



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
**04.11.2009 Bulletin 2009/45**

(51) Int Cl.:  
**A47L 5/32** (2006.01) **A47L 9/16** (2006.01)  
**A47L 9/00** (2006.01)

(43) Date of publication A2:  
**29.10.2008 Bulletin 2008/44**

(21) Application number: **07025015.4**

(22) Date of filing: **21.12.2007**

(84) Designated Contracting States:  
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR**  
Designated Extension States:  
**AL BA HR MK RS**

- **Oh, Jang-keun**  
**Seo-gu,**  
**Gwangju-city (KR)**
- **Lee, Jin-gon**  
**Gwangsan-gu,**  
**Gwangju-city (KR)**

(30) Priority: **27.04.2007 KR 20070041330**

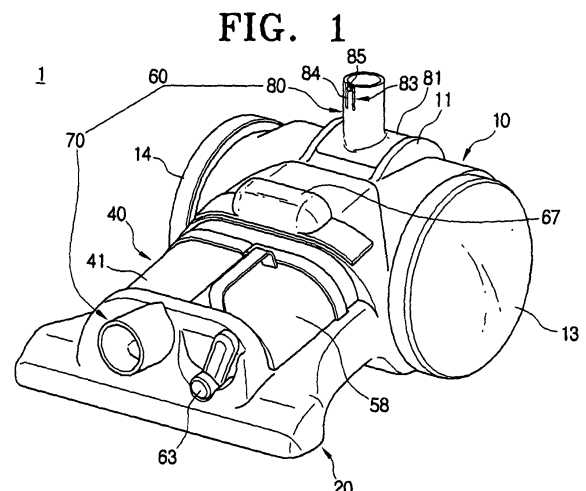
(74) Representative: **Käck, Jürgen**  
**Patentanwälte**  
**Kahler Käck Mollekopf**  
**Vorderer Anger 239**  
**86899 Landsberg (DE)**

(71) Applicant: **Samsung Gwangju Electronics Co., Ltd.**  
**Gwangju-city (KR)**

(72) Inventors:  
• **Han, Jung-gyun**  
**Gwangsan-gu,**  
**Gwangju-city (KR)**

(54) **Vacuum cleaner for using as both canister form and stick form**

(57) A vacuum cleaner for use in either a canister form or a stick form is disclosed. The vacuum cleaner includes a cleaner body (10), a suction unit (20) having an air suction opening formed in a bottom surface of the cleaner body (10) to drawn in air, a dust collecting unit (40) disposed in the cleaner body to separate dust or dirt from the air and to collect and store the dust or dirt therein, and a mode selecting unit (60) on the cleaner body (10) to select one of a first mode and a second mode. The first mode is a mode where a handle member for moving the cleaner body is connected to the cleaner body and the suction unit (20) and the dust collecting unit (40) are communicated with each other. The second mode is a mode where an external accessory is connected to the cleaner body (10) to communicate with the dust collecting unit (40).





## EUROPEAN SEARCH REPORT

Application Number  
EP 07 02 5015

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 4 660 246 A (DUNCAN JOHN L [US] ET AL) 28 April 1987 (1987-04-28)	1	INV. A47L5/32 A47L9/16 A47L9/00
Y	* column 1, lines 40-62 *	2-4	
	-----		
X	GB 2 344 746 A (NOTETRY LTD [GB]) 21 June 2000 (2000-06-21)	1-2	
Y	pages 12-13, bridging paragraph * page 4, line 6 - page 13, line 6 *	3-4	
	-----		
Y	US 6 332 239 B1 (DUBOS ROLAND [FR] ET AL) 25 December 2001 (2001-12-25)	2-4	TECHNICAL FIELDS SEARCHED (IPC)  A47L
	* column 3, line 20 - column 4, line 67 *		
	-----		
X	WO 2005/034706 A2 (T P A IMPEX S P A [IT]; AMORETTI LUIGI [IT]) 21 April 2005 (2005-04-21)	1-2	
	* page 8, line 3 - page 18, line 24 *		
	-----		
A	GB 2 394 650 A (BLACK & DECKER INC [US]) 5 May 2004 (2004-05-05)	1-5	
	* page 2, line 26 - page 3, line 16 *		
	-----		
A	EP 0 966 912 A1 (ELECTROLUX AB [SE]) 29 December 1999 (1999-12-29)	1-5	
	* paragraphs [0004] - [0006] *		
	-----		
A	WO 2005/096907 A1 (GREY TECHNOLOGY LTD [GB]; GREY NICHOLAS GERALD [GB]) 20 October 2005 (2005-10-20)	1-5	
	* page 48, line 1 - page 58, line 30; figures 20-22 *		
	-----		
A	GB 2 430 863 A (SHARP KK [JP]) 11 April 2007 (2007-04-11)	1-5	
	* page 2, paragraph 4 - page 7, paragraph 1 *		
	-----		
<del>The present search report has been drawn up for all claims</del>			
Place of search <b>Munich</b>		Date of completion of the search <b>6 July 2009</b>	Examiner <b>Martin Gonzalez, G</b>
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	

 2  
EPO FORM 1503 03-02 (P04C01)



Application Number

EP 07 02 5015

**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing claims for which payment was due.

☐ 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):

☐ 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.

**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:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ 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:

☒ 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:

see additional sheet(s)

☐ 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 07 02 5015

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: 1-5

Upright/canister convertible vacuum cleaner with improved  
cyclonic dust separator

---

2. claims: 1, 6-13

Upright/canister convertible vacuum cleaner with improved  
upright-canister conversion features

---

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

EP 07 02 5015

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.

06-07-2009

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4660246	A	28-04-1987	CA 1271903 A1	24-07-1990
GB 2344746	A	21-06-2000	US 6519804 B1	18-02-2003
US 6332239	B1	25-12-2001	AU 3935199 A	06-12-1999
			BR 9906376 A	11-07-2000
			CN 1272048 A	01-11-2000
			DE 69919106 D1	09-09-2004
			EP 0996355 A1	03-05-2000
			FR 2778546 A1	19-11-1999
			WO 9959458 A1	25-11-1999
			PL 337924 A1	11-09-2000
			RU 2198581 C2	20-02-2003
			TR 200000094 T1	21-09-2000
WO 2005034706	A2	21-04-2005	EP 1677658 A2	12-07-2006
GB 2394650	A	05-05-2004	NONE	
EP 0966912	A1	29-12-1999	US 6168641 B1	02-01-2001
WO 2005096907	A1	20-10-2005	AT 374562 T	15-10-2007
			CA 2562943 A1	20-10-2005
			DE 602005002740 T2	17-07-2008
			EP 1737326 A1	03-01-2007
			ES 2294700 T3	01-04-2008
			US 2008022485 A1	31-01-2008
GB 2430863	A	11-04-2007	JP 2007097810 A	19-04-2007
			US 2007186522 A1	16-08-2007