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(54) **CLEANING BASE STATION**

REINIGUNGSBASISSTATION

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Description

TECHNICAL FIELD

[0001] The present disclosure relates to technical field of cleaning apparatus, and in particular to a cleaning base station for cleaning cleaning members.

BACKGROUND

[0002] In recent years, with the development of social economy and improved living standards, home cleaning has gradually entered the era of intelligence and mechanization, and more and more cleaning robots have been used by peoples at home to relieve the workload of cleaning. The cleaning robot performs cleaning by sucking the dust and garbage on floor into a dust box through sweeping and vacuum adsorption.

[0003] A cleaning base station 1A (as shown in Fig. 1) is generally equipped with the cleaning robot. After a certain period of time of work, the cleaning robot will automatically move to a cleaning area 10A of the cleaning base station 1A where cleaning member of the cleaning robot is cleaned by cleaning water provided by the cleaning base station 1A, and sewage produced during the cleaning will be took back by the cleaning base station 1A. However, solid impurities introduced by the cleaning will remain at the cleaning area 10A after the cleaning being completed, and users need to bend down and use a rag to wipe and clear out the solid impurities. Once there are many solid impurities remaining, it needs to be cleaned again and again by users, which is inconvenient and laborious. As a result, it is difficult to provide users with a good experience.

[0004] CN109528111A provides a base station which includes a base station seat and a cleaning tank, the cleaning tank is detachably connected with the base station seat, the cleaning tank includes a liquid inlet structure, a liquid outlet structure and a convex part, garbage is scraped and removed from the mop by the convex part and fell onto the cleaning tank. The cleaning tank can be separated from the base station seat, so the cleaning tank and the base station seat can be cleaned. In this way, the base station can be cleaned conveniently and easily, and the user experience is improved.

SUMMARY

[0005] An objective of the present disclosure is to provide a cleaning base station which can be easily cleaned.

[0006] In order to achieve the above objective, the present disclosure discloses a cleaning base station comprising a base station frame structure, a draining structure arranged on the base station frame structure, a sewage collecting body, and a cleaning body arranged on the sewage collecting body. The base station frame structure comprises a first assembling portion, and the sewage collecting body comprises a second assembling

portion engaged with the first assembling portion, allowing the sewage collecting body being assembled to and limited by the base station frame structure. The sewage collecting body further comprises a sewage collecting portion and a water outlet communicated with the sewage collecting portion, and the cleaning body defines a filtering hole communicated with the sewage collecting portion. The draining structure comprises a drainage channel structure, and the water outlet is detachably connected with the drainage channel structure. The sewage collecting body further comprises a third assembling portion, and the cleaning body comprises a fourth assembling portion assembled with the third assembling portion, allowing the cleaning body to be limited in the sewage collecting body.

[0007] In some embodiments, the first assembling portion and the second assembling portion are planes, curved surfaces, or special-shaped surfaces matched with each other; or one of the first assembling portion and the second assembling portion is a block or a clasp structure, and the other of the first assembling portion and the second assembling portion is a slot or a hole structure.

[0008] In some embodiments, the draining structure further comprises an elastic connector sleeved on an end of the drainage channel structure, and the water outlet is connected to the drainage channel structure through the elastic connector.

[0009] In some embodiments, the sewage collecting body further comprises a pipe connected to the sewage collecting portion, and the water outlet is located at an end of the pipe; the elastic connector comprises a first connecting portion sleeved on an outer peripheral wall of the pipe, a second connecting portion sleeved on an outer peripheral wall of the drainage channel structure, and a filtering part located between the water outlet and the drainage channel structure.

[0010] In some embodiments, the third assembling portion and the fourth assembling portion are planes, curved surfaces, or special-shaped surfaces matched with each other; or one of the third assembling portion and the fourth assembling portion is a block or a clasp structure, and the other of the third assembling portion and the fourth assembling portion is a slot or a hole structure.

[0011] In some embodiments, one of the third assembling portion and the fourth assembling portion is a pivot structure, and the other of the third assembling portion and the fourth assembling portion is a pivot bushing structure; or one of the third assembling portion and the fourth assembling portion is a sliding slot and the other of the third assembling portion and the fourth assembling portion is a slider.

[0012] In some embodiments, the base station frame structure is provided with a water supplying structure, and the water supplying structure comprises a water supplying pipe defined with a water supplying outlet; the sewage collecting body and/or the cleaning body is provided

with an opening configured for communicating with the water supplying outlet.

[0013] In some embodiments, the sewage collecting body is defined with a first opening, the cleaning body is defined with a second opening, and the water supplying outlet, the first opening and the second opening are configured to be arranged correspondingly and communicate with each other; or the sewage collecting body is defined with a first opening, and the water supplying outlet and the first opening are configured to be arranged correspondingly and communicate with each other.

[0014] In some embodiments, the sewage collecting body and/or the cleaning body comprises an avoidance structure arranged corresponding to the water supplying structure to make way for the water supplying pipe.

[0015] In some embodiments, the sewage collecting body is defined with a first avoidance structure, the first opening is defined on the first avoidance structure, and the first avoidance structure is located above the water supplying pipe to make way for the water supplying pipe; and the cleaning body is provided with a second avoidance structure, the second opening is defined on the second avoidance structure, and the second avoidance structure is located above the first avoidance structure to make way for the first avoidance structure or the water supplying pipe.

[0016] In some embodiments, the water supplying pipe is arranged obliquely towards the sewage collecting portion, the water supplying pipe is provided with a wing extended along the inclined direction of the water supplying pipe, and a guiding groove is defined between the wing and the water supplying pipe.

[0017] In some embodiments, a baffle plate is provided at a higher end of the water supplying pipe, the baffle plate is connected with the wing, and is configured to block off the higher end of the water supplying pipe.

[0018] In some embodiments, the water supplying structure further comprises a sealing structure arranged between the water supplying pipe and the avoidance structure.

[0019] In some embodiments, the water supplying pipe is connected with a flow guiding member which is arranged obliquely, and the flow guiding member is configured to guide the water flowing back from the water supplying pipe and make the water flow outside along the flow guiding member.

[0020] In some embodiments, the base station frame structure comprises a bottom wall, the bottom wall is provided with a barrier rib to form a closed area on the bottom wall 14, and the water supplying pipe is located in the closed area. The barrier rib is configured to prevent the water in the closed area flowing out of the closed area.

[0021] In some embodiments, the cleaning body is defined with a vent communicated with the filtering hole, and a height of the vent is higher than that of the filtering hole.

[0022] In some embodiments, the sewage collecting portion is provided with a converging structure, the con-

verging structure is configured to collect sewage to the draining structure. The converging structure comprises an inclined surface extended towards a joint of the sewage collecting portion and the water outlet for converging sewage.

[0023] In some embodiments, a garbage collector is arranged between the cleaning body and the sewage collecting body, the garbage collector is communicated with the filtering hole, and collect garbage flowing out through the filtering hole.

[0024] In some embodiments, a periphery of the cleaning body is provided with a hem configured for preventing sewage from splashing or overflowing.

[0025] In the present disclosure, the sewage collecting body can be disassembled from the draining structure to be cleaned since the draining structure and the sewage collecting body are detachably connected, which improves the convenience for cleaning the cleaning base station.

BRIEF DESCRIPTION OF THE DRAWINGS

[0026]

Fig. 1 is a perspective diagram of a cleaning base station in related art;

Fig. 2 is a schematic diagram of a cleaning base station according to an exemplary embodiment of the present disclosure;

Fig. 3 is a perspective diagram of a cleaning base station with base station frame structure being removed according to an exemplary embodiment of the present disclosure;

Fig. 4 is an exploded view of Fig. 3;

Fig. 5 (A) is a cross-sectional view taken along line A-A in Fig. 3; Fig. 5 (B) is an enlarged view of portion H in Fig. 5 (A);

Fig. 6 is a schematic diagram of Fig. 5 with draining structure being removed;

Fig. 7 is a perspective diagram of a sewage collecting body in Fig. 4 from another angle;

Fig. 8 is a cross-sectional view of a cleaning body in Fig. 4 taken along line B-B;

Fig. 9 is an exploded view of a draining structure in Fig. 4;

Fig. 10 (A) and 10 (B) is perspective diagrams of an elastic connector in Fig. 9;

Fig. 11 is a perspective diagram of a water supplying structure in Fig. 4;

Fig. 12 is a perspective diagram of a cleaning base station with base station frame structure being removed according to an exemplary embodiment of the present disclosure;

Fig. 13 is an exploded view of Fig. 12;

Fig. 14 is a cross-sectional view of Fig. 12 taken along line C-C;

Fig. 15 is a cross-sectional view of Fig. 12 taken along line D-D, with the cleaning body being re-

moved;

Fig. 16 is a cross-sectional view of a sewage collecting body in Fig. 13 taken along line E-E;

Fig. 17 is a perspective diagram of a cleaning base station with base station frame structure being removed according to an exemplary embodiment of the present disclosure;

Fig. 18 is an exploded view of Fig. 17;

Fig. 19 is a cross-sectional view of Fig. 17 taken along line F-F, with the cleaning body being removed;

Fig. 20 is an enlarged view of portion G in Fig. 19;

Fig. 21 is a perspective diagram of a water supplying structure in Fig. 21;

Fig. 22 is an exploded view of the water supplying structure in Fig. 21;

Fig. 23 is a perspective diagram of a cleaning base station with base station frame structure being removed according to an exemplary embodiment of the present disclosure;

Fig. 24 is an exploded view of Fig. 23; and

Fig. 25 is a perspective diagram of a water supplying pipe according to an exemplary embodiment of the present disclosure.

DETAILED DESCRIPTION

[0027] In order to explain in detail the technical content, construction features, the purpose and effect achieved by the present disclosure, the following combined with the embodiment and the attached drawings are described in detail.

[0028] The present disclosure provides a cleaning base station 1 used in cooperation with a cleaning robot to clean cleaning members of cleaning robots. The cleaning members may be mops, brushes, etc.. It should be noted that, the cleaning base station in the disclosure is not limited to merely clean cleaning robots, it can also clean handheld cleaning devices or mops or brushes that are manually used by users.

[0029] Referring to Fig. 2 to Fig. 5, in some embodiments, the cleaning base station 1 includes a base station frame structure 10, a draining structure 20, a sewage collecting body 30, and a cleaning body 40. The base station frame structure 10 includes a first assembling portion 11a/11b/11c/11d. The draining structure 20 is arranged on the base station frame structure 10, and includes a drainage channel structure 21. Referring to Fig. 4 to Fig. 7, the sewage collecting body 30 includes a sewage collecting portion 31, a water outlet 32A, and a second assembling portion 33a/33b/33c/33d. The second assembling portion 33a/33b/33c/33d cooperates with the first assembling portion 11a/11b/11c/11d to limit the sewage collecting body 30 on the base station frame structure 10. Referring to Fig. 5(A) and Fig. 5(B), the water outlet 32A is communicated with the sewage collecting portion 31, and is detachably connected with the drainage channel structure 21. The cleaning body 40 is

arranged on the sewage collecting body 30, and the cleaning body 40 is defined with filtering holes 41 communicated with the sewage collecting portion 31. In an exemplary embodiment, the base station frame structure 10 may include a first limiting portion 12, and the draining structure 20 is limited by the first limiting portion 12. The cleaning member is cleaned on the cleaning body 40, sewage generated during cleaning the cleaning member flows to the sewage collecting portion 31 of the sewage collecting body 30 through the filtering holes 41, and then flows into the draining structure 20 through the water outlet 32A of the sewage collecting body 30, while solid impurities will be deposited on the cleaning body 40 and the sewage collecting body 30. The entire cleaning process is performed on the cleaning body 40 and the sewage collecting body 30, and sewage and solid impurities will not run to the base station frame structure 10, such that it can maintain the cleanliness of the base station frame structure 10. In some exemplary embodiments, the first assembling portion 11a/11b/11c/11d is arranged on an inner side wall 13 of the base station frame structure 10. The sewage collecting body 30 may be a plate-shaped structure, the sewage collecting portion 31 is located on an upper surface of the sewage collecting body 30, the water outlet 32A is arranged on a lower surface of the sewage collecting body 30, and the second assembling portion 33a/33b/33c/33d is arranged on a side edge of the sewage collecting body 30. During the sewage collecting body 30 being assembled to the base station frame structure 10 along a direction from top to bottom or a direction from front to back, the second assembling portion 33a/33b/33c/33d is guided by and aligned with the first assembling portion 11a/11b/11c/11d to finally complete the assembly, while the water outlet 32A is detachably connected to the drainage channel structure 21, as such the sewage collecting body 30 is limited in the base station frame structure 10. In some embodiments, as shown in Fig. 13 and Fig. 18, the first assembling portion 11a'/11b'/11c'/11d', 11a"/11b"/11c"/11d" can also be arranged on side wall 13', 13" and bottom wall 14', 14" of the base station frame structure 10', 10", correspondingly, the second assembling portion 33a'/33b'/33c'/33d', 33a"/33b"/33c"/33d" can also be arranged on a lower surface of the sewage collecting body 30', 30". In some exemplary embodiments, the first assembling portion 11a/11b/11c/11d, 11a'/11b'/11c'/11d', 11a"/11b"/11c"/11d" and the second assembling portion 33a/33b/33c/33d, 33a'/33b'/33c'/33d', 33a"/33b"/33c"/33d" can be flat surfaces, curved surfaces, or special-shaped surfaces matched with each other, and can also be a coupled structure like block (or clasp) and slot (or hole), as long as the sewage collecting body can be limited in the base station frame structure. In an exemplary embodiment, the sewage collecting body 30 is located below the cleaning body 40, and sewage flows through the filtering holes 42 to the sewage collecting body 30. In some embodiments, the sewage collecting body 30 and the cleaning body 40 may be arranged along

a horizontal direction, as long as sewage can flow from the cleaning body 40 to the sewage collecting body 30. When the sewage collecting body 30 is subjected to an external force and the water outlet 32A is separated from the drainage channel structure 21, the second assembling portion 33a/33b/33c/33d and the first assembling portion 11a/11b/11c/11d will also be separated from each other because of the external force, that is, the sewage collecting body 30 can be disassembled from the base station frame structure 10.

[0030] In the embodiments described above, the cleaning body 40 is arranged on the sewage collecting body 30, and the sewage collecting body 30 can be disassembled from the base station frame structure 10. Solid impurities introduced during the cleaning process will be deposited on the cleaning body 40 and the sewage collecting body 30, and after the cleaning is completed, both the sewage collecting body 30 and the cleaning body 40 can be disassembled from the base station frame structure 10 to be washed directly by tap water, which is very convenient since it does not need users to bend down and wipe the base station frame structure 10 again and again. Therefore, the cleaning base station 1 can be cleaned conveniently, the cleaning process becomes more labor-saving and simple, and the using experience can be greatly improved.

[0031] In some embodiments, as shown in Fig. 5(A), Fig. 5(B) and Fig. 9, the draining structure 20 further includes an elastic connector 22 sleeved on one end of the drainage channel structure 21, and the water outlet 32A of the sewage collecting body 30 is connected to the drainage channel structure 21 through the elastic connector 22. The elastic connector 22 can ensure a sealing among the water outlet 32A, the drainage channel structure 21, and the elastic connector 22 benefiting from an elastic properties of the elastic connector 22. Therefore, sewage can be prevented from leaking to the base station frame structure 10 and even to the outside of the cleaning base station 1, so as to avoid polluting the use environment of the cleaning base station 1 as much as possible.

[0032] In some embodiments, as shown in Fig. 5(A), Fig. 5(B), Fig. 7, Fig. 9, Fig. 10(A) and Fig. 10(B), the sewage collecting body 30 further includes a pipe 32B connecting to the sewage collecting portion 31, and the water outlet 32A is located at an end of the pipe 32B. The elastic connector 22 includes a first connecting portion 221, a second connecting portion 222, and a filtering part 223, the first connecting portion 221 is sleeved on an outer peripheral wall of the pipe 32B, the second connecting portion 222 is sleeved on an outer peripheral wall of the drainage channel structure 21, and the filtering part 223 is located between the water outlet 32A and the drainage channel structure 21. Since the filtering part 223 is arranged between the water outlet 32A and the drainage channel structure 21, large solid impurities introduced by cleaning the cleaning member can stay on the sewage collecting body 30 to not enter into the drainage channel structure 21, as such, the drainage channel

structure 21 will not be blocked off by the large solid impurities, and damages to other components downstream of the water flow on the cleaning base station 1 can also be avoided as much as possible.

[0033] In some embodiments, as shown in Fig. 6 and Fig. 9, the first limiting portion 12 defines a limiting groove 121 and a receiving groove 122, the limiting groove 121 and the receiving groove 122 are spaced by a wall 123, and a first through hole 124 is defined in the wall 123 to communicate with the limiting groove 121 and the receiving groove 122. The elastic connector 22 further includes a first matching portion 224a/224b. The drainage channel structure 21 includes a guiding pipe 211, a positioning member 212, a connecting pipe 214, and a negative pressure adapter 213. The connecting pipe 214 has two ends with one connecting with the guiding pipe 211 and the other connecting with the negative pressure adapter 213, and the positioning member 212 is sleeved on an outer wall of the connecting pipe 214. An outer wall of the guiding pipe 211 is arranged with a first engaging portion 211A1/211A2 and a second engaging portion 211B1/211B2, the positioning member 212 includes a second matching portion 212A1/212A2, the first engaging portion 211A1/211A2 is engaged with and limited by the first matching portion 224a/224b, and the second engaging portion 211B1/211B2 is engaged with and limited by the second matching portion 212A1/212A2, as such the elastic connector 22, the guiding pipe 211, and the positioning pipe 212 are connected together. The elastic connector 22, the guiding pipe 211, the connecting pipe 214, and the positioning member 212 are all received and limited in the limiting groove 121. The negative pressure adapter 213 is received and limited in the receiving groove 122. The negative pressure adapter 213 includes a joint portion 213a, and the negative pressure adapter 213 is connected to the connecting pipe 214 through the joint portion 213a. The positioning member 212 further includes a main body portion 212B having two sides, one side of the main body portion 212B is connected with an auxiliary limiting portion 212C1, and the other side of the main body portion 212B is connected with an auxiliary limiting portion 212C2. The auxiliary limiting portions 212C1/212C2 are connected to and limited by an inner wall of the limiting groove 121. The main body portion 212B and the auxiliary limiting portions 212C1/212C2 cooperatively form a limiting space, and the connecting pipe 214 is limited in the limiting space. The joint portion 213a passes through the first through hole 124 and extends into the limiting groove 121 to connect with the connecting pipe 214. In an exemplary embodiment, sewage from the water outlet 32A of the sewage collecting body 30 enters the connecting pipe 214 through the guiding pipe 211 after being filtered by the filtering part 223 of the sewage collecting body 30, and then is discharged by the negative pressure adapter 213. In some other embodiments, as shown in Fig. 14, the limiting groove and the receiving groove of the first limiting portion may directly communicate with each other and are positioned on different

planes, for example, the different planes can be perpendicular to each other, presenting an L-shape; for being a more stable structure, the drainage channel structure 21 may not include the guiding pipe, the connecting pipe, and the negative pressure adapter, but only a structure of a single pipe, with one end connecting to the elastic connector 22'.

[0034] In some embodiments, as shown in Fig. 4, Fig. 13 and Fig. 18, in order to facilitate the cleaning, the cleaning body 40, 40', 40" and the sewage collecting body 30, 30', 30" can be separated from each other. In some instances, the sewage collecting body 30, 30', 30" further includes a third assembling portion 36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d", the cleaning body 40, 40', 40" includes a fourth assembling portion 42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a"/42b"/42c"/42d" which is assembled with the third assembling portion 36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d", allowing the cleaning body 40, 40', 40" to be limited in the sewage collecting body 30, 30', 30". In an exemplary embodiment, the sewage collecting body 30 includes a side wall 35, the third assembling portion 36a/36b/36c/36d is arranged on the side wall 35, the cleaning body 40 is a plate-shaped structure, and the fourth assembling portion 42a/42b/42c/42d is arranged on a side edge of the cleaning body 40. During the cleaning body 40 being assembled to the sewage collecting body 30 along a direction from top to bottom, the fourth assembling portion 42a/42b/42c/42d is guided by and aligned with the third assembling portion 36a/36b/36c/36d until completing the assembly, allowing the cleaning body 40 to be limited in the sewage collecting body 30. Optionally, the third assembling portion may also be arranged on a bottom wall of the sewage collecting body, and correspondingly, the fourth assembling portion may also be arranged on a lower side of the cleaning body. In some exemplary embodiments, the third assembling portion and the fourth assembling portion may be planes, curved surfaces, or special-shaped surfaces matched with each other, or may be a coupled structure of block (or clasp) and slot (or hole), as long as the cleaning body can be limited on the sewage collecting body. That is, the cleaning body and the sewage collecting body are detachably connected and can be separated from each other. Alternatively, the cleaning body and the sewage collecting body can also be movably connected, for example, one of the third assembling portion and the fourth assembling portion is a pivot structure and the other of the third assembling portion and the fourth assembling portion is a pivot bushing structure, or one of the third assembling portion and the fourth assembling portion is a sliding slot and the other of the third assembling portion and the fourth assembling portion is a slider. That is, the cleaning body and the sewage collecting body can rotate or flipped relative to each other through a pivot structure, or one can slide on another, which is not limited here.

[0035] In the embodiments described above, the sewage collecting body and the cleaning body are assembled by detachably or movably connecting, therefore, when solid impurities deposited on the sewage collecting body and the cleaning body are needed to be cleaned out, the cleaning body can be disassembled from the sewage collecting body, or can be moved relative to the sewage collecting body to expose the sewage collecting body, which makes the cleaning of the sewage collecting body and the cleaning body be more thoroughly and conveniently.

[0036] In some embodiments, as shown in Fig. 4 and Fig. 18, a periphery of the cleaning body 40, 40" is provided with a hem 50, 50". During cleaning the cleaning member of the robot, the bottom surface of the robot and the hem 50, 50" cooperatively define a closed or incompletely closed space inside the cleaning body 40, 40" where the cleaning member is cleaned, thus can prevent the sewage from splashing from the cleaning body 40, 40", and further, it can prevent the sewage from overflowing from the cleaning body 40, 40" in case the sewage does not discharge timely from the draining structure 20, 20". In other embodiments, as shown in Fig. 13, the hem 50' can also be arranged around the sewage collecting body 30', as long as sewage splashing or overflowing from the cleaning base station can be prevented as much as possible, which is not limited here.

[0037] Referring to Fig. 4 and Fig. 18 again, the cleaning body 40, 40" includes a sewage guiding area 43, 43" and a sewage filtering area 44, 44". In order to speed up the drying of the cleaning members and make the sewage in the cleaning body 40, 44" be quickly discharged, the sewage filtering area 44, 44" is defined with filtering holes 41, 41", the sewage guiding area 43, 43" is defined with a vent 61, 61" communicated with the filtering holes 41, 41", and a height of the vent 61, 61" is higher than that of the filtering holes 41, 41". In an exemplary embodiment, during cleaning the cleaning member, high-speed airflow is output from the vent 61, 61" to dry the cleaning member and blows the sewage in the sewage guiding area 43, 43" to the sewage filtering area 44, 44" to be discharged through the filtering holes 41, 41". Since the height of the vent 61, 61" is higher than that of the filtering holes 41, 41", it is possible to effectively prevent falling garbage from clogging the vent 61, 61". In some exemplary embodiments, as shown in Fig. 4 and Fig. 13, a convex stage 60, 60' is provided in the middle of the sewage guiding area 43, 43', and each one of the left and right sides of the convex stage 60, 60' is arranged with a vent 61, 61'. By such an arrangement of the vents 61, 61', the airflow can be uniformly blown to the whole cleaning member. Further, in order to increase an air-drying speed of the cleaning member and the cleaning body, a heating device (not shown) is arranged at the vent, so that hot wind can be output from the vent to the sewage filtering area. In some embodiments, as shown in Fig. 8 and Figs. 17-20, the cleaning body 40, 40" is further provided with an air passage 62, 62" communicating with

the vent 61, 61", and a rib plate 63, 63' in the air passage 62, 62" is configured to distribute the airflow to the two vents 61a/61b, 61a"/61b" located on both sides of the sewage guiding area. In some other embodiments, as shown in Fig. 12, Fig. 13 and Fig. 16, vent 61' can also be arranged on the sewage collecting body 30', correspondingly, the cleaning body 40' is arranged at the front of the sewage collecting body 30', the convex stage 60' is arranged in the middle of the sewage collecting body 30' and is near to the cleaning body 40', and each one of the left and right sides of the convex stage 60' is defined with a vent 61'. Similarly, the sewage collecting body 30' is also provided with an air passage 62' that communicates with the vents 61', and a rib plate 63' is configured to distribute the airflow to the two vents 61' located on both sides of the sewage guiding area.

[0038] In some embodiments, as shown in Fig. 4, the sewage collecting portion 31 is provided with a converging structure 38 which is configured to collect sewage to the draining structure 20. The converging structure 38 includes an inclined surface 381 extended towards a joint of the sewage collecting portion 31 and the water outlet 32A. A joint of the sewage collecting body 30 and the draining structure 20 corresponds to the lowest position of the inclined surface 381. In some instances, the converging structure 38 further includes a converging surface 382 located on the sewage collecting body 30, and located at the lowest point of the inclined surface 381. The inclined surface 381 is arranged around the converging surface 382, extends towards the converging surface 382, and converges at the converging surface 382. In this embodiment, the sewage converging structure 38 is formed by the inclined surface 381 and the converging surface 382 arranged on the sewage collecting body 30, when sewage flows to the inclined surface 381, the sewage can automatically flow to the converging surface 382 below, such that the overflowing of the sewage on the sewage collecting body 30 can be reduced.

[0039] In some embodiments, the inclined surface 381 extends towards the converging surface 382 along a circumferential direction and converges at the converging surface 382. The inclined surface 381 may be an arc surface, a slant surface, or a special-shaped surface, which is not limited here.

[0040] In an exemplary embodiment, the converging structure 38 is directly defined by the inclined surface 381 and the converging surface 382 which are arranged on the sewage collecting body 30, when sewage flows to the inclined surface 381, the sewage can automatically flow to the converging surface 382 below, such that the overflowing of the sewage on the sewage collecting body 30 can be reduced.

[0041] In some embodiments, as shown in Fig. 23 and Fig. 24, the cleaning body 40''' is further provided with a garbage collector 70, the garbage collector 70 is arranged side by side with the cleaning body 40''' and communicated with the filtering holes 41''' to collect the garbage flowing out through the filtering holes 41'''. The gar-

bage collector 70 is detachably connected to the cleaning body 40''', such that it will be convenient to clean up the garbage accumulated in the garbage collector 70, so as to avoid a blocking to the filtering holes 41''', and facilitate the cleaning of the cleaning body 40'''.

[0042] In some embodiments, as shown in Fig. 4, the cleaning base station includes a base station frame structure 10 configured to support the cleaning body 40, the sewage collecting body 30, and the draining structure 20. The cleaning body 40 and the sewage collecting body 30 are configured to collect garbage and sewage, the converging structure 38 is configured to converge the sewage to the draining structure 20, and the draining structure 20 is configured to discharge the sewage, such that it can avoid an overflow of the sewage as much as possible. Further, the draining structure 20 is in a sealed connection with the sewage collecting body 30, so cleanliness of the base station frame structure 10 during cleaning of the cleaning member is improved. The base station frame structure 10 is detachably connected to the sewage collecting body 30, and the cleaning body 40 and the sewage collecting body 30 are assembled together, so maintaining a cleanliness of the base station frame structure 10, cleaning of the cleaning body 40 and cleaning of the sewage collecting body 30 can be performed conveniently. In this embodiment, for cleaning the cleaning base station, it is only necessary to clean the disassembled cleaning body 40 and the disassembled sewage collecting body 30, namely, it does not need to clean the whole cleaning base station 1, which improves the convenience of using the cleaning base station.

[0043] In some embodiments, as shown in Fig. 4, Fig. 11, Fig. 13, Fig. 15, and Figs. 18-22, the base station frame structure 10, 10', 10" is further provided with a water supplying structure 80, 80', 80". The water supplying structure 80, 80', 80" includes a water supplying pipe 81, 81', 81" defined with a water supplying outlet 82, 82', 82", and the sewage collecting body and/or the cleaning body is provided with an opening corresponding to and communicating with the water supplying outlet. In some exemplary embodiments, the sewage collecting body 30, 30" is provided with a first opening 39, 39", the cleaning body 40, 40" is provided with a second opening 45, 45", and the water supplying outlet 82, 82", the first opening 39, 39" and the second opening 45, 45" are configured to be arranged correspondingly and communicated with each other. Clean water or cleaning liquid is output from the water supplying outlet 82, 82", and then sequentially passes through the first opening 39, 39" and the second opening 45, 45" to enter the cleaning body 40, 40" or be directly supplied to the cleaning member, such that it does not need users to supply the clean water or cleaning liquid manually, which improves the convenience of using the cleaning base station 1. In another exemplary embodiment, the sewage collecting body 30' is provided with a first opening 39', and the water supplying outlet 82' and the first opening 39' are configured to be arranged correspondingly and communicated with each other.

[0044] In some embodiments, as shown in Fig. 4, Fig. 13, and Fig. 18, the sewage collecting body and/or the cleaning body includes an avoidance structure corresponding to the water supplying structure. In some exemplary embodiments, as shown in Figs. 4 and 18, the sewage collecting body 30, 30" is provided with a first avoidance structure 34, 34", and the first opening 39, 39" is defined on the first avoidance structure 34, 34". The cleaning body 40, 40" is provided with a second avoidance structure 46, 46", and the second opening 45, 45" is defined on the second avoidance structure 46, 46". The first avoidance structure 34, 34" is located above the water supplying pipe 81, 81" to make way for the water supplying pipe 81, 81", and the second avoidance structure 46, 46" is located above the first avoidance structure 34, 34" to make way for the first avoidance structure 34, 34". In an exemplary embodiment, the first avoidance structure 34 is a slotted structure, while taking into account the function of the first opening 39, that is, the first avoidance structure 34 can be the first opening 39. When the sewage collecting body is assembled on the base station frame structure, the first avoidance structure avoiding the water supplying pipe can allow the water supplying pipe supplying water smoothly, and the first avoidance structure can also limit a relative position between the sewage collecting body and the base station frame structure. Similarly, when the cleaning body is assembled on the sewage collecting body, the second avoidance structure avoids the first avoidance structure to allow the water supplying pipe supplying water smoothly, and the second avoidance structure can also limit a relative position between the cleaning body and the sewage collecting body. In some instances, the first avoidance structure and the second avoidance structure may be slots or openings penetrating the sewage collecting body or the cleaning body, or may be protruding structures adapted to the water supplying pipes, which is not limited here. In an exemplary embodiment, as shown in Fig. 13, the sewage collecting body 30' is provided with a first avoidance structure 34', and the first opening 39' is defined in the first avoidance structure 34'. The first avoidance structure 34' is configured to be arranged corresponding to the water supplying structure 80' to make way for the water supplying structure 80', and the first opening 39' is configured to be arranged corresponding to the water supplying outlet 82' to achieve smooth water supplying.

[0045] In some embodiments, as shown in Figs. 4, 11, 13, and 18-22, the water supplying pipe 81, 81', 81" is arranged obliquely towards the sewage collecting portion 31, 31', 31" and is provided with a wing 83, 83', 83" extended along the inclined direction of the water supplying pipe 81, 81', 81", and a guiding groove 84, 84', 84" is defined between the wing 83, 83', 83" and the water supplying pipe 81, 81', 81". In some instances, the water supplying pipe 81, 81', 81" is arranged obliquely towards the sewage collecting portion 31, 31', 31", and water returning from the water supplying pipe 81, 81', 81" can

outflow along the water supplying structure 80, 80', 80" to avoid residual water on the water supplying pipe 81, 81', 81" as much as possible. During cleaning the cleaning member located on the cleaning body 40, 40', 40", the water supplying pipe 81, 81', 81" can spray water to the cleaning body 40, 40', 40" or the cleaning member located on the cleaning body 40, 40', 40" through the water supplying outlet 82, 82', 82" formed thereon. Since one end of the water supplying pipe 81, 81', 81" is inclined downward, in case water output from the water supplying pipe 81, 81', 81" flows back, the water can follow along the outer wall of the water supplying pipe 81, 81', 81", which can avoid residual water on the water supplying pipe 81, 81', 81" as much as possible. The base station frame structure 10, 10', 10" is further provided with a mounting seat 15, 15', 15", and the water supplying pipe 81, 81', 81" is arranged on the mounting seat 15, 15', 15". In an exemplary embodiment, the sewage collecting body 30 is provided with a through hole communicating with the base station frame structure 10 (i.e., the above-mentioned first avoidance structure 34), a top of the mounting seat 15 passes through the through hole to locate above the sewage collecting body 30, and the water supplying pipe 81 is installed on the top of the mounting seat 15. In some embodiments, as shown in Figs. 15 and 19-20, the sewage collecting body 30', 30" is further defined with a drainage outlet 341', 341", the drainage outlet 341', 341" is arranged at one side of the first avoidance structure 34', 34" facing to the sewage collecting portion 31', 31", and is communicated with the first opening 39', 39". In case water flowing from the water supplying outlets 82', 82" returns back, the water can flow to the sewage collecting portion 31', 31" through the first opening 39', 39' and the drainage outlet 341', 341" in sequence, such that it can prevent sewage overflowing to the outside of the cleaning base station as much as possible.

[0046] In some embodiments, as shown in Fig. 4, the base station frame structure 10 includes a bottom wall 14, the bottom wall 14 is provided with a barrier rib 16 to allow the bottom wall 14 forming a closed area 17, and the water supplying pipe 81 is located in the closed area 17. The barrier rib 16 is configured to prevent the water in the closed area 17 flowing out of the closed area 17. In some instances, the barrier rib 16 is arranged around the mounting seat 15, so that the region where the mounting seat 15 is located forms the closed area 17. The closed area 17 is arranged corresponding to the water supplying pipe 81, allowing the water supplying pipe 81 being located in the closed area 17, that is, the water supplying pipe 81 is closed in an enclosed space by the closed area 17. The closed area 17 is also configured to receive the water flowing from the water supplying pipe 81 to prevent the water flowing out of the closed area 17 as much as possible, so as to define a dry and wet separation area on the base station frame structure 10, which is in favor of maintaining the overall cleanliness of the bottom wall 14 of the base station frame

structure 10 and performing a local cleaning of the base station frame structure 10.

[0047] In some embodiments, as shown in Figs. 4, 11, 13, and 18-22, the water supplying pipe 81, 81', 81" is arranged obliquely towards the sewage collecting portion 31, 31', 31", the water supplying pipe 81, 81', 81" is provided with a wing 83, 83', 83" extended along the inclined direction of the water supplying pipe 81, 81', 81", and a guiding grooves 84, 84', 84" is defined between the wing 83, 83', 83" and the water supplying pipe 81, 81', 81". In some instances, the wing 83, 83', 83" is arranged on the pipe body of the water supplying pipe 81, 81', 81", and the guiding groove 84, 84', 84" is defined between the wing 83, 83', 83" and the pipe body of the water supplying pipe 81, 81', 81" and extended along the inclined direction of the water supplying pipe 81, 81', 81". The guiding groove 84, 84', 84" can converge and guide the returning water, so that the returning water can concentrate and flow down along a lower end of the water supplying pipe 81, 81', 81" and finally flows to the water outlet, such that it can prevent the water from overflowing to the outside of the cleaning base station as much as possible. In some instances, each of opposite two sides of the water supplying pipe 81, 81', 81" is provided with a wing 83, 83', 83". In some instances, a baffle plate 85, 85', 85" connected to the wing 83, 83', 83" is provided at a higher end of the water supplying pipe 81, 81', 81" and is configured to block off a higher end of the guiding groove 84, 84', 84". The arrangement of the baffle plate 85, 85', 85" can effectively prevent water flowing out from the higher end of the guiding groove 84, 84', 84" as much as possible in case there is too much water in the guiding groove 84, 84', 84". In an exemplary embodiment, the water supplying structure 80" further includes a sealing structure 86" disposed between the water supplying pipe 81" and the first avoidance structure 34", and the sealing structure 86' is configured to seal the first opening 39" on the first avoidance structure 34" to prevent the water flowing back from the water supplying outlet 82', 82" from flowing back through the first opening 39" as much as possible, so as to ensure an sufficient amount of water that can be supplied to the cleaning body 40" or the cleaning member.

[0048] In an exemplary embodiment, the pipe body of the water supplying pipe 81"" is not limited to be obliquely arranged. In such a case, for ensuring the water returning from the water supplying pipe 81"" being guided away, the water supplying structure may include other flow guiding structures, for example, a flow guiding member 83"", which is configured to connect to the water supplying pipe 81"". The flow guiding member 83"" is arranged obliquely, so the water flowing back from the water supplying pipe 81"" can at least partially flow to the flow guiding member 83"" and then flow outside along the flow guiding member 83"". It can be merely an upper end of the flow guiding member 83"" being connected with an upper end of the water supplying pipe 81"", which is not limited here.

[0049] While the disclosure has been described in connection with what are presently considered to be optional embodiments, it is to be understood that the disclosure is not to be limited to the disclosed embodiments, but on the contrary, is intended to cover various modifications and equivalent arrangement included within the scope of the disclosure.

10 Claims

1. A cleaning base station (1), configured for providing cleaning water to clean a cleaning member of a cleaning robot, and taking back sewage produced during cleaning the cleaning member, the cleaning base station (1) comprising:

a base station frame structure (10, 10', 10") comprising a first assembling portion (11a/11b/11c/11d, 11a' /11 b' /11 c' /11 d', 11a"/11b"/11c"/11d");

a draining structure (20, 20', 20") arranged on the base station frame structure (10, 10', 10"), and the draining structure (20, 20', 20") comprising a drainage channel structure (21);

a sewage collecting body (30, 30', 30") comprising:

a sewage collecting portion (31, 31', 31");

a second assembling portion (33a/33b/33c/33d, 33a'/33b'/33c'/33d', 33a"/33b"/33c"/33d") engaged with the first assembling portion (11a/11b/11c/11d, 11a'/11b'/11c'/11d', 11a"/11b"/11c"/11d"), allowing the sewage collecting body (30, 30', 30") being assembled to and limited by the base station frame structure (10, 10', 10"); and

a water outlet (32A) communicated with the sewage collecting portion (31, 31', 31"), and detachably connected with the drainage channel structure (21); and

a cleaning body (40, 40', 40") arranged on the sewage collecting body (30, 30', 30"), and the cleaning body (40, 40', 40") defining a filtering hole (41, 40", 40") communicated with the sewage collecting portion (31, 31', 31"), **characterized in that,**

the sewage collecting body (30, 30', 30") further comprises a third assembling portion (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d"), and the cleaning body (40, 40', 40") comprises a fourth assembling portion (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a"/42b"/42c"/42d") assembled with the third assembling portion (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d"), al-

lowing the cleaning body (40, 40', 40") to be limited in the sewage collecting body (30, 30', 30").

2. The cleaning base station as claimed in claim 1, wherein

the first assembling portion (11a/11b/11c/11d, 11a'/11b'/11c'/11d', 11a"/11b"/11c"/11d") and the second assembling portion (33a/33b/33c/33d, 33a'/33b'/33c'/33d', 33a"/33b"/33c"/33d") are planes, curved surfaces, or special-shaped surfaces matched with each other; or one of the first assembling portion (11a/11b/11c/11d, 11a'/11b'/11c'/11d', 11a"/11b"/11c"/11d") and the second assembling portion (33a/33b/33c/33d, 33a'/33b'/33c'/33d', 33a"/33b"/33c"/33d") is a block or a clasp structure, and the other of the first assembling portion (11a/11b/11c/11d, 11a'/11b'/11c'/11d', 11a"/11b"/11c"/11d") and the second assembling portion (33a/33b/33c/33d, 33a'/33b'/33c'/33d', 33a"/33b"/33c"/33d") is a slot or a hole structure.

3. The cleaning base station (1) as claimed in claim 1, wherein the draining structure (20) further comprises an elastic connector (22) sleeved on an end of the drainage channel structure (21), and the water outlet (32A) is connected to the drainage channel structure (21) through the elastic connector (22).

4. The cleaning base station (1) as claimed in claim 3, wherein the sewage collecting body (30) further comprises a pipe (32B) connected to the sewage collecting portion (31), and the water outlet (32A) is located at an end of the pipe (32B); the elastic connector (22) comprises:

a first connecting portion (221) sleeved on an outer peripheral wall of the pipe (32B); a second connecting portion (222) sleeved on an outer peripheral wall of the drainage channel structure (21); and a filtering part (223) located between the water outlet (32A) and the drainage channel structure (21).

5. The cleaning base station (1) as claimed in claim 1, wherein

the third assembling portion (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d") and the fourth assembling portion (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a"/42b"/42c"/42d") are planes, curved surfaces, or special-shaped surfaces matched with each other; or

one of the third assembling portion (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d") and the fourth assembling portion (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a"/42b"/42c"/42d") is a block or a clasp structure, and the other of the third assembling portion (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d") and the fourth assembling portion (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a"/42b"/42c"/42d") is a slot or a hole structure; or

one of the third assembling portion (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d") and the fourth assembling portion (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a"/42b"/42c"/42d") is a pivot structure, and the other of the third assembling portion (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d") and the fourth assembling portion (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a"/42b"/42c"/42d") is a pivot bushing structure; or

one of the third assembling portion (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d") and the fourth assembling portion (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a"/42b"/42c"/42d") is a sliding slot and the other of the third assembling portion (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d") and the fourth assembling portion (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a"/42b"/42c"/42d") is a slider.

6. The cleaning base station (1) as claimed in claim 1, wherein the base station frame structure (10, 10', 10") is provided with a water supplying structure (80, 80', 80"), and the water supplying structure (80, 80', 80") comprises a water supplying pipe (81, 81', 81") defined with a water supplying outlet (82, 82', 82"); the sewage collecting body (30, 30', 30") and/or the cleaning body (40, 40', 40") is provided with an opening configured for communicating with the water supplying outlet (82, 82', 82").

7. The cleaning base station (1) as claimed in claim 1, wherein the sewage collecting body (30, 30") is defined with a first opening (39, 39"), the cleaning body (40, 40") is defined with a second opening (45, 45"), and the water supplying outlet (82, 82"), the first opening (39, 39") and the second opening (45, 45") are configured to be arranged correspondingly and communicate with each other; or the sewage collecting body (30, 30', 30") is defined with a first opening (39, 39', 39"), and the water supplying outlet (82, 82', 82") and the first opening (39, 39', 39") are configured to be arranged correspondingly and communicate with each other.

8. The cleaning base station (1) as claimed in claim 6, wherein the sewage collecting body (30, 30', 30'') and/or the cleaning body (40, 40', 40'') comprises an avoidance structure arranged corresponding to the water supplying structure (80, 80', 80'') to make way for the water supplying pipe (81, 81', 81''). 5
9. The cleaning base station (1) as claimed in claim 6, wherein the sewage collecting body (30, 30'') is defined with a first avoidance structure (34, 34''), the first opening (39, 39'') is defined on the first avoidance structure (34, 34''), and the first avoidance structure (34, 34'') is located above the water supplying pipe (81, 81''); and the cleaning body (40, 40'') is provided with a second avoidance structure (46, 46''), the second opening (45, 45'') is defined on the second avoidance structure (46, 46''), and the second avoidance structure (46, 46'') is located above the first avoidance structure (34, 34'') to make way for the first avoidance structure (34, 34'') or the water supplying pipe (81, 81''). 10
10. The cleaning base station (1) as claimed in claim 6, wherein the water supplying pipe (81, 81', 81'') is arranged obliquely towards the sewage collecting portion (31, 31', 31''), the water supplying pipe (81, 81', 81'') is provided with a wing (83, 83', 83'') extended along an inclined direction of the water supplying pipe (81, 81', 81''), and a guiding groove (84, 84', 84'') is defined between the wing (83, 83', 83'') and the water supplying pipe (81, 81', 81''). 15
11. The cleaning base station (1) as claimed in claim 6, wherein a baffle plate (85, 85', 85'') is provided at a higher end of the water supplying pipe (81, 81', 81''), the baffle plate (85, 85', 85'') is connected with the wing (83, 83', 83''), and is configured to block off the higher end of the water supplying pipe (81, 81', 81''). 20
12. The cleaning base station (1) as claimed in claim 8, wherein the water supplying structure (80'') further comprises a sealing structure (86'') arranged between the water supplying pipe (81'') and the avoidance structure. 25
13. The cleaning base station (1) as claimed in claim 6, wherein the water supplying pipe (81''') is connected with a flow guiding member (83''') which is arranged obliquely, and the flow guiding member (83''') is configured to guide the water flowing back from the water supplying pipe (81''') and make the water flow outside along the flow guiding member (83'''). 30
14. The cleaning base station (1) as claimed in claim 1, wherein the cleaning body (40, 40', 40'') is defined with a vent hole (61, 61', 61'') communicated with 35

the filtering hole (41, 41', 41''), and a height of the vent hole (61, 61', 61'') is higher than that of the filtering hole (41, 41', 41''). 40

Patentansprüche

1. Reinigungsbasisstation (1), die dazu konfiguriert ist, Reinigungswasser zum Reinigen eines Reinigungselements eines Reinigungsroboters bereitzustellen und während der Reinigung des Reinigungselements erzeugtes Abwasser zurückzunehmen, wobei die Reinigungsbasisstation (1) umfasst:

eine Basisstations-Rahmenstruktur (10, 10', 10'') mit einem ersten Montageabschnitt (11a/11b/11c/11d, 11a'/11b'/11c'/11d', 11a''/11b''/11c''/11d''); 45

eine Entwässerungsstruktur (20, 20', 20''), die an der Basisstations-Rahmenstruktur (10, 10', 10'') angeordnet ist, wobei die Entwässerungsstruktur (20, 20', 20'') eine Entwässerungskanalstruktur (21) umfasst; 50

einen Abwassersammelkörper (30, 30', 30''), umfassend:

einen Abwassersammelabschnitt (31, 31', 31''); 55

einen zweiten Montageabschnitt (33a/33b/33c/33d, 33a'/33b'/33c'/33d', 33a''/33b''/33c''/33d''), der mit dem ersten Montageabschnitt (11a/11b/11c/11d, 11a'/11b'/11c'/11d', 11a''/11b''/11c''/11d'') in Eingriff steht, so dass der Abwassersammelkörper (30, 30', 30'') an der Basisstations-Rahmenstruktur (10, 10', 10'') montiert und von dieser begrenzt wird; und einen Wasserauslass (32A), der mit dem Abwassersammelabschnitt (31, 31', 31'') kommuniziert und abnehmbar mit der Entwässerungskanalstruktur (21) verbunden ist; und 60

einen Reinigungskörper (40, 40', 40''), der an dem Abwassersammelkörper (30, 30', 30'') angeordnet ist, wobei der Reinigungskörper (40, 40', 40'') ein Filterloch (41, 40'', 40''') definiert, das mit dem Abwassersammelabschnitt (31, 31', 31'') kommuniziert, **dadurch gekennzeichnet, dass,** 65

der Abwassersammelkörper (30, 30', 30'') ferner einen dritten Montageabschnitt (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a''/36b''/36c''/36d'') umfasst, und der Reinigungskörper (40, 40', 40'') einen vierten Montageabschnitt (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a''/42b''/42c''/42d'') umfasst, der mit dem dritten Montageabschnitt 70

- (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d") zusammengebaut ist, wodurch der Reinigungskörper (40, 40', 40") in dem Abwassersammelkörper (30, 30', 30") begrenzt werden kann.
2. Reinigungsbasisstation nach Anspruch 1, **dadurch gekennzeichnet, dass** der erste Montageabschnitt (11a/11b/11c/11d, 11a'/11b'/11c'/11d', 11a"/11b"/11c"/11d") und der zweite Montageabschnitt (33a/33b/33c/33d, 33a'/33b'/33c'/33d', 33a"/33b"/33c"/33d") ebene, gekrümmte Flächen oder speziell geformte Flächen sind, die aneinander angepasst sind; oder einer von dem ersten Montageabschnitt (11a/11b/11c/11d, 11a'/11b'/11c'/11d', 11a"/11b"/11c"/11d") und dem zweiten Montageabschnitt (33a/33b/33c/33d, 33a'/33b'/33c'/33d', 33a"/33b"/33c"/33d") eine Block- oder eine Klammerstruktur ist, und der andere des ersten Montageabschnitts (11a/11b/11c/11d, 11a'/11b'/11c'/11d', 11a"/11b"/11c"/11d") und des zweiten Montageabschnitts (33a/33b/33c/33d, 33a'/33b'/33c'/33d', 33a"/33b"/33c"/33d") eine Schlitz- oder eine Lochstruktur ist.
3. Reinigungsbasisstation (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** die Entwässerungsstruktur (20) ferner ein elastisches Verbindungsstück (22) umfasst, das an einem Ende der Entwässerungskanalstruktur (21) angebracht ist, und der Wasserauslass (32A) durch das elastische Verbindungsstück (22) mit der Entwässerungskanalstruktur (21) verbunden ist.
4. Reinigungsbasisstation (1) nach Anspruch 3, **dadurch gekennzeichnet, dass** der Abwassersammelkörper (30) ferner ein Rohr (32B) umfasst, das mit dem Abwassersammelabschnitt (31) verbunden ist, und der Wasserauslass (32A) an einem Ende des Rohrs (32B) angeordnet ist; das elastische Verbindungsstück (22) umfasst:
- einen ersten Verbindungsabschnitt (221), der an einer äußeren Umfangswand des Rohrs (32B) angebracht ist;
- einen zweiten Verbindungsabschnitt (222), der an einer äußeren Umfangswand der Entwässerungskanalstruktur (21) angebracht ist; und
- ein Filterteil (223), das zwischen dem Wasserauslass (32A) und der Entwässerungskanalstruktur (21) angeordnet ist.
5. Reinigungsbasisstation (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** der dritte Montageabschnitt (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d") und der vierte Montageabschnitt (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a"/42b"/42c"/42d") ebene, gekrümmte Flächen oder speziell geformte Flächen sind, die aneinander angepasst sind; oder einer von dem dritten Montageabschnitt (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d") und dem vierten Montageabschnitt (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a"/42b"/42c"/42d") eine Block- oder eine Klammerstruktur ist, und der andere des dritten Montageabschnitts (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d") und des vierten Montageabschnitts (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a"/42b"/42c"/42d") eine Schlitz- oder eine Lochstruktur ist; oder einer von dem dritten Montageabschnitt (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d") und dem vierten Montageabschnitt (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a"/42b"/42c"/42d") eine Schwenkstruktur ist, und der andere des dritten Montageabschnitts (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d") und des vierten Montageabschnitts (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a"/42b"/42c"/42d") eine Drehbuchsenstruktur ist; oder einer von dem dritten Montageabschnitt (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d") und dem vierten Montageabschnitt (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a"/42b"/42c"/42d") ein Gleitschlitz ist und der andere des dritten Montageabschnitts (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a"/36b"/36c"/36d") und des vierten Montageabschnitts (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a"/42b"/42c"/42d") ein Schieber ist.
6. Reinigungsbasisstation (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** die Basisstations-Rahmenstruktur (10, 10', 10") mit einer Wasserzufuhrstruktur (80, 80', 80") versehen ist und die Wasserzufuhrstruktur (80, 80', 80") ein Wasserzufuhrrohr (81, 81', 81") umfasst, das mit einem Wasserzufuhrauslass (82, 82', 82") versehen ist; dass der Abwassersammelkörper (30, 30', 30") und/oder der Reinigungskörper (40, 40', 40") mit einer Öffnung versehen ist, die dazu konfiguriert ist, dass sie mit dem Wasserversorgungsauslass (82, 82', 82") kommuniziert.
7. Reinigungsbasisstation (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** der Abwassersammelkörper (30, 30) mit einer ersten Öffnung (39, 39) und der Reinigungskörper (40, 40) mit einer zweiten Öffnung (45, 45) versehen ist, und der Wasserzufuhrauslass (82, 82), die erste Öffnung (39, 39) und die zweite Öffnung (45, 45) so konfiguriert sind, dass

sie entsprechend angeordnet sind und miteinander kommunizieren; oder

der Abwassersammelkörper (30, 30', 30") mit einer ersten Öffnung (39, 39', 39) versehen ist und der Wasserzufuhrauslass (82, 82', 82) und die erste Öffnung (39, 39', 39) dazu konfiguriert sind, dass sie

8. Reinigungsbasisstation (1) nach Anspruch 6, **dadurch gekennzeichnet, dass** der Abwassersammelkörper (30, 30', 30") und/oder der Reinigungskörper (40, 40', 40") eine Ausweichstruktur aufweist, die entsprechend der Wasserzufuhrstruktur (80, 80', 80") angeordnet ist, um dem Wasserzufuhrrohr (81, 81', 81") Platz zu machen.

9. Reinigungsbasisstation (1) nach Anspruch 6, **dadurch gekennzeichnet, dass** der Abwassersammelkörper (30, 30") mit einer ersten Ausweichstruktur (34, 34") versehen ist, die erste Öffnung (39, 39") an der ersten Ausweichstruktur (34, 34") ausgebildet ist und die erste Ausweichstruktur (34, 34") oberhalb des Wasserzufuhrrohrs (81, 81") angeordnet ist, um für das Wasserzufuhrrohr (81, 81") Platz zu machen; und dass der Reinigungskörper (40, 40") mit einer zweiten Ausweichstruktur (46, 46") versehen ist, die zweite Öffnung (45, 45") an der zweiten Ausweichstruktur (46, 46") ausgebildet ist und die zweite Ausweichstruktur (46, 46") oberhalb der ersten Ausweichstruktur (34, 34") angeordnet ist, um der ersten Ausweichstruktur (34, 34") oder dem Wasserzufuhrrohr (81, 81") Platz zu machen.

10. Reinigungsbasisstation (1) nach Anspruch 6, **dadurch gekennzeichnet, dass** das Wasserzufuhrrohr (81, 81', 81") schräg zum Abwassersammelabschnitt (31, 31', 31") angeordnet ist, das Wasserzufuhrrohr (81, 81', 81") mit einem Flügel (83, 83', 83") versehen ist, der sich entlang einer geneigten Richtung des Wasserzufuhrrohrs (81, 81', 81") erstreckt, und eine Führungsnut (84, 84', 84") zwischen dem Flügel (83, 83', 83") und dem Wasserzufuhrrohr (81, 81', 81") definiert ist.

11. Reinigungsbasisstation (1) nach Anspruch 6, **dadurch gekennzeichnet, dass** an einem oberen Ende des Wasserzufuhrrohrs (81, 81', 81") eine Prallplatte (85, 85', 85") vorgesehen ist, die mit dem Flügel (83, 83', 83") verbunden ist, und ist dazu konfiguriert, dass das obere Ende des Wasserzufuhrrohrs (81, 81', 81") abgesperrt wird.

12. Reinigungsbasisstation (1) nach Anspruch 8, **dadurch gekennzeichnet, dass** die Wasserzufuhrstruktur (80") ferner eine Dichtungsstruktur (86") umfasst, die zwischen dem Wasserzufuhrrohr (81") und

der Ausweichstruktur angeordnet ist.

13. Reinigungsbasisstation (1) nach Anspruch 6, **dadurch gekennzeichnet, dass** das Wasserzufuhrrohr (81") mit einem Strömungsführungselement (83") verbunden ist, das schräg angeordnet ist, und das Strömungsführungselement (83") so konfiguriert ist, dass es das aus dem Wasserzufuhrrohr (81") zurückfließende Wasser leitet und das Wasser entlang des Strömungsführungselements (83") nach außen fließen lässt.

14. Reinigungsbasisstation (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** der Reinigungskörper (40, 40', 40") mit einem Entlüftungsloch (61, 61', 61") versehen ist, das mit dem Filterloch (41, 41', 41") kommuniziert, und die Höhe des Entlüftungslochs (61, 61', 61") höher als die des Filterlochs (41, 41', 41") ist.

Revendications

1. Station de base de nettoyage (1), configurée pour alimenter en eau de nettoyage pour nettoyer un élément de nettoyage d'un robot de nettoyage, et collecter l'eau usée produite lors du nettoyage de l'élément de nettoyage, la station de base de nettoyage (1) comprenant :

une structure de cadre de la station de base (10, 10', 10") comprenant une première portion d'assemblage (11a/11b/11c/11d, 11a'/11b'/11c'/11d', 11a"/11b"/11c"/11d");

une structure de drainage (20, 20', 20") disposée sur la structure de cadre de la station de base (10, 10', 10"), la structure de drainage (20, 20', 20") comprenant une structure de conduite de drainage (21);

un corps de collection de l'eau usée (30, 30', 30") comprenant:

une portion de collection de l'eau usée (31, 31', 31");

une deuxième portion d'assemblage (33a/33b/33c/33d, 33a'/33b'/33c'/33d', 33a"/33b"/33c"/33d") engagée avec la première portion d'assemblage (11a/11b/11c/11d, 11a'/11b'/11c'/11d', 11a"/11b"/11c"/11d"), permettant au corps de collection de l'eau usée (30, 30', 30") d'être assemblé et limité par la structure de cadre de la station de base (10, 10', 10"); et une sortie d'eau (32A) en communication avec la portion de collection de l'eau usée (31, 31', 31") et reliée de façon détachable à la structure de conduite de drainage (21); et

- un corps de nettoyage (40, 40', 40'') disposé sur le corps de collection de l'eau usée (30, 30', 30''), le corps de nettoyage (40, 40', 40'') délimitant un trou filtrant (41, 40'', 40'') en communication avec la portion de collection de l'eau usée (31, 31', 31''), **caractérisé en ce que**, le corps de collection de l'eau usée (30, 30', 30'') comprend en outre une troisième portion d'assemblage (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a''/36b''/36c''/36d''), et le corps de nettoyage (40, 40', 40'') comprend une quatrième portion d'assemblage (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a''/42b''/42c''/42d'') assemblée avec la troisième portion d'assemblage (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a''/36b''/36c''/36d''), permettant au corps de nettoyage (40, 40', 40'') d'être limité dans le corps de collection de l'eau usée (30, 30', 30'').
2. Station de base de nettoyage selon la revendication 1, dans laquelle
- la première portion d'assemblage (11a/11b/11c/11d, 11a'/11b'/11c'/11d', 11a''/11b''/11c''/11d'') et la deuxième portion d'assemblage (33a/33b/33c/33d, 33a'/33b'/33c'/33d', 33a''/33b''/33c''/33d'') sont des surfaces planes, courbes ou en forme spéciale correspondantes les unes aux autres; ou l'une de la première portion d'assemblage (11a/11b/11c/11d, 11a'/11b'/11c'/11d', 11a''/11b''/11c''/11d'') et de la deuxième portion d'assemblage (33a/33b/33c/33d, 33a'/33b'/33c'/33d', 33a''/33b''/33c''/33d'') présente une structure de bloc ou de fermoir, et l'autre de la première portion d'assemblage (11a/11b/11c/11d, 11a'/11b'/11c'/11d', 11a''/11b''/11c''/11d'') et de la deuxième portion d'assemblage (33a/33b/33c/33d, 33a'/33b'/33c'/33d', 33a''/33b''/33c''/33d'') présente une structure de fente ou de trou.
3. Station de base de nettoyage (1) selon la revendication 1, dans laquelle la structure de drainage (20) comprend en outre un connecteur élastique (22) gainé sur une extrémité de la structure de conduite de drainage (21), et la sortie d'eau (32A) est reliée à la structure de conduite de drainage (21) par l'intermédiaire du connecteur élastique (22).
4. Station de base de nettoyage (1) selon la revendication 3, dans laquelle le corps de collection de l'eau usée (30) comprend en outre un tuyau (32B) relié à la portion de collection de l'eau usée (31), et la sortie d'eau (32A) est située à une extrémité du tuyau (32B); le connecteur élastique (22) comprend:

une première portion de raccordement (221) gainée sur une paroi périphérique externe du tuyau (32B);

une deuxième portion de raccordement (222) gainée sur une paroi périphérique externe de la structure de conduite de drainage (21); et

une portion filtrante (223) située entre la sortie d'eau (32A) et la structure de conduite de drainage (21).

5. Station de base de nettoyage (1) selon la revendication 1, dans laquelle

la troisième portion d'assemblage (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a''/36b''/36c''/36d'') et la quatrième portion d'assemblage (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a''/42b''/42c''/42d'') sont des surfaces planes, courbes ou en forme spéciale correspondantes les unes aux autres; ou l'une de la troisième portions d'assemblage (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a''/36b''/36c''/36d'') et de la quatrième portion d'assemblage (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a''/42b''/42c''/42d'') présente une structure de bloc ou de fermoir, et l'autre de la troisième portion d'assemblage (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a''/36b''/36c''/36d'') et de la quatrième portion d'assemblage (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a''/42b''/42c''/42d'') présente une structure de fente ou de trou; ou l'une de la troisième portions d'assemblage (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a''/36b''/36c''/36d'') et de la quatrième portion d'assemblage (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a''/42b''/42c''/42d'') présente une structure pivotante, et l'autre de la troisième portion d'assemblage (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a''/36b''/36c''/36d'') et la quatrième portion d'assemblage (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a''/42b''/42c''/42d'') présente une structure de chemise pivotante; ou l'une de la troisième portion d'assemblage (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a''/36b''/36c''/36d'') et de la quatrième portion d'assemblage (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a''/42b''/42c''/42d'') présente une structure de fente coulissante, et l'autre de la troisième portion d'assemblage (36a/36b/36c/36d, 36a'/36b'/36c'/36d', 36a''/36b''/36c''/36d'') et de la quatrième portion d'assemblage (42a/42b/42c/42d, 42a'/42b'/42c'/42d', 42a''/42b''/42c''/42d'') est un coulisseau.

6. Station de base de nettoyage (1) selon la revendication 1, dans laquelle

- cation 1, dans laquelle la structure de cadre de la station de base (10, 10', 10'') est pourvue d'une structure d'alimentation en eau (80, 80', 80''), et la structure d'alimentation en eau (80, 80', 80'') comprend un tuyau d'alimentation en eau (81, 81', 81'') délimité par une sortie d'alimentation en eau (82, 82', 82''); et le corps de collection de l'eau usée (30, 30', 30'') et/ou le corps de nettoyage (40, 40', 40'') sont/est pourvue d'une ouverture configurée pour communiquer avec la sortie d'eau (82, 82', 82'').
7. Station de base de nettoyage (1) selon la revendication 1, dans laquelle le corps de collection de l'eau usée (30, 30'') est délimité par une première ouverture (39, 39''), le corps de nettoyage (40, 40'') est délimité par une deuxième ouverture (45, 45''), et la sortie d'alimentation en eau (82, 82''), la première ouverture (39, 39'') et la deuxième ouverture (45, 45'') sont configurées pour être disposées en conséquence et en communication l'une avec l'autre; ou le corps de collection de l'eau usée (30, 30', 30'') est délimité par une première ouverture (39, 39', 39''), et la sortie d'alimentation en eau (82, 82', 82'') et la première ouverture (39, 39', 39'') sont configurées pour être disposées en conséquence et en communication l'une avec l'autre.
8. Station de base de nettoyage (1) selon la revendication 6, dans laquelle le corps de collection de l'eau usée (30, 30', 30'') et/ou le corps de nettoyage (40, 40', 40'') comprennent/comprend une structure d'évitement disposée en correspondance à la structure d'alimentation en eau (80, 80', 80'') pour éviter la conduite d'alimentation en eau (81, 81', 81'').
9. Station de base de nettoyage (1) selon la revendication 6, dans laquelle le corps de collection de l'eau usée (30, 30'') est délimité par une première structure d'évitement (34, 34''), la première ouverture (39, 39'') est prévue sur la première structure d'évitement (34, 34''), et la première structure d'évitement (34, 34'') est située au-dessus du tuyau d'alimentation en eau (81, 81'') pour éviter le tuyau d'alimentation en eau (81, 81''); et le corps de nettoyage (40, 40'') est pourvu d'une deuxième structure d'évitement (46, 46''), la deuxième ouverture (45, 45'') est prévue sur la deuxième structure d'évitement (46, 46''), et la deuxième structure d'évitement (46, 46'') est située au-dessus de la première structure d'évitement (34, 34'') pour éviter la première structure d'évitement (34, 34'') ou le tuyau d'alimentation en eau (81, 81'').
10. Station de base de nettoyage (1) selon la revendication 6, dans laquelle le tuyau d'alimentation en eau (81, 81', 81'') est disposé obliquement vers la portion de collection de l'eau usée (31, 31', 31''), le tuyau d'alimentation en eau (81, 81', 81'') est pourvu d'une aile (83, 83', 83'') s'étendant selon une direction inclinée du tuyau d'alimentation en eau (81, 81', 81''), et une rainure de guidage (84, 84', 84'') est prévue entre l'aile (83, 83', 83'') et le tuyau d'alimentation en eau (81, 81', 81'').
11. Station de base de nettoyage (1) selon la revendication 6, dans laquelle une plaque de déflecteur (85, 85', 85'') est prévue à une extrémité supérieure du tuyau d'alimentation en eau (81, 81', 81''), la plaque de déflecteur (85, 85', 85'') est reliée à l'aile (83, 83', 83'') et est configurée pour bloquer l'extrémité supérieure du tuyau d'alimentation en eau (81, 81', 81'').
12. Station de base de nettoyage (1) selon la revendication 8, dans laquelle la structure d'alimentation en eau (80'') comprend en outre une structure d'étanchéité (86'') disposée entre le tuyau d'alimentation en eau (81'') et la structure d'évitement.
13. Station de base de nettoyage (1) selon la revendication 6, dans laquelle le tuyau d'alimentation en eau (81'') est relié à un élément de guidage de flux (83''') disposé obliquement, et l'élément de guidage de flux (83''') est configuré pour guider l'eau retournant du tuyau d'alimentation en eau (81'') et faire couler l'eau à l'extérieur le long de l'élément de guidage de flux (83''').
14. Station de base de nettoyage (1) selon la revendication 1, dans laquelle le corps de nettoyage (40, 40', 40'') est délimité par un trou d'évent (61, 61', 61'') en communication avec le trou filtrant (41, 41', 41''), le trou d'évent (61, 61', 61'') présentant une hauteur supérieure à celle du trou filtrant (41, 41', 41'').

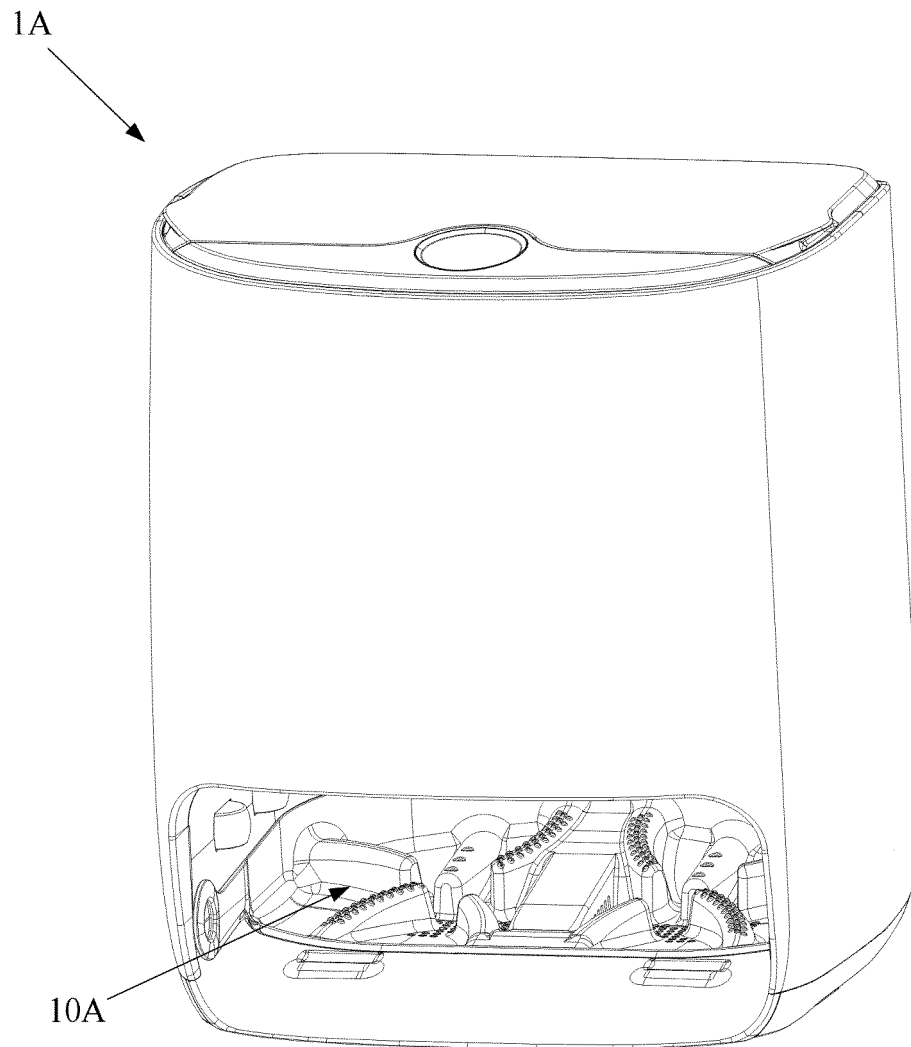


Fig. 1

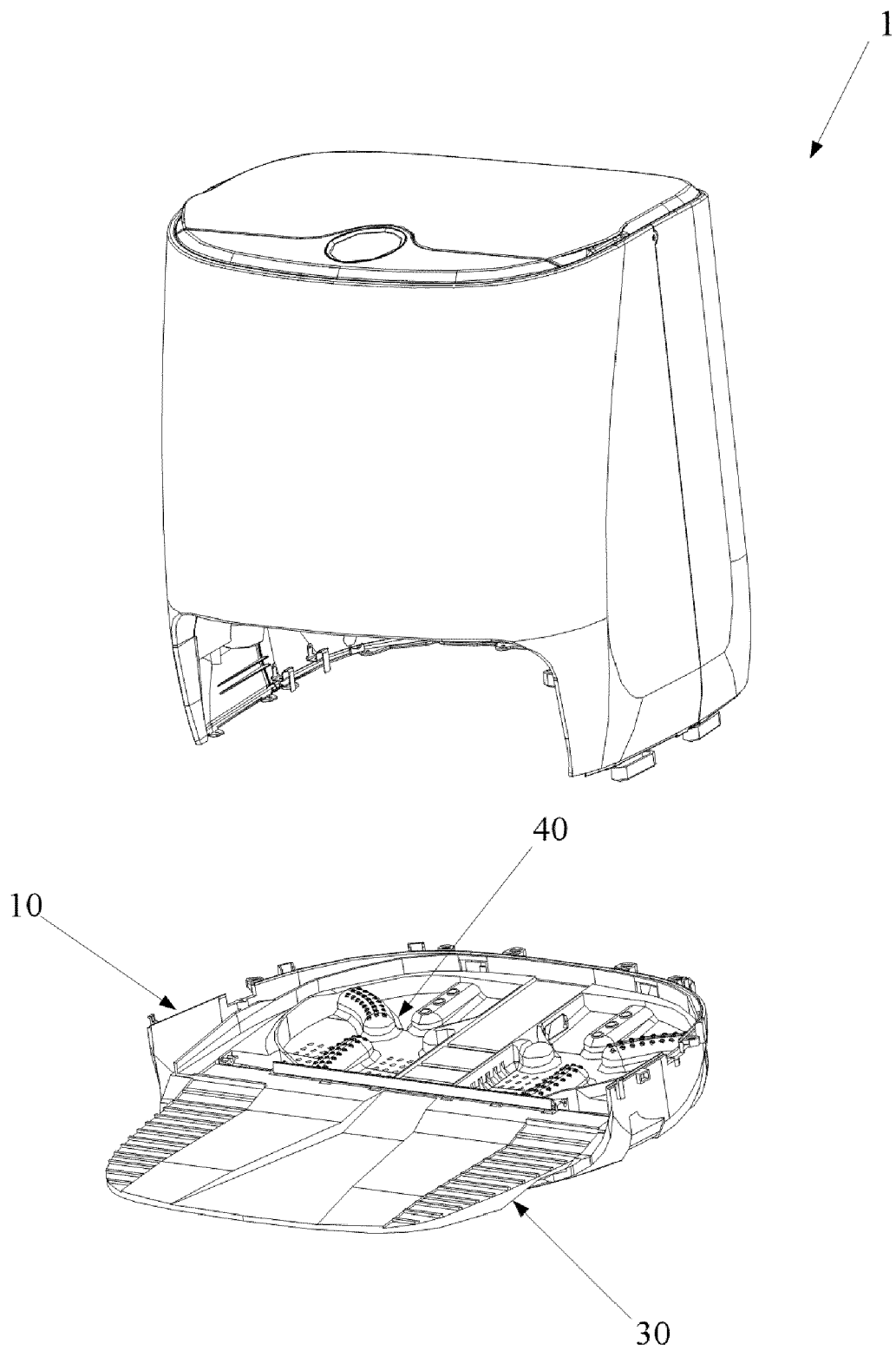


Fig. 2

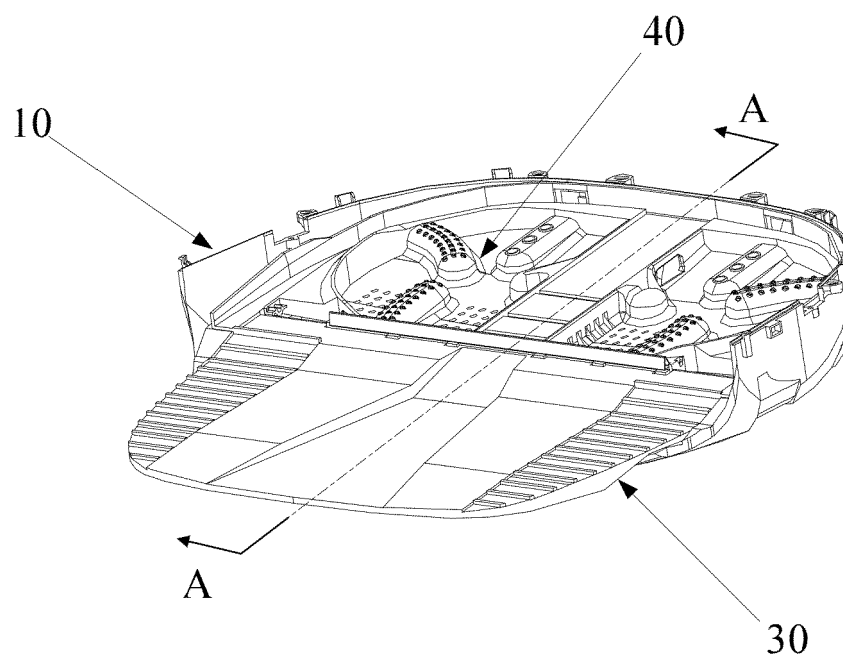


Fig. 3

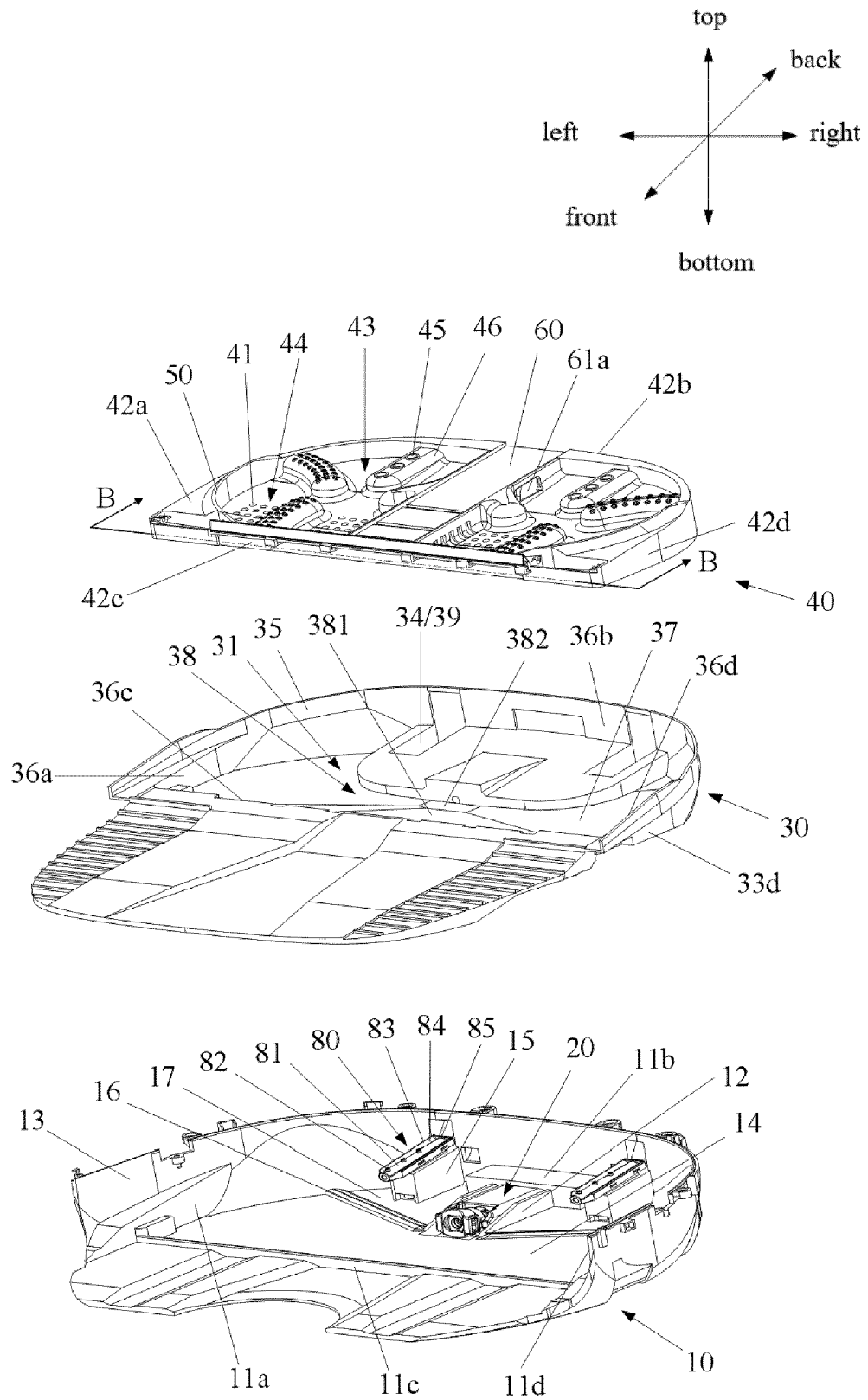


Fig. 4

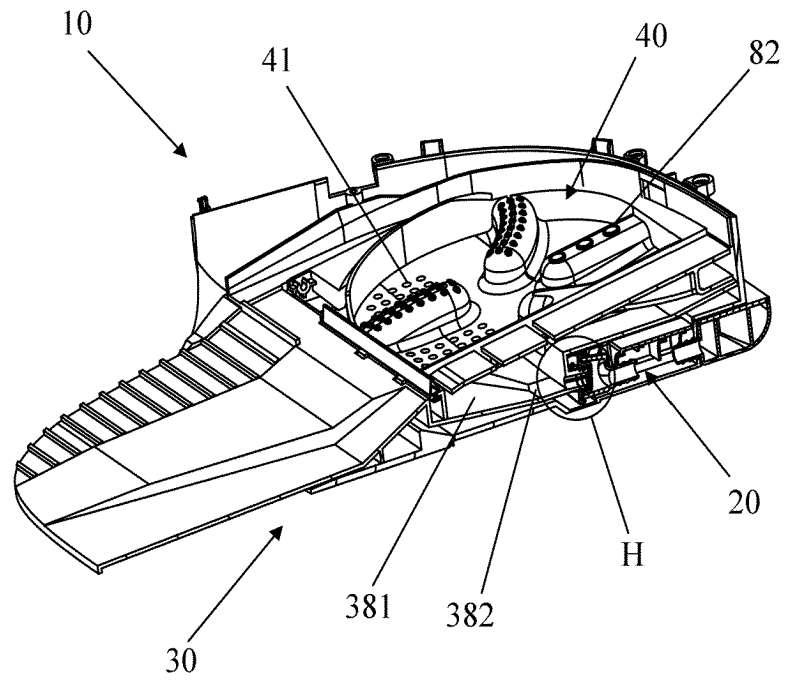


Fig. 5(A)

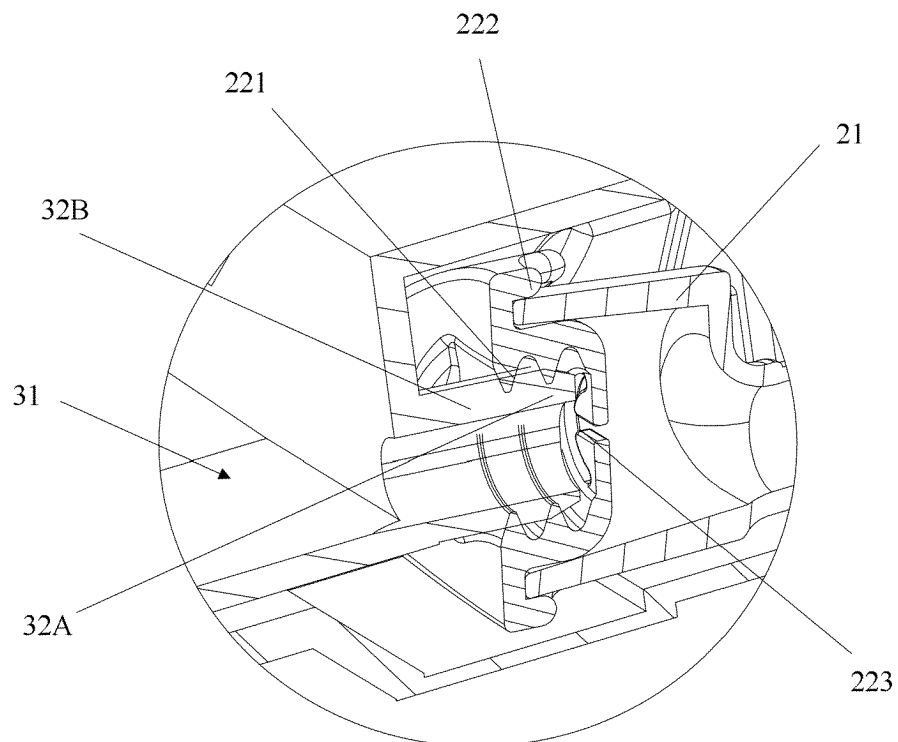


Fig. 5(B)

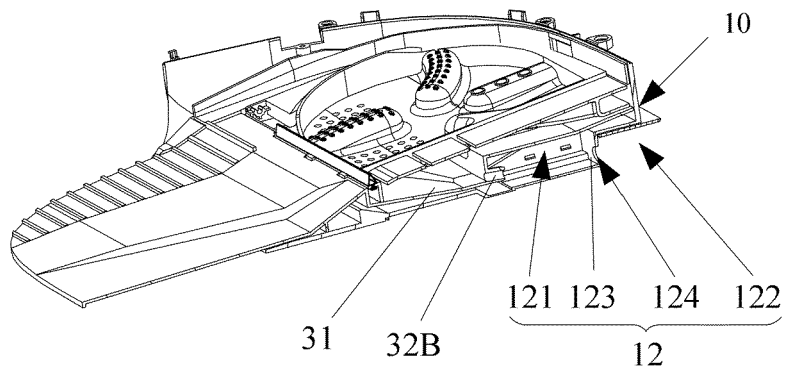


Fig. 6

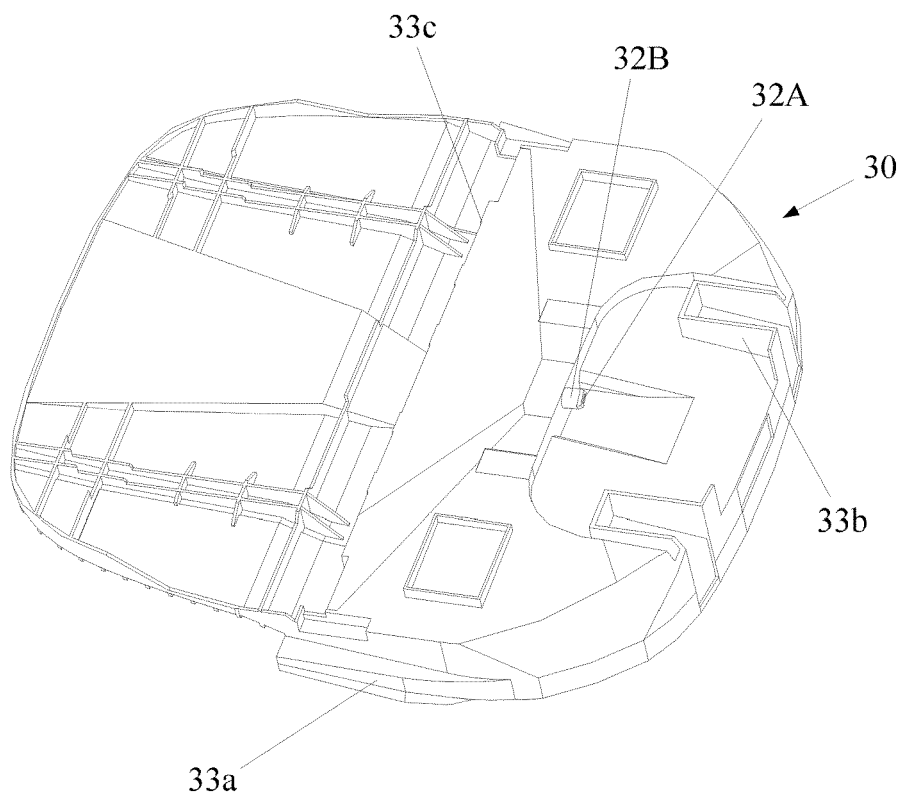


Fig. 7

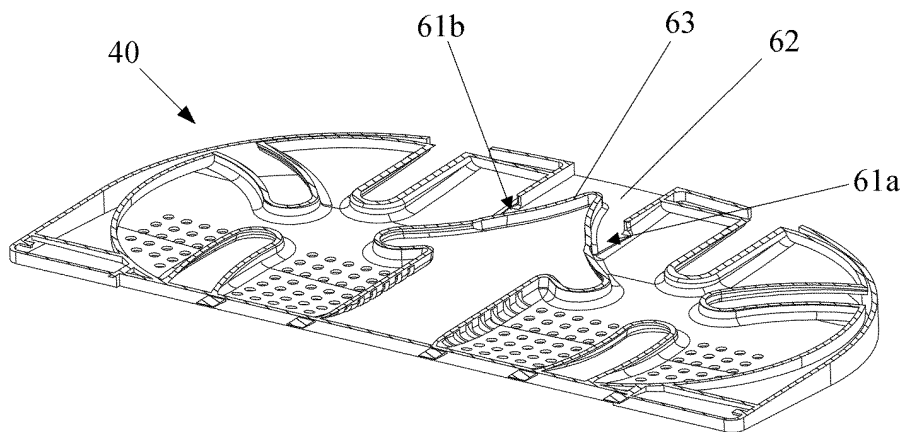


Fig. 8

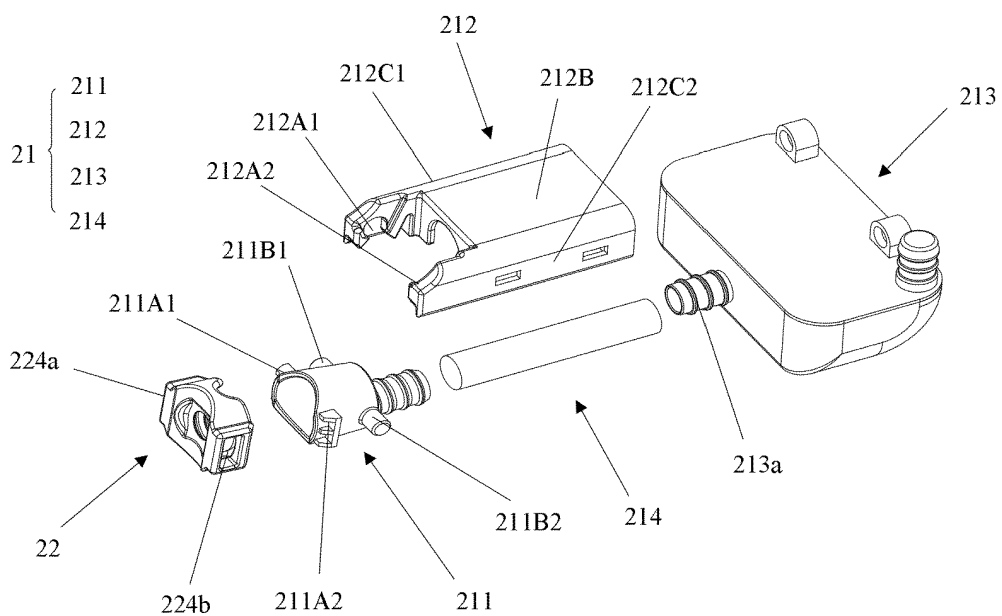


Fig. 9

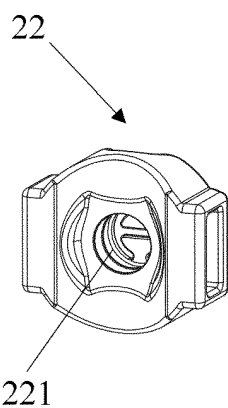


Fig. 10(A)

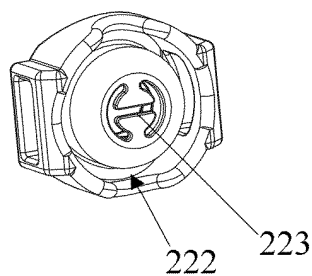


Fig. 10(B)

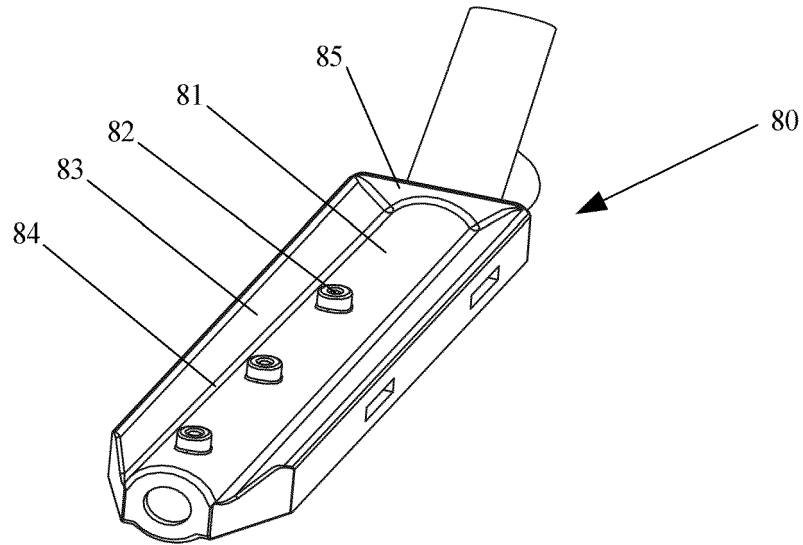


Fig. 11

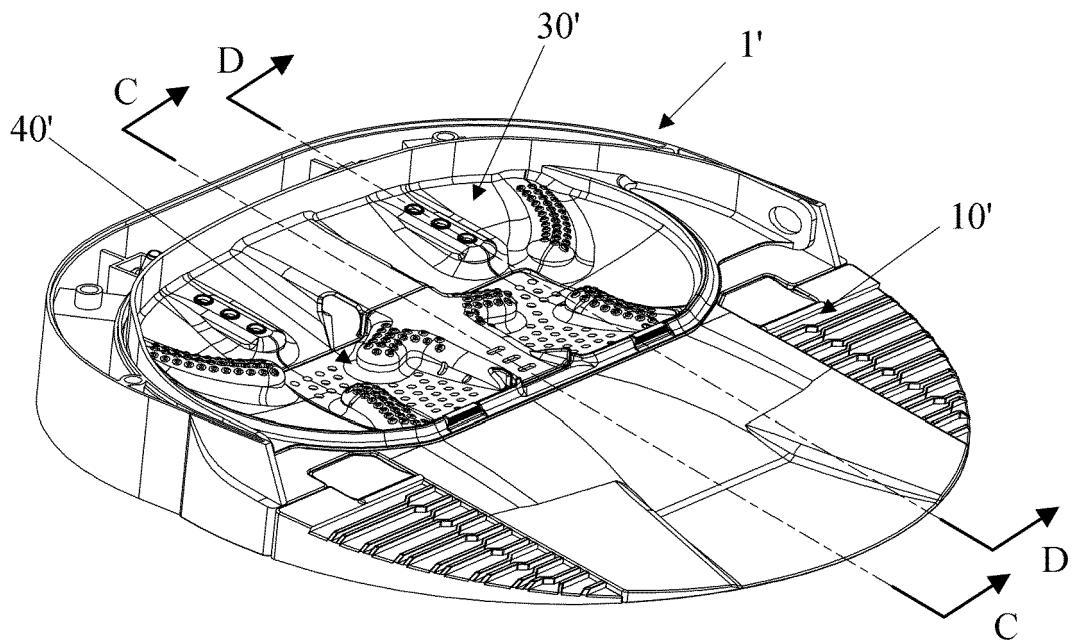


Fig. 12

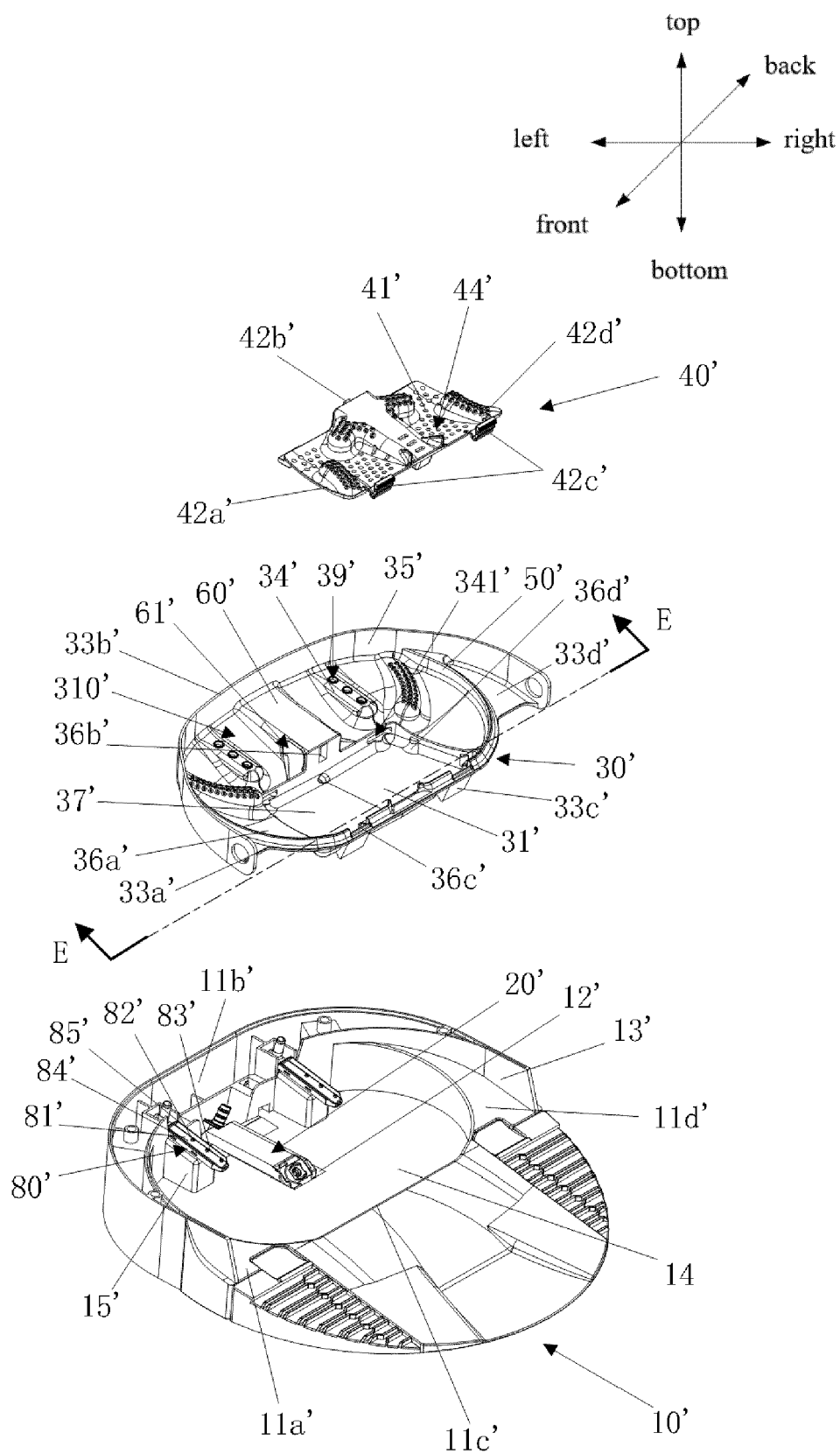


Fig. 13

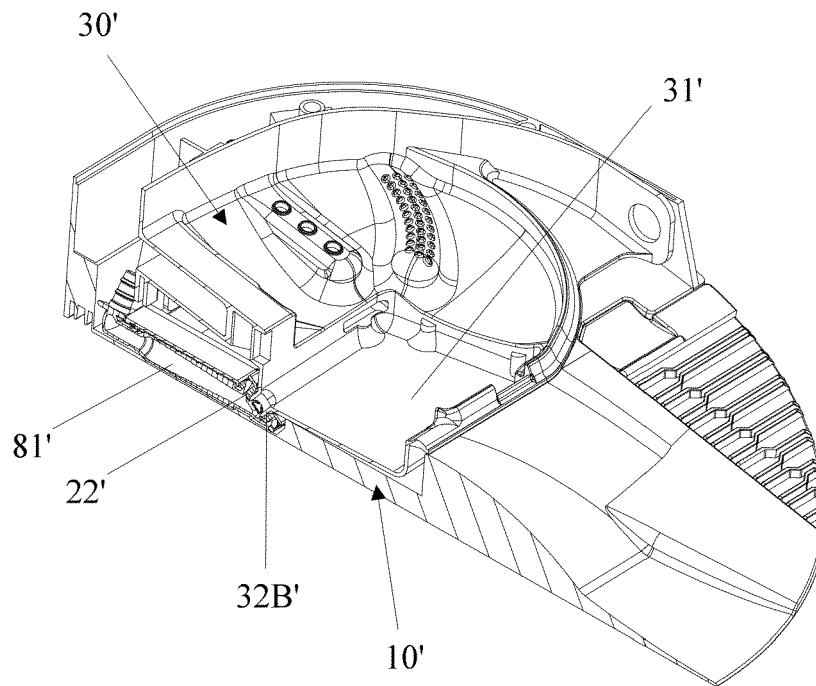


Fig. 14

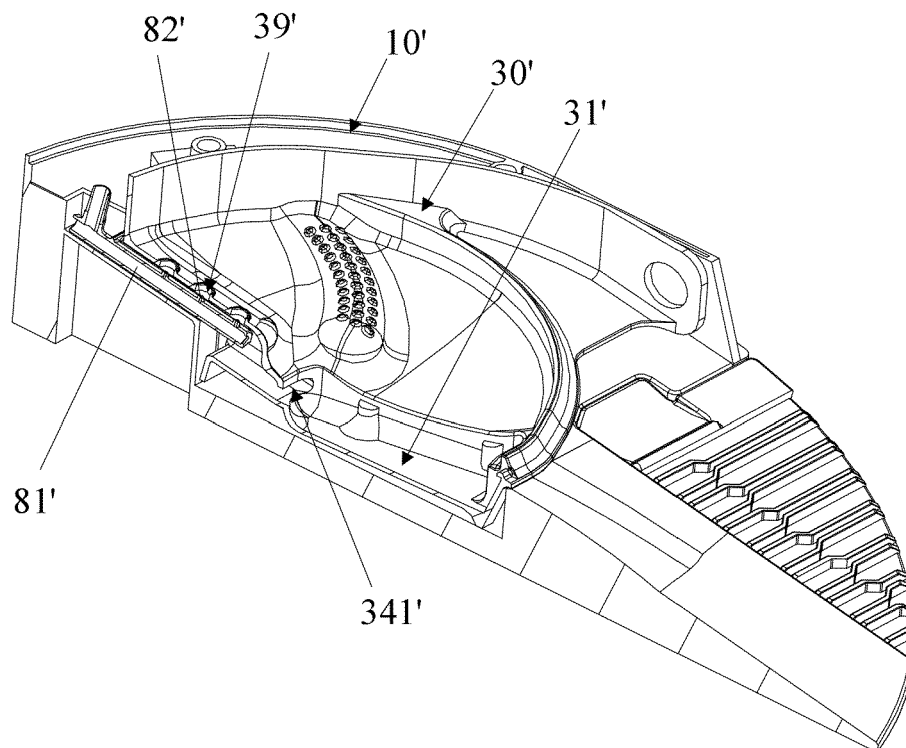


Fig. 15

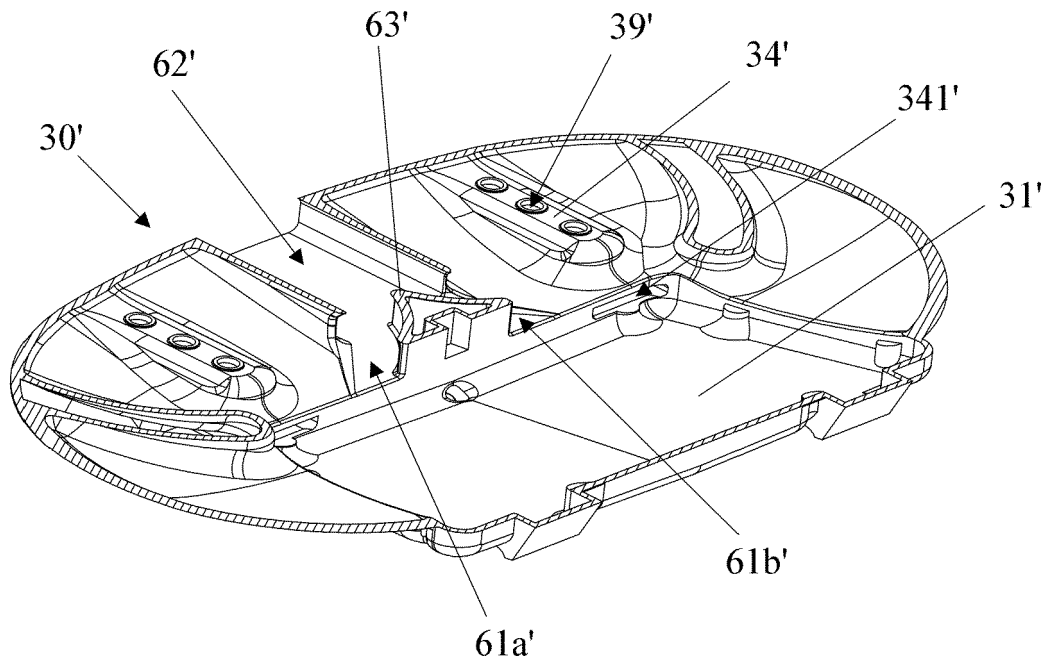


Fig. 16

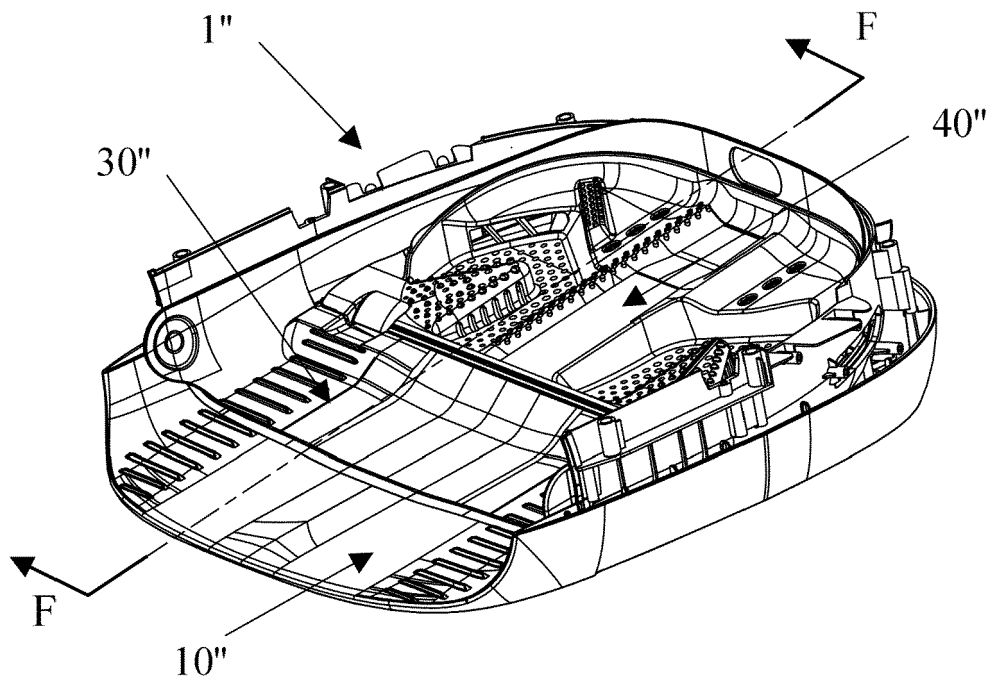


Fig. 17

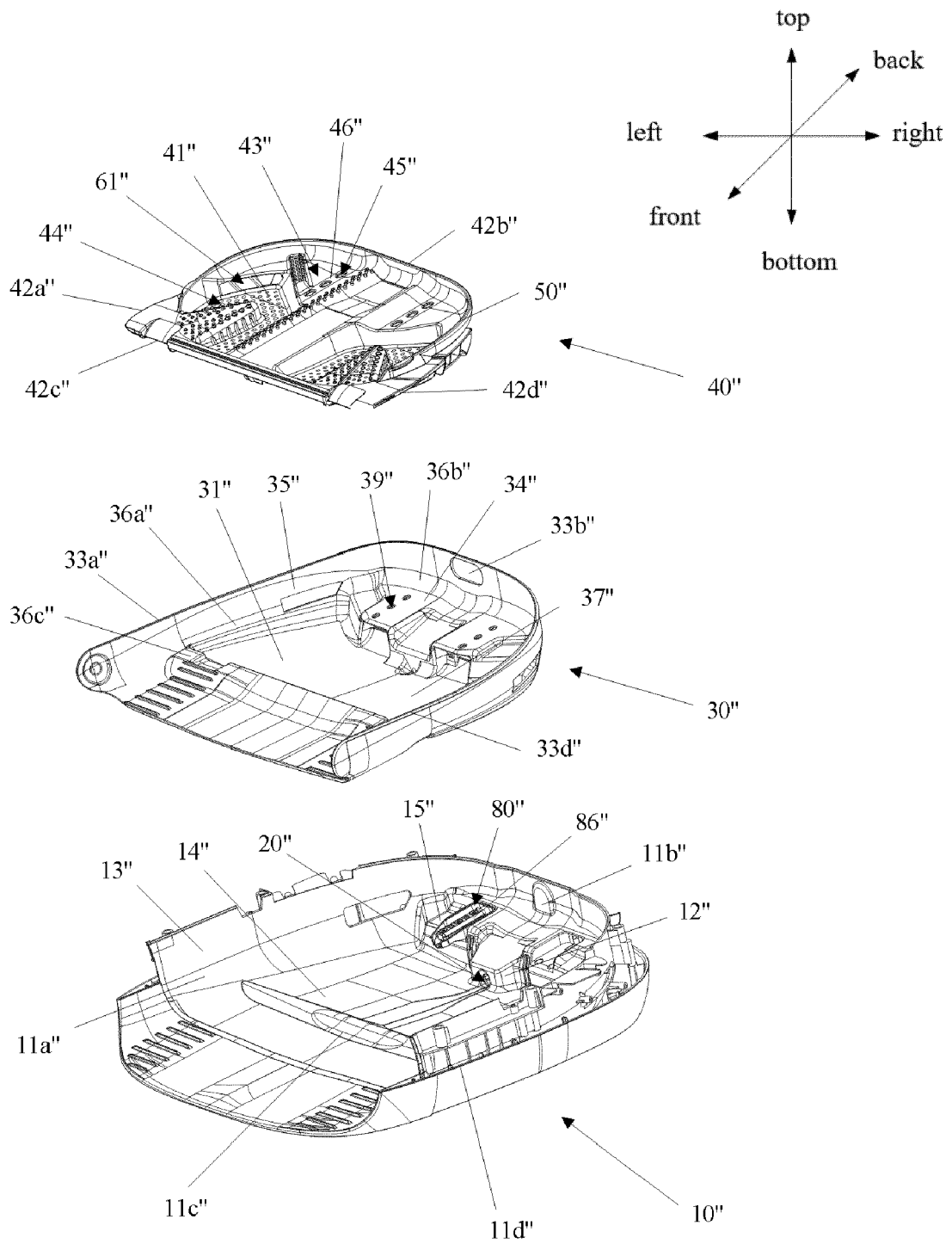


Fig. 18

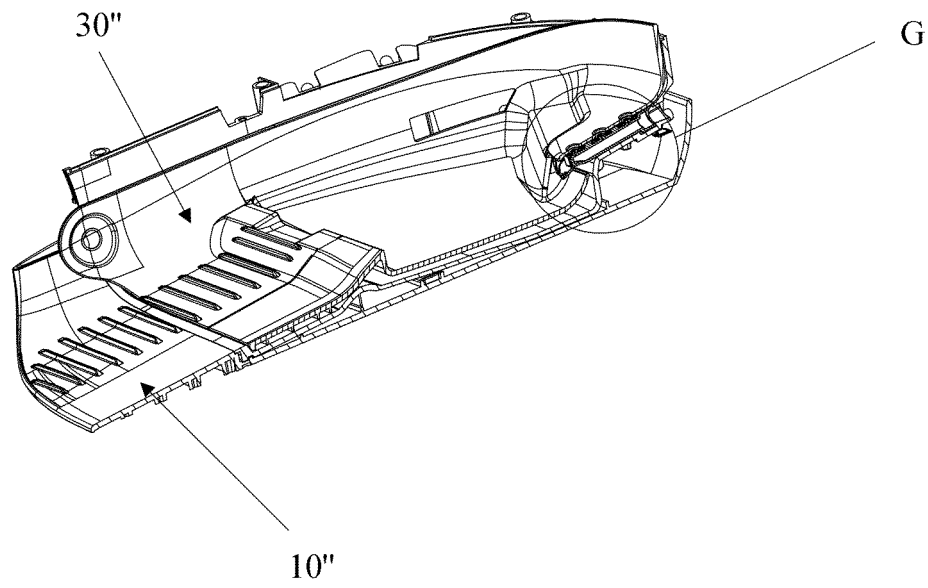


Fig. 19

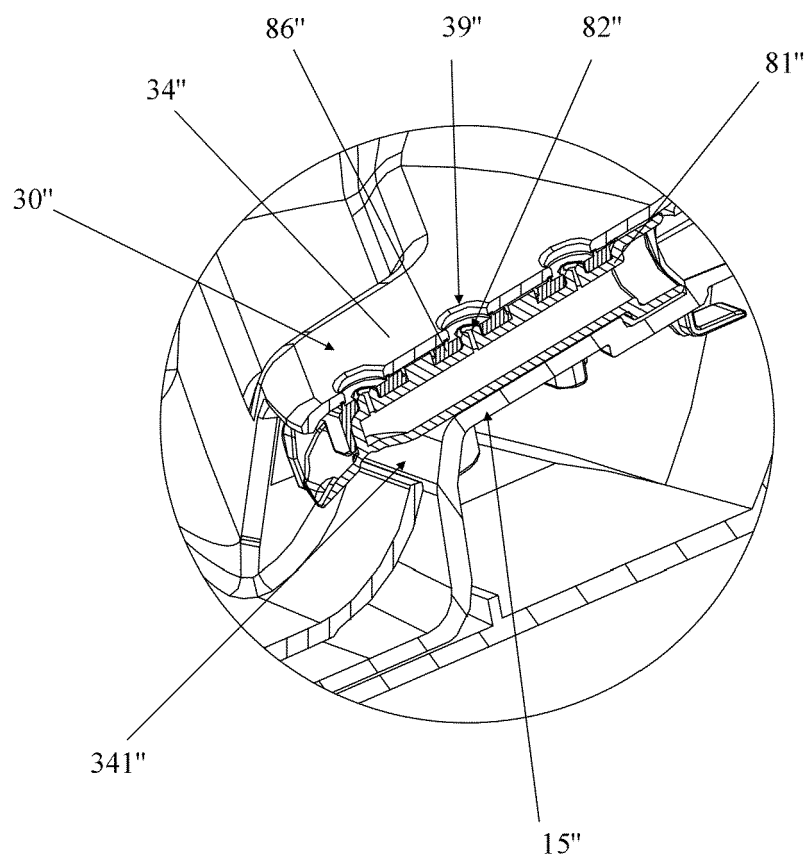


Fig. 20

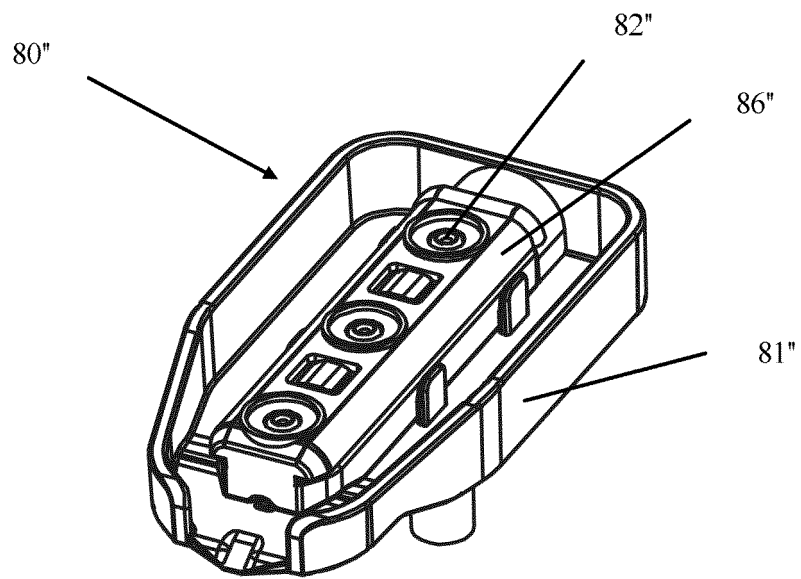


Fig. 21

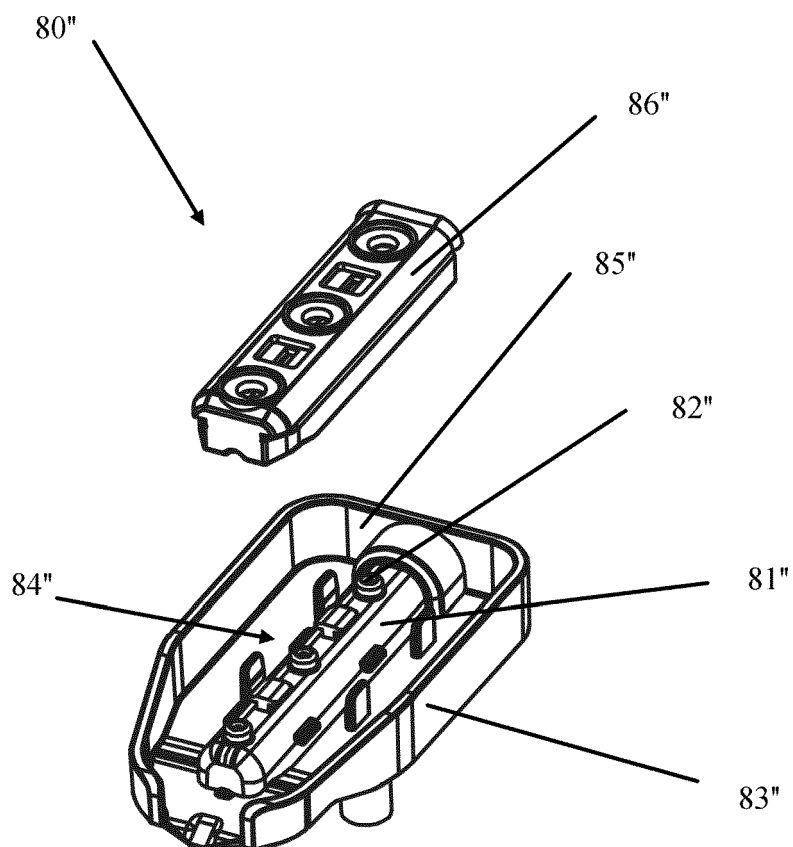


Fig. 22

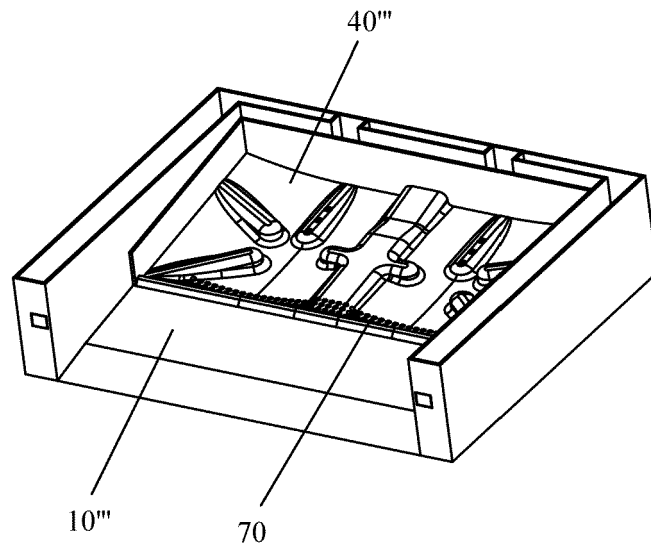


Fig. 23

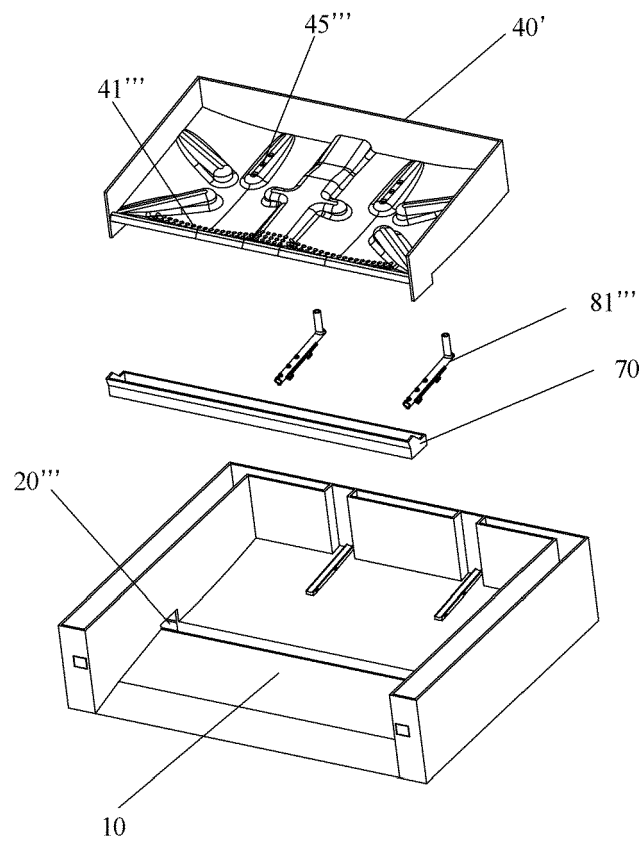


Fig. 24

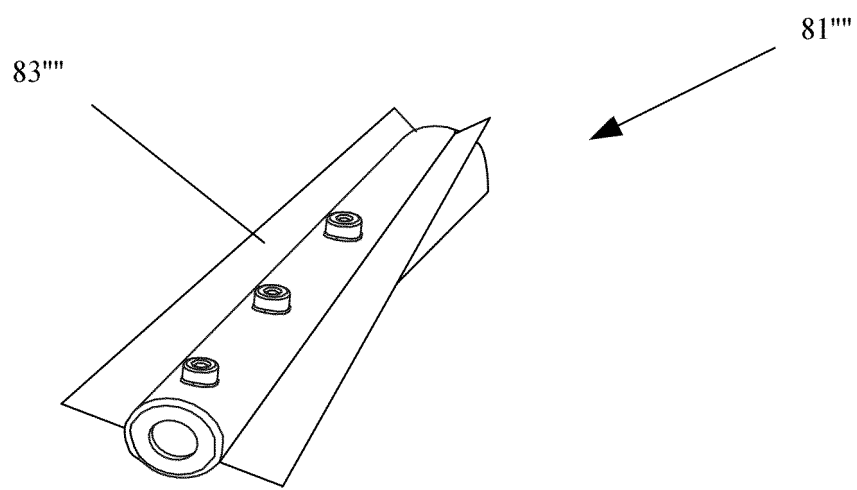


Fig. 25

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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