



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
20.12.2017 Bulletin 2017/51

(51) Int Cl.:
A47L 7/00 (2006.01) **A47L 9/06 (2006.01)**
A47L 9/04 (2006.01) **A47L 11/40 (2006.01)**

(43) Date of publication A2:
29.01.2014 Bulletin 2014/05

(21) Application number: **13176994.5**

(22) Date of filing: **18.07.2013**

(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

(72) Inventors:
• **Kim, Bo Sang**
Gwangju (KR)
• **Kim, Myeong Ho**
Gwangju (KR)
• **Jeon, Sang Cheon**
Gwangju (KR)

(30) Priority: **25.07.2012 KR 20120081487**
03.08.2012 KR 20120085321

(74) Representative: **Walaski, Jan Filip et al**
Venner Shipley LLP
200 Aldersgate
London EC1A 4HD (GB)

(71) Applicant: **Samsung Electronics Co., Ltd.**
Gyeonggi-do 443-742 (KR)

(54) **Autonomous cleaning device**

(57) An autonomous cleaning device (10) that may reduce noise caused by friction with a floor includes: a main body (11) having an opening; a brush unit 50) that is rotatably disposed in the opening of the main body (11); and a blade assembly (80) that guides introduction of dust swept up by the brush unit (50), the blade assembly (80) including: a blade (82) that guides dust toward an inner side of the main body (11); a support member (83) that is coupled to the blade (82) so as to support the blade (82) and that has one side in which a coupling groove (91b) is formed; and an insertion member (90) that is inserted into the coupling groove (91b) of the support member. The autonomous cleaning device (10) can prevent noise from occurring due to abnormal contact between the blade (82) and the floor while the autonomous cleaning device (10) travels.

FIG.2

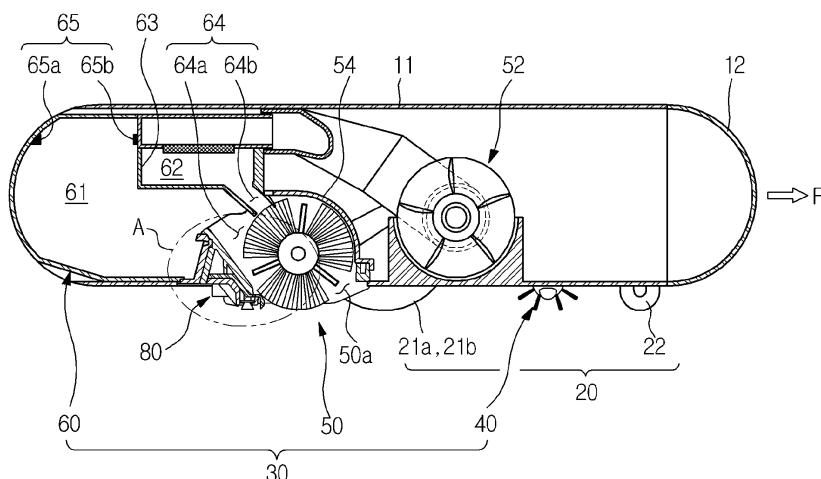
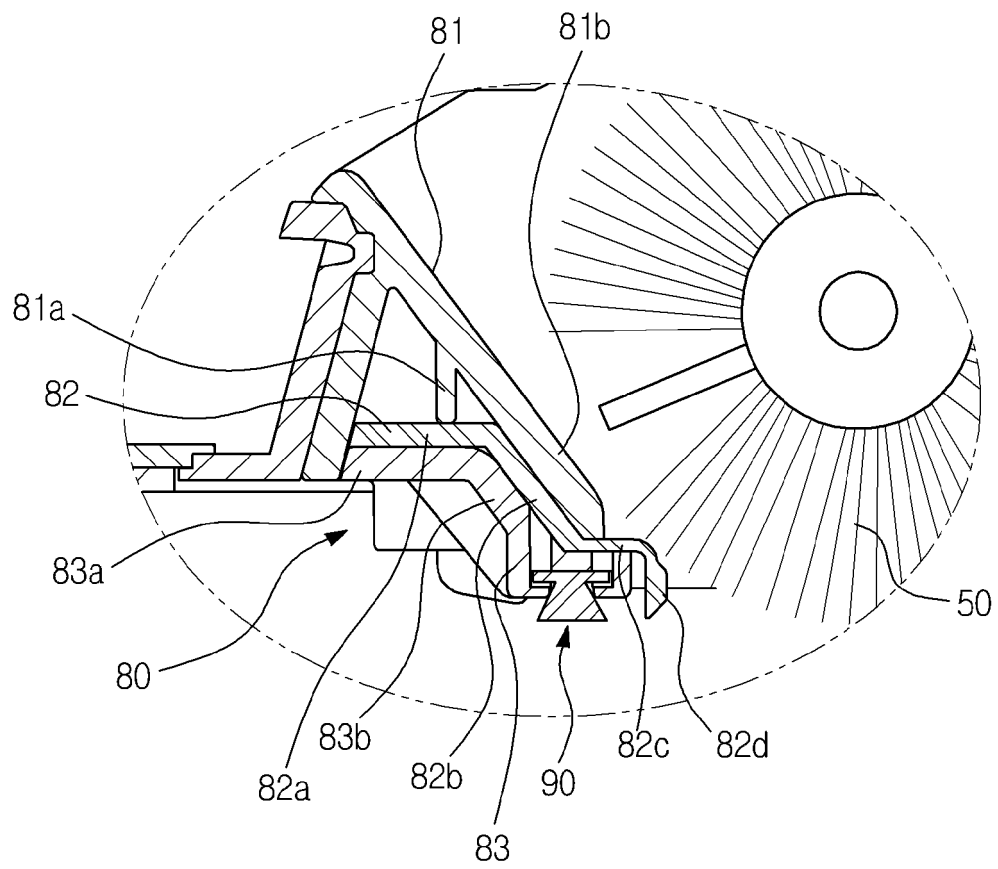


FIG.4





EUROPEAN SEARCH REPORT

 Application Number
 EP 13 17 6994

5

10

15

20

25

30

35

40

45

50

55

1

EPO FORM 1503 03.82 (P04C01)

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	EP 2 443 978 A2 (SAMSUNG ELECTRONICS CO LTD [KR]) 25 April 2012 (2012-04-25) * paragraph [0062] - paragraph [0121]; figures *	1-15	INV. A47L7/00 A47L9/06 A47L9/04 A47L11/40
A	WO 2006/068403 A1 (YUJIN ROBOTICS CO LTD [KR]; SHIN KYUNG CHUL [KR]; KIM SHIN [KR]; LEE N) 29 June 2006 (2006-06-29) * paragraph [0046]; figures 3,5 *	1-15	
A	WO 02/069775 A2 (KAERCHER GMBH & CO ALFRED [DE]; DIEHL RALPH [DE]; JANZEN JACOB [DE]; S) 12 September 2002 (2002-09-12) * page 11; figures 1,2 *	1	
A	US 2004/187249 A1 (JONES JOSEPH L [US] ET AL) 30 September 2004 (2004-09-30) * paragraph [0074] - paragraph [0078]; figures 3C,7A *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			A47L
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 7 November 2017	Examiner Masset, Markus
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 underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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

EP 13 17 6994

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.

07-11-2017

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 2443978	A2	25-04-2012	CN 102525351 A	04-07-2012
			CN 102908107 A	06-02-2013
			EP 2443978 A2	25-04-2012
			EP 2529654 A2	05-12-2012
			JP 2012090984 A	17-05-2012
			JP 2012228619 A	22-11-2012
			KR 20120042642 A	03-05-2012
			US 2012096656 A1	26-04-2012
			US 2012317745 A1	20-12-2012

WO 2006068403	A1	29-06-2006	NONE	

WO 02069775	A2	12-09-2002	AT 304312 T	15-09-2005
			AU 2002251034 A1	19-09-2002
			CN 1494393 A	05-05-2004
			DE 10110906 A1	19-09-2002
			DE 50204255 D1	20-10-2005
			EP 1367929 A2	10-12-2003
			WO 02069775 A2	12-09-2002

US 2004187249	A1	30-09-2004	US 2004187249 A1	30-09-2004
			US 2007266508 A1	22-11-2007
			US 2008000041 A1	03-01-2008
			US 2008000042 A1	03-01-2008
			US 2008307590 A1	18-12-2008
			US 2010257690 A1	14-10-2010
			US 2010257691 A1	14-10-2010
			US 2010263158 A1	21-10-2010
			US 2011131741 A1	09-06-2011
			US 2013174371 A1	11-07-2013
			US 2014250613 A1	11-09-2014
			US 2017188772 A1	06-07-2017
			US 2017215671 A1	03-08-2017
			US 2017215673 A1	03-08-2017
