

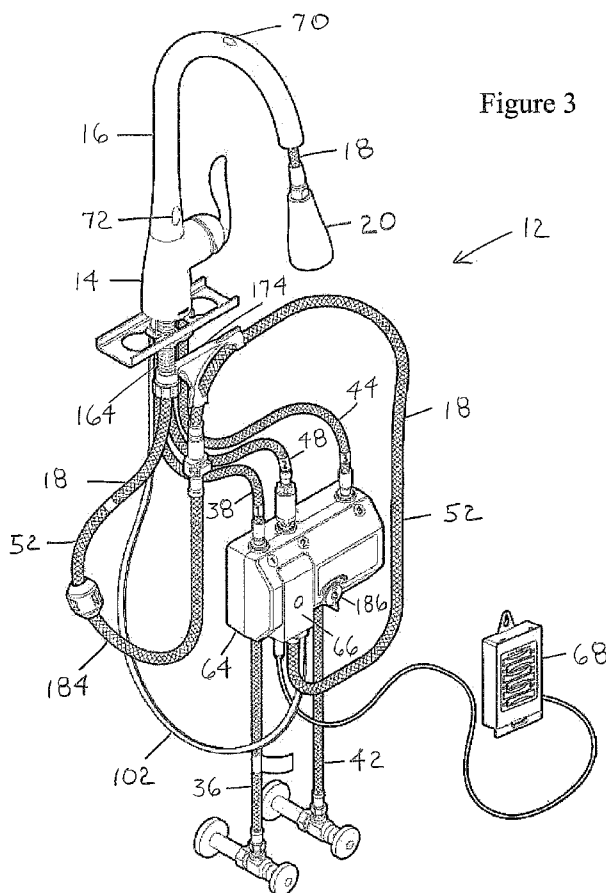


- (51) International Patent Classification:
E03C 1/05 (2006.01)
- (21) International Application Number:
PCT/US2013/029650
- (22) International Filing Date:
7 March 2013 (07.03.2013)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
61/607,860 7 March 2012 (07.03.2012) US
- (71) Applicant: **MOEN INCORPORATED** [US/US]; 25300
Al Moen Drive, North Olmsted, OH 44070 (US).
- (72) Inventors: **EVANS, Kenneth, E.**; 28515 Stonegate Circle,
Westlake, OH 44145 (US). **FRICK, Timothy, A.**; 3986
Canterbury Drive, Brunswick, OH 44212 (US). **PAGANO,
Terrence, A.**; 9424 Potomac Drive, North Royalton, OH
44133 (US). **PARIKH, Harshil**; 3675 Clague Road, #403,
North Olmsted, OH 44070 (US). **SONG, Inho**; 12466
Bentbrook Drive, Chesterland, OH 44026 (US). **TUCK-
ER, W., Randall**; 10780 Pyle South Amherst Road, Ober-
lin, OH 44074 (US). **WEBER, Eric, M.**; 1221 Ty Drive,
Medina, OH 44256 (US).
- (74) Agent: **KASTELIC, Tara, A.**; Calfee, Halter & Griswold
LLP, The Calfee Building, 1405 East Sixth Street, Clevel-
and, OH 44114 (US).
- (81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,

[Continued on next page]

(54) Title: ELECTRONIC PLUMBING FIXTURE FITTING

(57) Abstract: The present invention provides an electronic plumbing fixture fitting, such as an electronic faucet.





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

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

UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

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

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

5 February 2015

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 13/29650

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - E03C 1/05 (2013.01)

USPC - 4/623, 676; 251/129.03

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)

IPC(8): E03C 1/05 (2013.01)

USPC: 4/623, 676; 251/129.03

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

IPC(8): E03C 1/05 (2013.01)

USPC: 251/129.01, 129.03; 4/567, 596, 615, 619, 620, 623, 624, 654, 668, 675, 676, 678

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

PatBase; Google Scholar; Google Patent; Search Terms: valve mix proportion solenoid electronic processor controller sensor detector IR proximal touch actuator fixture fitting faucet plumbing sink housing escutcheon hose spray flexible spout

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2006/0202142 A1 (Marty et al.) 14 September 2006 (14.09.2006) para. [0039]-[0088], Fig. 1-23	23-30
Y	US 5,984,262 A (Parsons et al.) 16 November 1999 (16.11.1999) col. 2 ln. 55-67, Fig. 1, 2	23-30
Y	US 2009/0000024 A1 (Louis et al.) 01 January 2009 (01.01.2009) para. [0031]-[0074], Fig. 1-5	1-22, 45, 46
Y	US 2006/0231637 A1 (Schmitt) 19 October 2006 (19.10.2006) para. [0022]-[0026], Fig. 1-5	1-22, 45, 46
Y	US 2003/0146307 A1 (Herring) 07 August 2003 (07.08.2003) para. [0013] and [0027]-[0029], Fig. 2-3 and 5	1-22
Y	US 2010/0125946 A1 (Meisner et al.) 27 May 2010 (27.05.2010) para. [0026], [0029], [0030], Fig. 1, 2	8, 15, 22
Y	US 2010/0096017 A1 (Jonte et al.) 22 April 2010 (22.04.2010) para. [0054]-[0117], Fig. 1-8	1-22
A		31-44
A	US 2011/0284111 A1 (Marty et al.) 24 November 2011 (24.11.2011) para. [0038]-[0085], Fig. 1-4	31-44
A	US 2008/0045794 A1 (Belson) 21 February 2008 (21.02.2008) para. [0064]	31-44

☒ Further documents are listed in the continuation of Box C.



* 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

17 April 2013 (17.04.2013)

Date of mailing of the international search report

13 MAY 2013

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 13/29650

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2006/0130907 A1 (Marty et al.) 22 June 2006 (22.06.2006) entire document	1-46
A	US 2007/0246550 A1 (Rodenbeck et al.) 25 October 2007 (25.10.2007) entire document	1-46
A	US 2010/0012194 A1 (Jonte et al.) 21 January 2010 (21.01.2010) entire document	1-46