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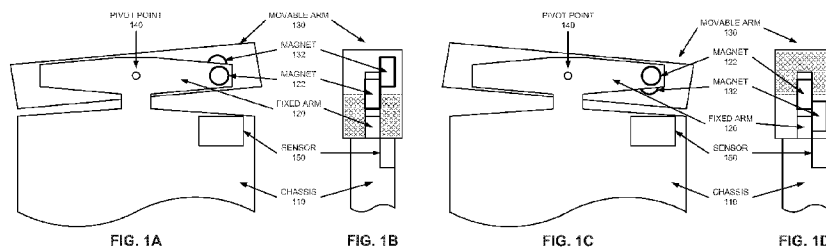
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(54) **Title:** TOGGLE SWITCH WITH MAGNETIC MECHANICAL AND ELECTRICAL CONTROL



(57) **Abstract:** A switch includes magnets that provide both mechanical actuation of the switch as well as electrical operation of the switch. A system controller detects a state of the switch and controls operation of one or more systems in a structure based on the state of the switch. The system controller can detect the state of the switch by detecting a position of a magnet of the switch.

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## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/US2011/042001****A. CLASSIFICATION OF SUBJECT MATTER****H01H 23/16(2006.01)i, H01H 36/00(2006.01)i**

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)

H01H 23/16; G09G 5/08; H01H 36/00; H01H 19/58; F24F 13/00; G09G 5/00; G05D 23/00

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) &amp; Keywords: SWITCH, MAGNET, REPEL, REPULSIVE, TOGGLE

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
|-----------|--|-----------------------|
| X         | US 2001-0055002 A1 (MICHIKO ENDO) 27 December 2001<br>See paragraphs [0067]-[0068] and figure 7.                                 | 1-20                  |
| A         | US 2004-0094393 A1 (RONALD H. LALONDE et al.) 20 May 2004<br>See paragraphs [0033]-[0034] ; claim 1 and figure 4.                | 1-20                  |
| A         | JP 2005-285612 A (HST Co.) 13 October 2005<br>See paragraph [0028] and figure 4.   | 1-20                  |
| A         | US 05348078A A (STEVEN D. DUSHANE, et al.) 20 September 1994<br>See column 10, line 16-column 11, line 36; claim 1 and figure 1. | 1-20                  |

 Further documents are listed in the continuation of Box C. See patent family annex.

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"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

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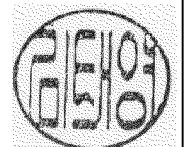

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

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**PCT/US201 1/042001**

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s)  | Publication<br>date   |
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| US 200 1-0055002 A1                       | 27 . 12 .200 1      | DE 60 138510 D1<br>EP 1 168234 A2<br>EP 1 168234 A3<br>EP 1 168234 B1<br>JP 2002-007059 A<br>US 2004-0183778 A1<br>US 6738043 B2<br>US 7 15 1526 B2 | 10 .06 ,2009<br>02 .0 1 ,2002<br>23 .08 ,2006<br>29 .04 ,2009<br>11 .0 1 ,2002<br>23 .09 ,2004<br>18 .05 ,2004<br>19 . 12 ,2006   |
| us 2004-0094393 A1                        | 20 .05 .2004        | US 6922 123 B2  | 26 .07 ,2005  |
| JP 2005-2856 12 A                         | 13 . 10 .2005       | None  |   |
| us 05348078A A                            | 20 .09 . 1994       | US 054493 19A A<br>US 06032867A A<br>US 06 116512A A<br>US 06 134134A A<br>US 6 196467 B1<br>US 62 13404 B1<br>WO 95-02 156 A1<br>WO 98-37364 A1    | 12 .09 , 1995<br>07 .03 ,2000<br>12 .09 ,2000<br>17 . 10 ,2000<br>06 .03 ,2001<br>10 .04 ,2001<br>19 .0 1 , 1995<br>27 .08 , 1998 |