

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
26 May 2006 (26.05.2006)

PCT

(10) International Publication Number  
**WO 2006/055681 A3**

(51) International Patent Classification:  
E03C 1/04 (2006.01)

(71) Applicant and

(72) Inventor: LOUIS, William M. [US/US]; 543 Cerro Street, Encinitas, California 92024 (US).

(21) International Application Number:  
PCT/US2005/041625

(74) Agents: KLEINKE, Bernard, L. et al.; Duckor Spradling Metzger & Wynne, A Law Corporation, 401 West A Street, Suite 2400, San Diego, CA 92101-7915 (US).

(22) International Filing Date:  
17 November 2005 (17.11.2005)

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

(25) Filing Language: English

(26) Publication Language: English

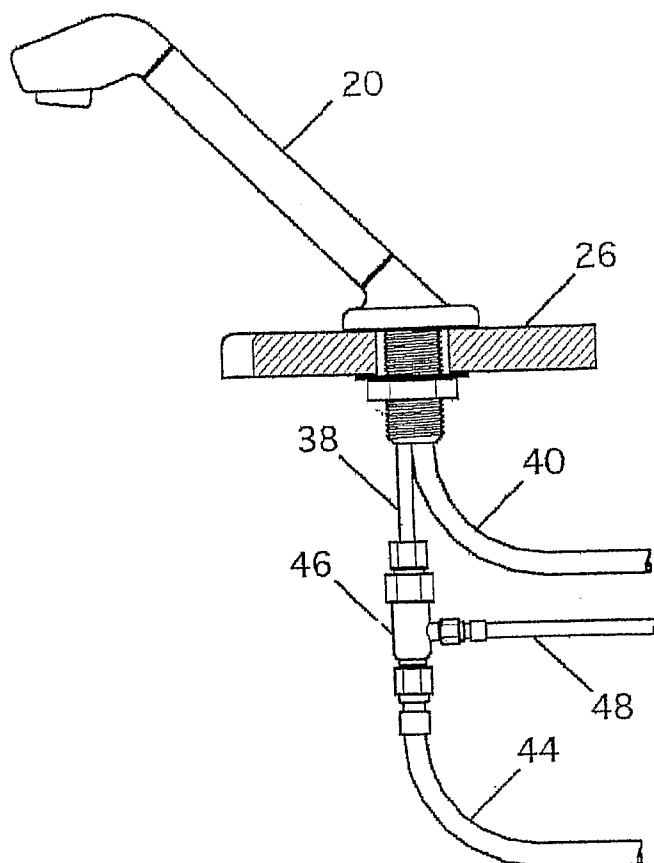
(30) Priority Data:  
60/629,065 18 November 2004 (18.11.2004) US  
11/280,577 16 November 2005 (16.11.2005) US

(71) Applicant (for all designated States except US): WILLOW DESIGN, INC. [US/US]; Attention: William M. Louis, President, 543 Cerro Street, Encinitas, California 92024 (US).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: DISPENSING SYSTEM AND METHOD, AND INJECTOR THEREFOR



(57) Abstract: A dispensing system and method, and injector therefor are disclosed. The disclosed dispensing system, when used for washing hands, may include a faucet in communication with a water or other supply line and a soap or other substance dispensing device adapted to create, for example, a soap and water mixture in the supply line. The system may provide an injector which may include at least one vortex generator to create strong vortices that effectively commingle the two fluids into a thoroughly dispersed mixture, for discharging from the faucet outlet or other outlet.

WO 2006/055681 A3



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, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

**(88) Date of publication of the international search report:**  
28 June 2007

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/41625

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC:           E03C 1/04( 2006.01)  USPC:         4/676-678;239/310;137/268 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) U.S. : 4/676-678; 239/310; 137/268  Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,906,319 A (CROWL) 25 May 1999 (25.05.1999), entire document.	10-27
Y	US 4,984,306 A (SUMERIX) 15 January 1991 (15.01.1991), entire document.	1-9
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* 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
"E" earlier application or patent published on or after the international filing date	"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
"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)	"&"	document member of the same patent family
"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 27 March 2007 (27.03.2007)	Date of mailing of the international search report 01 MAY 2007	
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 Khoa D. Huynh Telephone No. (703) 308-1113	