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(54) Title: A MOBILE INHALER AND A CONTAINER FOR USING THEREWITH

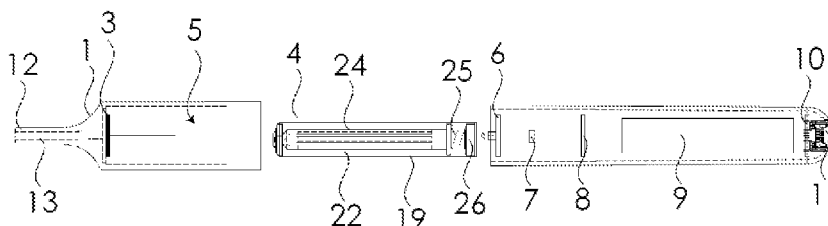


FIG. 1

(57) Abstract: A mobile inhaler is provided and a container for using therewith. The mobile inhaler comprises: a mouthpiece comprising at least one inhaling opening; a body element connected to the mouthpiece and comprising a housing for holding a DC power source; a power conversion unit comprising an inverter operative to convert a DC voltage provided by a DC power source, into a higher AC voltage; a nebulizer comprising an ultrasonic vibrator and a mesh, wherein the ultrasonic vibrator is activated by the AC voltage, and wherein the nebulizer is adapted to enable converting into aerosol droplets at least part of a liquid comprised in an enclosure, and the aerosol droplets to be directly inhaled from the mouthpiece; and an enclosure adapted to enable holding a liquid, and characterized in that it provides a connection to enable fluid transfer from the enclosure to the nebulizer.



INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL 17/50402

A. CLASSIFICATION OF SUBJECT MATTER
 IPC(8) - A61M 15/06 (2017.01)
 CPC - A61M 15/06, 15/0085, 11/005

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)

See Search History Document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

See Search History Document

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

See Search History Document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y --- A	US 2010/0044460 A1 (SAUZADE) 25 February 2010 (25.02.2010) see especially para [0033], [0034], [0052], [0101], [0105], [0106], [0113], [0125], [0126], fig 1A, 11B, 11C, 17B, 17C	1-6, 8-29, 31 ----- 7, 30
Y --- A	US 5,518,179 A (HUMBERSTONE et al) 21 May 1996 (21.05.1996) see especially col 7, ln 54-62, col 7, ln 65 to col 8, ln 10, col 12, ln 64 to col 13, ln 40, fig 1, 3, 4, 15	1-6, 8-29, 31 ----- 7, 30
Y --- A	US 2013/0267864 A1 (ADDINGTON et al) 10 October 2013 (10.10.2013) see especially para [0096], [0097], [0103], [0104], fig 27-29	15-17 ----- 7, 30
Y	US 2013/0079732 A1 (BURT et al) 28 March 2013 (28.03.2013) see especially para [0097]	11
Y	US 2011/0168194 A1 (HON) 14 July 2011 (14.07.2011) see especially para [0027], [0029], [0035], fig 2	18, 31
Y	US 2009/0050142 A1 (HAMANO) 26 February 2009 (26.02.2009) see especially para [0037], [0038], fig 9A	19
Y	US 2011/0265806 A1 (ALARCON et al) 3 November 2011 (03.11.2011) see especially para [0046], [0056], [0072]-[0076], fig 1A, 9	20, 22, 24-25
Y	US 2004/0206351 A1 (McFARLAND) 21 October 2004 (21.10.2004) see especially para [0071]	23

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

12 July 2017

Date of mailing of the international search report

22 SEP 2017

Name and mailing address of the ISA/US

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL 17/50402

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 continuation 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 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.:
1-31

- 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.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL 17/50402

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2012/0266870 A1 (DENYER et al) 25 October 2012 (25.10.2012) see especially para [0027]-[0029], [0033], fig 1	28-29
A,P	US 2016/0213866 A1 (TAN) 28 July 2016 (28.07.2016) see whole document	1-31
A,P	US 9,352,108 B1 (REED et al) 31 May 2016 (31.05.2016) see whole document	1-31
A,P	WO 2016/076178 A1 (JAPAN TOBACCO Inc) 19 May 2016 (19.05.2016) see whole document	1-31
A	US 2009/0095821 A1 (FERIANI et al) 16 April 2009 (16.04.2009) see whole document	1-31
A	US 2005/0011514 A1 (POWER et al) 20 January 2005 (20.01.2005) see whole document	1-31

INTERNATIONAL SEARCH REPORT

International application No.

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Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

Group I: claims 1-31 directed to a mobile inhaler having a mouthpiece, DC power supply and converter, and a nebulizer

Group II: claims 32-37 directed to a container having a physiological solution and at least one solute

The groups of Inventions above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

Special Technical Features:

The special technical feature of the Group I claims is a a mouthpiece, DC power supply and converter, and a nebulizer, which is not present in the claims of Group II.

The special technical feature of the Group II claims is a physiological solution and at least one solute, which is not present in the claims of Group I.

Common Technical Features

Groups I-II share the technical feature of a liquid container for an inhaler. This generic feature does not avoid the prior art, as evinced by US 2010/0044460 A1 to Sauzade which teaches an inhaler with a reservoir (para [0033], [0125], [0126], fig 17B, 17C, reservoir 13).

Therefore, the listed inventions lack unity of invention under PCT Rule 13 because they do not share a same or corresponding special technical feature.