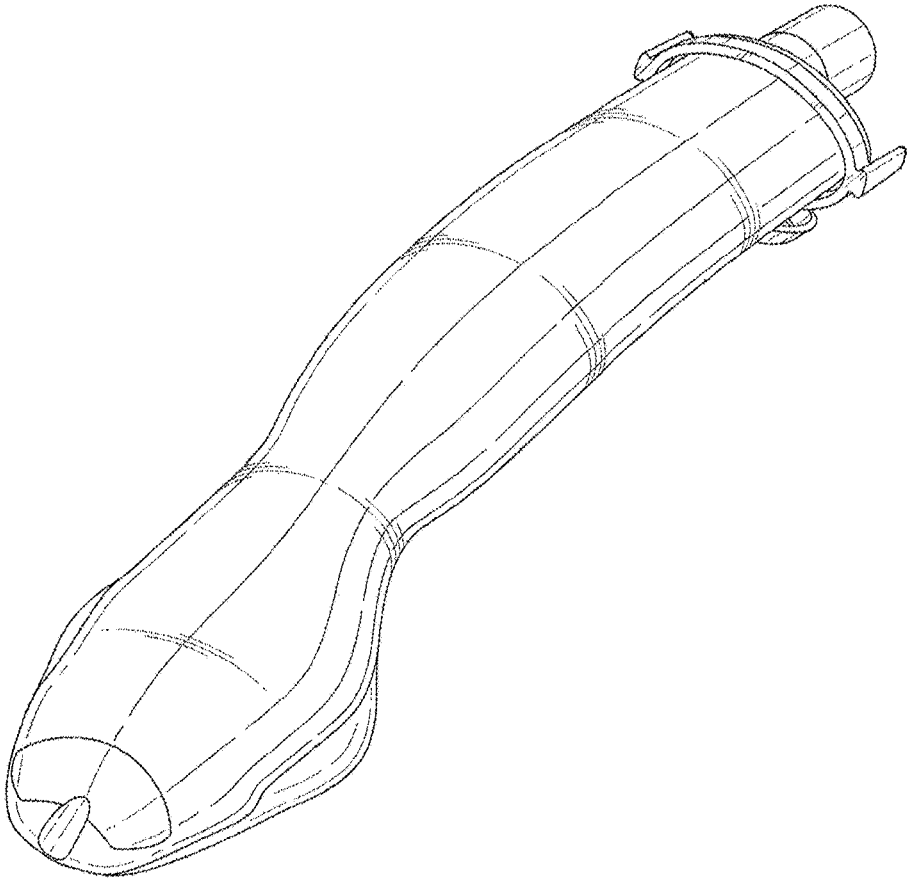


FIG. 1

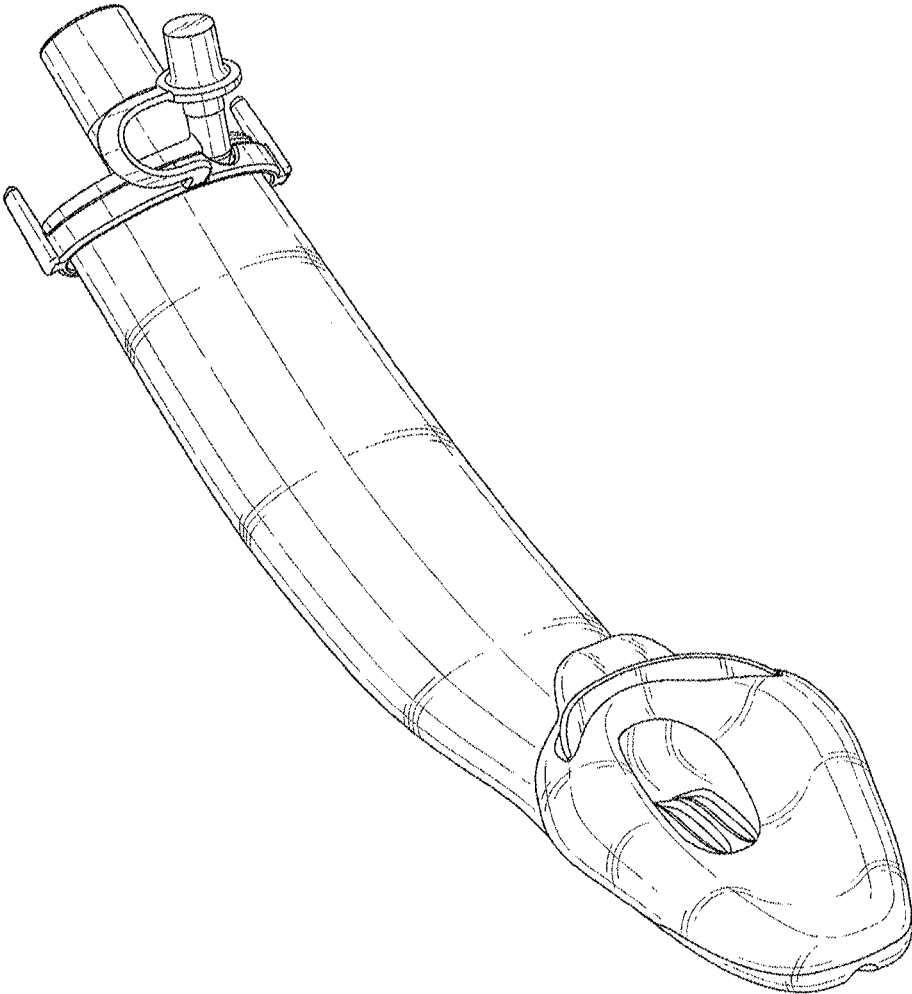


FIG. 2

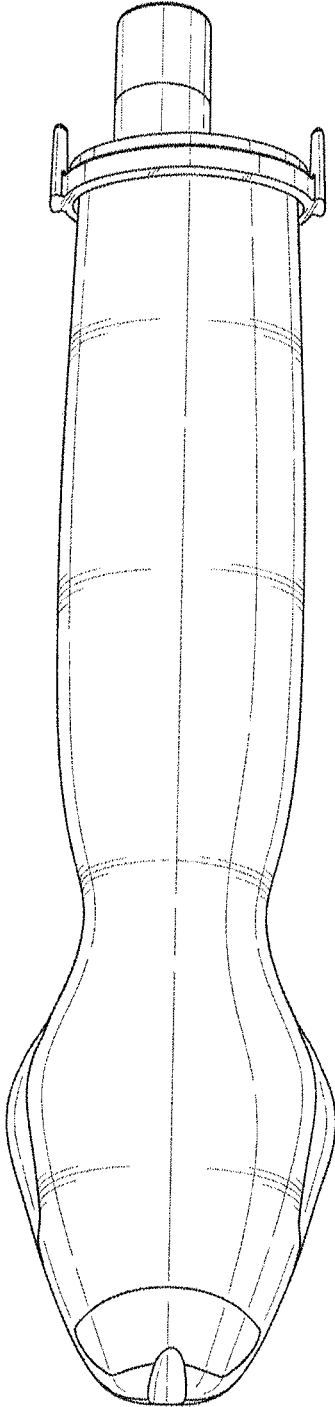


FIG. 3



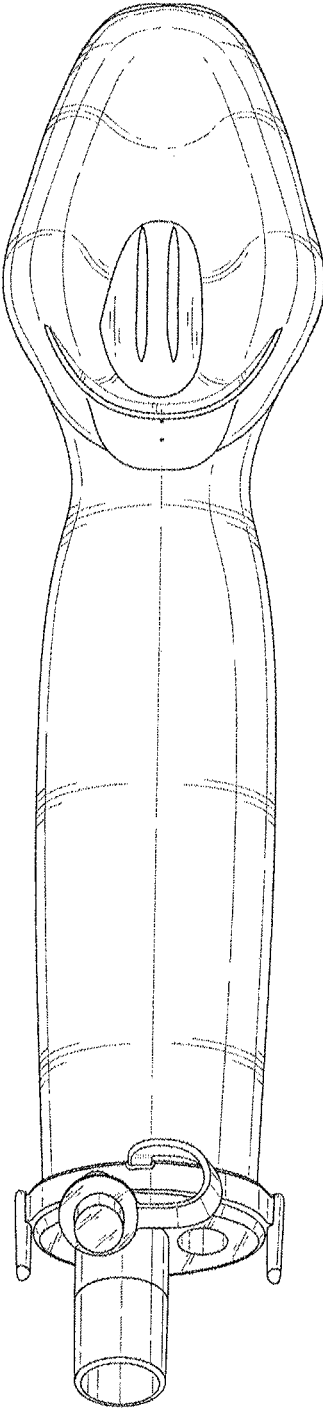


FIG. 4

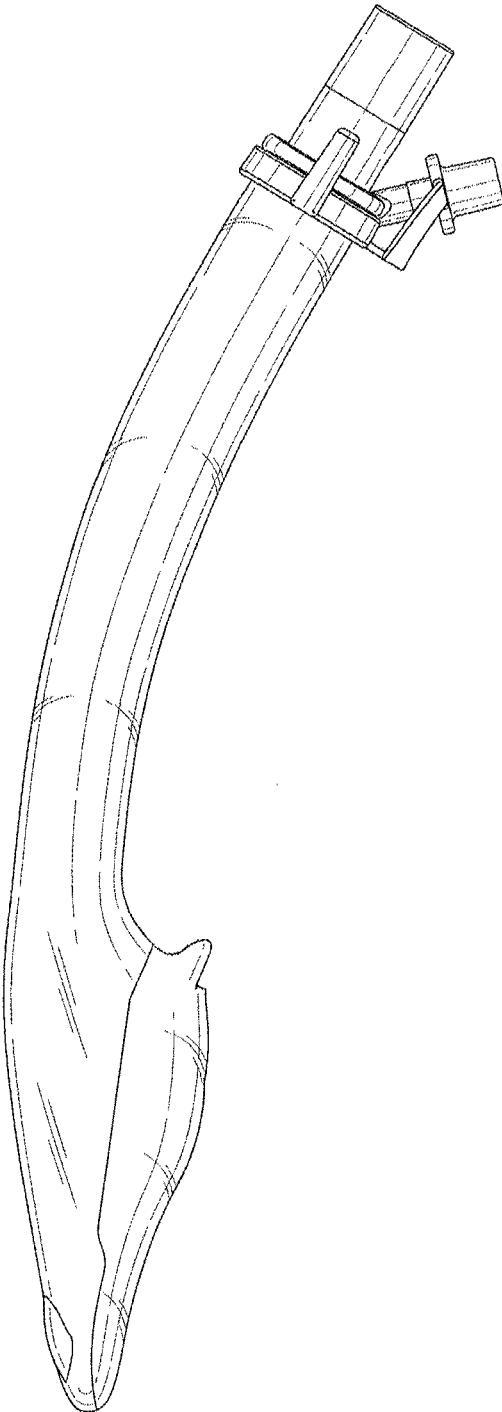


FIG. 5

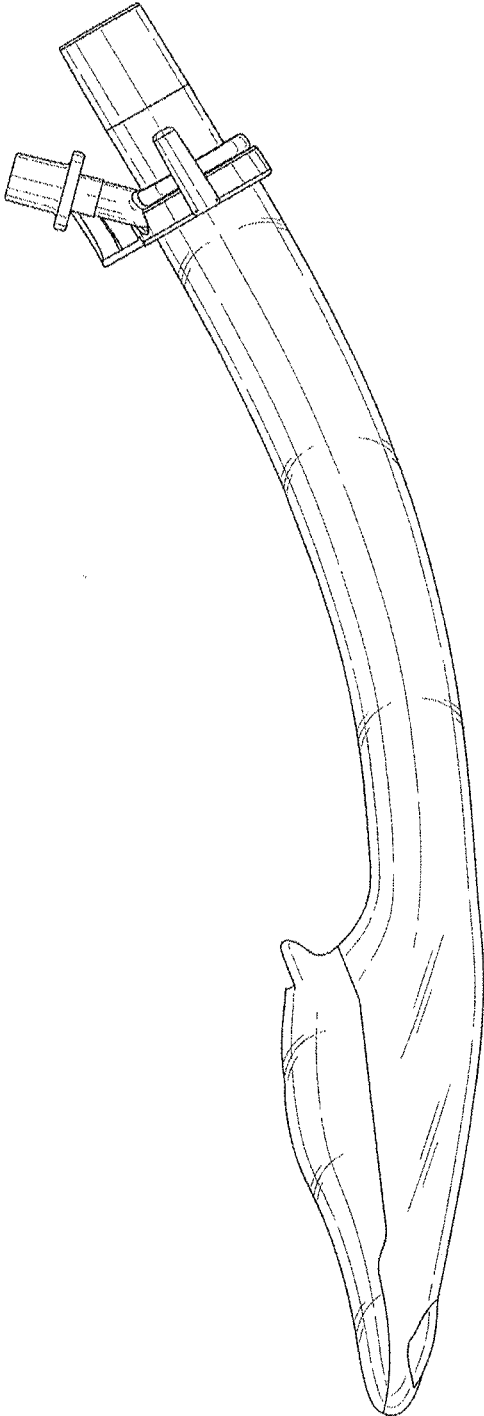


FIG. 6

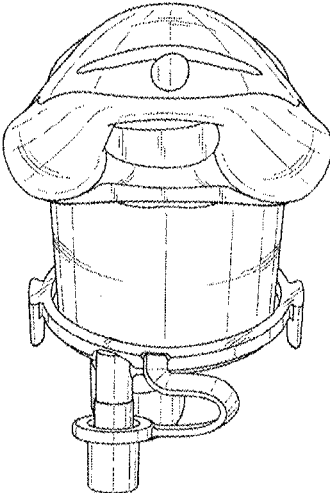


FIG. 7

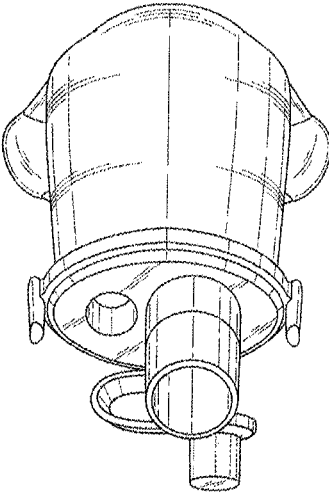


FIG. 8