(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 875 769 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
03.01.2018 Bulletin 2018/01

(51) Int Cl.:
A47L 13/58 *(2006.01)*

(21) Application number: **14194374.6**

(22) Date of filing: **21.11.2014**

(54) **Mop-washing bucket equipped with an extensible post and mop**

Moppwascheimer mit einem verlängerbaren Stiel und Mopp

Godet de lavage équipé d'un montant extensible et d'une serpillière

(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

(30) Priority: **21.11.2013 CN 201320738397 U**
21.11.2013 CN 201320738593 U
27.08.2014 CN 201420484780 U

(43) Date of publication of application:
27.05.2015 Bulletin 2015/22

(73) Proprietor: **Jiaxing Jackson Travel Products Co., Ltd.**
Xiuzhou Indstrial Park
Jiaxing
Zhejiang 314023 (CN)

(72) Inventor: **Zhu, Xuelin**
Zhejiang 314023 (CN)

(74) Representative: **Joanny, Damien Henri Xavier et al**
Cabinet Beau de Loménie
158, rue de l'Université
75340 Paris Cedex 07 (FR)

(56) References cited:
CN-U- 203 138 413
US-A- 5 361 448
US-A1- 2011 067 259

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 2 875 769 B1

Printed by Jouve, 75001 PARIS (FR)

Description

BACKGROUND OF INVENTION

1. FIELD OF INVENTION

[0001] The present invention relates to a washing apparatus and, more particularly, to a mop-washing bucket equipped with an extensible post.

2. RELATED PRIOR ART

[0002] A conventional mop-washing bucket includes a washing unit and a spin-drying unit arranged side by side. This mop-washing bucket is however bulky such as disclosed in Chinese Design CN201330360846.2. The problem of bulkiness has been solved by an elevation-type washing and spin-drying bucket apparatus that includes a bucket and a cage such as disclosed in Chinese Utility Model CN201320013544.2. The cage is coaxially connected to a stand or extensible post that is movable up and down on an internal side of the bucket. Thus, a mop head is located higher than the lever of water contained in the bucket and ready to be spin-dried when the cage is lifted with the stand or elevating axle. The mop head is located lower than the level of water contained in the bucket and ready to be washed when the cage is lowered with the stand or elevating axle. The mop head cannot however be fully extended to completely wash away mud and/or sand from the mop head because of the cage. Moreover, the cage is connected to the stand or extensible post via a bearing that cannot be sealed. The mud and/or sand enter, rust and wear away the bearing, thus jeopardizing the life of the elevation-type washing and spin-drying bucket apparatus.

[0003] Document US 5 361 448 is also known and describes a dewatering device of another kind.

[0004] The present invention is therefore intended to obviate or at least alleviate the problems encountered in prior art.

SUMMARY OF INVENTION

[0005] It is the primary objective of the present invention to provide a mop-cleaning apparatus to solve the problem of inadequate washing of a mop related to the use of a cage and the problem of wearing away a bearing used in such a cage.

[0006] To achieve the foregoing objective, the mop-cleaning apparatus includes the features of appended claim 1 and notably an extensible post connected to an internal side of a lower portion of a bucket. The extensible post includes a stationary element, a movable element movably connected to the stationary element, at least one track arranged between the stationary element and the movable element, at least one boss movably inserted in the track, and an axle connected to an upper end of the movable element. The track includes a lower longitudinal groove and an upper longitudinal groove in communication with the lower longitudinal grove. The axle includes an upper end for connection to a mop.

[0007] In another aspect, the movable element includes a bore made in the upper end thereof, a lower bushing inserted in the bore, and an upper bushing inserted in the bore. The axle is inserted in the upper and lower bushings.

[0008] In another aspect, the stationary element is a tubular element, the track is made in an internal side of the stationary element, the boss is formed on an external side of a lower portion of the movable element, and the movable element is inserted in the stationary element.

[0009] In another aspect, the movable element is a tubular element, the track is located on an external side of the stationary element, the boss is located on an internal side of a lower portion of the movable element, and the stationary element is inserted in the movable element.

[0010] In another aspect, the movable element is a tubular element, the track is located on an internal side of the movable element, the boss is located on an external side of an upper portion of the stationary element, and the stationary element is inserted in the movable element.

[0011] In another aspect, the track further includes an annular groove for connecting the lower longitudinal groove to the upper longitudinal groove, and each of the lower and upper longitudinal grooves includes a slope formed at an upper end.

[0012] In another aspect, the track further includes an upward groove, a downward groove, a first turning groove and a second turning groove. The upward groove includes a lower end connected to an upper end of the lower longitudinal groove, the downward groove includes a lower end connected to the upper end of the lower longitudinal groove, the first turning groove includes an end connected to an upper end of the upward groove and another end connected to an upper end of the upper longitudinal groove, and the second turning groove includes an end connected to an upper end of the downward groove and another end connected to the upper end of the upper longitudinal groove.

[0013] In another aspect, the track further includes an upward groove, a downward groove, a first turning groove and a second turning groove. The downward groove includes an upper end connected to a lower end of the upper longitudinal groove, the upward groove includes an upper end connected to the lower end of the upper longitudinal groove, the first turning groove includes an end connected to a lower end of the upward groove and another end connected to a lower end of the lower longitudinal groove, and
the second turning groove includes an end connected to a lower end of the downward groove and another end connected to the lower end of the upper longitudinal groove.

[0014] In another aspect, the track further includes a port connected to the upper end of the downward groove.

[0015] In another aspect, the track includes several lower longitudinal grooves and an identical number of upper longitudinal grooves, there are several bosses, and the number of the lower longitudinal grooves is a multiple of the number of the bosses.

[0016] In another aspect, the mop includes a mop head made with a cavity and claws for connection to the axle.

[0017] The mop-cleaning apparatus of the present invention exhibits several advantages. Firstly, it allows the mop to be in full contact with and effectively washed by water because it does not include any cage. Secondly, it protects the axle and the bushings from mud and/or sand that would otherwise rust and wear away the axle and the bushings because the gap between the axle and the upper or lower bushing is sealed.

[0018] Other objectives, advantages and features of the present invention will be apparent from the following description referring to the attached drawings.

BRIEF DESCRIPTION OF DRAWINGS

[0019] The present invention will be described via detailed illustration of three embodiments referring to the drawings wherein:

FIG. 1 is an exploded view of a mop and a mop-washing bucket equipped with an extensible post according to the first embodiment of the present invention;

FIG. 2 is a cross-sectional view of the mop, the mop-washing bucket and the extensible post shown in FIG. 1;

FIG. 3 is an enlarged partial view of the extensible post shown in FIG. 2;

FIG. 4 is a cross-sectional view of a stationary element of the extensible post shown in FIG. 1;

FIG. 5 is an enlarged partial view of tracks formed on an internal side of the stationary element of the extensible post of the mop-washing bucket shown in FIG. 4;

FIG. 6 is a cross-sectional view of the mop spin-dried by the mop-washing bucket equipped with the extensible post shown in FIG. 1;

FIG. 7 is an exploded view of a mop-washing bucket equipped with an extensible post according to the second embodiment of the present invention;

FIG. 8 is a cross-sectional view of a mop, the mop-washing bucket and the extensible post shown in FIG. 7;

FIG. 9 is an enlarged perspective view of several linings and a stationary element of the extensible post of the mop-washing bucket shown in FIG. 8;

FIG. 10 is an enlarged side view of one of the linings shown in FIG. 9;

FIG. 11 is an exploded view of a mop-washing bucket equipped with an extensible post according to the third embodiment of the present invention;

FIG. 12 is an enlarged cut-away view of the mop-washing bucket and the extensible post shown in FIG. 11; and

FIG. 13 is an enlarged side view of a lining of the extensible post shown in FIG. 11.

DETAILED DESCRIPTION OF EMBODIMENTS

[0020] Referring to FIGS. 1 and 2, there is a mop 120 and a mop-cleaning apparatus according to a first embodiment of the present invention. The mop 120 can be cleaned with the mop-cleaning apparatus. The mop-cleaning apparatus includes a bucket 101 and an extensible post 104. The bucket 101 includes a cavity in an internal side of a lower portion thereof. The cavity receives a threaded collar 103. The threaded collar 103 is secured to the lower portion of the bucket 101 via a self-tapping screw. The threaded collar 103 includes a thread formed on an internal side thereof. The threaded collar 103 receives the extensible post 104. The extensible post 104 includes a stationary element 105, three linings 106 and a movable element 107. The stationary element 105 is a tubular element that includes a thread formed on an external side of a lower portion. The thread of the stationary element 105 is engaged with the thread of the threaded collar 103. The stationary element 105 includes, on an internal side, cavities for receiving the linings 106 each including grooves. The movable element 107 is inserted in the stationary element 105. The movable element 107 includes bosses 112 formed on an external side of a lower portion. In this embodiment, the number of the bosses 112 is three, identical to the number of the linings 106. The bosses 112 are movable in the cavities of the linings 106.

[0021] Referring to FIGS. 1 and 3, a bore 113 is made in an upper end of the movable element 107. A lower bushing 108 is inserted in a lower portion of the bore 113. An axle 110 is inserted in a cavity made in an upper side of the lower bushing 108. An upper bushing 109 is inserted in an upper portion of the bore 113. The axle 110 includes a middle portion inserted in the upper bushing 109. The axle 110 includes a lower end inserted in the cavity of the lower bushing 108. An upper end of the axle 110 is located out of the bore 113, above the upper bushing 109. A mop head connector 111 is connected to the upper end of the axle 110 so that the mop head connector 111 is rotatable with the axle 110. In this embodiment, the axle 110 is tight in the upper bushing 109 so that the bore 113 is sealed. Thus, the axle 110 is protected from mud and/or sand that would otherwise enter the bore 113 when the mop 120 is washed.

[0022] Referring FIGS. 1 and 3, the mop 120 includes a mop head 121. A bore is made in a center of a lower side of the mop head 121. Claws 122 are formed on the wall of the bore of the mop head 121. Each of the claws 122 includes a tip formed on an internal side of a lower portion thereof. The bore of the mop head 121 of the mop 120 receives the mop head connector 111, which is conventional and will not be further descried.

[0023] Referring to FIGS. 1 and FIG. 4, the linings 106 are joined together and located against the internal side of the stationary element 105. As described above, grooves are made in the internal side of each of the linings 106. The grooves made in the internal sides of the linings 106 together become a track of the extensible post 104. Referring to FIGS. 1, 4 and 5, the track includes lower longitudinal groove 130 and upper longitudinal grooves 131. The lower longitudinal grooves 130 are connected to the upper longitudinal grooves 131 via an annular groove 132. In this embodiment, there are three lower longitudinal grooves 130 and three upper longitudinal grooves 131, and the lower longitudinal grooves 130 and the upper longitudinal grooves 131 are evenly distributed. A slope 133 is formed at an upper end of each of the lower longitudinal grooves 130 and the upper longitudinal grooves 131. When lifted out of a lower longitudinal groove 130 or upper longitudinal groove 131, each of the bosses 112 of the movable element 107 is introduced into an adjacent upper longitudinal groove 131 or lower longitudinal groove 130 by an adjacent slope 133.

[0024] Referring to FIGS. 1 and 5, when the mop-cleaning apparatus is used, the bosses 112 are movable in the track. Since the bosses 112 are rigidly connected to the external side of the lower portion of the movable element 107, the movement of the movable element 107 is guided and confined by the track. If the bosses 112 are located in the lower portions of the lower longitudinal grooves 130 originally, the bosses 112 can be lifted with the movable element 107. The movable element 107 will eventually be moved to the upper ends of the lower longitudinal grooves 130. As the movable element 107 continues to be lifted, the bosses 112 enter the annular groove 132 and reach an upper wall of the annular groove 132 and the slopes 133, which are located immediately above the lower longitudinal grooves 130. An adjacent slope 133 guides each of the bosses 112 to moves towards an adjacent upper longitudinal groove 131. If the movable element 107 is released, each of the bosses 112 will accordingly move along the annular groove 132 and then be guided by the slope 133 to fall into an adjacent upper longitudinal groove 131. If the movable element 107 is lifted again, each of the bosses 112 will enter a next lower longitudinal groove 130 in a similar manner.

[0025] Referring to FIGS. 2 and 5, to clean the mop 120, the mop head 121 is connected to the mop head connector 111, which is supported at the upper end of the movable element 107. If the bosses 112 are located in the upper longitudinal grooves 131, the mop 120 must be lifted and then lowered. In this process, the movable element 107 moves with the mop 120 and the bosses 112 move into the lower longitudinal grooves 130 in the foregoing above. Referring to FIG. 2, water is filled in the bucket 101 to fully submerge the mop head 121. The mop head 121 is washed as the mop 120 is rotated. In the bucket 101, there is no cage to contain the mop head 121. Thus, in the washing of the mop head 121, the mop head 121 is fully in contact with water and can effectively be washed.

[0026] Referring to FIGS. 5 and 6, the mop 120 is lifted after it is washed. Then, the mop 120 is lowered again. During the upward movement of the mop 120, the bosses 112, which are formed on the movable element 107, move into the lower longitudinal grooves 130 from the upper longitudinal grooves 131. The upper longitudinal grooves 131 are located higher than the lower longitudinal grooves 130 so that the mop head 121, which is supported at the upper end of the movable element 107, moves out of the water. Then, the mop head 121 is spin-dried as the mop 120 is spun. Then, the mop head 121 is moved from the mop head connector 111. Finally, the washing and spin-drying of the mop head 121 are finished.

[0027] Referring to FIGS. 7 to 10, there is a mop-cleaning apparatus according to a second embodiment of the present invention. Referring to FIG. 7 and 8, the extensible post 203 includes a stationary element 205, three linings 206, an extensible post washer 204 and a movable element 207. The second embodiment is different from the first embodiment in how the movable element 207 is connected to the stationary element 205. A lower end of the stationary element 205 is secured to an internal side of a lower portion of the bucket 201. Cavities are made in the periphery of the stationary element 205. The linings 206 are inserted in the cavities of the stationary element 205. There are three linings 206 in the second embodiment. The extensible post washer 204 is connected to an upper end of the stationary element 205. The extensible post washer 204 prevents the linings 206 from sliding in the cavities of the stationary element 205. A track is made in an internal side of each of the linings 206. The movable element 207 is a tubular element movably located on the stationary element 205. Bosses 212 are formed on an internal side of a lower portion of the movable element 207. The bosses 212 are movably inserted in the tracks of the linings 206. The bosses 212 move in the tracks made in the external sides of the linings 206 when the movable element 207 is moved up and down.

[0028] Referring to FIGS. 9 and 10, the track made in the external side of each of the linings 206 includes a lower longitudinal groove 230 and an upper longitudinal groove 231. The lower longitudinal groove 230 is connected to the upper longitudinal groove 231 via an upward groove 232, a downward groove 233, a first turning groove 234 and a second turning groove 235. A lower end of the upward groove 232 is connected to an upper end of the lower longitudinal groove 230. A lower end of the downward groove 233 is connected to the upper end of the lower longitudinal groove 230. The first turning groove 234 includes an end connected to an upper end of the upward groove 232 and another end is connected to an upper end of the upper longitudinal groove 231. The second turning groove 235 includes an end connected to an upper end of the downward groove 233 and another end connected to the upper end of the upper longitudinal groove 231. A port 240 is made at an upper

end of the downward groove 233. One of the bosses 212 enters and leaves the track of one of the linings 206 via the port 240.

[0029] Referring to FIGS. 9 and 10, the movement of one of the bosses 212 in the track of one of the linings 206 will be described. In assembly, the boss 212 is inserted into the track via the port 240. The boss 212 is allowed to fall into the lower longitudinal groove 230 along the downward groove 233. Thus, the boss 212 is originally located in the lower longitudinal groove 230. The movable element 207 is lifted so that the boss 212 moves upwards and enters the upward groove 232, which is located above the lower longitudinal groove 230. The boss 212 continues to move upwards along the upward groove 232. The boss 212 enters the first turning groove 234 and continues to move upwards. The boss 212 reaches an upper limit of the first turning groove 234 and cannot move upwards any further. Then, the first turning groove 234 guides the boss 212 to move downwards and enter the upper longitudinal groove 231. The boss 212 would fall into the upper longitudinal groove 231 without an external force to lift the movable element 207. Now, the upward movement of the boss 212 into the upper longitudinal groove 231 from the lower longitudinal groove 230 is finished.

[0030] The downward movement of the boss 212 is similar to the upward movement. In the beginning of the downward movement, the boss 212 is located at the lower end of the upper longitudinal groove 231. The movable element 207 is lifted so that the boss 212 moves upwards into the second turning groove 235 from the lower end of the upper longitudinal groove 231. The boss 212 reaches an upper limit of the second turning groove 235 and cannot continue to move upwards. The second turning groove 235 guides the boss 212 to move downwards and enter the downward groove 233. The boss 212 moves downwards along the downward groove 233. Finally, the boss 212 reaches the lower end of the lower longitudinal groove 230 from the upper end of the lower longitudinal groove 230.

[0031] The boss 212 will move out of the track via the port 240, which is located at the upper end of the downward groove 233 if the movable element 207 is lifted during the downward movement of the boss 212 along the downward groove 233. The movable element 207 is movably connected to the stationary element 205 via the boss 212 formed on the internal side thereof so that the movable element 207 is detached from the stationary element 205 after the boss 212 moves out of the track of the lining 206 via the port 240. the port 240 enables the movable element 207 to be detachably connected to the movable element 205. Thus, the movable element 207 can be detached from the movable element 205 without using any tool, and the movable element 207 and the movable element 205 can be washed.

[0032] Referring to FIGS. 7 and 8, the axle 210 is connected to an upper end of the movable element 207. The axle 210 is inserted in a bore made in the upper end of the movable element 207 via an upper bushing 209 and a lower bushing 208. A mop head connector 211 is connected to an upper end of the axle 210.

[0033] Referring to FIGS. 11 and 12, there is a mop-cleaning apparatus according to a third embodiment of the present invention. An extensible post 303 includes a stationary element 305, three linings 306 and a movable element 307. A lower end of the stationary element 305 is secured to an internal side of a lower portion of the bucket 301. Three bosses 312 are formed on an internal side of an upper portion of the stationary element 305. The movable element 307 is a tubular element that includes a cavity made in an internal side. The linings 306 are inserted in the cavity of the movable element 307. There are three linings 306. Each of the linings 306 includes a track made in an internal side. The stationary element 305 is inserted in the movable element 307. The stationary element 305 includes, on an external side, three bosses 312 movably inserted in the tracks of the linings 306. As the movable element 307 is moved up and down, the bosses 312 move in the tracks made in the internal side of the linings 306.

[0034] Referring to FIGS. 12 and 13, a mop-cleaning apparatus includes three linings 306 according to a third embodiment of the present invention. Each of the linings 306 includes a track on an internal side. The track includes a lower longitudinal groove 330 and an upper longitudinal groove 331. The lower longitudinal groove 330 is connected to the upper longitudinal groove 331 via an upward groove 332, a downward groove 333, a first turning groove 334 and a second turning groove 335. An upper end of the upward groove 332 is connected to a lower end of the upper longitudinal groove 331. An upper end of the downward groove 333 is connected to a lower end of the upper longitudinal groove 331. The first turning groove 334 includes an end connected to a lower end of the upward groove 332 and another end connected to a lower end of the lower longitudinal groove 330. The second turning groove 335 includes an end connected to a lower end of the downward groove 333 and another end connected to the lower end of the lower longitudinal groove 330. A port 340 is made at the lower end of the upward groove 332. A boss 312 can enter and leave the track via the port 340.

[0035] Referring to FIGS. 12 and 13, movement of the boss 312 in the track of one of the linings 306 will be described. In assembly, the boss 312 is inserted into the track of the lining 306 via the port 340 and lifted into the upper longitudinal groove 331 along the upward groove 332. Hence, the boss 312 is originally located in the upper longitudinal groove 331. Then, the movable element 307 is lifted so that the boss 312 enters the downward groove 333, which is located below the upper longitudinal groove 331. The boss 312 continues to move downwards along the downward groove 333. The boss 312 enters the second turning groove 335 and continues to move downwards. The boss 312 reaches a lower limit of the second turning groove 335 and cannot continue to move down-

wards. The boss 312 moves upwards from the lower limit of the second turning groove 335. The boss 312 enters the lower longitudinal groove 330 from the lower end of the lower longitudinal groove 330. The boss 312 would move upwards and reaches the upper end of the lower longitudinal groove 330 without an external force for lifting the movable element 307. Now, the downward movement of the boss 312 into the lower longitudinal groove 330 from the upper longitudinal groove 331 is finished.

[0036] The upward movement of the boss 312 is like the downward movement. The movable element 307 is lifted so that the boss 312 moves downwards relative to the track of the lining 306. The boss 312 moves downwards into the first turning groove 334, which is connected to the lower end of the lower longitudinal groove 330. The boss 312 reaches a lower limit of the first turning groove 334 and cannot move further downwards. The first turning groove 334 guides the boss 312 to move upwards and enter the upward groove 332. The boss 312 moves upward along the upward groove 332. Finally, the boss 312 enters the upper longitudinal groove 331 via the lower end of upper longitudinal groove 331.

[0037] If the movable element 307 is lifted during the upward movement of the boss 312 along the upward groove 332, the boss 312 will move downwards relative to the track of the lining 306. The boss 312 will leave the track of the lining 306 via the port 340, which is connected to the lower end of the upward groove 332. The stationary element 305 is movably connected to the movable element 307 via the boss 312 so that the stationary element 305 is detached from the movable element 307 after the boss 312 leaves the track of the lining 306.

[0038] According to FIG. 11, an axle 310 is connected to an upper end of the movable element 307. The axle 310 is inserted in a bore made in the upper end of the movable element 307 via an upper bushing 309 and a lower bushing 308. A mop head connector 311 is connected to an upper end of the axle 310.

[0039] The present invention has been described via the detailed illustration of the embodiments. Those skilled in the art can derive variations from the embodiments without departing from the scope of the present invention. Therefore, the embodiments shall not limit the scope of the present invention defined in the claims.

Claims

1. A mop-cleaning apparatus including a bucket (101) and an extensible post (104) connected to an internal side of a lower portion of the bucket, wherein the extensible post (104) includes:

   a stationary element (105);
   a movable element (107) movably connected to the stationary element (105) between a lifted position and a lowered position; and
   a connection portion (111) connected to an upper end of the movable element (107) for connection to a mop (120),
   characterized in that the extensible post (104) includes at least one track (130, 131, 132) and at least one boss (112) movably inserted in the track (130, 131, 132) for movably connecting the stationary element (105) to the movable element (107).

2. The mop-cleaning apparatus according to claim 1, wherein the extensible post (104) is devoid of any cage.

3. The mop-cleaning apparatus according to claim 1 or 2, wherein the connection portion (111) is formed at the upper end of an axle (110) connected to the upper end of the movable element (107).

4. The mop-cleaning apparatus according to claim 3, wherein the movable element (107) includes a bore (113) made in the upper end thereof, a lower bushing (108) inserted in the bore (113), and an upper bushing (109) inserted in the bore (113), wherein the axle (110) is inserted in the upper and lower bushings (108, 109).

5. The mop-cleaning apparatus according to any one of claims 1 to 4, wherein the track includes a lower longitudinal groove (130) and an upper longitudinal groove (131) in communication with the lower longitudinal grove (130).

6. The mop-cleaning apparatus according to claim 5, wherein the stationary element (105) is a tubular element, the track (130, 131, 132) is made in an internal side of the stationary element (105), the boss (112) is formed on an external side of a lower portion of the movable element (107), and the movable element (107) is inserted in the stationary element (105).

7. The mop-cleaning apparatus according to claim 5, wherein the movable element (207) is a tubular element, the track (230-235) is located on an external side of the stationary element (205), the boss (212) is located on an internal side of a lower portion of the movable element (207), and the stationary element (205) is inserted in the movable element (207).

8. The mop-cleaning apparatus according to claim 5, wherein the movable element (307) is a tubular element, the track (330-335) is located in an internal side of the movable element (307), the boss (312) is located on an upper portion of the stationary element (305), and the stationary element (305) is inserted in the movable element (307).

9. The mop-cleaning apparatus according to any one

of claims 5 to 8, wherein the track further includes an annular groove (132) for connecting the lower longitudinal groove (130) to the upper longitudinal groove (131), and each of the lower and upper longitudinal grooves (130, 131) includes a slope (133) formed at an upper end.

10. The mop-cleaning apparatus according to any one of claims 5 to 7, wherein the track further includes an upward groove (232), a downward groove (233), a first turning groove (234) and a second turning groove (235), wherein the upward groove (232) includes a lower end connected to an upper end of the lower longitudinal groove (230), the downward groove (233) includes a lower end connected to the upper end of the lower longitudinal groove (230), the first turning groove (234) includes an end connected to an upper end of the upward groove (232) and another end connected to an upper end of the upper longitudinal groove (231), and the second turning groove (235) includes an end connected to an upper end of the downward groove (233) and another end connected to the upper end of the upper longitudinal groove (231).

11. The mop-cleaning apparatus according to claim 10, wherein the track further includes a port (240) connected to the upper end of the downward groove (233).

12. The mop-cleaning apparatus according to claim 5 or 8, wherein the track further includes an upward groove (332), a downward groove (333), a first turning groove (334) and a second turning groove (335), the downward groove (333) includes an upper end connected to a lower end of the upper longitudinal groove (331), the upward groove (332) includes an upper end connected to the lower end of the upper longitudinal groove (331), the first turning groove (334) includes an end connected to a lower end of the upward groove (332) and another end connected to a lower end of the lower longitudinal groove (330), and the second turning groove (335) includes an end connected to a lower end of the downward groove (333) and another end connected to the lower end of the upper longitudinal groove (331).

13. The mop-cleaning apparatus according to any one of claims 5 to 12, wherein the track includes several lower longitudinal grooves (130) and an identical number of upper longitudinal grooves (131), there are several bosses (112), and the number of the lower longitudinal grooves (130) is a multiple of the number of the bosses (112).

14. A mop for use with the mop-cleaning apparatus according to any one of claims 1 to 13, wherein the mop (120) includes a mop head, **characterized in that** the mop head is made with a cavity and claws (122) for connection to the connection portion (111) of the mop-cleaning apparatus.

Patentansprüche

1. Mopp-Reinigungsvorrichtung, enthaltend einen Eimer (101) und einen verlängerbaren Stiel (104), der mit einer Innenseite eines unteren Abschnitts des Eimers verbunden ist, wobei der verlängerbare Stiel (104) enthält:

ein feststehendes Element (105),
ein bewegliches Element (107), das mit dem feststehenden Element (105) zwischen einer angehobenen Position und einer abgesenkten Position beweglich verbunden ist, und
einen Verbindungsabschnitt (111), der mit einem oberen Ende des beweglichen Elements (107) zur Verbindung mit einem Mopp (120) verbunden ist,
dadurch gekennzeichnet, dass der verlängerbare Stiel (104) mindestens eine Führung (130, 131, 132) und mindestens eine Auswölbung (112) enthält, die beweglich in die Führung (130, 131, 132) eingesetzt ist, um das feststehende Element (105) beweglich mit dem beweglichen Element (107) zu verbinden.

2. Mopp-Reinigungsvorrichtung nach Anspruch 1, wobei der verlängerbare Stiel (104) frei von jeglichem Korb ist.

3. Mopp-Reinigungsvorrichtung nach Anspruch 1 oder 2, wobei der Verbindungsabschnitt (111) am oberen Ende einer Achse (110) gebildet ist, die mit dem oberen Ende des beweglichen Elements (107) verbunden ist.

4. Mopp-Reinigungsvorrichtung nach Anspruch 3, wobei das bewegliche Element (107) eine Bohrung (113) enthält, die in seinem oberen Ende ausgebildet ist, und eine untere Buchse (108), die in die Bohrung (113) eingesetzt ist, und eine obere Buchse (109), die in die Bohrung (113) eingesetzt ist, wobei die Achse (110) in die obere und die untere Buchse (108, 109) eingesetzt ist.

5. Mopp-Reinigungsvorrichtung nach einem der Ansprüche 1 bis 4, wobei die Führung eine untere Längsrille (130) und eine obere Längsrille (131) in Verbindung mit der unteren Längsrille (130) enthält.

6. Mopp-Reinigungsvorrichtung nach Anspruch 5, wobei das feststehende Element (105) ein röhrenförmiges Element ist, die Führung (130, 131, 132) an einer Innenseite des feststehenden Elements (105)

ausgebildet ist, die Auswölbung (112) an einer Außenseite eines unteren Abschnitts des beweglichen Elements (107) ausgebildet ist und das bewegliche Element (107) in das feststehende Element (105) eingesetzt ist.

7. Mopp-Reinigungsvorrichtung nach Anspruch 5, wobei das bewegliche Element (207) ein röhrenförmiges Element ist, die Führung (230-235) an einer Außenseite des feststehenden Elements (205) gelegen ist, die Auswölbung (212) an einer Innenseite eines unteren Abschnitts des beweglichen Elements (207) gelegen ist und das feststehende Element (205) in das bewegliche Element (207) eingesetzt ist.

8. Mopp-Reinigungsvorrichtung nach Anspruch 5, wobei das bewegliche Element (307) ein röhrenförmiges Element ist, die Führung (330-335) an einer Innenseite des beweglichen Elements (307) gelegen ist, die Auswölbung (312) an einem oberen Abschnitt des feststehenden Elements (305) gelegen ist und das feststehende Element (305) in das bewegliche Element (307) eingesetzt ist.

9. Mopp-Reinigungsvorrichtung nach einem der Ansprüche 5 bis 8, wobei die Führung ferner eine ringförmige Rille (132) zur Verbindung der unteren Längsrille (130) mit der oberen Längsrille (131) enthält und jede von der unteren und oberen Längsrille (130, 131) eine Schräge (133) enthält, die an einem oberen Ende gebildet ist.

10. Mopp-Reinigungsvorrichtung nach einem der Ansprüche 5 bis 7, wobei die Führung ferner eine ansteigende Rille (232), eine absteigende Rille (233), eine erste Wenderille (234) und eine zweite Wenderille (235) enthält, wobei die ansteigende Rille (232) ein unteres Ende enthält, das mit einem oberen Ende der unteren Längsrille (230) verbunden ist, die absteigende Rille (233) ein unteres Ende enthält, das mit dem oberen Ende der unteren Längsrille (230) verbunden ist, die erste Wenderille (234) ein Ende enthält, das mit einem oberen Ende der ansteigenden Rille (232) verbunden ist, und ein anderes Ende, das mit einem oberen Ende der oberen Längsrille (231) verbunden ist, und die zweite Wenderille (235) ein Ende enthält, das mit einem oberen Ende der absteigenden Rille (233) verbunden ist, und ein anderes Ende, das mit dem oberen Ende der oberen Längsrille (231) verbunden ist.

11. Mopp-Reinigungsvorrichtung nach Anspruch 10, wobei die Führung ferner einen Anschluss (240) enthält, der mit dem oberen Ende der absteigenden Rille (233) verbunden ist.

12. Mopp-Reinigungsvorrichtung nach Anspruch 5 oder 8, wobei die Führung ferner eine ansteigende Rille (332), eine absteigende Rille (333), eine erste Wenderille (334) und eine zweite Wenderille (335) enthält, wobei die absteigende Rille (333) ein oberes Ende enthält, das mit einem unteren Ende der oberen Längsrille (331) verbunden ist, die ansteigende Rille (332) ein oberes Ende enthält, das mit dem unteren Ende der oberen Längsrille (331) verbunden ist, die erste Wenderille (334) ein Ende enthält, das mit einem unteren Ende der ansteigenden Rille (332) verbunden ist, und ein anderes Ende, das mit einem unteren Ende der unteren Längsrille (330) verbunden ist, und die zweite Wenderille (335) ein Ende enthält, das mit einem unteren Ende der absteigenden Rille (333) verbunden ist, und ein anderes Ende, das mit dem unteren Ende der oberen Längsrille (331) verbunden ist.

13. Mopp-Reinigungsvorrichtung nach einem der Ansprüche 5 bis 12, wobei die Führung mehrere untere Längsrillen (130) und eine identische Anzahl von oberen Längsrillen (131) enthält, mehrere Auswölbungen (112) vorhanden sind und die Anzahl der unteren Längsrillen (130) ein Vielfaches der Anzahl der Auswölbungen (112) ist.

14. Mopp zur Verwendung mit der Mopp-Reinigungsvorrichtung nach einem der Ansprüche 1 bis 13, wobei der Mopp (120) einen Moppkopf enthält, **dadurch gekennzeichnet, dass** der Moppkopf mit einem Hohlraum und Klauen (122) zur Verbindung mit dem Verbindungsabschnitt (111) der Mopp-Reinigungsvorrichtung gebildet ist.

Revendications

1. Appareil pour laver avec une serpillère comprenant un seau (101) et un montant extensible (104) raccordé à un côté interne d'une partie inférieure du seau, dans lequel le montant extensible (104) comprend :

un élément fixe (105) ;
un élément mobile (107) raccordé, de manière mobile, à l'élément fixe (105) entre une position levée et une position abaissée ; et
une partie de raccordement (111) raccordée à une extrémité supérieure de l'élément mobile (107) pour le raccordement à une serpillère (120),
caractérisé en ce que le montant extensible (104) comprend au moins un rail (130, 131, 132) et au moins un bossage (112) inséré de manière mobile dans le rail (130, 131, 132) pour raccorder de manière mobile l'élément fixe (105) à l'élément mobile (107).

2. Appareil pour laver avec une serpillère selon la re-

vendication 1, dans lequel le montant extensible (104) est dépourvu de cage.

3. Appareil pour laver avec une serpillère selon la revendication 1 ou 2, dans lequel la partie de raccordement (111) est formée au niveau de l'extrémité supérieure d'un axe (110) raccordé à l'extrémité supérieure de l'élément mobile (107).

4. Appareil pour laver avec une serpillère selon la revendication 3, dans lequel l'élément mobile (107) comprend un alésage (113) réalisé dans son extrémité supérieure, un manchon inférieur (108) inséré dans l'alésage (113) et un manchon supérieur (109) inséré dans l'alésage (113), dans lequel l'axe (110) est inséré dans les manchons supérieur et inférieur (108, 109).

5. Appareil pour laver avec une serpillère selon l'une quelconque des revendications 1 à 4, dans lequel le rail comprend une rainure longitudinale inférieure (130) et une rainure longitudinale supérieure (131) en communication avec la rainure longitudinale inférieure (130).

6. Appareil pour laver avec une serpillère selon la revendication 5, dans lequel l'élément fixe (105) est un élément tubulaire, le rail (130, 131, 132) est réalisé dans un côté interne de l'élément fixe (105), le bossage (112) est formé sur un côté externe d'une partie inférieure de l'élément mobile (107), et l'élément mobile (107) est inséré dans l'élément fixe (105).

7. Appareil pour laver avec une serpillère selon la revendication 5, dans lequel l'élément mobile (207) est un élément tubulaire, le rail (230-235) est positionné sur un côté externe de l'élément fixe (205), le bossage (212) est positionné sur un côté interne d'une partie inférieure de l'élément mobile (207) et l'élément fixe (205) est inséré dans l'élément mobile (207).

8. Appareil pour laver avec une serpillère selon la revendication 5, dans lequel l'élément mobile (307) est un élément tubulaire, le rail (330-335) est positionné dans un côté interne de l'élément mobile (307), le bossage (312) est positionné sur une partie supérieure de l'élément fixe (305), et l'élément fixe (305) est inséré dans l'élément mobile (307) .

9. Appareil pour laver avec une serpillère selon l'une quelconque des revendications 5 à 8, dans lequel le rail comprend en outre une rainure annulaire (132) pour raccorder la rainure longitudinale inférieure (130) à la rainure longitudinale supérieure (131), et chacune des rainures longitudinales inférieure et supérieure (130, 131) comprend une rampe (133) formée au niveau d'une extrémité supérieure.

10. Appareil pour laver avec une serpillère selon l'une quelconque des revendications 5 à 7, dans lequel le rail comprend en outre une rainure ascendante (232), une rainure descendante (233), une première rainure rotative (234) et une seconde rainure rotative (235), dans lequel la rainure ascendante (232) comprend une extrémité inférieure raccordée à une extrémité supérieure de la rainure longitudinale inférieure (230), la rainure descendante (233) comprend une extrémité inférieure raccordée à l'extrémité supérieure de la rainure longitudinale inférieure (230), la première rainure rotative (234) comprend une extrémité raccordée à une extrémité supérieure de la rainure ascendante (232) et une autre extrémité raccordée à une extrémité supérieure de la rainure longitudinale supérieure (231), et la seconde rainure rotative (235) comprend une extrémité raccordée à une extrémité supérieure de la rainure descendante (233) et une autre extrémité raccordée à l'extrémité supérieure de la rainure longitudinale supérieure (231).

11. Appareil pour laver avec une serpillère selon la revendication 10, dans lequel le rail comprend en outre un orifice (240) raccordé à l'extrémité supérieure de la rainure descendante (233).

12. Appareil pour laver avec une serpillère selon la revendication 5 ou 8, dans lequel le rail comprend en outre une rainure ascendante (332), une rainure descendante (333), une première rainure rotative (334) et une seconde rainure rotative (335), la rainure descendante (333) comprend une extrémité supérieure raccordée à une extrémité inférieure de la rainure longitudinale supérieure (331), la rainure ascendante (332) comprend une extrémité supérieure raccordée à l'extrémité inférieure de la rainure longitudinale supérieure (331), la première rainure rotative (334) comprend une extrémité raccordée à une extrémité inférieure de la rainure ascendante (332) et une autre extrémité raccordée à une extrémité inférieure de la rainure longitudinale inférieure (330), et la seconde rainure rotative (335) comprend une extrémité raccordée à une extrémité inférieure de la rainure descendante (333) et une autre extrémité raccordée à l'extrémité inférieure de la rainure longitudinale supérieure (331) .

13. Appareil pour laver avec une serpillère selon l'une quelconque des revendications 5 à 12, dans lequel le rail comprend plusieurs rainures longitudinales inférieures (130) et un nombre identique de rainures longitudinales supérieures (131), on trouve plusieurs bossages (112) et le nombre de rainures longitudinales inférieures (130) est un multiple du nombre de bossages (112).

14. Serpillère prévue pour à être utilisée avec l'appareil pour laver avec une serpillère selon l'une quelconque des revendications 1 à 13, dans laquelle la serpillère (120) comprend une tête de serpillère, **caractérisée en ce que** la tête de serpillère est réalisée avec une cavité et des griffes (122) pour le raccordement à la partie de raccordement (111) de l'appareil pour laver avec une serpillère.

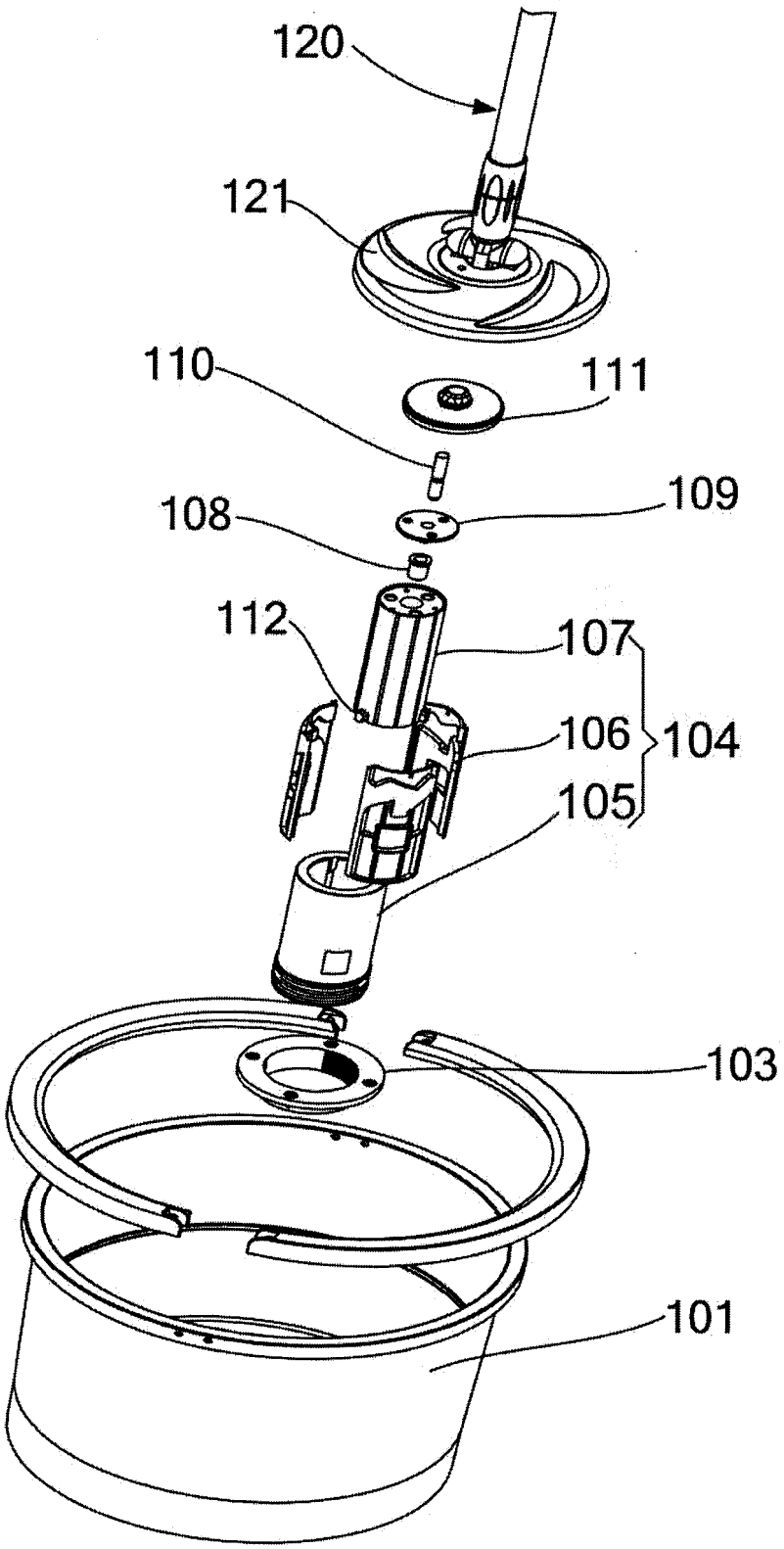


Fig. 1

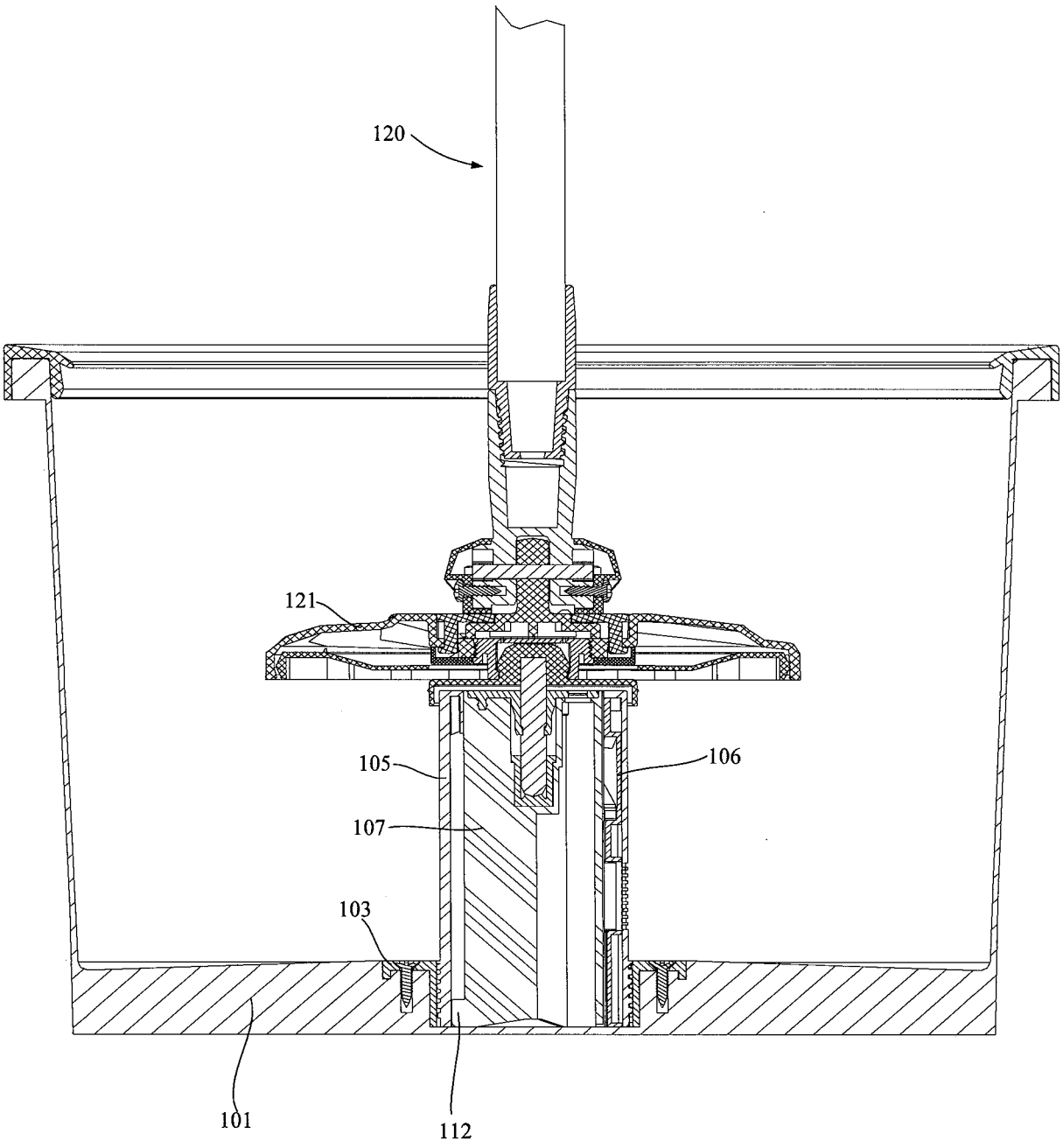


Fig. 2

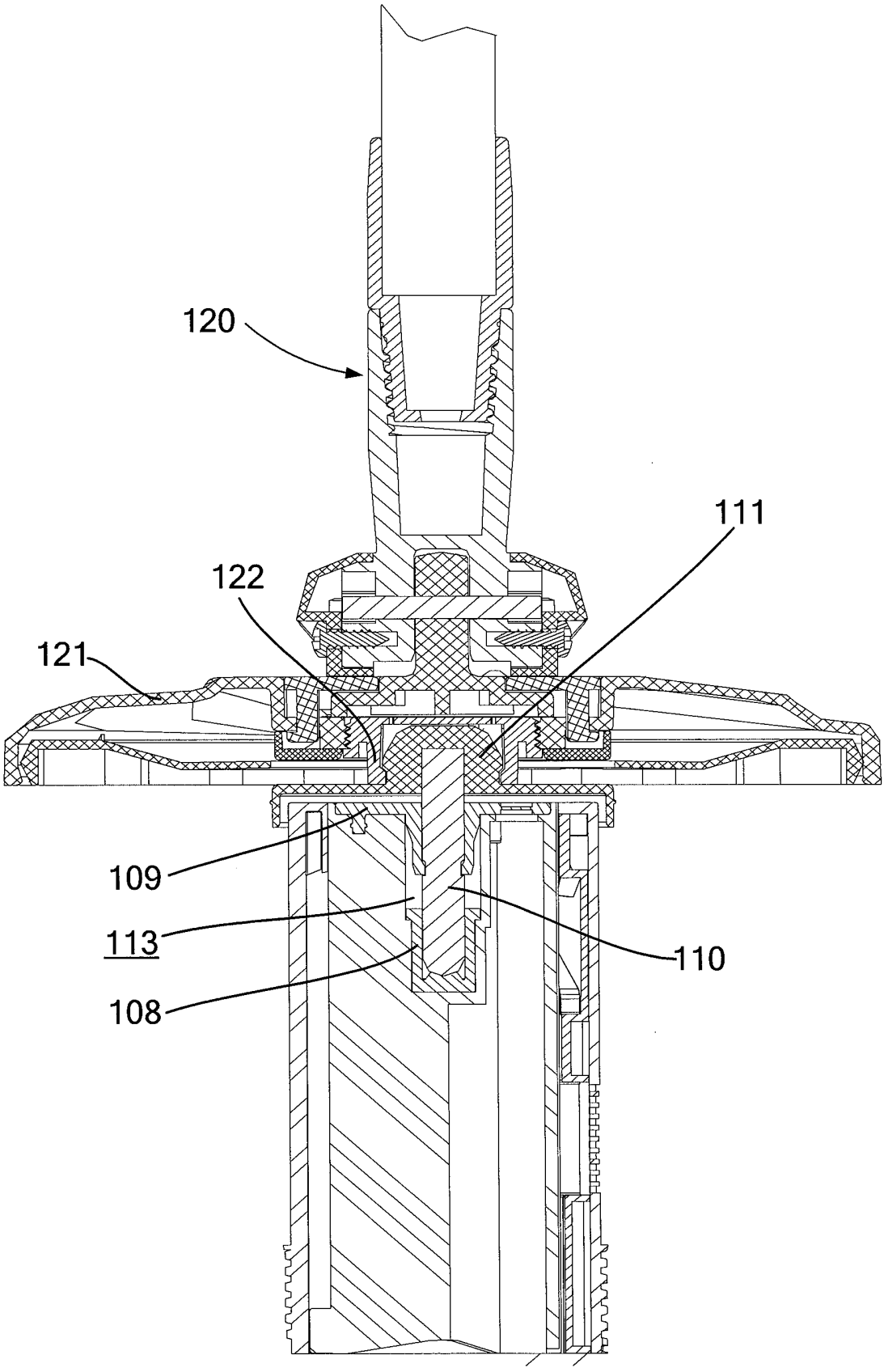


Fig. 3

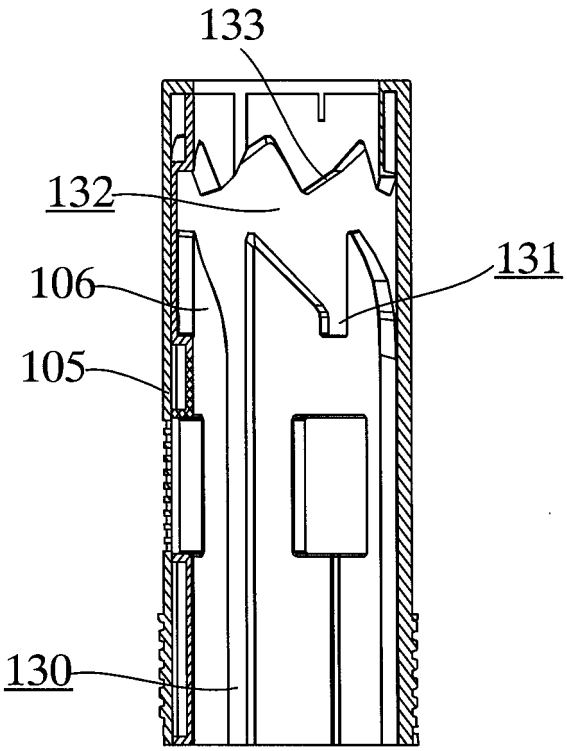


Fig. 4

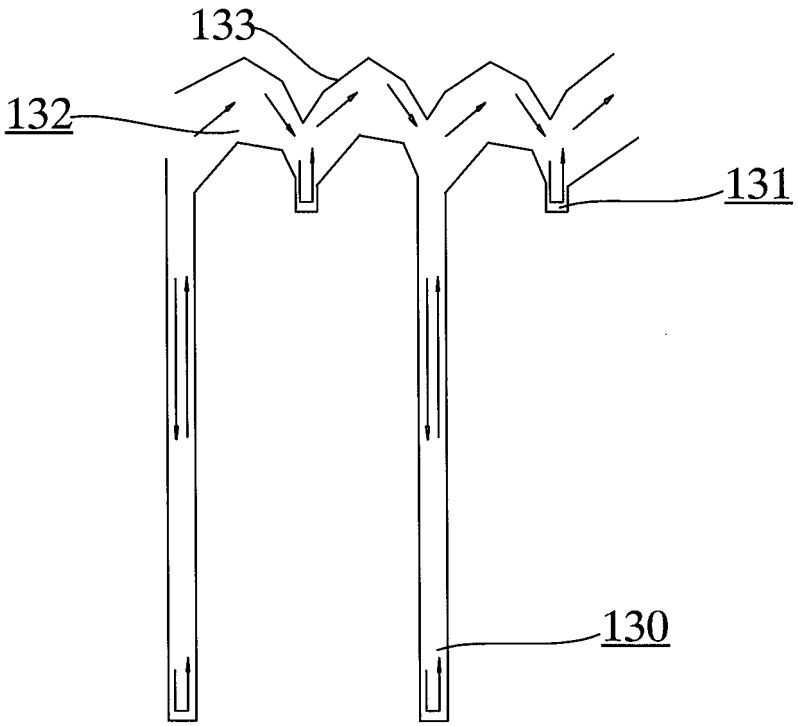


Fig. 5

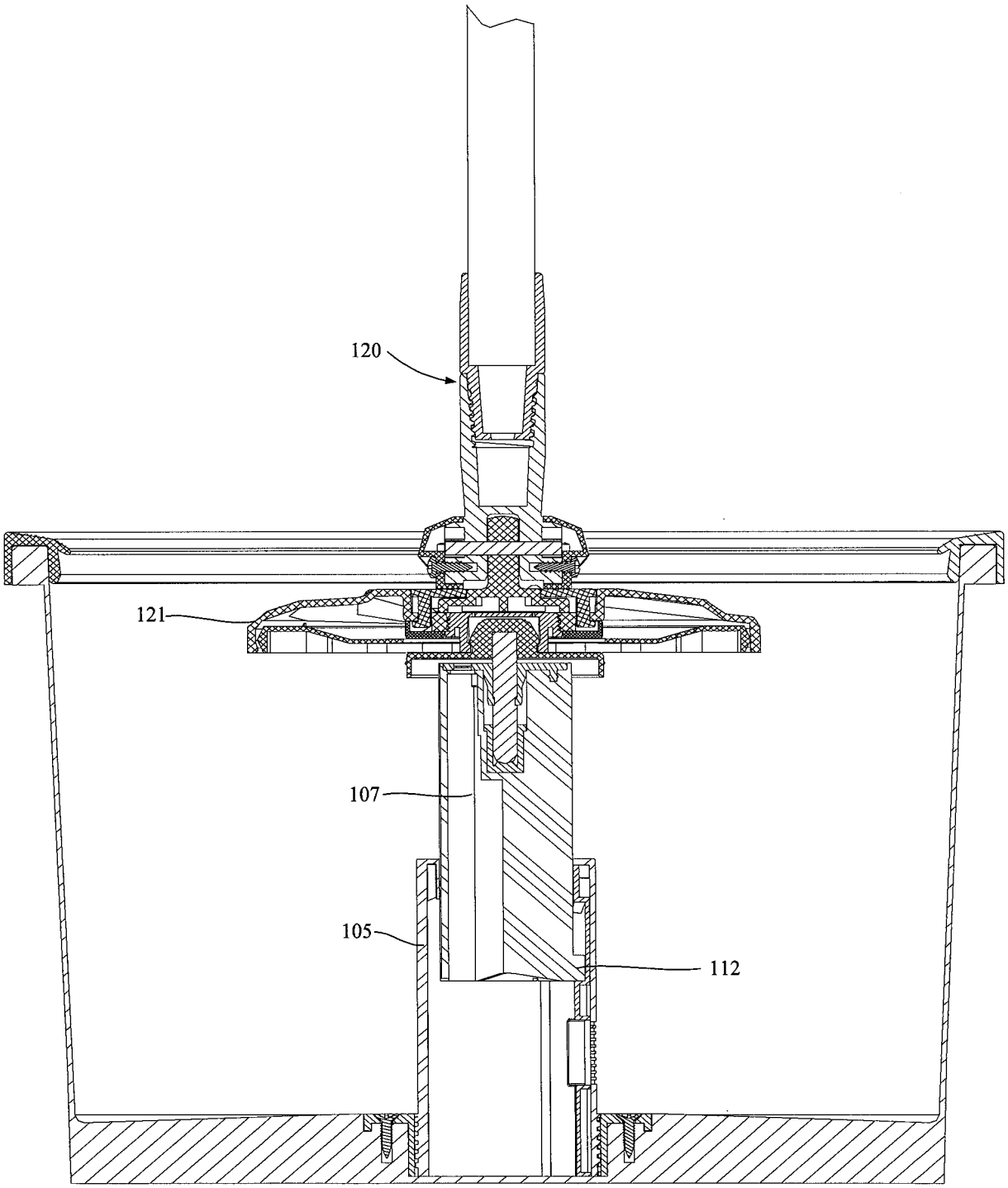


Fig. 6

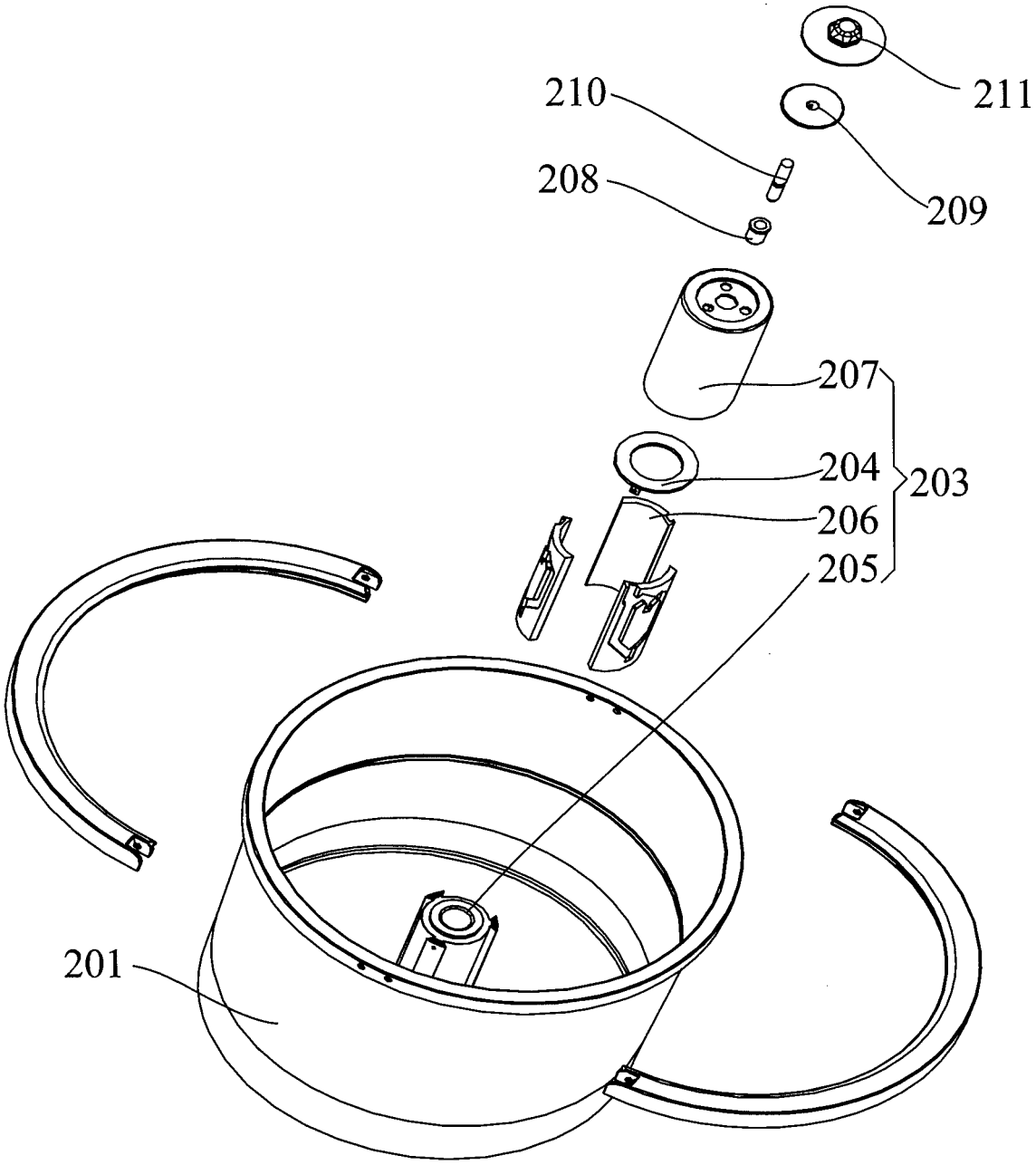


Fig. 7

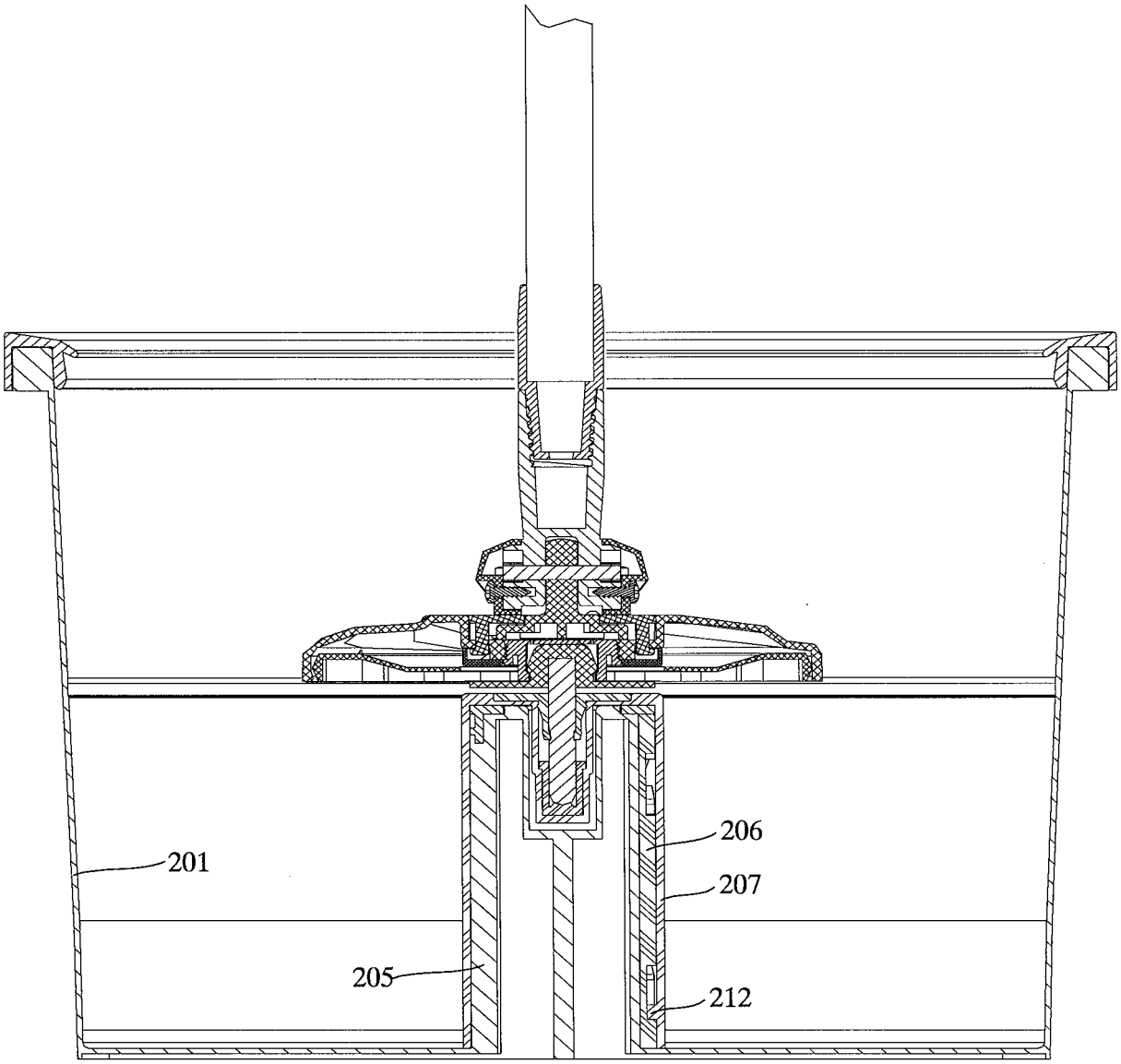


Fig. 8

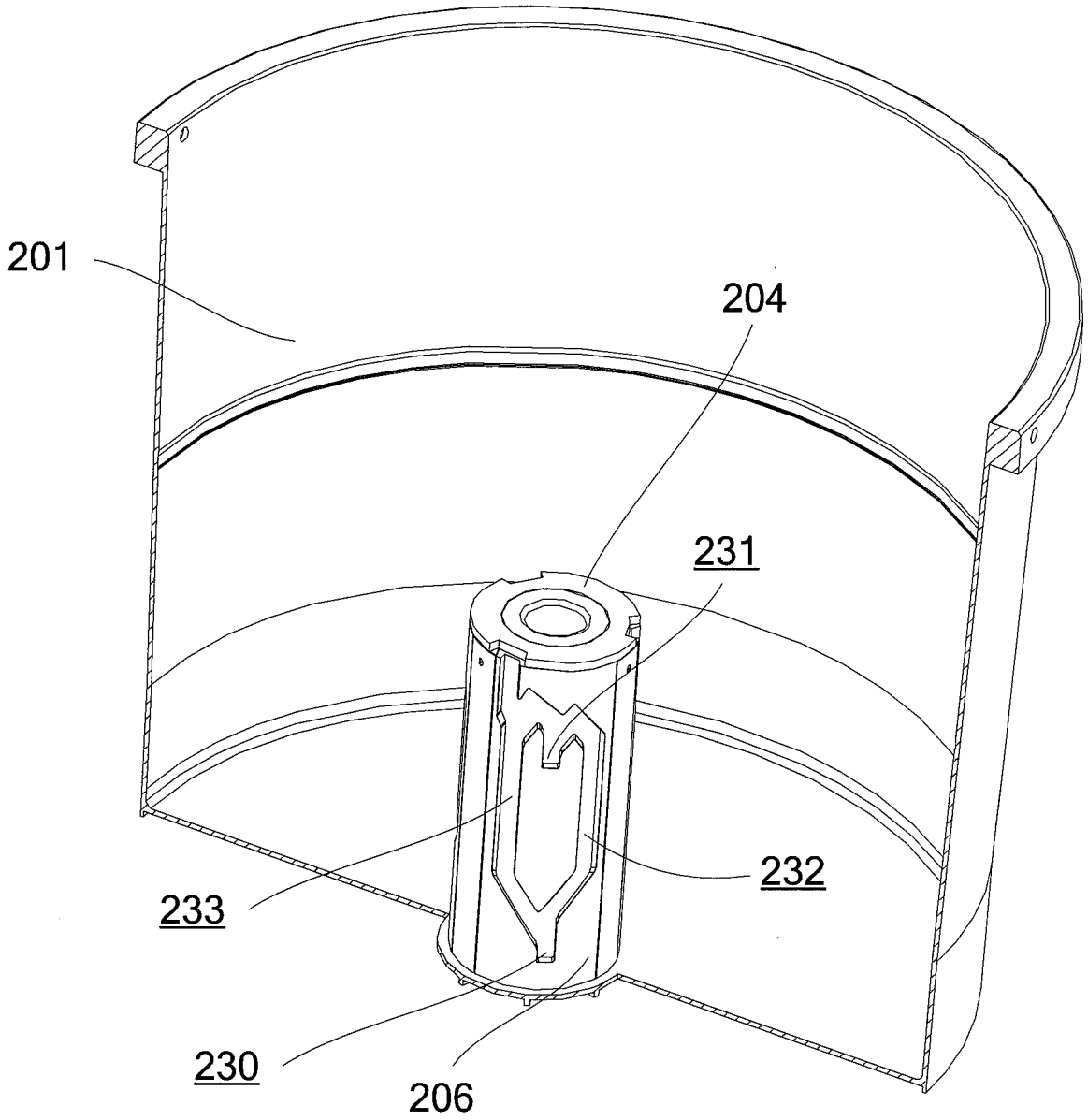


Fig. 9

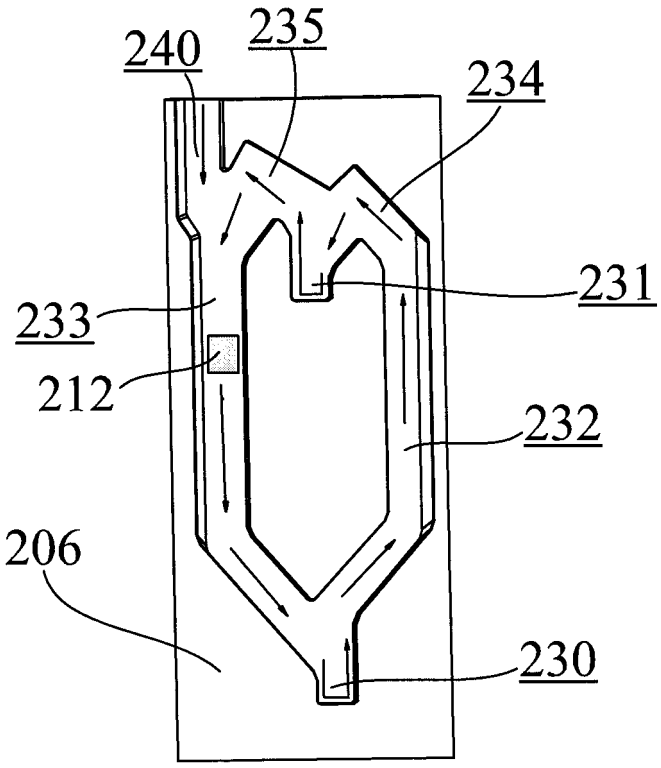


Fig. 10

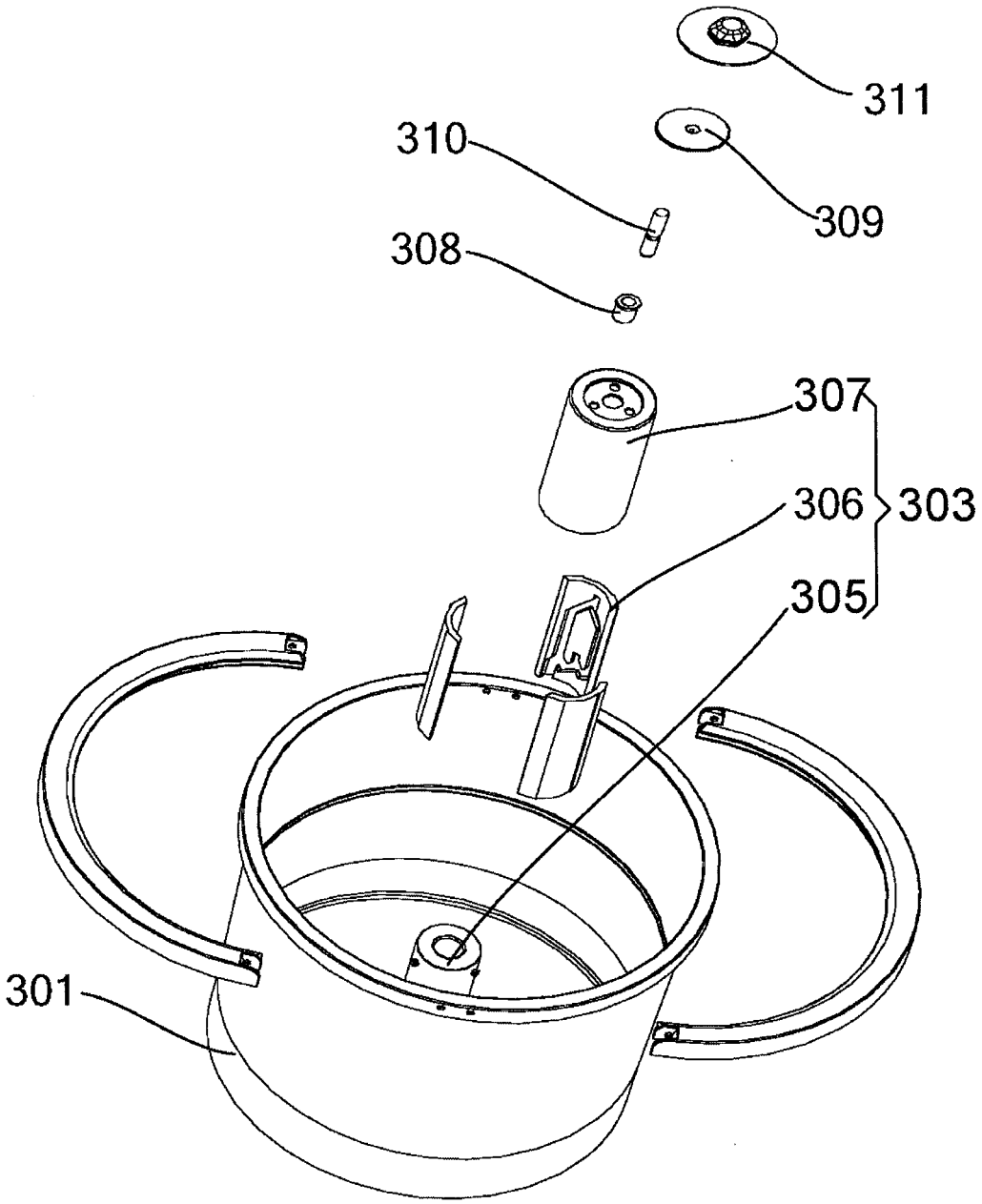


Fig. 11

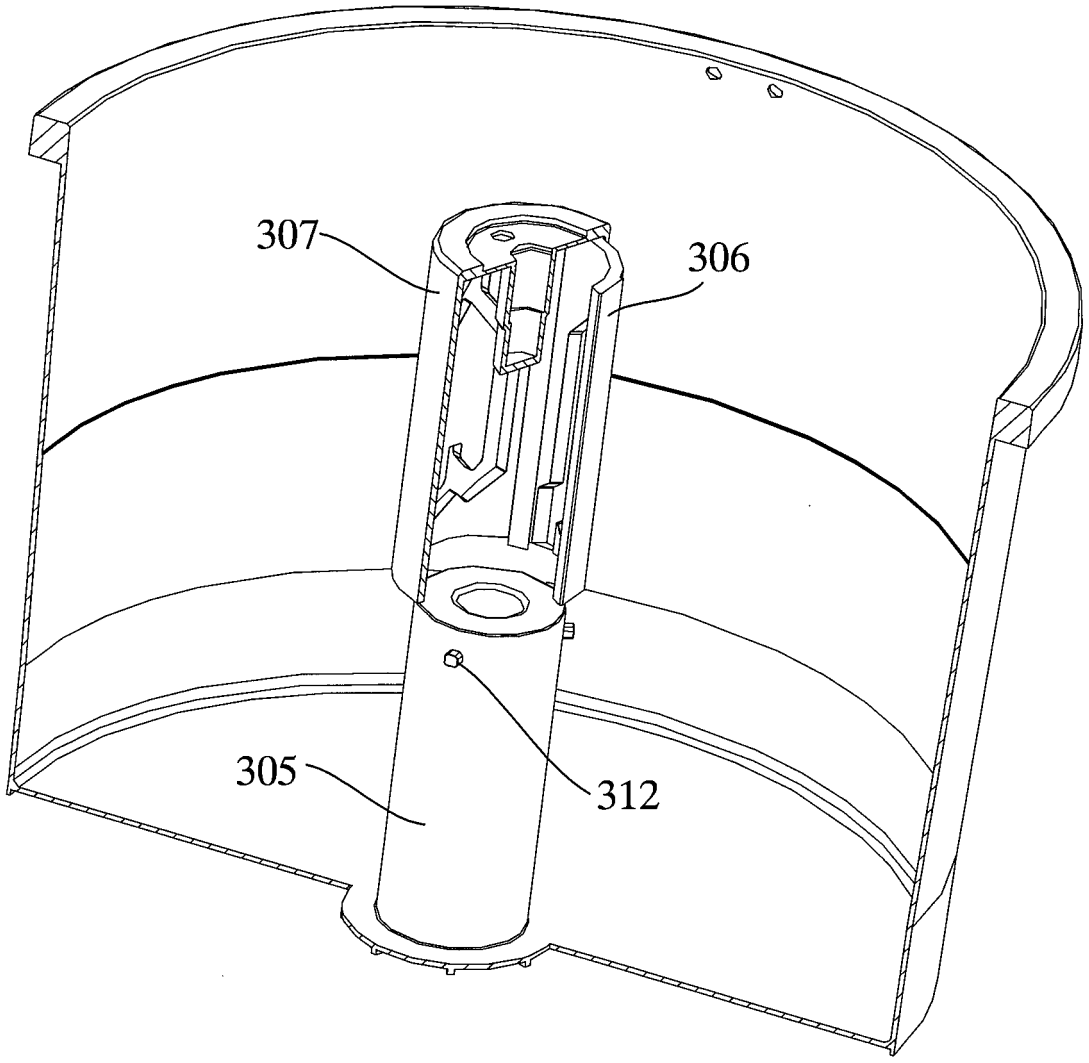


Fig. 12

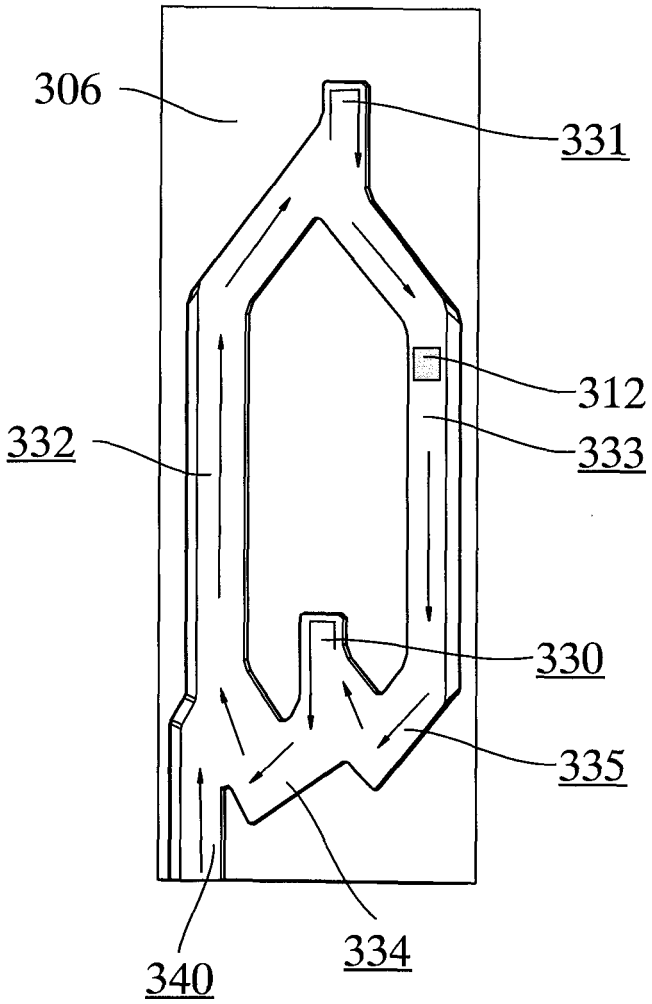


Fig. 13

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

- CN 201330360846 **[0002]**
- CN 201320013544 **[0002]**
- US 5361448 A **[0003]**