



- (51) **International Patent Classification:**
F25D 29/00 (2006.01)
- (21) **International Application Number:**
PCT/DK2012/000084
- (22) **International Filing Date:**
13 July 2012 (13.07.2012)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
PA 2011 00545 15 July 2011 (15.07.2011) DK
- (71) **Applicant (for all designated States except US):** DAN-FOSS A/S [DK/DK]; Nordborgvej 81, DK-6430 Nordborg (DK).
- (72) **Inventors; and**
- (75) **Inventors/Applicants (for US only):** LANGENBERG, Gero C. [DE/DE]; Moltkestrasse 24, 24937 Flensburg (DE). FOGH, Hans Erik [DK/DK]; Skeldevej 12, DK-6310 Broager (DK).
- (74) **Agent:** DANFOSS A/S; Intellectual Property, L25, Nordborgvej 81, DK-6430 Nordborg (DK).
- (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.

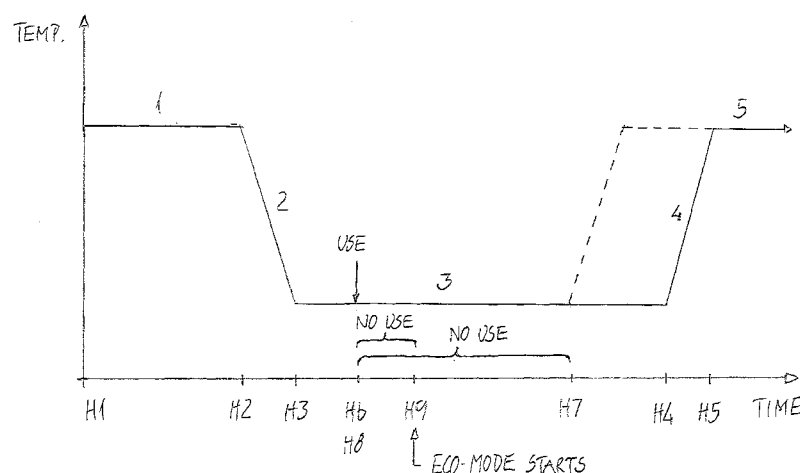
- (84) **Designated States (unless otherwise indicated, for every kind of regional protection available):** ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, 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))
- 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))

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

7 November 2013

(54) Title: METHOD FOR CONTROLLING A REFRIGERATOR, A CONTROL UNIT AND A REFRIGERATOR

(57) **Abstract:** The invention relates to a method for controlling a refrigerator. The method comprises the steps of establishing a time interval of a certain duration, a first use of the refrigerator starting a first time interval, starting a subsequent time interval based on the start of the first time interval, and subtracted a time difference. The subsequent time interval subtracted a time difference is being used for starting a cool-down period of the subsequent time interval. The invention also relates to a control unit for the refrigerator and to a refrigerator with such control unit.

INTERNATIONAL SEARCH REPORT

International application No

PCT/DK2012/000084

A. CLASSIFICATION OF SUBJECT MATTER

INV. F25D29/00

ADD.

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)

F25D

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)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/050075 A1 (KING EDDIE W [US] ET AL) 18 March 2004 (2004-03-18) paragraph [0025] - paragraph [0031]; claims 11-17	1-15
X	----- EP 0 090 431 A2 (COCA COLA CO [US]) 5 October 1983 (1983-10-05) claims 2,7,9,	1-15
X	----- WO 01/90668 A1 (SCHANIN DAVID J [US]) 29 November 2001 (2001-11-29) page 4, line 29 - line 36	1-15
X	----- EP 1 909 050 A1 (SIEMENS SCHWEIZ AG [CH]) 9 April 2008 (2008-04-09) the whole document	1-15
	----- -/--	

☒ 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 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

12 September 2013

Date of mailing of the international search report

24/09/2013

Name and mailing address of the ISA/

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

Authorized officer

Jessen, Flemming

INTERNATIONAL SEARCH REPORT

International application No

PCT/DK2012/000084

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 2005/177282 A1 (MASON PAUL L II [US]) 11 August 2005 (2005-08-11) the whole document -----	1-15

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/DK2012/000084

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2004050075 A1	18-03-2004	AU 2003272482 A1	30-04-2004
		BR 0313440 A	12-07-2005
		CN 1682170 A	12-10-2005
		CN 101504551 A	12-08-2009
		EP 1540438 A1	15-06-2005
		ES 2315529 T3	01-04-2009
		HK 1137522 A1	28-10-2011
		JP 2005539313 A	22-12-2005
		MX PA05001045 A	08-04-2005
		US 2004050075 A1	18-03-2004
		WO 2004025388 A1	25-03-2004
EP 0090431 A2	05-10-1983	AU 546732 B2	19-09-1985
		AU 1240483 A	06-10-1983
		CA 1184633 A1	26-03-1985
		DE 3364414 D1	14-08-1986
		EP 0090431 A2	05-10-1983
		JP H04315 B2	07-01-1992
		JP S58182722 A	25-10-1983
		US 4417450 A	29-11-1983
WO 0190668 A1	29-11-2001	AU 6335601 A	03-12-2001
		AU 2001263356 B2	13-01-2005
		BR 0111132 A	25-02-2004
		CA 2409228 A1	29-11-2001
		EP 1299680 A1	09-04-2003
		MX PA02011689 A	14-10-2003
		US 6389822 B1	21-05-2002
		US 2002139134 A1	03-10-2002
		US 2004000154 A1	01-01-2004
		WO 0190668 A1	29-11-2001
EP 1909050 A1	09-04-2008	CN 101201213 A	18-06-2008
		EP 1909050 A1	09-04-2008
		US 2009113919 A1	07-05-2009
US 2005177282 A1	11-08-2005	CA 2549901 A1	18-08-2005
		EP 1751719 A2	14-02-2007
		MX PA06006595 A	23-08-2006
		US 2005177282 A1	11-08-2005
		WO 2005074446 A2	18-08-2005