

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2017/006115

A. CLASSIFICATION OF SUBJECT MATTER

A47L 5/24(2006.01)i, A47L 9/28(2006.01)i, A47L 9/26(2006.01)i, A47L 9/32(2006.01)i

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)

A47L 5/24; A47L 9/00; H01M 2/10; A47L 9/28; A47L 9/26; A47L 9/32

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models: IPC as above

Japanese Utility models and applications for Utility models: IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS (KIPO internal) & Keywords: cleaner, battery housing, battery, frame, battery cell, battery holder, battery management unit, barrier

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2016-131777 A (MITSUBISHI ELECTRIC CORP. et al.) 25 July 2016 See paragraphs [0011], [0013], [0050]-[0055] and figures 1, 7, 15-17.	1,3-6
Y		2,7-13
A		14-15
Y	EP 2215947 A2 (MAKITA CORPORATION) 11 August 2010 See paragraphs [0052]-[0055] and figures 10-12.	2
Y	JP 2007-305408 A (HITACHI KOKI CO., LTD.) 22 November 2007 See paragraph [0034] and figure 6.	7-8
Y	JP 2010-123299 A (TOSHIBA CORP.) 03 June 2010 See paragraphs [0009]-[0011], [0015]-[0023], [0031] and figures 1-10.	9-13
Y	KR 10-1552437 B1 (LG ELECTRONICS INC.) 10 September 2015 See paragraphs [0082]-[0095] and figures 4-10.	13



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

30 AUGUST 2017 (30.08.2017)

Date of mailing of the international search report

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Name and mailing address of the ISA/KR

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/KR2017/006115

Patent document cited in search report	Publication date	Patent family member	Publication date
JP 2016-131777 A	25/07/2016	NONE	
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KR 10-1552437 B1	10/09/2015	AU 2015-202106 A1 AU 2015-202106 B2 CN 105078363 A EP 2945205 A2 EP 2945205 A3 US 2015-0320283 A1	26/11/2015 10/11/2016 25/11/2015 18/11/2015 24/02/2016 12/11/2015