# 

### EP 2 738 486 A3 (11)

(12)

## **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:

11.01.2017 Bulletin 2017/02

(43) Date of publication A2: 04.06.2014 Bulletin 2014/23

(21) Application number: 13188925.5

(22) Date of filing: 16.10.2013

(84) Designated Contracting States:

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR **Designated Extension States:** 

**BA ME** 

(30) Priority: 03.12.2012 US 201213691894

(71) Applicant: Whirlpool Corporation Benton Harbon MI 49022 (US)

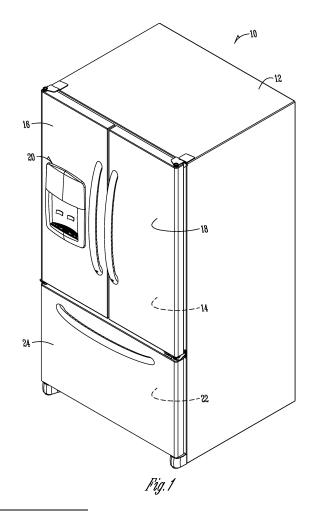
(51) Int Cl.: F25B 21/04 (2006.01) F25C 5/08 (2006.01)

F25C 1/04 (2006.01) F25D 11/02 (2006.01)

- (72) Inventor: Boarman, Patrick J. Benton Harbor, MI Michigan 49022 (US)
- (74) Representative: Nicholls, Michael John J A Kemp 14 South Square Gray's Inn London WC1R 5JJ (GB)

#### (54)Modular cooling and low energy ice

(57)A refrigerator (10) includes a refrigerator cabinet (12), an ice maker (32) disposed within the refrigerator cabinet, an ice mold (40) in the ice maker, and a thermoelectric device (46) positioned below the ice mold and configured to provide cooling liquid along a bottom side of the ice mold during freezing of water to make ice. The ice maker is further configured to warm the bottom side of the ice mold to facilitate harvesting of the ice. The ice maker may be disposed within a refrigeration compartment and may be configured to make clear ice. The ice mold may be fixed in place during the harvesting of the ice. The ice maker may be further configured to warm the bottom side of the ice mold to facilitate harvesting of the ice by providing warming liquid along the bottom side of the ice mold.





## **EUROPEAN SEARCH REPORT**

Application Number

EP 13 18 8925

J	
10	
15	
20	
25	
30	
35	
40	
45	
50	

55

5

	DOCUMENTS CONSIDERED	TO BE RELEVANT			
Category	Citation of document with indication of relevant passages	n, where appropriate,	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)	
X	US 2012/167596 A1 (KRAU [US] ET AL) 5 July 2012 * the whole document *		1-15	INV. F25B21/04 F25C1/04 F25C5/08	
Х	US 6 951 113 B1 (ADAMSK 4 October 2005 (2005-10 * the whole document *		1-15	F25D11/02	
Х	US 3 192 726 A (NEWTON 6 July 1965 (1965-07-06 * the whole document *		1-15		
А	US 2010/071384 A1 (LU Q 25 March 2010 (2010-03- * the whole document *		1-15		
				TECHNICAL FIELDS	
				SEARCHED (IPC)	
				F25B	
				F25C F25D	
				1230	
	The present search report has been dr	awn up for all claims	1		
	Place of search	Date of completion of the search	<del></del>	Examiner	
	The Hague	30 November 2016	Bio	det, Sébastien	
C	ATEGORY OF CITED DOCUMENTS	T : theory or princip		<u> </u>	
	icularly relevant if taken alone	E : earlier patent do after the filing da	cument, but publi		
Y : part	icularly relevant if combined with another	D : document cited	D : document cited in the application L : document cited for other reasons		
document of the same category A: technological background			L : document cited for other reasons  & : member of the same patent family, corresponding		
	-written disclosure mediate document	& : member of the s document	ame patent family	r, corresponding	

## EP 2 738 486 A3

## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 13 18 8925

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

30-11-2016

10	Patent document cited in search report	Publication date	Patent family member(s)	Publication date
	US 2012167596 A	05-07-2012	NONE	
15	US 6951113 B	. 04-10-2005	NONE	
10	US 3192726 A	06-07-1965	DE 1250457 B GB 1069452 A US 3192726 A	30-11-2016 17-05-1967 06-07-1965
20	US 2010071384 A	25-03-2010	EP 2326894 A1 EP 2687794 A2 JP 5248680 B2 JP 5774630 B2 JP 2012503757 A JP 2013140011 A	01-06-2011 22-01-2014 31-07-2013 09-09-2015 09-02-2012 18-07-2013
25			US 2010071384 A1 WO 2010036861 A1	25-03-2010 01-04-2010 
30				
35				
40				
45				
50 ਲੁੱਝ				
55 CS				

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82