

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
21 December 2006 (21.12.2006)

PCT

(10) International Publication Number
WO 2006/134391 A3

- (51) International Patent Classification:
E03C 1/02 (2006.01) A61H 33/00 (2006.01)
F16K 11/20 (2006.01) G05D 23/13 (2006.01)
- (21) International Application Number:
PCT/GB2006/002233
- (22) International Filing Date: 19 June 2006 (19.06.2006)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
0512412.8 17 June 2005 (17.06.2005) GB

(71) Applicant and
 (72) Inventor: DICKSON, Matthew [GB/GB]; 4 Latchmoor Way, Gerards Cross, Buckinghamshire SL9 8LP (GB).

(74) Agents: DRAPER, Martyn, John et al.; BOULT WADE TENNANT, Verulam Gardens, 70 Gray's Inn Road, London WC1X 8BT (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

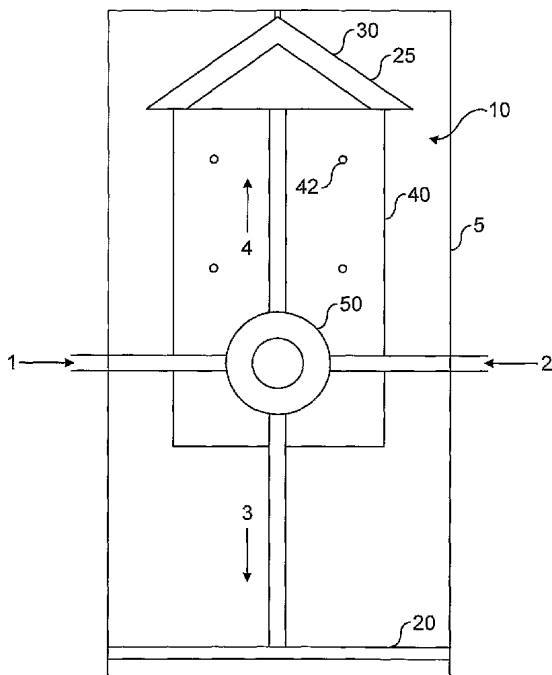
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,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

(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, 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

[Continued on next page]

(54) Title: MULTIPLE OUTLET WATER MIXING UNIT AND SHOWER UNIT FOR USE IN HYDROTHERAPY



(57) Abstract: A multiple outlet water mixing unit (50) comprising a housing (45) having a hot water inlet (1) and a cold water inlet (2). The Unit also comprises a plurality of water mixer valves (65, 66) located within the housing (45) each supplied by the hot water inlet (1) and the cold water inlet (2) and supplying a respective water outlet (3, 4), each water mixer valve (65, 66) being operable to mix water received from the hot and cold water inlets in varying proportions, and at least one controller (51) to control the valves and hence the relative proportions of hot and cold water fed to each water outlet (3, 4). A shower unit (10) having at least one water dispensing means (30) and a water mixer (50) with hot and cold water inlets (1, 2) and a plurality of outlets (3, 4) is also disclosed.

WO 2006/134391 A3



(88) Date of publication of the international search report:

21 December 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/GB2006/002233

A. CLASSIFICATION OF SUBJECT MATTER
INV. E03C1/02 F16K11/20 A61H33/00 G05D23/13

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)
E03C F16K G05D A47K F24D A61H

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 practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 688 273 A (LYNG BJOERN [NO]) 25 August 1987 (1987-08-25) the whole document	1, 4, 5
A	-----	19, 23
X	JP 59 100319 A (MITSUBISHI ELECTRIC CORP) 9 June 1984 (1984-06-09) abstract	1, 4
X	WO 03/023155 A (ANDREOTTI PAOLO [IT]) 20 March 2003 (2003-03-20) the whole document	1, 4
X	DE 197 02 358 A1 (GROHE KG HANS [DE]) 30 July 1998 (1998-07-30) the whole document	6, 9-18
	----- -/--	

Further documents are listed in the continuation of Box C.

See patent family annex.

* 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 document 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.
- *Z* document member of the same patent family

Date of the actual completion of the international search

25 October 2007

Date of mailing of the international search report

05/11/2007

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Millward, Richard

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 1 070 374 A (PLEINS L H) 12 August 1913 (1913-08-12) the whole document -----	6,11,12
P,X	FR 2 872 837 A (DAVOUDI FARHOOMAN [FR]) 13 January 2006 (2006-01-13) abstract; figures 3,6 page 1, line 21 - line 38; claim 1 page 2, line 51 - line 55; claims 2,6 -----	1,6, 11-14,18
A	EP 1 083 266 A (DORIA LUCIO [IT]) 14 March 2001 (2001-03-14) the whole document -----	13,14,18
A	DE 41 43 259 C1 (HUBER, MANUELA, DIPL.-OEC.TROPH., 8058 ERDING, DE) 25 February 1993 (1993-02-25) the whole document -----	11-14
X	JP 59 100321 A (MITSUBISHI ELECTRIC CORP) 9 June 1984 (1984-06-09) abstract; figure 2 -----	19
A	JP 05 165533 A (MATSUSHITA ELECTRIC IND CO LTD) 2 July 1993 (1993-07-02) abstract; figure 1 -----	23
A	US 4 753 265 A (BARRETT JOHN P [US] ET AL) 28 June 1988 (1988-06-28) figures 2-4 column 9, line 36 - line 42 column 11, line 45 - column 13, line 5 -----	19,23
X	US 3 095 579 A (GEROW CLARENCE C ET AL) 2 July 1963 (1963-07-02) the whole document -----	1,6,11
X	EP 0 684 535 A (DANFOSS AS [DK]) 29 November 1995 (1995-11-29) the whole document -----	1,6,11
P,X	WO 2006/048609 A (BRISTAN LTD [GB]; GIBBS RODERICK JOSEPH [GB]; PEGDEN PETER JAMES HAROL) 11 May 2006 (2006-05-11) the whole document -----	1,6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2006/002233

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:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.
2. As all searchable claims could be searched without effort justifying an 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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-5

Water mixing unit comprising
a housing with
hot and cold water inlets
a plurality of mixer valves
a controller and
a plurality of pre-mixer valves

2. claims: 6-18

A shower unit comprising
a water dispensing means and "an auxiliary site", supplied
by separate outlets of a mixer having a plurality of mixing
valves

3. claims: 19-26

Water mixing unit comprising
a splitter to split a water inlet into 2 streams
a heater for heating one stream

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2006/002233

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 4688273	A	25-08-1987	DE	3565717 D1	24-11-1988
			DK	479985 A	18-10-1985
			EP	0174331 A1	19-03-1986
			FI	854094 A	21-10-1985
			NO	840670 A	23-08-1985
			WO	8503764 A1	29-08-1985
JP 59100319	A	09-06-1984	NONE		
WO 03023155	A	20-03-2003	NONE		
DE 19702358	A1	30-07-1998	NONE		
US 1070374	A		NONE		
FR 2872837	A	13-01-2006	NONE		
EP 1083266	A	14-03-2001	IT	B0990481 A1	08-03-2001
DE 4143259	C1	25-02-1993	NONE		
JP 59100321	A	09-06-1984	NONE		
JP 5165533	A	02-07-1993	JP	3257005 B2	18-02-2002
US 4753265	A	28-06-1988	NONE		
US 3095579	A	02-07-1963	NONE		
EP 0684535	A	29-11-1995	FI	952451 A	21-11-1995
WO 2006048609	A	11-05-2006	EP	1810106 A1	25-07-2007