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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
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[Continued on next page]

(54) Title: SYSTEMS AND METHODS FOR EVALUATING MEDICATION DELIVERY FROM VALVED HOLDING CHAMBERS WITH A FACEMASK USING A MODEL FACE

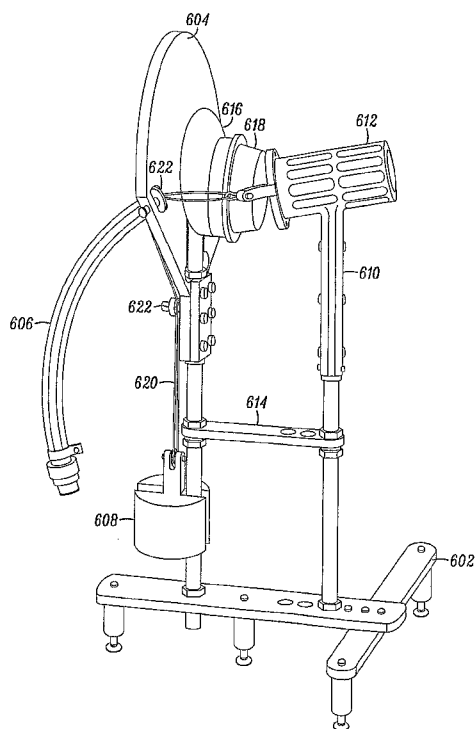


FIG. 7

(57) Abstract: Systems and methods for evaluating medication delivery from valved holding chambers (VHCs) with a facemask using a model face of a child or a model face of an infant are disclosed. Generally, the model face includes a base, an elastomer cast, an air pocket, and a mouth opening. The elastomer cast is positioned on at least a portion of a top of the base. The elastomer simulates soft tissues in a face and defines at least a nose, a chin, and a mouth sized to simulate a nose, a chin, and a mouth of a child. The air pocket is positioned between the base and the elastomer case below at least the nose, the chin, and the mouth of the elastomer cast. The mouth opening defines a passageway through the base, the air pocket, and the mouth of the elastomer cast.



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GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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INTERNATIONAL SEARCH REPORT

International application No.
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| <p>A. CLASSIFICATION OF SUBJECT MATTER IPC: <i>G01M 19/00</i> (2006.01) , <i>A61M 15/00</i> (2006.01) According to International Patent Classification (IPC) or to both national classification and IPC</p> | | | | | | | | | | | | | | | | | | | | |
|---|---|--|--|---|-----------------------|---|---|------|---|---|------|---|--|------|---|--|------|---|--|------|
| <p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols) IPC: <i>G01M 19/00</i> (2006.01) , <i>A61M 15/00</i> (2006.01), <i>A61M-15/</i>, <i>A61M-16/</i>, <i>A62B-18/</i>, <i>A62B-27/</i>, <i>G09B-23/28</i>, <i>G01M</i> USPC: <i>73/ ,73/038,73/040, 128/ , 128/200.24, 434/ , 434/265,267,270,274</i></p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p> <p>Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used) Delphion, Canadian Patent Database keywords: model face, elastomer cast, mouth opening, induction port, valved holding chamber, soft tissue simulation, facemask</p> | | | | | | | | | | | | | | | | | | | | |
| <p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:10%;">Category*</th> <th style="width:60%;">Citation of document, with indication, where appropriate, of the relevant passages</th> <th style="width:30%;">Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td align="center">A</td> <td>US 5,289,819 A (KROGER, R. ET AL.) 1 March 1994 (01-03-1994) *see entire document*</td> <td align="center">1-16</td> </tr> <tr> <td align="center">A</td> <td>US 5,808,182 A (STUMPF, W.) 15 September 1998 (15-09-1998) *see entire document*</td> <td align="center">1-16</td> </tr> <tr> <td align="center">A</td> <td>US 4,796,467 A (BURT, F. ET AL.) 10 January 1989 (10-01-1989) *see entire document*</td> <td align="center">1-16</td> </tr> <tr> <td align="center">A</td> <td>US 6,425,395 B1 (BREWER, G. ET AL.) 30 July 2002 (30-07-2002) *see entire document*</td> <td align="center">1-16</td> </tr> <tr> <td align="center">A</td> <td>US 2007/0193339 A1 (SELIM, A. ET AL.) 23 August 2007 (23-08-2007) *see entire document*</td> <td align="center">1-16</td> </tr> </tbody> </table> | | | Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. | A | US 5,289,819 A (KROGER, R. ET AL.) 1 March 1994 (01-03-1994) *see entire document* | 1-16 | A | US 5,808,182 A (STUMPF, W.) 15 September 1998 (15-09-1998) *see entire document* | 1-16 | A | US 4,796,467 A (BURT, F. ET AL.) 10 January 1989 (10-01-1989) *see entire document* | 1-16 | A | US 6,425,395 B1 (BREWER, G. ET AL.) 30 July 2002 (30-07-2002) *see entire document* | 1-16 | A | US 2007/0193339 A1 (SELIM, A. ET AL.) 23 August 2007 (23-08-2007) *see entire document* | 1-16 |
| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. | | | | | | | | | | | | | | | | | | |
| A | US 5,289,819 A (KROGER, R. ET AL.) 1 March 1994 (01-03-1994) *see entire document* | 1-16 | | | | | | | | | | | | | | | | | | |
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| A | US 2007/0193339 A1 (SELIM, A. ET AL.) 23 August 2007 (23-08-2007) *see entire document* | 1-16 | | | | | | | | | | | | | | | | | | |
| <p><input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; vertical-align: top;"> <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> </td> <td style="width:50%; vertical-align: top;"> <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> </td> </tr> </table> | | | <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> | | | | | | | | | | | | | | | | |
| <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> | | | | | | | | | | | | | | | | | | | |
| <p>Date of the actual completion of the international search 8 April 2009 (08-04-2009)</p> | | <p>Date of mailing of the international search report 22 April 2009 (22-04-2009)</p> | | | | | | | | | | | | | | | | | | |
| <p>Name and mailing address of the ISA/CA Canadian Intellectual Property Office Place du Portage I, C114 - 1st Floor, Box PCT 50 Victoria Street Gatineau, Quebec K1A 0C9 Facsimile No.: 001-819-953-2476</p> | | <p>Authorized officer Robert Gruber 819- 953-1889</p> | | | | | | | | | | | | | | | | | | |

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2008/003371

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of the 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. Claim Nos. :
because they relate to subject matter not required to be searched by this Authority, namely :

2. Claim 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. Claim 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 :

1. Claims 1-10:
Pertain to a model face comprising an elastomer cast simulating soft tissues of a nose, chin and mouth of a child.
 2. Claims 11-13:
Pertain to a cradle for use with a model face in an evaluation of medical delivery of a valved holding chamber (VHC).
 3. Claims 14-16:
Pertain to testing a seal between a facemask and model face by comparing the amount of medication deployed by a VHC at the facemask and an amount of medication received at the mouth opening of the model face.
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 claim 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 claim Nos. :
- 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
Information on patent family members

International application No.
PCT/IB2008/003371

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