(11) **EP 3 671 081 A3**

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3: 16.09.2020 Bulletin 2020/38

(51) Int Cl.: F25D 25/02 (2006.01)

(43) Date of publication A2: **24.06.2020 Bulletin 2020/26**

(21) Application number: 19213114.2

(22) Date of filing: **03.12.2019**

(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

Designated Validation States:

KH MA MD TN

(30) Priority: 17.12.2018 CN 201811540539

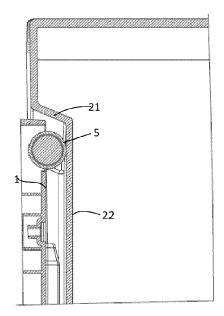
(71) Applicant: BSH Hausgeräte GmbH 81739 München (DE)

(72) Inventors:

- Ding, Guanghua Chuzhou, 239000 (CN)
- Han, Gailian Nanjing City, Jiangsu province, 239016 (CN)

(54) **REFRIGERATOR**

A refrigerator, including: a storage chamber (102), having a front opening (104) and a posterior chamber wall (105) facing the front opening; a rail (1) located in the storage chamber; a storage component (2), suitable for moving, along the rail and in a front-back direction, between a first extreme position and a second extreme position, where the storage component is closest to the posterior chamber wall when the storage component is in the first extreme position; a first roller (3, 43) and a second roller (4) that are at least partially located between the storage component and the rail in a vertical direction, where the storage component is suitable for being supported on the rail by the first roller and the second roller, and the second roller is in front of the first roller at least when the storage component is in the first extreme position; and a transverse roller (5) at least partially located between the storage component and the rail in a horizontal direction to prevent the storage component from moving in a transverse direction of the storage chamber. where when the storage component is in the first extreme position, the transverse roller is located between the first roller and the second roller in the front-back direction.



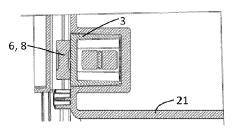


FIG. 4

EP 3 671 081 A3



EUROPEAN SEARCH REPORT

DOCUMENTS CONSIDERED TO BE RELEVANT

Application Number

EP 19 21 3114

10

Category	y Citation of document with indication, where appropriate, of relevant passages		Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)	
Α	US 5 887 960 A (LEE 30 March 1999 (1999 * figures 1-5 *	1-12	INV. F25D25/02		
Υ	JP H11 294943 A (MITSUBISHI ELECTRIC CORP) 29 October 1999 (1999-10-29) * figures 1-7 *		1-12		
Υ	JP H10 300336 A (MATSUSHITA REFRIGERATION) 13 November 1998 (1998-11-13) * figures 1-10 *		1-12		
Α	JP H05 34055 A (TOSHIBA CORP) 9 February 1993 (1993-02-09) * figures 1-6 *		1-12		
Α	JP H02 106686 A (MI 18 April 1990 (1990 * figures 1-4 *	TSUBISHI ELECTRIC CORP) -04-18)	1-12		
A	KR 2007 0052145 A (LG ELECTRONICS INC [KR]) 21 May 2007 (2007-05-21) * figures 1-5b *		1-12	TECHNICAL FIELDS SEARCHED (IPC)	
Α	US 2014/265807 A1 (KENDALL JAMES W [US] ET AL) 18 September 2014 (2014-09-18) * figures 1-7f *		1-12		
Α	US 2014/265808 A1 (AL) 18 September 20 * figures 1-7f *	KENDALL JAMES W [US] ET 14 (2014-09-18)	1-12		
The present search report has been drawn up for all claims				Examiner	
Place of search The Hague		Date of completion of the search 4 May 2020	Dez	rso, Gabor	
CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document		T : theory or principle E : earlier patent doc after the filing date or D : document cited in L : document cited fo	T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document cited for other reasons &: member of the same patent family, corresponding document		
		& : member of the sa			



5

Application Number

EP 19 21 3114

	CLAIMS INCURRING FEES					
	The present European patent application comprised at the time of filing claims for which payment was due.					
10	Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):					
15	No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.					
20	LACK OF UNITY OF INVENTION					
	The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:					
25						
	see sheet B					
30						
	All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.					
35	As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.					
40	Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:					
45	None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:					
50	1-12					
55	The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).					



LACK OF UNITY OF INVENTION SHEET B

Application Number

EP 19 21 3114

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely: 1. claims: 1-12 10 A refrigerator with a first roller and a second roller. 2. claims: 13-15 15 A refrigerator with an anti-overturn portion fixed in the rear of the storage component. 20 25 30 35 40 45 50 55

EP 3 671 081 A3

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

EP 19 21 3114

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.

04-05-2020

10	Patent document cited in search report	Publication date	Patent family member(s)	Publication date
15	US 5887960 A	30-03-1999	CN 1183541 A JP H10170141 A KR 19980028277 A US 5887960 A	03-06-1998 26-06-1998 15-07-1998 30-03-1999
	JP H11294943 A	29-10-1999	JP 3648052 B2 JP H11294943 A	18-05-2005 29-10-1999
20	JP H10300336 A	13-11-1998	NONE	
	JP H0534055 A	09-02-1993	NONE	
	JP H02106686 A	18-04-1990	NONE	
25	KR 20070052145 A	21-05-2007	NONE	
30	US 2014265807 A1	18-09-2014	US D777221 S US D777222 S US D777223 S US D777224 S US D780236 S US 2014265807 A1	24-01-2017 24-01-2017 24-01-2017 24-01-2017 28-02-2017 18-09-2014
35	US 2014265808 A1	18-09-2014	US 2014265808 A1 US 2016231047 A1	18-09-2014 11-08-2016
40				
45				
50				
55	FORM P0459			

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