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[Continued on next page]

(54) Title: COMBINATION SPEAKER AND LIGHT SOURCE RESPONSIVE TO STATE(S) OF AN ORGANISM BASED ON SENSOR DATA

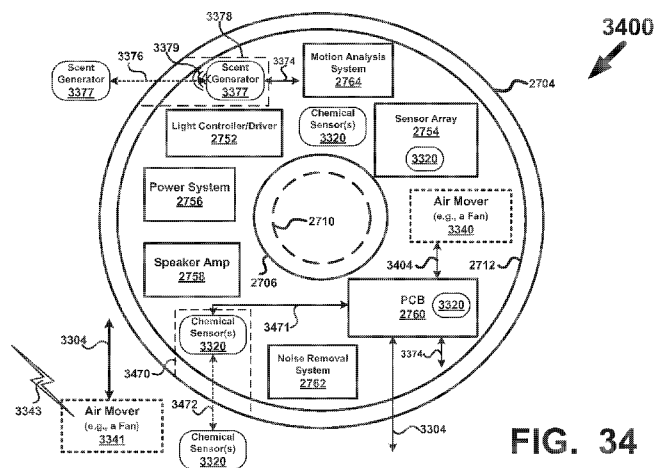


FIG. 34

(57) Abstract: Techniques associated with a combination speaker and light source ("speaker-light device") responsive to states of an organism based on sensor data are described, including generating chemical sensor data in response to one or more chemicals sensed by one or more chemical sensors in the same or different speaker-light devices. A scent generator may be activated to counter an odor caused by a chemical detected by the chemical sensor(s). The speaker-light device may activate an air mover operative to circulate ambient air over the chemical sensor. The speaker-light device may take an appropriate action in response to detected chemicals that affect states of the organism. Some or all of the actions taken may be taken by other devices in communication with the speaker-light device(s). An action may include generating and presenting a path or route to be taken by a user to an area of safety or reduced chemical concentration.

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— *with international search report (Art. 21(3))*

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 14/38861

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC(8) - A01G 7/04, A01G 7/00 (2014.01) CPC - A61B 5/05, A01G 7/00, A63J 17/00, G10H 1/0066, G10H 2220/351 According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) IPC(8) - A01G 7/04, A01G 7/00 (2014.01) CPC - A61B 5/05, A01G 7/00, A63J 17/00, G10H 1/0066, G10H 2220/351 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched IPC(8) - A01G 7/04, A01G 7/00 (2014.01); USPC - 47/58.1LS, 47/1.7 CPC - A61B 5/05, A01G 7/00, A63J 17/00, G10H 1/0066, G10H 2220/351, G10H 1/00, G10H 2220/371 (keyword delimited) Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Patbase; Google, Google Patent Search terms used: light sound module responsive chemical sensor detection scent fan blower air mover		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/0106260 A1 (AIRAUDI et al.) 12 June 2003 (12.06.2003), para [0014]-[0022]	1
Y		2, 3, 11, 19
Y	US 2008/0000960 A1 (OUTWATER et al.) 03 January 2008 (03.01.2008), para [0151], [0154]	2, 3
Y	WO 2013/061300 A1 (DI FRANCIA et al.) 02 May 2013 (02.05.2013), pg 6, ln 19-23; pg 8, ln 17-25; pg 5, ln 28-pg 6, ln 12; pg 8, ln 26-pg 9, ln 22	11, 19
Y	US 2007/0012181 A1 (NIEZGODA et al.) 18 January 2007 (18.01.2007), entire document	11, 19
A	US 7,786,889 B2 (VAN DER POEL et al.) 31 August 2010 (31.08.2010), entire document	1-3, 11, 19
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/>		
* 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 06 December 2014 (06.12.2014)		Date of mailing of the international search report <b>16 DEC 2014</b>
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

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 14/38861

**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:

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. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

The claimed embodiments are directed to a method, comprising: reading a sensor output of a chemical sensor included in a combination speaker and light source device; detecting a signal on the sensor output; processing, after the detecting, the signal to determine which action or actions, if any, are required to be taken combination speaker and light source device or one or more other devices in wireless communication with the combination speaker and light source device; and taking an appropriate action for the type of chemical detected by the chemical sensor.

-- see extra 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.:  
1-3, 11, 19

**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.

Continuation of Box No. III -- Observations where unity of invention is lacking

The specific claims that constitute separate and distinct embodiments of the claimed invention are as follows:

Group I: Claims 1-3, 11, 19 - wherein the appropriate action is activating an air mover.

Group II: Claims 1, 4 - wherein the appropriate action is presenting an exit route on a display of a client device

Group III: Claims 1, 5-10, 12-17 - wherein the appropriate action is activating a scent generator to generate a scent.

Group IV: Claims 1, 18 - wherein the appropriate action is causing a window in a structure the combination speaker and light source is disposed in to open or to close

Group V: Claims 1, 20 - wherein the appropriate action is activating a security system in a structure

The inventions listed as Group I-V do not relate to a single special technical feature under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

Groups I-V are related as a method as set forth in claim 1 and share the common technical feature of the method of claim 1. However, this shared technical feature does not represent a contribution over prior art, because the shared technical feature is anticipated by US 2003/0106260 A1 to Airaudi et al. (hereinafter Airaudi).

Airaudi discloses a method (para [0014]) comprising:

reading a sensor output of a chemical sensor included in a combination speaker and light source device (para [0014], [0022], detect microvariations in a biologic living organism...Such microvariations can be in...chemical concentrations, electrochemical potential, electrochemical current...connected to computer port 11 and used as a music synthesizer or lighting controller);

detecting a signal on the sensor output para [0014], [0016], detect microvariations in a biologic living organism...Microvariations within organism 2 produce analog signal 4 which feeds signal conditioning electronics 1);

processing, after the detecting, the signal to determine which action or actions, if any, are required to be taken combination speaker and light source device or one or more other devices in wireless communication with the combination speaker and light source device (para [0017], ADC 6 feeds digital processing electronics 7); and

taking an appropriate action for the type of chemical detected by the chemical sensor (para [0017]-[0021]).

As the common technical features were known in the art at the time of the invention, these cannot be considered special technical features that would otherwise unify the groups.

Therefore, Group I-II inventions lack unity under PCT Rule 13.