



(11) **EP 3 456 234 A1**

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
20.03.2019 Bulletin 2019/12

(51) Int Cl.:
A47L 9/32 (2006.01) A47L 9/28 (2006.01)

(21) Application number: **17796304.8**

(86) International application number:
PCT/KR2017/004391

(22) Date of filing: **25.04.2017**

(87) International publication number:
WO 2017/196004 (16.11.2017 Gazette 2017/46)

(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:
MA MD

(30) Priority: **09.05.2016 KR 20160056462**
25.08.2016 KR 20160108643

(71) Applicant: **LG Electronics Inc.**
Seoul 07336 (KR)

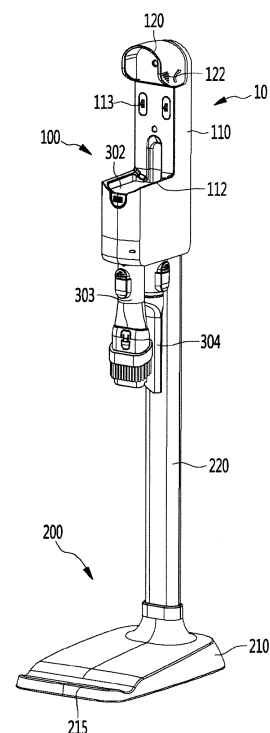
(72) Inventors:
• **KIM, Namhee**
Seoul 08592 (KR)
• **NAM, Bohyun**
Seoul 08592 (KR)
• **HWANG, Jungbae**
Seoul 08592 (KR)
• **KIM, Jinju**
Seoul 08592 (KR)
• **BAE, Sehwan**
Seoul 08592 (KR)

(74) Representative: **Vossius & Partner**
Patentanwälte Rechtsanwälte mbB
Siebertstrasse 3
81675 München (DE)

(54) **VACUUM STAND**

(57) A cleaner holder includes: a first body having a first charging port configured to charge a cleaner; a second body protruding from the first body to support the cleaner; and a battery accommodating space recessed in one surface of the second body and configured to accommodate a battery detachably mounted to the cleaner, wherein a second charging port configured to charge the battery is provided in the second body.

Fig.1



EP 3 456 234 A1

Description

TECHNICAL FIELD

[0001] The present invention relates to a cleaner holder.

BACKGROUND ART

[0002] A cleaner is a device that performs cleaning by sucking and wiping dust or foreign substances on a surface to be cleaned.

[0003] Such a cleaner may be classified into a manual cleaner that performs cleaning while a user directly moves the cleaner and an automatic cleaner that performs cleaning while the cleaner is driven by itself. The manual cleaner may be classified into a canister cleaner, an upright cleaner, a handheld cleaner, a stick cleaner and the like depending on types of the cleaner.

[0004] The above-described cleaner may have a rechargeable battery embedded therein, and the rechargeable battery may supply electric power for operating the cleaner only when being frequently charged. Thus, the cleaner requires a holder that may simultaneously charge the rechargeable battery and hold the cleaner.

[0005] Contents of a vacuum cleaner holder are disclosed in Korean Patent Application Publication No. 10-2012-0103956 as the prior art.

[0006] The vacuum cleaner holder according to the prior art includes a pedestal for holding a head of a vacuum cleaner to simultaneously charge and hold the vacuum cleaner and a support having charging pins for charging the vacuum cleaner.

[0007] Meanwhile, the vacuum cleaner holder according to the prior art, which holds a vacuum cleaner having a center on a lower side thereof, is inserted into support pieces on a lower side of the vacuum cleaner to support the vacuum cleaner. However, in case of a cleaner having a center on an upper side thereof, because a charging terminal should be provided on an upper side, the cleaner holder according to the prior art may not hold the cleaner.

DISCLOSURE OF THE INVENTION

TECHNICAL PROBLEM

[0008] The present disclosure provides a cleaner holder which may simultaneously charge a cleaner and a battery, and which be used in a stand type or a wall-mounted type, as needed.

[0009] The present disclosure provides a cleaner holder which may be used while being supported by a floor.

TECHNICAL SOLUTION

[0010] A cleaner holder includes: a first body having a first charging port configured to charge a cleaner; a second body protruding from the first body to support the

cleaner; and a battery accommodating space recessed in one surface of the second body and configured to accommodate a battery detachably mounted to the cleaner, wherein a second charging port configured to charge the battery is provided in the second body.

[0011] A cleaner holder which is fixed to a wall surface includes: a first body which is fixed to the wall surface on a rear surface of the first body and has a first charging port formed on a front surface of the first body to charge a cleaner, and of which the front surface is in contact with a first surface of the cleaner; a second body which protrudes from the first body and of which an upper surface supports a second surface of the cleaner; and a locking part provided on the first body and coupled to the cleaner.

[0012] A cleaner holder which is placed and used on a floor includes: a first body which is seated on the floor on a bottom surface of the first body and has a first charging port formed on an upper surface of the first body to charge a cleaner and of which the upper surface is in contact with a first surface of the cleaner; a second body which protrudes upward from the first body, a second surface of the cleaner being supported by a side surface of the second body; and a locking part provided in the second body and coupled to the cleaner body.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013]

FIG. 1 is a perspective view illustrating a cleaner holder according to an embodiment of the present disclosure;

FIG. 2 is a front view of the cleaner holder of FIG. 1;

FIG. 3 is a rear view of the cleaner holder of FIG. 1;

FIG. 4 is a view illustrating a state in which a cleaner is held on the cleaner holder;

FIG. 5A is a view illustrating a state in which the cleaner is coupled to a support part;

FIG. 5B is a view illustrating a state in which a locking part is coupled to the cleaner;

FIG. 6 is a view illustrating a state in which an extra battery is separated from the cleaner holder;

FIG. 7 is a view illustrating a state in which a nozzle is separated from a charging stand;

FIG. 8 is a view illustrating a state in which the charging stand is separated from the support;

FIG. 9 is a view illustrating a state in which the charging stand on which the cleaner is held is mounted on a wall surface;

FIG. 10 is a view illustrating a state in which a charging stand is supported by a floor.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0014] Hereinafter, some embodiments of the present disclosure will be described in detail with reference to the accompanying drawings. It should be noted that when components in the drawings are designated by reference

numerals, the same components have the same reference numerals as far as possible even though the components are illustrated in different drawings. Further, in description of embodiments of the present disclosure, when it is determined that detailed descriptions of well-known configurations or functions disturb understanding of the embodiments of the present disclosure, the detailed descriptions will be omitted.

[0015] Also, in the description of the embodiments of the present disclosure, the terms such as first, second, A, B, (a) and (b) may be used. Each of the terms is merely used to distinguish the corresponding component from other components, and does not delimit an essence, an order or a sequence of the corresponding component. It should be understood that when one component is "connected", "coupled" or "joined" to another component, the former may be directly connected or joined to the latter or may be "connected", coupled" or "joined" to the latter with a third component interposed therebetween.

[0016] FIG. 1 is a perspective view illustrating a cleaner holder according to an embodiment of the present disclosure, FIG. 2 is a front view of the cleaner holder of FIG. 1, FIG. 3 is a rear view of the cleaner holder of FIG. 1, and FIG. 4 is a view illustrating a state in which a cleaner is held on the cleaner holder.

[0017] Referring to FIGS. 1 and 4, a cleaner holder 10 according to the embodiment of the present disclosure includes a charging stand 100 for charging a battery of the cleaner 300. The charging stand 100 may simultaneously support the cleaner 300 and charge the battery provided in the cleaner 300.

[0018] The cleaner 300 may include a cleaner body 310 having a suction motor, a battery housing 320 in which the battery is accommodated, an extension tube 330 and a suction nozzle 340. The cleaner body 310 may include a dust separator 312 for separating dust and a dust container 314 in which the dust separated by the dust separator 312 are stored. External air may be introduced by suction force generated in the cleaner body 310 through the suction nozzle 340 and the extension tube 330 and may be moved to the dust container 314 provided in the cleaner body 310. Hereinafter, detailed descriptions of the cleaner 300 will be omitted.

[0019] The charging stand 100 includes a first body 110 and a second body 110a.

[0020] The first body 110 includes a charging port 113 (or a first charging port). The charging port 113 may be in contact with terminals of the cleaner 300 to charge the battery provided in the cleaner 300.

[0021] An extra battery 302 may be accommodated in the second body 110a. The second body 110a may additionally include a charging port (117d) (see Fig. 6) (or a second charging port) for charging the extra battery 302.

[0022] Extra nozzles 303 and 304 may be coupled to the charging stand 100. The nozzles 303 and 304 may be attached/detached to/from the cleaner 300 or the like. In general, a cleaner may include a plurality of replace-

able suction nozzles according to usage. Thus, it is inconvenient to store the suction nozzle that is not used. However, in this way, when the suction nozzles 303 and 304 are stored while being coupled to the charging stand 100, the risk of loss is reduced, and a user may easily use the same. The extra nozzles 303 and 304 may be named accessories.

[0023] Fixing parts 115a and 115b for fixing the charging stand 100 to a wall surface may be provided on a rear surface 111 of the first body 110. Accordingly, the charging stand 100 may be fixed to the wall surface. For example, the fixing parts 115a and 115b may have a hole or groove shape. Accordingly, nails or the like, which are installed on the wall surface, are inserted into the fixing parts 115a and 115b, so that the first body 110 may be fixed to the wall surface.

[0024] A support part 112 for supporting the cleaner body 310 may be provided in the second body 110a. The support part 112 may support the cleaner body 310 from below.

[0025] The charging stand 100 may further include a locking part 120 provided in the first body 110. The locking part 120 may be coupled to the cleaner 300 to stably fix the cleaner 300.

[0026] In detail, the locking part 120 may be coupled to the battery housing 320 to support the cleaner 300. An inner peripheral surface of the locking part 120 may have a shape corresponding to an outer peripheral surface of the battery housing 320 to surround the outer peripheral surface of the battery housing 320.

[0027] The user may selectively rotate the locking part 120 forward/rearward such that the locking part 120 may be coupled to the battery housing 320. The locking part 120 may include an anti-slide part 122 for providing friction force such that the user may easily grip the locking part 120. The anti-slide part 122 may include a plurality of bosses on an outer peripheral surface of the locking part 120.

[0028] The cleaner holder 10 may further include a stand 200 for supporting the charging stand 100.

[0029] The stand 200 may include a base 210 supported on a floor and a support 220 provided in the base 210. The support 220 may be detachably coupled to the charging stand 100.

[0030] The support 220 may extend from the base 210 in a vertical direction. The support 220 may be coupled to an electric wire 114 provided in the charging stand 100. The electric wire 114 may extend from the rear surface 111 of the first body 110 to be connected to an external power source.

[0031] The base 210 may include an inclined surface 213 on which the suction nozzle 340 of the cleaner 300 is held and a stopper 215 for preventing the suction nozzle 340 of the cleaner 300 from being separated therefrom.

[0032] The stopper 215 may protrude from an end of the inclined surface 213. The stopper 215 serves to support the suction nozzle 340 such that a state in which the

suction nozzle 340 is stably seated on the base 210 may be maintained.

[0033] Hereinafter, a method for coupling the cleaner 300 to the holder 10 will be described.

[0034] FIG. 5 is a view illustrating a state in which a cleaner is held on the cleaner holder. In detail, FIG. 5A illustrates a state in which the cleaner is coupled to a support part, and FIG. 5B illustrates a state in which the locking part is coupled to the cleaner.

[0035] Referring to FIG. 5, a cleaner guide 116 for guiding movement of the cleaner body 310 may be provided in the second body 110a.

[0036] The cleaner guide 116 may be provided inside the support part 112. Accordingly, the cleaner body 310 may be moved forward/rearward along the cleaner guide 116 while being supported by the support part 112. As illustrated, the cleaner body 310 is moved along the cleaner guide 116 to come into contact with the charging port 113.

[0037] The locking part 120 may be rotatably connected to the first body 110 within a predetermined angle. FIG. 5A illustrates a state in which the locking part 120 is maximally rotated rearward (in a clockwise direction in FIG. 5A).

[0038] The first body 110 may include an elastic member (not illustrated) for applying elastic force to the locking part 120. In a state in which the locking part 120 is rotated rearward, the elastic member (not illustrated) may apply elastic force to a rear side thereof such that a state in which the locking part 120 is rotated rearward is maintained.

[0039] The locking part 120 may include a push part 123. The push part 123 may be provided inside the locking part 120. The push part 123 may be pressed by the battery housing 320 while the cleaner body 310 is moved along the cleaner guide 116.

[0040] When the push part 123 is pressed by the battery housing 320, the locking part 120 may be operated.

[0041] In detail, when the locking part 120 is operated, the locking part 120 may be rotated forward (in a counterclockwise direction in FIG. 5B) to be coupled to the outer peripheral surface of the battery housing 320. Accordingly, the locking part 120 may cover at least a portion of the battery housing 320.

[0042] When the locking part 120 is rotated forward, the elastic member (not illustrated) may apply elastic force such that a state in which the locking part 120 is rotated forward is maintained. Accordingly, the locking part 120 may serve to fix the battery housing 320 to the first body 110.

[0043] FIG. 6 is a view illustrating a state in which an extra battery is separated from the cleaner holder.

[0044] Referring to FIG. 6, the charging stand 100 includes the second body for accommodating the extra battery 302.

[0045] The second body 110a may protrude from the first body 110. A battery accommodating space 117a in which an extra battery 302 is to be accommodated may

be formed in the second body 110a. The battery accommodating space 117a may be recessed rearward from one surface of the second body 110a. Further, the battery accommodating space 117a may be provided inside the support part 112 and the cleaner guide 116.

[0046] A charging port 117d for charging the extra battery 302 is provided inside the battery accommodating space 117a.

[0047] The first and second bodies 110 and 110a may include grooves 117b and 117c for allowing the extra battery 302 accommodated in the battery accommodating space 117a to be easily gripped.

[0048] The grooves 117b and 117c may include a first groove 117b provided in front of the battery accommodating space 117a and a second groove 117c provided on a rear side of the battery accommodating space 117a.

[0049] FIG. 7 is a view illustrating a state in which a nozzle is separated from a charging stand.

[0050] Referring to FIG. 7, the charging stand 100 may include connectors 118a and 118b to which the extra nozzles 303 and 304 are selectively coupled. The connectors 118a and 118b may extend from one side of the charging stand 100. The connectors 118a and 118b may be provided in, for example, the first body 110 or the second body 110a.

[0051] The user may attach/detach the nozzles 303 and 304 to the connectors 118a and 118b as needed. Accordingly, because the extra nozzles 303 and 304 are easily stored and used, user convenience may be improved.

[0052] Here, in a state in which the stand 200 is coupled to a stand coupling part 119 of the charging stand 100, the connectors 118a and 118b may be located in front of the stand 200.

[0053] FIG. 8 is a view illustrating a state in which the charging stand is separated from the support, and FIG. 9 is a view illustrating a state in which the charging stand on which the cleaner is held is mounted on a wall surface.

[0054] Referring to FIGS. 8 and 9, the first body 110 may include a coupling part 119 to which the support 220 is coupled. The support 220 may be detachably coupled to the coupling part 119. Accordingly, the user may easily separate the charging stand 100 and the support 220 from each other.

[0055] As needed, the user may fix the charging stand 100 from which the support 220 is separated to a wall surface 2 using the fixing parts 115a and 115b.

[0056] When the cleaner holder according to the present disclosure is a wall-mounted type, the charging stand may be fixed to a wall surface in close contact with the wall surface in a state in which the stand is separated from the charging stand, so that space utilization is excellent.

[0057] FIG. 10 is a view illustrating a state in which the charging stand is supported by the floor.

[0058] Referring to FIG. 10, the rear surface 111 of the first body 110 may be supported by the floor. To achieve this, the rear surface 111 of the first body 110 may have

a planar shape. In this way, because the charging stand 100 may be held in various schemes according to a usage situation, user convenience may be improved.

[0059] When the cleaner holder according to the present disclosure is a floor-mounted type, unlike a stand type or a wall-mounted type, a separate member for installation of the charging stand is not required, so that a danger of overturning is minimized as the center of gravity is located on a lower side.

Claims

1. A cleaner holder comprising:

a first body having a first charging port configured to charge a cleaner;
a second body protruding from the first body to support the cleaner; and
a battery accommodating space recessed in one surface of the second body and configured to accommodate a battery detachably mounted to the cleaner,
wherein a second charging port configured to charge the battery is provided in the second body.

2. The cleaner holder of claim 1, wherein a fixing part used to fix the first body to a wall surface and a stand coupling part to be coupled to a stand are provided in the first body.

3. The cleaner holder of claim 1, further comprising a locking part rotatably provided in the first body and coupled to the cleaner to fix the cleaner.

4. The cleaner holder of claim 1, wherein a cleaner guide configured to perform guiding such that the cleaner comes into contact with the first charging port is provided in the second body.

5. The cleaner holder of claim 1, further comprising a stand coupled to a stand coupling part of the first body.

6. The cleaner holder of claim 5, wherein the stand comprises a support coupled to the first body, and a base coupled to a lower end of the support and supported by a floor.

7. The cleaner holder of claim 6, wherein an electric wire configured to supply electric power to the first charging port and the second charging port is connected to a rear surface of the first body, and wherein the electric wire extends to the base along a rear surface of the support.

8. The cleaner holder of claim 6, wherein an inclined

surface forward and downward inclined is provided in the base such that a suction nozzle of the cleaner is held on the inclined surface.

9. The cleaner holder of claim 6, wherein a stopper protruding upward is formed in front of the base to prevent separation of the suction nozzle.

10. The cleaner holder of claim 2, wherein a connector configured to fix an accessory is provided in the first body or the second body.

11. The cleaner holder of claim 10, wherein in a state in which the stand is coupled to the stand coupling part, the stand is located on a rear side of the connector.

12. The cleaner holder of claim 2, wherein the fixing part has a hole or groove shape.

13. The cleaner holder of claim 2, wherein the fixing part and a terminal connected to an electric wire configured to supply electric power are provided on a rear surface of the first body.

14. A cleaner holder which is fixed to a wall surface, the cleaner holder comprising:

a first body fixed to the wall surface on a rear surface of the first body and has a first charging port formed on a front surface of the first body to charge a cleaner, and of which the front surface is in contact with a first surface of the cleaner;

a second body which protrudes from the first body and of which an upper surface supports a second surface of the cleaner; and
a locking part provided on the first body and coupled to the cleaner.

15. The cleaner holder of claim 14, wherein at least a portion of a bottom surface of the first body has a flat shape such that the bottom surface is supported by a floor.

16. The cleaner holder of claim 14, further comprising a battery accommodating space recessed in one surface of the second body to accommodate a battery.

17. The cleaner holder of claim 16, wherein a second charging port configured to charge the battery is provided in the battery accommodating space

18. The cleaner holder of claim 16, wherein when a terminal of the cleaner comes into contact with the first charging port, at least a portion of the battery accommodating space is covered by the cleaner.

19. A cleaner holder which is placed and used on a floor,

the cleaner holding comprising:

a first body seated on the floor on a bottom surface of the first body and has a first charging port formed on an upper surface of the first body to charge a cleaner and of which the upper surface is in contact with a first surface of the cleaner;
a second body which protrudes upward from the first body, a second surface of the cleaner being supported by a side surface of the second body;
and
a locking part provided on the first and coupled to the cleaner.

5

10

15

- 20.** The cleaner holder of claim 19, wherein a battery accommodating space in which a battery is to be accommodated is formed on the side surface of the second body.

20

25

30

35

40

45

50

55

Fig.1

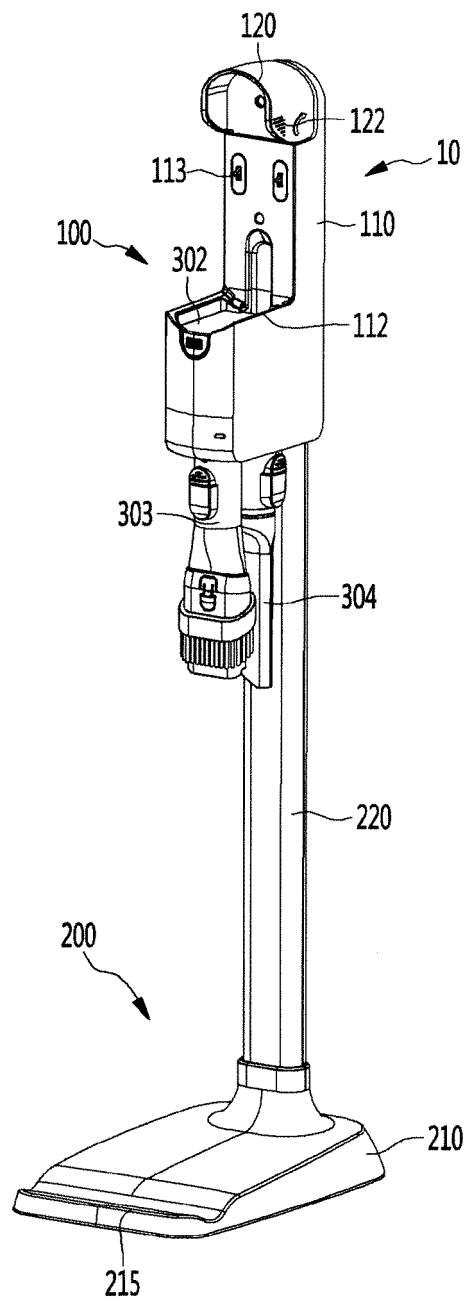


Fig.2

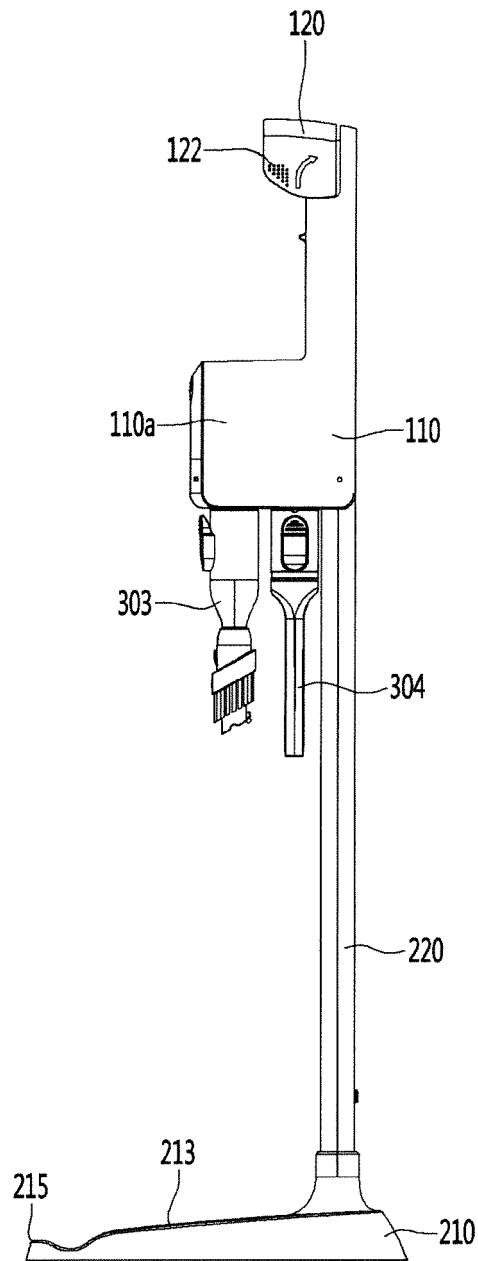


Fig.3

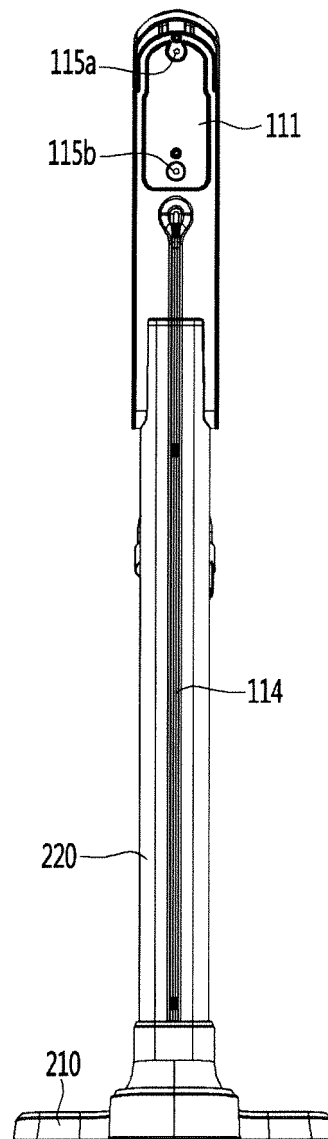


Fig.4

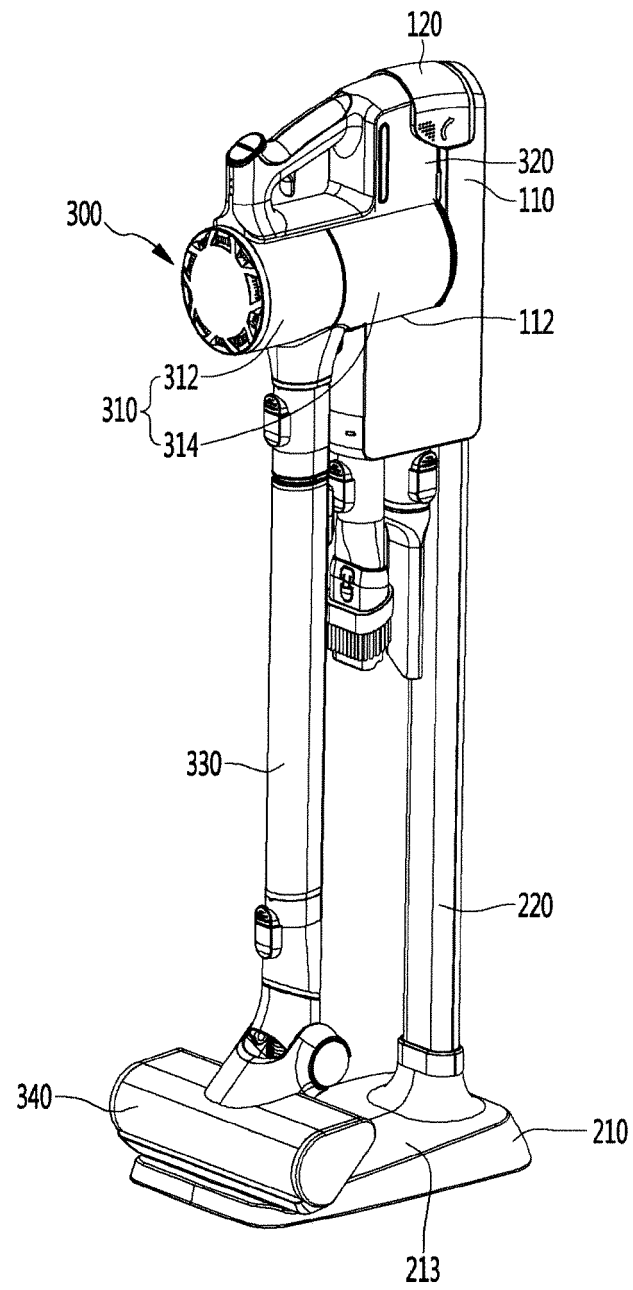


Fig.5

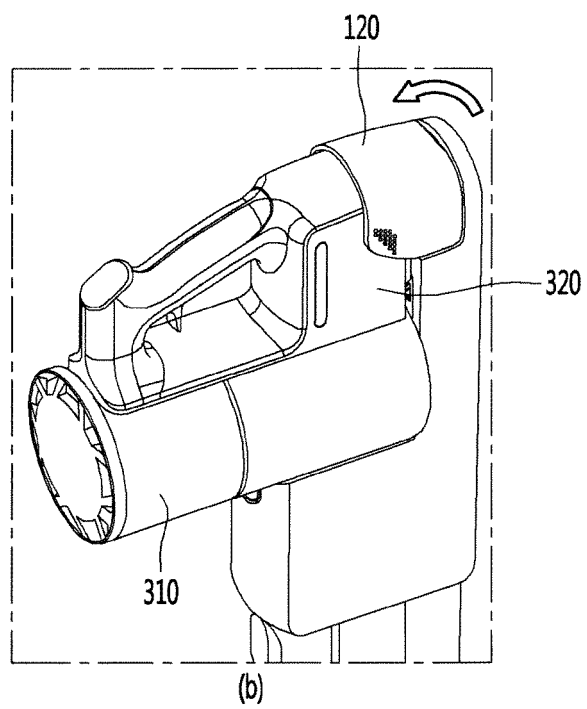
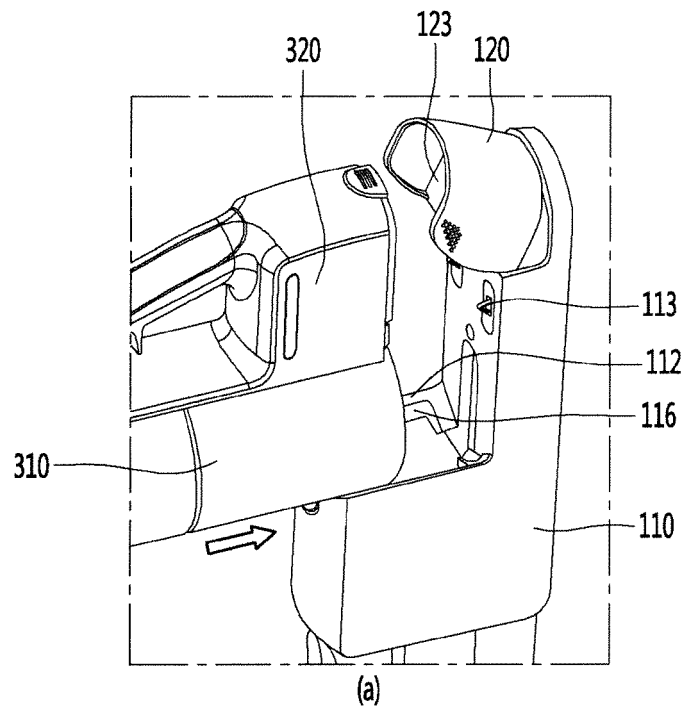


Fig.6

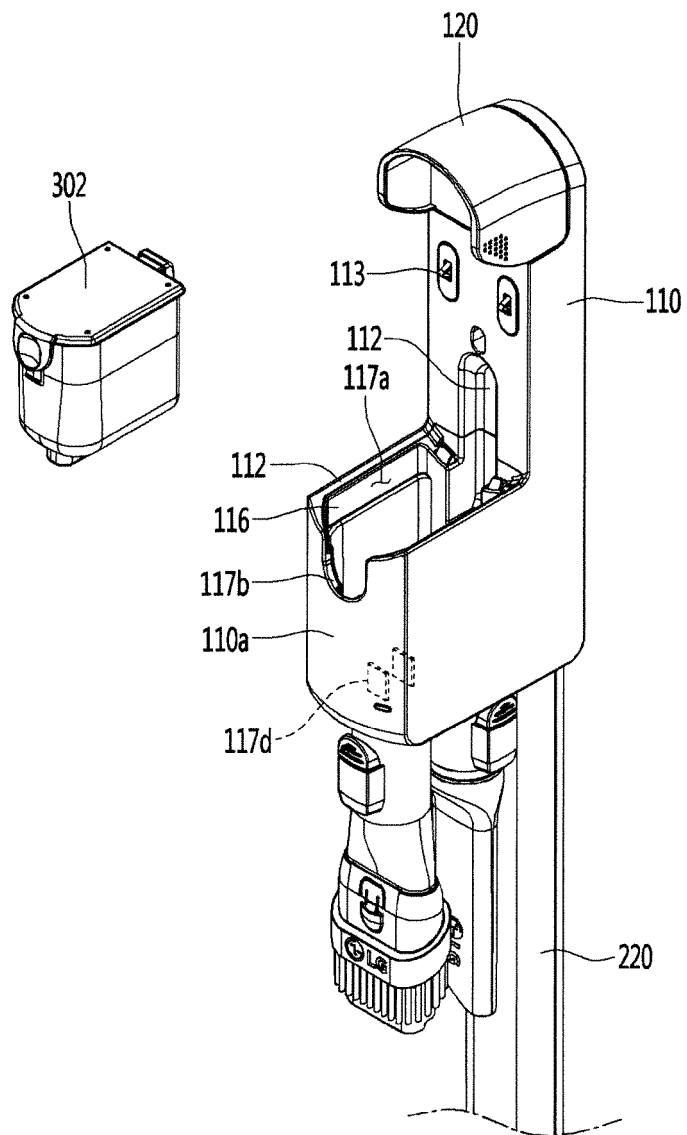


Fig.7

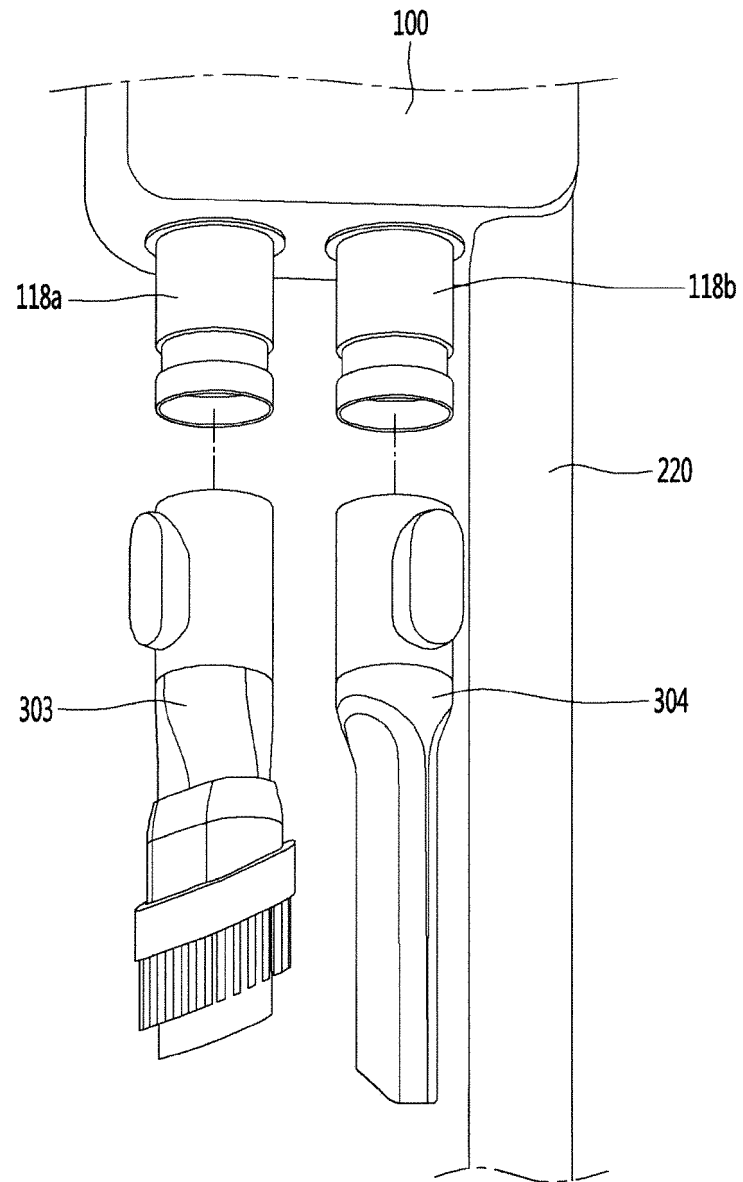


Fig.8

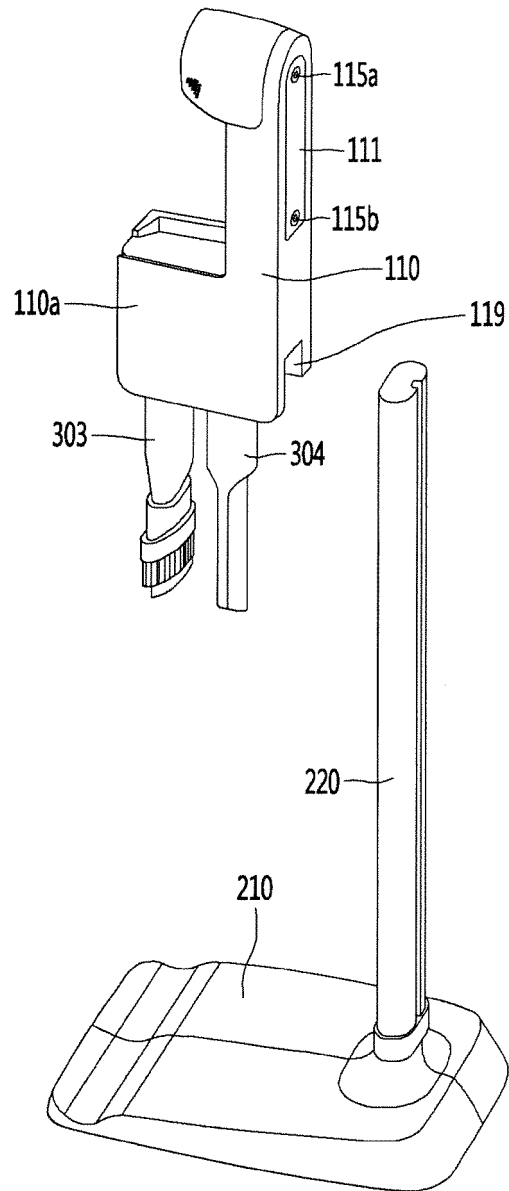


Fig.9

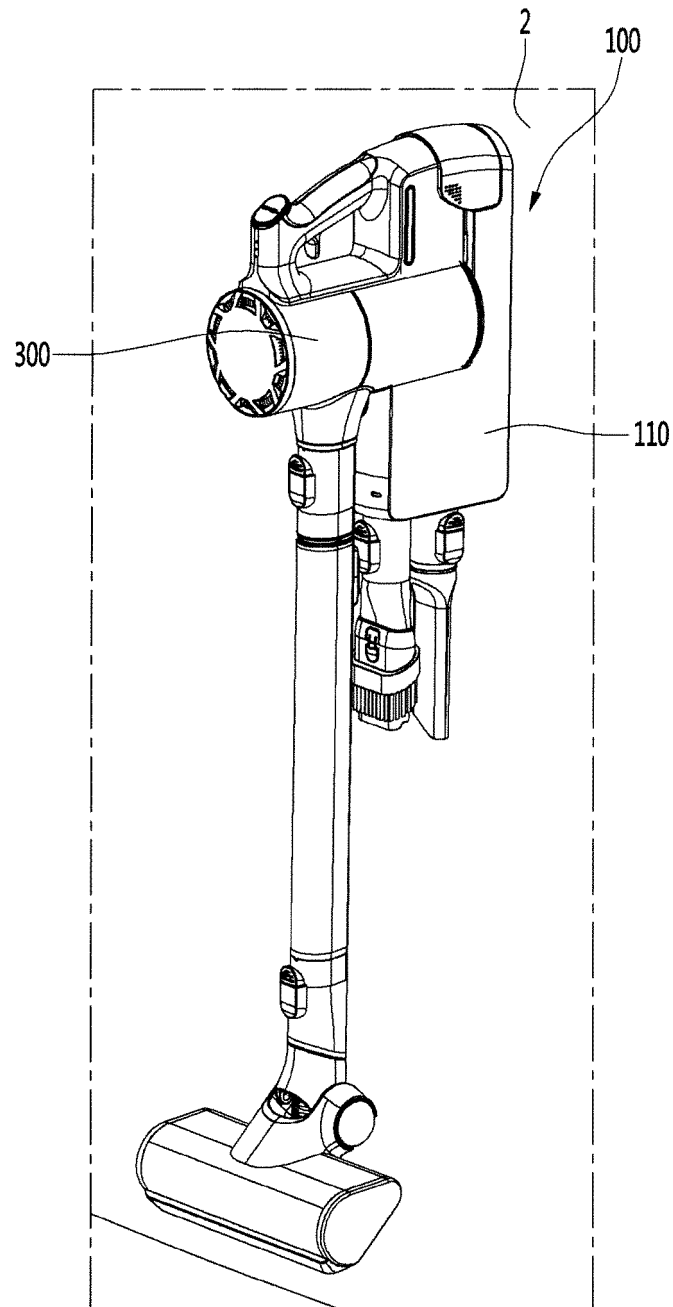
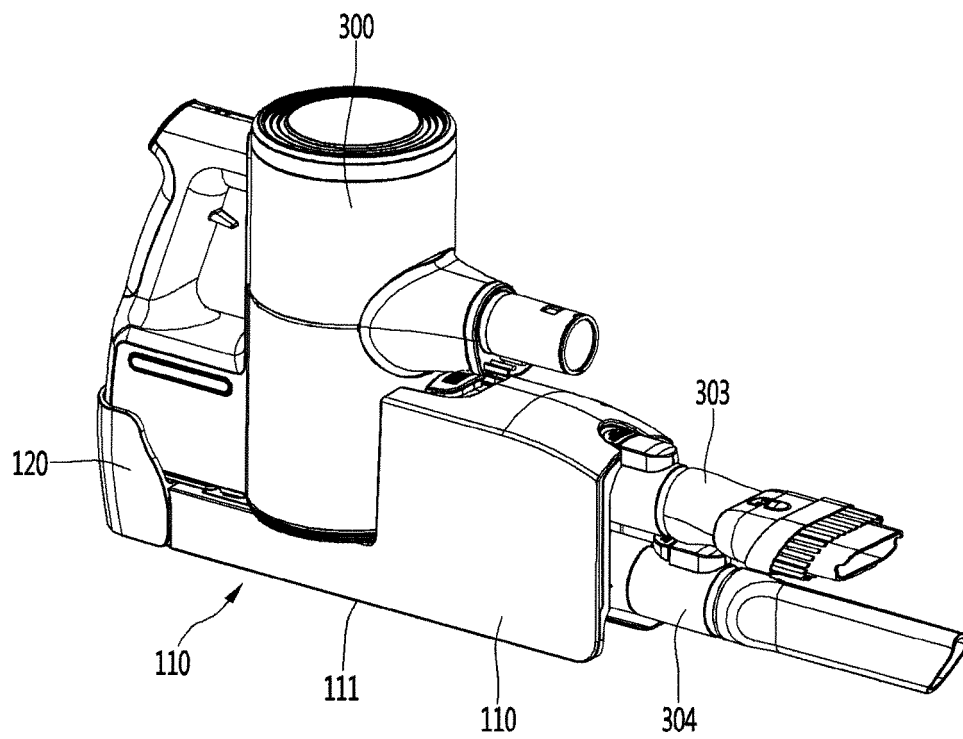


Fig.10



INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2017/004391

A. CLASSIFICATION OF SUBJECT MATTER

A47L 9/32(2006.01)i, A47L 9/28(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 9/32; A47L 5/36; A47L 9/00; A47L 5/24; A47L 5/28; H02J 7/02; A47L 9/28

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, holder, first main body, second main body, receiving space, battery, charging terminal, locking unit

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2011-0219566 A1 (DYSON et al.) 15 September 2011 See paragraphs [0067]-[0071] and figures 2, 4-9.	14-15,19
A		1-13,16-18,20
Y	JP 2014-200379 A (IRIS OHYAMA INC.) 27 October 2014 See paragraphs [0021]-[0025] and figures 1-2.	14-15,19
A	JP 2004-121469 A (MATSUSHITA ELECTRIC IND. CO., LTD.) 22 April 2004 See abstract, claim 1 and figure 1.	1-20
A	JP 2001-149289 A (MATSUSHITA ELECTRIC IND. CO., LTD.) 05 June 2001 See abstract, claim 1 and figure 1.	1-20
A	KR 10-2016-0023134 A (LG ELECTRONICS INC.) 03 March 2016 See paragraphs [0076]-[0082] and figures 4-7.	1-20

☐ 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

28 JULY 2017 (28.07.2017)

Date of mailing of the international search report

28 JULY 2017 (28.07.2017)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejeon, 189 Seonsa-ro, Daejeon 302-701,
Republic of Korea

Facsimile No. +82-42-481-8578

Authorized officer

Telephone No.

EP 3 456 234 A1

INTERNATIONAL SEARCH REPORT Information on patent family members

International application No.

PCT/KR2017/004391

Patent document cited in search report	Publication date	Patent family member	Publication date
US 2011-0219566 A1	15/09/2011	AU 2011-225870 A1 CN 102188188 A CN 102188189 B EP 2544575 A1 EP 2544575 B1 ES 2602838 T3 GB 2478599 A GB 2478599 B GB 2478614 A GB 2478614 B JP 2011-189132 A JP 2011-189133 A JP 5222375 B2 US 2011-0219571 A1 US 9155431 B2 WO 2011-110826 A1 WO 2011-110827 A1	01/11/2012 21/09/2011 29/06/2016 16/01/2013 17/08/2016 22/02/2017 14/09/2011 16/07/2014 14/09/2011 29/02/2012 29/09/2011 29/09/2011 26/06/2013 15/09/2011 13/10/2015 15/09/2011 15/09/2011
JP 2014-200379 A	27/10/2014	JP 5710676 B2	30/04/2015
JP 2004-121469 A	22/04/2004	NONE	
JP 2001-149289 A	05/06/2001	NONE	
KR 10-2016-0023134 A	03/03/2016	AU 2015-207916 A1 AU 2015-207916 B2 DE 202015103964 U1 US 2016-0051109 A1	10/03/2016 21/07/2016 14/10/2015 25/02/2016

Form PCT/ISA/210 (patent family annex) (January 2015)

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- KR 1020120103956 [0005]