

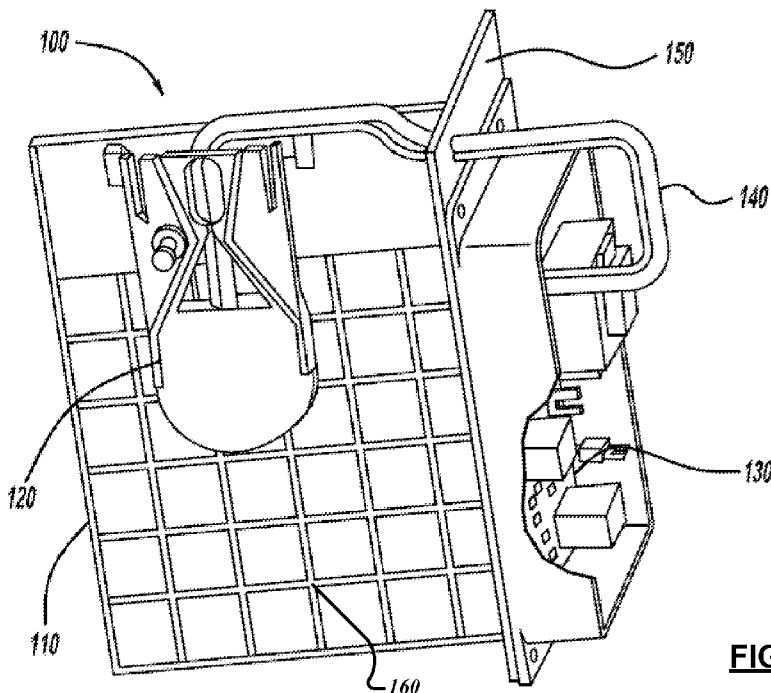


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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, 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, 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.
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[Continued on next page]

(54) Title: SYSTEM, APPARATUS, AND METHOD FOR ICE DETECTION



(57) Abstract: A system, apparatus, and method for determining when an amount of ice formed on an evaporator or evaporator grid has reached a predetermined size are illustrated. An acoustic transmitter positioned proximate to the evaporator channels acoustic signals emanating from the evaporator or evaporator grid to an acoustic sensor, which generates an electronic signal indicative of the acoustic signal. A receiver module coupled to the acoustic sensor is configured to receive the electronic signal and determine that ice formed on the evaporator has reached a predetermined size based on the electronic signal.

FIG. 1

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- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/024336**A. CLASSIFICATION OF SUBJECT MATTER****F25C 1/00(2006.01)i, G01B 17/00(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)

F25C 1/00; F25B 5/02; F25C 5/10; G06F 7/00; G01N 29/00

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) & Keywords: "acoustic", "sonic", "detect"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 05627310A A (JOHNSON; MARTIN) 06 May 1997 See abstract, column 3, claim 1 and figures 1, 2.	1-6,9-14,17-19
A	See abstract, column 3, claim 1 and figures 1, 2.	7,8,15,16
X	US 2001-0039804 A1 (TODD R. NEWMAN et al.) 15 November 2001 See abstract, paragraphs 33, 63, claim 1 and figure 1.	1-6,9-14,17-19
A	See abstract, paragraphs 33, 63, claim 1 and figure 1.	7,8,15,16
X	WO 2009-034300 A1 (UNIVERSITY OF EXETER et al.) 19 March 2009 See abstract, page 7, claims 15 and figures 1, 2.	1-6,9-14,17-19
A	See abstract, page 7, claims 15 and figures 1, 2.	7,8,15,16
A	US 05922030A A (SHANK; DAVID et al.) 13 July 1999 See abstract, column 5 and figure 1.	1-19

 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

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"&" document member of the same patent family

Date of the actual completion of the international search

10 AUGUST 2012 (10.08.2012)

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 05627310A A	06.05.1997	None	
US 2001-0039804 A1	15.11.2001	US 05653114A A US 05931003A A US 06125639A A US 6282909 B1 US 6581393 B2	05.08.1997 03.08.1999 03.10.2000 04.09.2001 24.06.2003
WO 2009-034300 A1	19.03.2009	GB 0717908 D0	24.10.2007
US 05922030A A	13.07.1999	None	