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[Continued on next page]

(54) **Title:** AUTOMATIC FAUCET AND SHOWER



FIG. 1

(57) **Abstract:** An automatic faucet device comprises a water flow control valve and valve control means. In the control means, a decision regarding closing or opening the valve is based on readings from dual sensor means. The dual sensor means include infrared sensors and capacitive sensors. A decision re closing or opening the valve is based on readings from dual sensor means, an automatic faucet activation method comprising: read sensors input, wherein signals from the two sensors (IR and capacitive) are being read continuously; compute OPEN evaluation with criterion A: The sensors readings will be evaluated; to open valve? If Yes, then commands to an electro-mechanical device are issued, to open the water flow.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 09/50369

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - F16K 31/02 (2009.01)

USPC - 251/129.01

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)  
USPC: 251/129.01

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
USPC: 251/30.01-30.05, 129.02

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
PubWEST(USPT,PGPB,EPAB,JPAB), Google patent, Google Scholar  
Search Terms: Search Terms: automatic faucet, control, valve, dual sensor, infrared, capacitive, cone, pull-out, manual override

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 2007/0057215 A1 (PARSONS et al) 15 March 2007 (15.03.2007) entire document, especially para [0009], [0011], [0048], [0053], [0054], [0067], [0115], [0137]-[0139], Fig.1A, Fig.3B, Fig.11	1-4, 7-10 ----- 5-6
Y	US 4,886,207 A (LEE et al)12 December 1989 (12.12.1989) col 7, ln 13-16, see Fig.1	5
Y	US 2007/0157978 A1 (JONTE et al) 12 July 2007 (12.07.2007); para [0072]	6

Further documents are listed in the continuation of Box C.

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|---|--|
| * Special categories of cited documents:  | "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  |
| "A" document defining the general state of the art which is not considered to be of particular relevance  | "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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| "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  |  |

Date of the actual completion of the international search  
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**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.: 11  
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.  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.:

**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.