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- (71) Applicant: BREATHE TECHNOLOGIES, INC.
[US/US]; 175 W. Technology Drive, Suite 100, Irvine, California 92690 (US).
- (72) Inventors: BRAMBILLA, Enrico; 7 Brookdale, Irvine, California 92604 (US). AHMAD, Samir S.; 12539 Carmel Canyon Road, San Diego, California 92130 (US).
- (74) Agent: STETINA BRUNDA GARRED & BRUCKER; Mark B. Garred, 75 Enterprise, Suite 250, Aliso Viejo, California 92656 (US).
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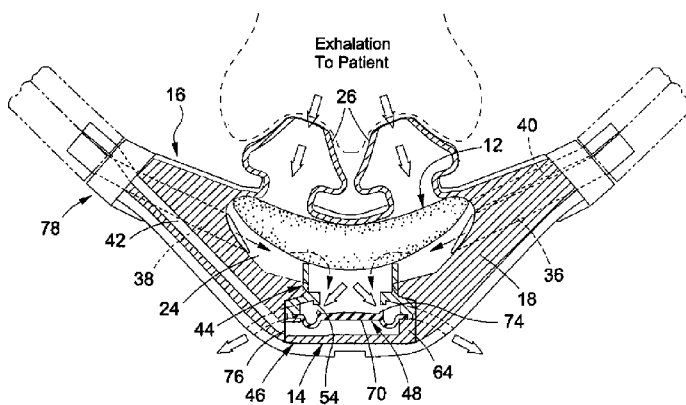


FIG. 4

(57) Abstract: In accordance with the present invention, there is provided a mask, such as a nasal pillows mask, for achieving positive pressure mechanical ventilation (inclusive of CPAP, ventilator support, critical care ventilation, emergency applications. The mask of the present invention includes a piloted exhalation valve that is used to achieve the target pressures/flows to the patient. The pilot for the valve may be pneumatic and driven from the gas supply tubing from the ventilator. The mask of the present invention further includes a heat and moisture exchange (HME) device which is directly integrated into the housing or cushion thereof (thus residing in extremely close proximity to the patient's nostrils), and is further uniquely configured to induce a flow pattern between it and the cushion which maximizes the transmission of heat and moisture to air which is inhaled by and exhaled from the patient through the mask.



INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - A61M 16/06 (2015.01) CPC - A61M 16/0666 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) IPC(8) : A61M 16/06 (2015.01) CPC : A61M 16/0666 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched IPC(8) : A61M 16/00, 16/08, 16/10, 16/20 (2015.01) CPC: A61M 16/00,16/0057, 16/06, 16/08, 16/0875, 16/10, 16/1045, 16/20, 16/208 Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Patbase, Google Patent, Google Scholar: nasal, nares, nostril, nose, heat, warm, hot, thermal, moisture, humid, exchange, exhale, out, pilot, valve, hme, medium, material, foam, sponge, layer, composition, element, conic, cone, fustro, layer, laminate, density, dense, turbulence, pillow, prong, cannula, mask		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2012/0325205 A1 (ALLUM et al) 27 December 2012 (27.12.2012) see especially para [0034]-[0039], [0043], [0060]-[0062], fig 1-5, 10	1-3, 5-7, 19-20 ----- 4, 8-18
X --- Y	US 2012/0138050 A1 (WONDKA et al) 07 June 2012 (07.06.2012) see especially para [0091], [0092], [0094]-[0098], fig 17	1, 19 ----- 4, 8, 16
X	US 2003/0116163 A1 (WOOD) 26 June 2003 (26.06.2003) see especially para [0059], fig 11, 12	1, 19
Y	US 2009/0320851 A1 (SELVARAJAN et al) 31 December 2009 (31.12.2009) see especially para [0069]-[0071]	9, 12-18
Y	WO 2009/125539 A1 (OHMURA et al) 15 October 2009 (15.10.2009) see especially para [0034]-[0037], fig 3, 4	10-11, 17-18
A, E	WO 2015/013761 A1 (HARRINGTON) 05 February 2015 (05.02.2015) see whole document	1-20
A	US 2012/0209096 A1 (JAFFE et al) 16 August 2012 (16.08.2012) see whole document	1-20
A	US 2009/0217929 A1 (KWOK et al) 03 September 2009 (03.09.2009) see whole document	1-20
A	US 3,747,597 A (OLIVERA) 24 July 1973 (24.07.1973) see whole document	1-20
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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201		Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774