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(54) **DRYING MODULE AND ELECTRIC APPLIANCE**

(57) A drying module (1), comprising a housing (100), a wheel disc (200), and buffer components (1100). The wheel disc (200) is rotatably arranged in the housing (100); the buffer components (1100) are arranged on at least one inner wall of the housing (100) facing the end surface of the wheel disc (200); each buffer component (1100) comprises a connecting member (1101) and a contact member (1102); one end of the connecting member (1101) is connected to the inner wall of the housing (100); the contact member (1102) is provided at the end of the connecting member (1101)

away from the inner wall of the housing (100); the contact member (1102) is in contact with the end surface of the wheel disc (200); and at least one of the connecting member (1101) and the contact member (1102) is elastic. According to the present application, the buffer components (1100) are in flexible contact with the wheel disc (200), so that the damage caused by collision between the wheel disc (200) and the housing (100) during transportation and assembly of the drying module (1) can be avoided, and the present application has good practicability.

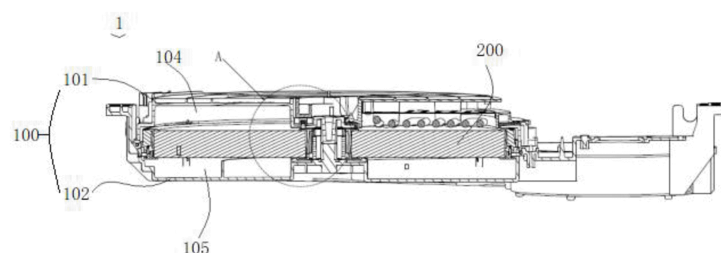


FIG. 1

Description

CROSS-REFERENCE TO RELATED APPLICATION

[0001] The present disclosure claims priority to Chinese Patent Application Nos. 202322404522.5, 202322404504.7, 202322387829.9, and 202322404480.5, filed on August 31, 2023, the entire contents of which are incorporated herein by reference.

TECHNICAL FIELD

[0002] The present disclosure relates to the technical field of household appliances, and in particular, to a drying assembly and an electrical device.

BACKGROUND

[0003] In electrical devices such as a clothes dryer and a washer-dryer combo, the moisture in an accommodating member for loading items may be introduced into a drying assembly. A rotatable wheel disc is arranged in the housing of the drying assembly. When the wheel disc rotates within the housing, the moisture is removed from the airflow led out of the accommodating member, and the airflow with the moisture removed is led back into the accommodating member to form an airflow circulation.

[0004] In the related art, during the transportation and assembly of the drying assembly, the wheel disc may move within the housing, and consequently, the wheel disc may collide with the housing of the drying assembly, resulting in damage. This is not conducive to the assembly and use of the drying assembly.

SUMMARY

[0005] To solve the above technical problems, the present disclosure provides a drying assembly and an electrical device, aiming to solve, at least to a certain extent, the technical problem that a wheel disc may collide with a housing and cause damage.

[0006] The present disclosure provides a drying assembly. The drying assembly includes: a housing, a wheel disc rotatably arranged in the housing, and a buffering component arranged on at least one inner wall of the housing facing an end surface of the wheel disc. The buffering component includes a connecting member and a contact member, one end of the connecting member is connected to the inner wall of the housing, the contact member is arranged at an end of the connecting member away from the inner wall of the housing, the contact member is in contact with the end surface of the wheel disc, and at least one of the connecting member and the contact member is elastic.

[0007] In the drying assembly provided by the present disclosure, since the buffering component is arranged in the housing of the drying assembly, the buffering component includes the connecting member and the contact

member, one end of the connecting member is connected to the inner wall of the housing, the contact member is arranged at the end of the connecting member away from the inner wall of the housing, the contact member is in contact with the end surface of the wheel disc, and the contact member can limit the movement of the wheel disc within the housing. In addition, since at least one of the connecting member and the contact member is elastic, the contact between the buffering component and the wheel disc can be a flexible contact, thereby avoiding the occurrence of damage caused by collision between the wheel disc and the housing during the transportation and assembly of the drying assembly.

[0008] The present disclosure further provides an electrical device. The electrical device includes the above drying assembly.

[0009] The electrical device provided with the above drying assembly enables the contact between the buffering component and the wheel disc of the drying assembly to be a flexible contact, thereby avoiding the occurrence of damage caused by a collision between the wheel disc and the housing during the transportation and assembly of the drying assembly.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The above and various other advantages and benefits of the present disclosure will become clear to those of ordinary skill in the art by reading the detailed description of preferred embodiments below.

FIG. 1 is a schematic cross-sectional view of a drying assembly according to some embodiments of the present disclosure;

FIG. 2 is a schematic enlarged view of portion A in FIG. 1;

FIG. 3 is a schematic structural view of a first housing in FIG. 1;

FIG. 4 is a schematic assembly view of a buffering component in FIG. 3 on the first housing;

FIG. 5 is a schematic structural view of a second housing in FIG. 1;

FIG. 6 is a schematic assembly view of a supporting member in FIG. 5 on the second housing;

FIG. 7 is a schematic structural view of an electrical device provided with the drying assembly shown in FIG. 1;

FIG. 8 is a schematic structural view of the drying assembly according to some embodiments of the present disclosure assembled on a washer-dryer combo;

FIG. 9 is a schematic exploded view of the drying assembly in FIG. 8;

FIG. 10 is a schematic structural view of the first housing in FIG. 9;

FIG. 11 is a schematic enlarged perspective view of the portion A in FIG. 10;

FIG. 12 is a schematic top view of FIG. 10 with a gear

assembly removed;
 FIG. 13 is a schematic cross-sectional view of FIG. 9;
 FIG. 14 is a schematic enlarged view of portion B in FIG. 13;
 FIG. 15 is a schematic top view of the first housing provided with a damping wheel;
 FIG. 16 is a schematic view of a specific arrangement of the damping wheel in FIG. 15;
 FIG. 17 is a schematic front view of FIG. 16;
 FIG. 18 is a schematic top view of the second housing in FIG. 9;
 FIG. 19 is a schematic structural view of a supporting wheel set in FIG. 18;
 FIG. 20 is a schematic assembly view of the supporting wheel set in FIG. 18;
 FIG. 21 is a schematic front view of FIG. 20;
 FIG. 22 is a schematic view of an arrangement of a limiting wheel set in a second housing;
 FIG. 23 is a schematic structural view of the limiting wheel set in FIG. 22;
 FIG. 24 is a schematic bottom view of FIG. 23;
 FIG. 25 is a schematic assembly view of the limiting wheel set in 22 on the second housing;
 FIG. 26 is a schematic structural view of a position of a second housing where a limiting wheel set is assembled;
 FIG. 27 is a schematic assembly cross-sectional view of the limiting wheel set in FIG. 15 on the second housing; and
 FIG. 28 is a schematic assembly view of a limiting wheel set in a housing when a third mounting hole is a blind hole.

Description of reference numerals:

[0011]

Drying assembly-1;
 housing-100, first housing-101, second housing-102, second limiting groove-103, first accommodating chamber-104, second accommodating chamber-105, motor accommodating portion-106, first protrusion-107, recessed portion-108, first reinforcing rib-109, viewing hole-110, first supporting portion-111, mounting chamber-112, first mounting groove-1121, first mounting hole-113, first guiding hole-1131, first hole body-1132, second hole body-1133, mounting frame-114, second mounting groove-115, second mounting hole-116, second guiding hole-1161, third hole body-1162, fourth hole body-1163, second supporting portion-117, supporting plate-118, second protrusion-119, third mounting hole-120, third mounting groove-121, first bevel-122, fourth mounting hole-123, second bevel-124, second reinforcing rib-125, linking portion-126, lubricating layer-127, drain hole-128, supporting portion-129, first limiting groove-130, first rotation shaft-131, second rotation shaft-132;

wheel disc-200;
 motor-300, drive shaft-301;
 gear-400, gear shaft-401, limiting portion-402;
 sealing member-500;
 damping member-600;
 damping mounting portion-700;
 damping wheel set-E, damping wheel-800, damping wheel shaft-801;
 supporting wheel set-F, supporting wheel-900, supporting wheel shaft-901;
 limiting wheel set-G, limiting wheel-1000, outer wheel body-10001, inner wheel body-10002, supporting rib-10003, supporting ring-10004, limiting wheel shaft-1005;
 1100-buffering component, 1101-connecting member, 1102-contact member, 1103-limiting member, 1104-supporting member, 1105-connecting rib, 1106-sleeve, 11061-first turning plate, 11062-second turning plate;
 washer-dryer combo-W, clothing accommodating member-R, drying assembly-D, moisture adsorption-desorption part-D1, moisture adsorption channel-D2, moisture adsorption channel fan-D21, moisture desorption channel-D3, moisture desorption channel fan-D31.

DETAILED DESCRIPTION

[0012] The present disclosure will be further described below with reference to the drawings and specific embodiments. The following description merely illustrates the basic principles of the present disclosure and is not intended to limit the present disclosure.

[0013] In a clothing treatment device such as a clothes dryer and a washer-dryer combo, moisture in a clothing accommodating member for loading clothes may be converted into dry airflow by a drying assembly and then re-enters the clothing accommodating member to form an airflow circulation. The drying assembly will now be further described by taking the washer-dryer combo as an example.

[0014] The washer-dryer combo includes a clothing accommodating member for loading clothes and a drying assembly, the clothing accommodating member is provided with an air inlet and an air outlet, the drying assembly includes a housing, a motor and a wheel disc with moisture adsorption capacity are arranged in the housing, and a distance is formed between the wheel disc and each of two end surfaces of the housing to form an air inlet channel and an air exhaust channel. The air inlet channel is in communication with the air outlet of the clothing accommodating member, the air exhaust channel is in communication with the air inlet of the clothing accommodating member, and the wheel disc is driven by the motor to rotate in the housing. In a drying mode, the moisture in the clothing accommodating member is transferred to the air inlet channel to form humid airflow, the humid airflow enters the rotatable wheel disc, and

after being absorbed by the wheel disc, the humid airflow becomes dry airflow, and the dry airflow is then transferred back into the clothing accommodating member through the air exhaust channel. This process is repeated until a preset drying effect is achieved.

Example 1:

[0015] During the transportation and assembly of the drying assembly, the wheel disc may move within the housing (including but not limited to vibration/falling, or the like), and consequently, the wheel disc may collide with the housing of the drying assembly, resulting in damage. This is not conducive to the assembly and use of the drying assembly.

[0016] Based on the above technical problems, the present disclosure provides a drying assembly to facilitate the assembly and use of the drying assembly to a certain extent.

[0017] FIG. 1 is a schematic cross-sectional view of a drying assembly according to some embodiments of the present disclosure, FIG. 2 is a schematic enlarged view of portion A in FIG. 1, FIG. 3 is a schematic structural view of a first housing in FIG. 1, and FIG. 4 is a schematic assembly view of a buffering component in FIG. 3 on the first housing. With reference to FIGs. 1 to 4, the drying assembly 1 includes a housing 100, a wheel disc 200, and a buffering component 1100. The wheel disc 200 is rotatably arranged in the housing 100, the buffering component 1100 is arranged on at least one inner wall of the housing 100 facing an end surface of the wheel disc 200, the buffering component 1100 includes a connecting member 1101 and a contact member 1102, one end of the connecting member 1101 is connected to the inner wall of the housing 100, the contact member 1102 is arranged at an end of the connecting member 1101 away from the inner wall of the housing 100, the contact member 1102 is in contact with the end surface of the wheel disc 200, and at least one of the connecting member 1101 and the contact member 1102 is elastic.

[0018] In the drying assembly 1 provided by the present disclosure, since the buffering component 1100 is arranged in the housing 100 of the drying assembly 1 therein, the buffering component 1100 includes the connecting member 1101 and the contact member 1102, one end of the connecting member 1101 is connected to the inner wall of the housing 100, the contact member 1102 is arranged at the end of the connecting member 1101 away from the inner wall of the housing 100, the contact member 1102 is in contact with the end surface of the wheel disc 200, and the contact member 1102 can limit the movement of the wheel disc 200 within the housing 100. In addition, since at least one of the connecting member 1101 and the contact member 1102 is elastic, the contact between the buffering component 1100 and the wheel disc 200 can be a flexible contact, thereby avoiding the occurrence of damage caused by a collision between the wheel disc 200 and the housing 100 during

the transportation and assembly of the drying assembly 1.

[0019] FIG. 5 is a schematic structural view of a second housing in FIG. 1. With reference to FIGs. 1, 3, and 5, the housing 100 includes a first housing 101 and a second housing 102 connected to each other, the first housing 101 is provided with a first accommodating chamber 104, and the second housing 102 is provided with a second accommodating chamber 105. After the first housing 101 and the second housing 102 are assembled, the first accommodating chamber 104 and the second accommodating chamber 105 cooperate to form an accommodating chamber for loading the wheel disc 200, and then the wheel disc 200 can be rotatably arranged in the accommodating chamber. The wheel disc 200 can be made of a material with good moisture adsorption and desorption performance, such as zeolite, lithium chloride, silica gel, modified silica gel, or 13X (sodium X-type) molecular sieve.

[0020] Due to the characteristics of the material for manufacturing the wheel disc 200, the wheel disc 200 is brittle. Therefore, the wheel disc 200 is prone to cracking when subjected to vibration, dropping, and the like during the assembly and transportation of the drying assembly 1. The buffering component 1100 arranged in the housing 100 of the present disclosure is in flexible contact with the end surface of the wheel disc 200, thereby preventing the wheel disc 200 from cracking to a certain extent.

[0021] In some embodiments, at least a part of the connecting member 1101 is elastic, and the contact member 1102 is a rigid member. Although the contact member 1102 is in rigid contact with the wheel disc 200, at least a part of the connecting member 1101 is elastic, so that when the wheel disc 200 moves, the wheel disc 200 deforms the connecting member 1101 through the contact member 1102 to adapt to the movement of the wheel disc 200; and when the wheel disc 200 returns to an initial position, the connecting member 1101 also recovers from the deformation accordingly.

[0022] In some embodiments, the contact member 1102 is in point contact with the end surface of the wheel disc 200, so that an area of contact between the contact member 1102 and the wheel disc 200 can be reduced, thereby reducing a friction force on the wheel disc 200, and thus allowing the wheel disc 200 to rotate smoothly. In addition, damage to the wheel disc 200 can also be reduced, achieving high practicability.

[0023] During specific implementation, a side surface of the contact member 1102 facing the wheel disc 200 is arc-shaped, so that the contact between the contact member 1102 and the wheel disc 200 is point contact. The contact member 1102 may be spherical as a whole, or the contact member 1102 may be hemispherical or in other shapes as a whole, which is not limited herein, as long as it is ensured that the contact member 1102 is in point contact with the wheel disc 200.

[0024] In some other embodiments, the contact mem-

ber 1102 may also be in line contact or surface contact with the wheel disc 200, which is not limited herein.

[0025] With reference to FIGs. 2 and 4, in some embodiments, the contact member 1102 may be a steel ball, and the connecting member 1101 may be a spring or the like. Certainly, the contact member 1102 may also be a bead made of other materials, and the connecting member 1101 may also be an elastic member made of other materials, such as a gasket made of elastic materials, which is not limited herein. When a spring is selected as the connecting member 1101, the contact member 1102 can be snap-fitted into an end portion of the connecting member 1101, so as to realize assembly of the contact member 1102 and the connecting member 1101 in a convenient and practical manner.

[0026] It should be noted that the connecting member 1101 may be only partially elastic, or may be elastic in two or more segments, or may be elastic as a whole, or the like, which is not limited herein.

[0027] With reference to FIGs. 2 and 4, in some embodiments, the buffering component 1100 further includes a limiting member 1103, the limiting member 1103 is arranged on the inner wall of the housing 100, the connecting member 1101 is deformed in the limiting member 1103, the contact member 1102 is provided with a contact portion protruding from the limiting member 1103, and the contact portion is in contact with the end surface of the wheel disc 200. The deformation of the connecting member 1101 can be limited by the arranged limiting member 1103, thereby preventing the problem of buffer failure caused by the connecting member 1101 failing to return in time.

[0028] With reference to FIGs. 2 and 4, in some embodiments, the limiting member 1103 may include a first limiting groove 130 formed in the inner wall of the housing 100, one end of the connecting member 1101 is arranged at a bottom of the first limiting groove 130, and the above contact member 1102 is assembled at the other end of the connecting member 1101.

[0029] During specific implementation, with reference to FIGs. 2 and 4, a supporting portion 129 may be arranged on the inner wall of the housing 100, the supporting portion 129 may correspond to a rotating shaft of the wheel disc 200, and the first limiting groove 130 may be formed in the supporting portion 129.

[0030] In some other embodiments, the limiting member 1103 may also be a limiting protrusion arranged on the inner wall of the housing 100, and a limiting hole may be formed in the limiting protrusion; that is, the connecting member 1101 is arranged in the limiting hole. One end of the connecting member 1101 is connected to the limiting protrusion, and the above contact member 1102 is assembled at the other end of the connecting member 1101. Alternatively, the limiting member 1103 is a combination of the first limiting groove 130 and the limiting protrusion; that is, the first limiting groove 130 is in communication with the limiting hole, one end of the connecting member 1101 is connected to the bottom of the first limiting groove

130, and the other end of the connecting member 1101 sequentially passes through the first limiting groove 130 and is located in the limiting hole, with the above contact member 1102 assembled at the other end of the connecting member 1101.

[0031] In the case that the limiting member 1103 is arranged, one end of the connecting member 1101 may be connected to a bottom of the limiting member 1103, or may directly abut against the bottom of the limiting member 1103, and the connecting member 1101 is assembled in the limiting member 1103 through compression from the wheel disc 200.

[0032] In other embodiments, the connecting member 1101 may be rigid, and at least part of the contact member 1102 is elastic. When the wheel disc 200 moves, the wheel disc 200 may press against and directly deform the contact member 1102, so as to adapt to the movement of the wheel disc 200. When the wheel disc 200 returns to the initial position, the contact member 1102 also correspondingly recovers from the deformation. Under this operating condition, the position of the contact member 1102 in contact with the end surface of the wheel disc 200 is elastic. Certainly, other positions of the contact member 1102 may also be elastic, or the contact member 1102 is elastic in two or more segments, or the contact member 1102 is elastic as a whole, which is not limited herein.

[0033] In yet other embodiments, at least part of the connecting member 1101 and the contact member 1102 are both elastic. When the wheel disc 200 moves, the wheel disc 200 may press against and deform both the contact member 1102 and the connecting member 1101 to adapt to the movement of the wheel disc 200. When the wheel disc 200 returns to the initial position, the contact member 1102 and the connecting member 1101 also correspondingly recover from the deformation. Under this operating condition, both the contact member 1102 and the connecting member 1101 can be elastic in one segment. Certainly, both the contact member 1102 and the connecting member 1101 can also be elastic in two or more segments, or both the contact member 1102 and the connecting member 1101 are elastic as a whole, or the like, which is not limited herein.

[0034] With reference to FIG. 3, a plurality of buffering components 1100 may be arranged, and the plurality of buffering components 1100 are arranged spaced apart around the rotating shaft of the wheel disc 200, so that a more uniform buffering effect can be provided for the wheel disc 200 to prevent the damage of the wheel disc 200 caused by the movable impact, from the wheel disc 200, against the housing 100.

[0035] As described above, the housing 100 includes a first housing 101 and a second housing 102 connected to each other. The first housing 101 is generally located above the second housing 102, and the buffering component 1100 may be arranged on the first housing 101. To prevent the second housing 102 from being in contact with the wheel disc 200, foam may be arranged on the second housing 102 to play a buffering and supporting

role in the related art. However, after long-term use, the foam will wear out and fail, losing the buffering and supporting role.

[0036] FIG. 6 is a schematic assembly view of a supporting member in FIG. 5 on the second housing. With reference to FIGs. 5 and 6, in the present disclosure, a supporting member 1104 is arranged in the second housing 102. The supporting member 1104 may be made of a rigid material, preferably a material with a self-lubrication function, to improve the smoothness of the rotation of the wheel disc 200. The supporting member 1104 is arranged on the outer side of the rotating shaft, only playing the supporting role. Since the supporting member 1104 is made of a rigid material, the technical problem of wear and failure of the foam after long-term use in the related art can be avoided to effectively support the wheel disc 200, and the buffering component 1100 can provide buffering for the wheel disc 200 to prevent the wheel disc 200 from being damaged during assembly and transportation.

[0037] With reference to FIGs. 5 and 6, the supporting member 1104 may be annular and is coaxially arranged on the outer side of the rotating shaft of the wheel disc 200. In addition, the supporting member 1104 may be integrally formed on the second housing 102, the supporting member 1104 and a second rotation shaft 132 may be connected through a plurality of connecting ribs 1105, and the plurality of connecting ribs 1105 are arranged radially with the rotating shaft of the wheel disc 200 as a center, so as to improve the reliability of assembly of the supporting member 1104 and the second housing 102. In addition, the plurality of connecting ribs 1105 may also be integrally formed on the second housing 102 to further improve the connection strength of the supporting member 1104 on the second housing 102.

[0038] With reference to FIG. 2, a first rotation shaft 131 is arranged in the first housing 101, the second housing 102 may be provided with the second rotation shaft 132, and the first rotation shaft 131 and the second rotation shaft 132 are connected to form the rotating shaft for the wheel disc 200 to rotate; and the wheel disc 200 is provided with a central hole, a sleeve 1106 is arranged in the central hole, and the sleeve 1106 is rotatably connected to the rotating shaft, so that the wheel disc 200 can rotate around the rotating shaft under the driving of a driving assembly.

[0039] In some embodiments, the first rotation shaft 131 and the second rotation shaft 132 may be assembled in a docking mode. After the first rotation shaft 131 and the second rotation shaft 132 are docked, the first rotation shaft 131 and the second rotation shaft 132 are fixedly connected by bolts. In some other embodiments, the first rotation shaft 131 and the second rotation shaft 132 may be fixedly assembled in a connection mode such as interference insertion or snap fit, which is not limited herein.

[0040] With reference to FIG. 2, the contact member 1102 of the buffering component 1100 is in contact with an

end portion of the sleeve 1106 facing the first housing 101, and at least a part of the supporting member 1104 is in contact with an end portion of the sleeve 1106 facing the second housing 102, so as to ensure the supporting effect of the supporting member 1104 on the wheel disc 200 while ensuring the buffering effect of the buffering component 1100 on the wheel disc 200.

[0041] With reference to FIG. 2, in some embodiments, two opposite end portions of the sleeve 1106 are provided with turning plates, the two turning plates extend to end portions of the wheel disc 200 in a radial direction of the wheel disc 200, and the two turning plates are a first turning plate 1101 facing the first housing 101 and a second turning plate 1102 facing the second housing 102, respectively. Since at least part of the buffering component 1100 is elastic, the whole contact member 1102 of the buffering component 1100 is in contact with the first turning plate 1101 to ensure the buffering effect of the buffering component 1100 on the wheel disc 200. The supporting member 1104 is rigid, and the supporting member 1104 can be partially in contact with the second turning plate 1102, as shown in the figure. In other embodiments, the whole supporting member 1104 may be in contact with the second turning plate 1102, which is not limited herein.

[0042] It should be noted that the above buffering component 1100 may also be arranged in the second housing 102. However, since the second housing 102 is arranged below the first housing 100, the buffering component 1100 arranged on the second housing 102 needs to bear a large self-weight, which is not conducive to the deformation recovery of the buffering component 1100 on the second housing 102. Therefore, only the buffering component is arranged in the first housing 101 located above, and the rigid supporting member 1104 is arranged in the second housing 102 located below.

[0043] Based on the above drying assembly 1, the present disclosure further provides an electrical device. The electrical device includes the above drying assembly 1.

[0044] According to the electrical device provided by the present disclosure, since the buffering component 1100 is arranged in the housing 100 of the drying assembly 1 therein, the buffering component 1100 includes the connecting member 1101 and the contact member 1102, one end of the connecting member 1101 is connected to the inner wall of the housing 100, the contact member 1102 is arranged at the other end of the connecting member 1101, the contact member 1102 is in contact with the end surface of the wheel disc 200, and the contact member 1102 can limit the movement of the wheel disc 200 within the housing 100. In addition, since at least one of the connecting member 1101 and the contact member 1102 is elastic, the contact between the buffering component 1100 and the wheel disc 200 can be a flexible contact, thereby avoiding the occurrence of damage caused by a collision between the wheel disc 200 and the housing 100 during the transportation

and assembly of the drying assembly 1, and thus achieving high practicability.

[0045] FIG. 7 is a schematic structural view of an electrical device provided with the drying assembly shown in FIG. 1. With reference to FIG. 7, the electrical device provided by the present disclosure may be a dryer or a washer-dryer combo. During specific implementation, the drying assembly 1 is in communication with an air outlet of a clothing accommodating member R and an air inlet of the clothing accommodating member R, respectively. Based on this, the drying assembly 1 and the clothing accommodating member R form a circulation path, thereby drying the hot and humid air circulating therein.

[0046] In other embodiments, the drying assembly may also be applied to various electrical devices requiring dehumidification, such as a dehumidifier and a dishwasher, which is not limited herein.

Example 2:

[0047] FIG. 8 is a schematic structural view of the drying assembly according to some embodiments of the present disclosure assembled on a washer-dryer combo, FIG. 9 is a schematic exploded view of the drying assembly in FIG. 8, FIG. 10 is a schematic structural view of the first housing in FIG. 9, FIG. 11 is a schematic enlarged perspective view of portion A in FIG. 10, FIG. 12 is a schematic top view of FIG. 10 with a gear assembly removed, FIG. 13 is a schematic cross-sectional view of FIG. 9, and FIG. 14 is a schematic enlarged view of portion B in FIG. 13. With reference to FIGs. 8 to 13, the drying assembly includes a housing 100, a second limiting groove 103 for loading the gear assembly is formed on the inner side of the housing 100, and a circumferential inner wall of the second limiting groove 103 is provided with a lubricating layer 127.

[0048] In the drying assembly provided by the present disclosure, since the end surface of the housing 100 is provided with the second limiting groove 103, the gear assembly can be assembled in the second limiting groove 103 to limit the radial swing of the gear assembly, so that limiting members such as a shaft sleeve for limiting the swing of the gear assembly can be eliminated, thereby reducing the production costs, and correspondingly also reducing the assembly process of the shaft sleeve in the housing 100. In addition, since the circumferential inner wall of the second limiting groove 103 is provided with the lubricating layer 127, the gear assembly can rotate smoothly in the second limiting groove 103, thus achieving high practicability.

[0049] With reference to FIG. 9, the housing 100 may include a first housing 101 and a second housing 102 connected to each other, the first housing 101 is provided with a first accommodating chamber 104, the second housing 102 is provided with a second accommodating chamber 105, the first accommodating chamber 104 and the second accommodating chamber 105 cooperate to

form an accommodating chamber for loading the wheel disc 200, the wheel disc 200 is rotatably arranged in the accommodating chamber, the first housing 101 may be located above the second housing 102, an air inlet channel is defined between the wheel disc 200 and the first housing 101, and an air outlet channel is defined between the wheel disc 200 and the second housing 102. This is known in the prior art and will not be repeated herein.

[0050] With reference to FIGs. 10 to 13, during actual implementation, a gear 400 is provided with a gear shaft 401, the gear shaft 401 is in transmission connection with a drive shaft 301 of a motor 300, the gear shaft 401 is provided with a limiting portion 402 protruding from an end portion of the gear 400, the limiting portion 402 of the gear shaft 401 is assembled in the second limiting groove 103 in a clearance fit mode, and the radial swing of the limiting portion 402 of the gear shaft 401 is limited through the second limiting groove 103, so as to achieve the purpose of limiting the radial swing of the gear 400. A circumferential surface of the gear 400 is in contact with a periphery of the wheel disc 200 to drive the wheel disc 200 to rotate.

[0051] In other embodiments, part of the circumferential surface of the gear 400 may also be assembled in the second limiting groove 103 in a clearance fit mode, and the remaining circumferential surface of the gear 400 is in contact with the periphery of the wheel disc 200, which can also limit the radial swing of the gear assembly.

[0052] With reference to FIG. 13, an end surface of the second housing 102 is provided with a motor accommodating portion 106, the motor accommodating portion 106 is arranged on the outer side of the second accommodating chamber 105, the motor 300 for driving the gear 400 to rotate is arranged in the motor accommodating portion 106, an output end of the motor 300 is connected to the drive shaft 301, and the gear shaft 401 of the gear 400 may be fixedly connected to the drive shaft 301. In this way, the gear 400 can be driven to rotate by the motor 300, thereby driving the wheel disc 200 to rotate in the accommodating chamber. The second limiting groove 103 is formed on the outer side of the first accommodating chamber 104 of the first housing 101 and located above the motor accommodating portion 106, and the limiting portion 401 of the gear shaft 401 is arranged in the second limiting groove 103 in the clearance fit mode. In this way, the gear 400 can rotate normally within a set swing range. During the rotation of the gear 400, the gear 400 may be in contact with the circumferential inner wall of the second limiting groove 103. To enable the gear 400 to rotate smoothly, the circumferential inner wall of the second limiting groove 103 may be provided with the lubricating layer 127. During specific implementation, the lubricating layer may be arranged only on the circumferential inner wall of the second limiting groove 103 by means of attachment or coating. The lubricating layer may be made of a soft metal material, or the first housing 101 is made of a self-lubrication material as a whole. The self-lubrication material may be a mixture of nylon and

glass fiber, or a polymer-based material, a ceramic-based material, or the like. Accordingly, the circumferential inner wall of the second limiting groove 103 also has a self-lubrication function, so that the gear 400 can rotate smoothly in the second limiting groove 103.

[0053] It should be noted that the second housing 102 may also be made of a self-lubrication material as a whole, which is not limited herein.

[0054] With reference to FIGs. 10 to 12, a first protrusion 107 is arranged on the inner side of the first housing 101, the second limiting groove 103 is formed in the first protrusion 107, and the first protrusion 107 may be integrally formed on the first housing 101. The first protrusion 107 may be columnar. In other embodiments, the first protrusion 107 may also be in other shapes such as a square shape and a frustum shape, which is not limited herein.

[0055] With reference to FIGs. 10 to 12, a recessed portion 108 may be arranged on the inner side of the first housing 101, the first protrusion 107 may be integrally formed on the recessed portion 108, and the arranged recessed portion 108 may enable the first protrusion 107 and the motor accommodating portion 106 to have a sufficient space to facilitate the assembly of the gear 400 and the rolling contact between the gear 400 and the periphery of the wheel disc 200. The recessed portion 108 is also cylindrical as a whole, and certainly, may also be in other shapes such as a square shape and a frustum shape, which is not limited herein.

[0056] With reference to FIG. 4, part of the periphery of the first protrusion 107 may be connected to the side wall of the recessed portion 108, which can improve the connection strength between the first protrusion 107 and the first housing 101, thereby ensuring the reliable rotation of the gear 400 within the second limiting groove 103.

[0057] With reference to FIGs. 10 to 12, the other part of the periphery of the first protrusion 107 may have a distance from the side wall of the recessed portion 108, and the first protrusion 107 and the side wall of the recessed portion 108 may be connected by a plurality of first reinforcing ribs 109 arranged spaced apart to further improve the connection strength of the first protrusion 107 within the housing 100, thereby ensuring reliable rotation of the gear 400 within the second limiting groove 103. The first reinforcing rib 109 and the first protrusion 107 may be integrally formed at a bottom of the recessed portion 108, and the plurality of first reinforcing ribs 109 may be radially arranged spaced apart around the circumferential surface of the first protrusion 107 to improve the reliability of the connection between the first reinforcing rib 109 and the first protrusion 107 on the first housing 101.

[0058] It should be noted that the second limiting groove 103 may also be directly formed in the end surface of the first housing 101; that is, the end surface of the first housing 101 is not recessed at the position where the second limiting groove 103 is formed. In this case, the

thickness of the part of the first housing 101 provided with the second limiting groove 103 is relatively large, which is not conducive to ensuring the flatness of the inner end surface of the first housing 101 during the molding of the first housing 101. However, the recessed treatment of the part of the first housing 101 provided with the second limiting groove 103 can reduce the thickness of this part of the first housing 101, so that the inner end surface of the first housing 101 can be as flat as possible during the molding of the first housing 101.

[0059] In addition, with reference to FIG. 13, the second limiting groove 103 may be provided with a through hole 110, and the through hole 110 may be formed at the bottom of the second limiting groove 103. The internal condition of the housing 100 can be visually observed through the through hole 110, especially for observing the operation of the motor 300 and/or the gear 400, including but not limited to the speed of the motor 300 and/or the gear 400, the wear condition of the gear 400, and the like.

[0060] With reference to FIG. 13, the drying assembly further includes a sealing member 500, and the sealing member 500 is detachably connected to the through hole 110. When the internal condition of the housing 100 needs to be observed, the sealing member 500 may be taken out to facilitate observing the inside of the housing 100. Upon completion of the observation, the sealing member 500 is assembled in the viewing hole 110 to enable the device to operate normally, so as to avoid the leakage of the airflow from the viewing hole 110 during the operation of the device.

[0061] During specific implementation, the sealing member 500 may be a plug, which may be connected in the viewing hole 110 by means of a threaded connection or an interference fit to facilitate disassembly of the sealing member 500.

[0062] With reference to FIG. 10, a first supporting portion 111 for limiting the movement of the wheel disc 200 is arranged in the first accommodating chamber 104 of the first housing 101, the first supporting portion 111 is configured to assist in the rotation of the wheel disc 200, the first supporting portion 111 may be partially annular or substantially annular, an outer wall of the first supporting portion 111 is connected to the circumferential inner wall of the first accommodating chamber 104, a gap is formed between the periphery of the wheel disc 200 and the circumferential inner wall of the first accommodating chamber 104, and the projection of the periphery of the wheel disc 200 falls on the first supporting portion 111. To enable the gear 400 to drive the wheel disc 200, the depth of the second limiting groove 103 (i.e., the height of the first protrusion 107) may be less than or equal to the height of the first supporting portion 111. Preferably, the depth of the second limiting groove 103 is consistent with the height of the first supporting portion 111; that is, an opening of the second limiting groove 103 and the first supporting portion 111 are located on the same plane. In this way, the first protrusion 107 and the first supporting portion 111 can be located on the same plane to avoid

interference with the rotation of the wheel disc 200, and part of the periphery of the first protrusion 107 is connected to the outer side of the first supporting portion 111.

[0063] With reference to FIGs. 10 to 12, when the motor 300 drives the gear 400 to drive the rotation of the wheel disc 200, friction may be generated between the wheel disc 200 and the first supporting portion 111. In one aspect, this may affect the normal operation of the wheel disc 200, and in another aspect, this also generates noise. Based on this, in the present disclosure, one or more damping members 600 are arranged spaced apart on the first supporting portion 111, so that the wheel disc 200 may be in contact with the damping member 600 during the rotation of the wheel disc 200. Since the damping members 600 are arranged spaced apart, an area of contact between the wheel disc 200 and the first supporting portion 111 can be reduced, thereby reducing the vibration and noise of the housing 100 caused by the rotation of the wheel disc 200.

[0064] With reference to FIGs. 10 to 12, during specific implementation, the first supporting portion 111 may be provided with damping mounting portions 700 spaced apart, the damping mounting portion 700 and the damping member 600 are correspondingly arranged, the damping member 600 is arranged in the corresponding damping mounting portion 700, and the damping member 600 at least partially protrudes from a plane where the corresponding damping mounting portion 700 is located to form a damping portion. When the wheel disc 200 rotates, the damping portion with the damping member 600 protruded from the plane where the damping mounting portion 700 is located is in direct contact with the wheel disc 200, thereby reducing the vibration and noise of the housing 100 caused by rotation of the wheel disc 200.

[0065] In addition, to improve the mounting reliability of the damping member 600, an adhesive may be applied between the damping member 600 and the first supporting portion 111 and between the damping member 600 and the corresponding damping mounting portion 700, and then the damping member 600 is fixed in the corresponding damping mounting portion 700 by means of adhesion.

[0066] With reference to FIG. 11, in some embodiments, the damping mounting portion 700 may be a damping frame arranged on the first supporting portion 111, the damping frame may be fixed to the first supporting portion 111 in an integrally formed manner, and the damping member 600 may be arranged in the corresponding damping frame in an interference fit manner. Certainly, in other embodiments, the first supporting portion 111 may also be provided with grooves, and the damping member 600 is assembled in the corresponding groove, or the damping member 600 is directly bonded to the first supporting portion 111, which is not limited herein.

[0067] Based on the above drying assembly, the present disclosure further provides a clothing treatment device. The clothing treatment device includes the above

drying assembly.

[0068] According to the clothing treatment device provided with the above drying assembly, since the end surface of the housing 100 is provided with the second limiting groove 103 to limit the radial swing of the gear assembly, the limiting member for limiting the swing of the gear assembly can be eliminated to reduce the production costs, and correspondingly, the assembly process can also be reduced. In addition, since the circumferential inner wall of the second limiting groove 103 is provided with the lubricating layer, the gear assembly can rotate smoothly in the second limiting groove 103, thus achieving high practicability.

[0069] The clothing treatment device may be a clothes dryer or a washer-dryer combo, and certainly, the drying assembly therein may also be applied to various devices requiring dehumidification, such as a dehumidifier and a dishwasher.

Example 3:

[0070] With reference to FIGs. 10 to 12, in Example 1, to reduce the friction and vibration between the wheel disc 200 and the first supporting portion 111, the damping member 600 is arranged on the first supporting portion 111, but the damping member 600 and the wheel disc 200 are in sliding friction with a large friction force, which affects the smooth rotation of the wheel disc 200.

[0071] Based on the above technical problems, the present disclosure provides a drying assembly and a clothing treatment device to alleviate the friction force to a certain extent when the wheel disc 200 rotates, thereby enabling the wheel disc 200 to rotate smoothly.

[0072] FIG. 15 is a schematic top view of the first housing provided with a damping wheel. With reference to FIG. 15, the drying assembly includes a housing 100 and a wheel disc 200, the wheel disc 200 is rotatably arranged in the housing 100, a plurality of damping wheels 800 are arranged on the inner side of the housing 100, the damping wheel 800 is rotatably connected in the housing 100, and a circumferential surface of the damping wheel 800 is in rolling contact with the wheel disc 200.

[0073] In the drying assembly provided by the present disclosure, since the plurality of damping wheels 800 are arranged on the inner side of the housing 100, the damping wheel 800 is rotatably connected in the housing 100, and the circumferential surface of the damping wheel 800 is in rolling contact with the wheel disc 200. In this way, the sliding friction in the related art can be changed into the rolling friction, so as to alleviate the friction force when the wheel disc 200 rotates, thereby enabling the wheel disc 200 to rotate smoothly.

[0074] It should be noted that during the mounting of the damping wheel 800, a certain mounting gap is maintained between the damping wheel 800 and the wheel disc 200, as long as the circumferential surface of the damping wheel 800 is in contact with the wheel disc 200 for at least part of the time.

[0075] As described above, with reference to FIG. 9, the housing 100 includes a first housing 101 and a second housing 102 connected to each other, the first housing 101 is provided with a first accommodating chamber 104, and the second housing 102 is provided with a second accommodating chamber 105. After the first housing 101 and the second housing 102 are assembled, the first accommodating chamber 104 and the second accommodating chamber 105 cooperate to form an accommodating chamber for loading the wheel disc 200, the wheel disc 200 is rotatably arranged in the accommodating chamber, the first housing 101 may be located above the second housing 102, an air inlet channel is defined between the wheel disc 200 and an end surface of the first housing 101, and an air outlet channel is defined between the wheel disc 200 and an end surface of the second housing 102. This is known in the prior art and will not be repeated herein.

[0076] FIG. 16 is a schematic view of a specific arrangement of the damping wheel in FIG. 15. With reference to FIGs. 15 and 16, during specific implementation, the housing 100 may be provided with a mounting chamber 112 corresponding to the damping wheel 800, the mounting chamber 112 is provided with an opening, the opening of the mounting chamber 112 faces the wheel disc 200, the damping wheel 800 is arranged in the mounting chamber 112, a damping wheel shaft 801 of the damping wheel 800 is arranged on a side wall of the mounting chamber 112, at least part of the damping wheel 800 protrudes from a plane where the opening of the mounting chamber 112 is located, and when the wheel disc 200 rotates, the circumferential surface of the damping wheel 800 may be in contact with the wheel disc 200, so that the damping wheel 800 and the wheel disc 200 form rolling friction to enable the wheel disc 200 to rotate smoothly on the premise of effectively supporting and damping the wheel disc 200.

[0077] In some embodiments, the circumferential surface of the damping wheel 800 has certain elasticity, or the damping wheel 800 itself is made of an elastic material to adapt to the swing of the wheel disc 200 during rotation. An axial direction of the damping wheel 800 may be arranged in the radial direction of the wheel disc 200 or close to the radial direction of the wheel disc 200, so that the plurality of damping wheels 800 are radially arranged around the central axis of the wheel disc 200 to further reduce the friction between the damping wheel 800 and the wheel disc 200, thereby enabling the wheel disc 200 to rotate smoothly.

[0078] With reference to FIG. 16, in some embodiments, the damping wheel 800 may be fixedly connected to the damping wheel shaft 801, and two ends of the damping wheel shaft 801 are rotatably connected to the side wall of the mounting chamber 112. When the wheel disc 200 is in contact with the damping wheel 800, the wheel disc 200 drives the damping wheel 800 to rotate, and the damping wheel shaft 801 of the damping wheel 800 rotates on the side wall of the mounting chamber 112,

thereby achieving the driven rotation of the damping wheel 800.

[0079] In some embodiments, the damping wheel 800 and the damping wheel shaft 801 are preferably integrally formed to improve the reliability of the damping wheel 800 and the damping wheel shaft 801 during use and improve the assembly efficiency. Certainly, in other embodiments, the damping wheel 800 may also be fixedly connected to the damping wheel shaft 801 by means of a key connection or the like, which is not limited herein.

[0080] FIG. 17 is a schematic front view of FIG. 16. With reference to FIGs. 16 and 17, the mounting chamber 112 is square or substantially square, and two ends of the damping wheel shaft 801 are rotatably connected to two opposite side walls of the mounting chamber 112. The side wall of the mounting chamber 112 is provided with a first mounting hole 113, the first mounting hole 113 extends from the opening of the mounting chamber 112 in a direction away from the wheel disc 200, the first mounting hole 113 includes a first hole body 1132 and a second hole body 1133 sequentially in communication with the opening, the damping wheel shaft 801 is in interference fit with at least part of the first hole body 1132, and the damping wheel shaft 801 is arranged in the second hole body 1133 in a clearance fit manner. During specific implementation, the damping wheel shaft 801 may be placed at the opening of the mounting chamber 112, and then the damping wheel shaft 801 is pressed down, so that the end portion of the damping wheel shaft 801 passes through the first hole body 1132 at the same end in an interference fit manner, and enters the second hole body 1133 at the same end. Since the damping wheel shaft 801 is arranged in the second hole body 1133 in a clearance fit manner, the rotating damping wheel 800 can drive the damping wheel shaft 801 to rotate in the second hole body 1133 under the driving of an external force. Due to the interference fit between the damping wheel shaft 801 and the first hole body 1132, the damping wheel shaft can be restricted from entering the second hole body 1133 from the first hole body 1132 to prevent the damping wheel shaft 801 from coming out of the corresponding mounting chamber 112, so that the damping wheel shaft 801 and the damping wheel 800 rotate normally. In some embodiments, the interference fit and the clearance fit may be realized by designing the diameter of the damping wheel shaft 801 to be H. H is greater than the diameter of the part of the first hole body 1132 adapted to the damping wheel shaft 801 and less than the diameter of the part of the second hole body 1133 adapted to the damping wheel shaft 801.

[0081] Since a damping wheel set E composed of the damping wheel shaft 801 and the damping wheel 800 can be assembled in place simply by pressing downward, the assembly efficiency of the damping wheel set E can be improved, thus achieving high practicability.

[0082] With reference to FIGs. 16 and 17, in some embodiments, the second hole body 1133 may be arc-shaped, so that the damping wheel shaft 801 can rotate in

the second hole body 1133, and the first hole body 1132 has at least a pore size less than the diameter of the second hole body 1133. In this way, the damping wheel shaft 801 can rotate in the second hole body 1133 without coming out of the second hole body 1132.

[0083] With reference to FIGs. 16 and 17, the first hole body 1132 may be rectangular, the pore size of the first hole body 1132 needs to be less than the diameter of the third hole body 1133, and the central angle of the second hole body 1132 needs to be greater than 180° , so that the end portion of the damping wheel shaft 801 can pass through the first hole body 1132 by pressing downward, and the damping wheel shaft 801 can rotate in the second hole body 1133 without coming out of the first hole body 11323, so as to limit the damping wheel shaft 801 in a direction parallel to the central axis of the wheel disc 200.

[0084] In other embodiments, a part of the first hole body 1132 may be rectangular, and the pore size of this part is less than the diameter of the second hole body 1133 to prevent the damping wheel shaft 801 from coming out of the first hole body 1132. The remaining part of the first hole body 1132 may be arc-shaped, trapezoidal, or the like, which is not limited herein.

[0085] In addition, with reference to FIGs. 16 and 17, the first mounting hole 113 may further include a first guiding hole 1131, and the first guiding hole 1131 is formed between the first hole body 1132 and the opening of the mounting chamber 112; that is, the first hole body 1132 and the mounting chamber 112 transition through the first guiding hole 1131. A hole pitch of the first guiding hole 1131 on a side close to the opening of the mounting chamber 112 is greater than a hole pitch on a side thereof close to the first hole body 1132. When the damping wheel shaft 801 needs to be assembled, the damping wheel shaft 801 with the damping wheel 800 may be placed in the first guiding hole 1131. Since the damping wheel shaft 801 is in interference fit with the first hole body 1132, the damping wheel shaft 801 is supported in the first guiding hole 1131 of the first mounting hole 113, which can achieve initial positioning of the damping wheel shaft 801. Then, the damping wheel shaft 801 is pressed downward by an external force, so that the damping wheel shaft 801 passes through the first hole body 1132 and is assembled in the second hole body 1133.

[0086] In some embodiments, the hole pitch of the first guiding hole 1131 gradually decreases from the opening of the mounting chamber 112 toward the first hole body 1132; that is, the first guiding hole 1131 may have a shape resembling an inverted Chinese character "入" to facilitate supporting the damping wheel shaft 801.

[0087] Thicknesses of the first guiding hole 1131, the first hole body 1132, and the second hole body 1133 may be correspondingly set according to the diameter of the damping wheel 800. However, it is necessary to ensure that at least part of the damping wheel 800 protrudes from the plane where the opening of the mounting chamber 112 is located, so that the circumferential surface of the

damping wheel 800 can be in rolling contact with the wheel disc 200 to achieve damping of the wheel disc 200.

[0088] In some embodiments, two opposite sides of the mounting chamber 113 are each provided with the above first mounting hole 113, and two ends of the damping wheel shaft 801 are both arranged in the corresponding first mounting holes 113.

[0089] With reference to FIGs. 16 and 17, the diameter of the damping wheel 800 is greater than a hole pitch of the second hole body 1133 of the first mounting hole 113. In the case that the damping wheel 800 rotates with the wheel disc 200, the damping wheel 800 may move in an axial direction of the damping wheel shaft 801. Since the diameter of the damping wheel 800 is greater than the hole pitch of the second hole body 1133 of the first mounting hole 113, the axial movement of the damping wheel 800 can be limited, thereby allowing the damping wheel 800 to rotate only in the mounting chamber 112. In this case, the damping wheel 800 may be in contact with the side wall of the mounting chamber 112. Therefore, a baffle may be arranged on an outer side wall of the first mounting hole 113, and the baffle covers at least an outer side of the second hole body 1133. The movement of the damping wheel shaft 801 of the damping wheel 800 is limited by the baffle, so that the damping wheel 800 cannot be in contact with the side wall of the mounting chamber 112, thereby improving the smoothness of the rotation of the damping wheel 800 and further improving the smoothness of the rotation of the wheel disc 200.

[0090] With reference to FIGs. 15 to 17, in some embodiments, a side surface of the first housing 101 facing the wheel disc 200 may be provided with a first mounting groove 1121, a mounting frame 114 is arranged at an opening of the first mounting groove 1121, and the mounting frame 114 is in communication with the opening of the first mounting groove 1121 to form the above mounting chamber 112. The mounting frame 114 may be integrally formed on the end surface of the housing 100, and the size of the through hole thereof may be consistent with the size of the opening of the first mounting groove 1121. Certainly, in other embodiments, the mounting frame 114 may be detachably connected to the end surface of the housing 100 by bolts or the like, and the size of the through hole of the mounting frame 114 may be greater than or less than the size of the opening of the first mounting groove 1121. This can be designed accordingly without hindering the assembly of the damping wheel 800, and thus will not be repeated herein.

[0091] To improve the smoothness of the rotation of the damping wheel 800, an inner wall of the second hole body 1133 of the first mounting hole 113 may be provided with a lubricating layer. During specific implementation, the lubricating layer may be arranged only on the inner wall of the second hole body 1133 by means of attachment or coating. The lubricating layer may be made of a soft metal material, or the first housing 101 is made of a self-lubrication material as a whole. The self-lubrication material may be a mixture of nylon and glass fiber, or a polymer-based

material, a ceramic-based material, or the like. Accordingly, the inner wall of the second hole body 1133 also has a self-lubrication function, so that the supporting wheel shaft 901 can rotate smoothly in the second hole body 1133.

[0092] It should be noted that the above damping wheel 800 may also be rotatably connected to the damping wheel shaft 801, and two ends of the damping wheel shaft 801 are fixedly connected to two opposite sides of the mounting chamber 112. That is, the wheel disc 200 drives the damping wheel 800 to rotate on the damping wheel shaft 801, which can also achieve the purpose of rolling friction between the wheel disc 200 and the damping wheel 800. This is not limited herein.

[0093] With reference to FIGs. 15 to 17, a first supporting portion 111 for limiting the movement of the wheel disc 200 is arranged in the first accommodating chamber 104 of the first housing 101, and the arrangement of the first supporting portion 111 may refer to Example 1, and thus will not be repeated herein. The above damping wheel 800 may be arranged on the first supporting portion 111. Through the arrangement of the damping wheel 800, a gap is formed between the wheel disc 200 and the first supporting portion 111, and the wheel disc 200 can be in rolling contact with the first supporting portion 111, so that the wheel disc 200 can rotate smoothly.

[0094] In addition, the damping member 600 shown in Example 2 may also be arranged on the first supporting portion 111; that is, both the damping wheel 800 and the damping member 600 may be arranged on the first supporting portion 111. In this case, since the damping wheel 800 and the damping member 600 may be arranged spaced apart, in one aspect, the number of the damping members 600 is reduced, so that the wheel disc 200 rotates smoothly. Moreover, the vibration and noise caused by direct contact between the wheel disc 200 and the first supporting portion 111 can be avoided when the damping wheel 800 or the damping member 600 fails.

[0095] Based on the above drying assembly, the present disclosure further provides a clothing treatment device. The clothing treatment device includes the above drying assembly.

[0096] In the clothing treatment device provided with the above drying assembly, since a plurality of damping wheels 800 are arranged on the end surface of the housing 100 of the drying assembly, the damping wheel 800 is rotatably connected in the housing 100, and the circumferential surface of the damping wheel 800 is in rolling contact with the end surface of the wheel disc 200. In this way, the sliding friction in the related art can be changed into the rolling friction, so as to reduce the friction force when the wheel disc 200 rotates, thereby enabling the wheel disc 200 to rotate smoothly.

[0097] The clothing treatment device may be a clothes dryer or a washer-dryer combo, and certainly, the drying assembly therein may also be applied to various devices requiring dehumidification, such as a dehumidifier and a dishwasher.

Example 4:

[0098] In the related art, the drying assembly is provided with a supporting wheel in the housing to always provide rolling support for the rotating wheel disc and play a limiting role, thereby preventing the wheel disc from deflecting and/or colliding with the housing. However, the supporting wheel is rotatably connected to the corresponding supporting wheel shaft, and the assembly method is relatively complex and needs to be further improved.

[0099] Based on the above technical problems, the present disclosure provides a drying assembly and a clothing treatment device to improve the assembly efficiency of a supporting wheel set to a certain extent.

[0100] FIG. 18 is a schematic top view of the second housing in FIG. 9, FIG. 19 is a schematic structural view of the supporting wheel set in FIG. 18, FIG. 20 is a schematic assembly view of the supporting wheel set in FIG. 18, and FIG. 21 is a schematic front view of FIG. 20. With reference to FIGs. 18 to 21, the drying assembly includes a housing 100, a wheel disc 200, and a plurality of supporting wheel sets F, the wheel disc 200 is rotatably arranged in the housing 100, a plurality of second mounting grooves 115 are formed on the inner side of the housing 100, at least one side of the second mounting groove 115 is provided with a second mounting hole 116, the second mounting hole 116 extends from an opening of the second mounting groove 115 in a direction away from the wheel disc 200, and the second mounting hole 116 includes a third hole body 1162 and a fourth hole body 1163 sequentially in communication with the opening of the second mounting groove 115. The supporting wheel set F and the second mounting groove 115 are correspondingly arranged, the supporting wheel set F includes a supporting wheel 900 and a supporting wheel shaft 901, the supporting wheel 900 is fixedly connected to the supporting wheel shaft 901, the supporting wheel shaft 901 is in interference fit with at least part of the third hole body 1162, the supporting wheel shaft 901 is arranged in the fourth hole body 1163 in a clearance fit manner, the supporting wheel 900 at least partially protrudes from a plane where the opening of the second mounting groove 115 is located, and the supporting wheel 900 is in rolling contact with the wheel disc 200 to support the wheel disc 200.

[0101] In the drying assembly provided by the present disclosure, since the supporting wheel 900 of the supporting wheel set F is fixedly connected to the supporting wheel shaft 901, during specific implementation, the supporting wheel shaft 901 with the supporting wheel 900 can be placed at the opening of the second mounting groove 115, and then the supporting wheel shaft 901 is pressed downward, so that an end portion of the supporting wheel shaft 901 passes through the third hole body 1162 in an interference fit manner and enters the fourth hole body 1163. Since the supporting wheel shaft 901 is arranged in the fourth hole body 1163 in a clearance fit manner, the

supporting wheel 900 drives, under the driving of the wheel disc 200, the supporting wheel shaft 901 to rotate in the fourth hole body 1163. Since the supporting wheel shaft 901 is in interference fit with at least part of the third hole body 1162, the supporting wheel shaft 901 can be restricted from entering the third hole body 1162 from the fourth hole body 1163, so as to prevent the supporting wheel shaft 901 from coming out of the corresponding second mounting groove 115, thereby enabling the supporting wheel shaft 901 to rotate normally.

[0102] Since the supporting wheel set F can be assembled in place simply by pressing downward, the assembly efficiency of the supporting wheel set F can be improved, thus achieving high practicability.

[0103] With reference to FIGs. 20 and 21, in some embodiments, the fourth hole body 1163 may be arc-shaped, so that the supporting wheel shaft 901 can rotate in the fourth hole body 1163, and the third hole body 1162 has at least a pore size less than the diameter of the fourth hole body 1163. In this way, the supporting wheel shaft 901 can rotate in the fourth hole body 1163 without coming out of the third hole body 1162.

[0104] With reference to FIGs. 19 and 20, the third hole body 1162 may be rectangular, the pore size of the third hole body 1162 needs to be less than the diameter of the fourth hole body 1163, and a central angle of the fourth hole body 1163 needs to be greater than 180° , so that the end portion of the supporting wheel shaft 901 can pass through the third hole body 1162 by pressing downward, and the supporting wheel shaft 901 can rotate in the fourth hole body 1163 without coming out of the third hole body 1163, thereby limiting the supporting wheel shaft 901 in a direction parallel to the central axis of the wheel disc 200.

[0105] In other embodiments, a part of the third hole body 1162 may be rectangular, and the pore size of this part is less than the diameter of the fourth hole body 1163 to prevent the supporting wheel shaft 901 from coming out of the third hole body 1162. The remaining part of the third hole body 1162 may be arc-shaped, trapezoidal, or the like, which is not limited herein.

[0106] In addition, with reference to FIGs. 20 and 21, the second mounting hole 116 may further include a second guiding hole 1161, and the second guiding hole 1161 is formed between the third hole body 1162 and the opening of the second mounting groove 115; that is, the third hole body 1162 and the second mounting groove 115 transition through the second guiding hole 1161. A hole pitch of the second guiding hole 1161 on a side close to the opening of the second mounting groove 115 is greater than a hole pitch on a side thereof close to the third hole body 1162. When the supporting wheel shaft 901 needs to be assembled, the supporting wheel shaft 901 with the supporting wheel 900 may be placed in the second guiding hole 1161. Since the supporting wheel shaft 901 is in interference fit with the third hole body 1162, the supporting wheel shaft 901 is supported in the second guiding hole 1161 of the second mounting hole

116, which can achieve initial positioning of the supporting wheel shaft 901. Then, the supporting wheel shaft 901 is pressed downward by an external force, so that the supporting wheel shaft 901 passes through the third hole body 1162 and is assembled in the fourth hole body 1163.

[0107] With reference to FIGs. 20 and 21, in some embodiments, the hole pitch of the second guiding hole 1161 gradually decreases from the opening of the second mounting groove 115 toward the third hole body 1162; that is, the second guiding hole 1161 may have a shape resembling an inverted Chinese character "入" to facilitate supporting the supporting wheel shaft 901.

[0108] Thicknesses of the second guiding hole 1161, the third hole body 1162, and the fourth hole body 1163 may be correspondingly set according to the diameter of the supporting wheel 900. However, it is necessary to ensure that at least part of the supporting wheel 900 protrudes from the plane where the opening of the second mounting groove 115 is located, so that a circumferential surface of the supporting wheel 900 can be in rolling contact with the wheel disc 200 to provide effective rolling support for the wheel disc 200.

[0109] In some embodiments, two opposite sides of the second mounting groove 115 are each provided with the above second mounting hole 116, and two ends of the supporting wheel shaft 901 are both arranged in the corresponding second mounting holes 116.

[0110] With reference to FIGs. 20 and 21, the diameter of the supporting wheel 900 may be greater than a hole pitch of the second mounting hole 116. In the case that the supporting wheel 900 rotates with the wheel disc 200, the supporting wheel 900 may move in the axial direction of the supporting wheel shaft 901. Since the diameter of the supporting wheel 900 is greater than the hole pitch of the second mounting hole 116, the axial movement of the supporting wheel 900 can be limited, thereby allowing the supporting wheel 900 to rotate only in the second mounting groove 115. In this case, the supporting wheel 900 may be in contact with a side wall of the mounting groove. Therefore, in some embodiments, a baffle is further arranged on the second mounting groove 115, and the baffle covers at least an outer side of the fourth hole body 1163 of the second mounting hole 116. The movement of the supporting wheel shaft 901 is limited by the baffle, so that the supporting wheel 900 cannot be in contact with the side wall of the mounting groove, thereby improving the smoothness of the rotation of the supporting wheel 900 and further improving the smoothness of the rotation of the wheel disc 200.

[0111] In some embodiments, the baffle may cover an outer side of the second mounting hole 116, or may cover only an outer side of the fourth hole body 1163 of the second mounting hole 116.

[0112] With reference to FIG. 19, the supporting wheel 900 and the supporting wheel shaft 901 may be integrally formed. In this way, the formed supporting wheel set F can be directly assembled to improve the assembly efficiency of the supporting wheel set F.

[0113] To improve the smoothness of the rotation of the supporting wheel 900, an inner wall of the fourth hole body 1163 of the second mounting hole 116 may be provided with a lubricating layer. During specific implementation, the lubricating layer may be arranged only on the inner wall of the fourth hole body 1163 by means of attachment or coating. The lubricating layer may be made of a soft metal material, or the second housing 102 is made of a self-lubrication material as a whole. The self-lubrication material may be a mixture of nylon and glass fiber, or a polymer-based material, a ceramic-based material, or the like. Accordingly, the inner wall of the fourth hole body 1163 also has a self-lubrication function, so that the supporting wheel shaft 901 can rotate smoothly in the second hole body 1133.

[0114] In some embodiments, the supporting wheel 900 of the supporting wheel shaft 901 is made of a hard material to effectively support the wheel disc 200, thereby preventing the wheel disc 200 from deflecting and/or colliding with the housing 100 due to the deformation of the supporting wheel 900.

[0115] With reference to FIGs. 18 and 20, the first supporting portion 111 for limiting the movement of the wheel disc 200 is arranged in the first accommodating chamber 104 of the first housing 101, and a second supporting portion 117 for limiting the movement of the wheel disc 200 is arranged in the second accommodating chamber 105 of the second housing 102. The arrangement of the first supporting portion 111 and the second supporting portion 117 is similar to that of the first supporting portion 111 in Example 1, and thus will not be repeated herein.

[0116] With reference to FIG. 18, the plurality of supporting wheel sets F may be arranged on the second supporting portion 117. By arranging the supporting wheel shaft 901, a gap may be formed between the wheel disc 200 and the second supporting portion 117 to support and limit the wheel disc 200, thereby preventing the wheel disc 200 from deflecting and/or colliding with the housing 100. In addition, the wheel disc 200 is also in rolling contact with the supporting wheel shaft 901 on the second supporting portion 117, thereby enabling the wheel disc 200 to rotate smoothly.

[0117] With reference to FIGs. 18, 20, and 21, in some embodiments, the second supporting portion 117 is provided with a plurality of groove bodies spaced apart, a side of the groove body facing the inside of the second supporting portion 117 (i.e., the inner side of the groove body) is provided with a supporting plate 118, the supporting plate 118 and the groove body are configured to form the above second mounting groove 115, a side of the groove body facing the outside of the second supporting portion 117 and the supporting plate 118 are each provided with the second mounting hole 116, and two ends of the supporting wheel shaft 901 of the supporting wheel set F are respectively connected to a side of the groove body facing the outside of the second supporting portion 117 and to the second mounting hole 116 in the support-

ing plate 118.

[0118] In other embodiments, the above supporting plate 118 may be arranged on a side of the groove body facing away from the inside of the second supporting portion 117, or the supporting plate 118 may be arranged on the side of the groove body facing and/or facing away from the inside of the second supporting portion 117; that is, the supporting plate 118 is arranged on two sides or one side of the groove body in the radial direction of the wheel disc, the supporting plate 118 and the groove body are configured to form the second mounting groove 115, and the second mounting hole 116 is formed in the supporting plate 118.

[0119] In some embodiments, the supporting plate 118 may be integrally formed on the groove body to facilitate production and processing. A gap may be formed between the supporting plate 118 and the groove body on both sides along the circumferential direction of the second supporting portion 117, and the gap may be defined as a weight-reducing hole to save the production and manufacturing costs to a certain extent.

[0120] Based on the above drying assembly, the present disclosure further provides a clothing treatment device. The clothing treatment device includes the above drying assembly.

[0121] For the clothing treatment device provided with the above drying assembly, since the supporting wheel set F can be assembled in place simply by pressing downward, the assembly efficiency of the supporting wheel set F can be improved, thus achieving high practicability.

[0122] The clothing treatment device may be a clothes dryer or a washer-dryer combo, and certainly, the drying assembly therein may also be applied to various devices requiring dehumidification, such as a dehumidifier and a dishwasher.

Example 5:

[0123] A limiting wheel is arranged in the housing of the drying assembly, and is located on the outer side of the periphery of the wheel disc. The periphery of the limiting wheel is in rolling contact with the periphery of the wheel disc. When the wheel disc rotates in the housing, the limiting wheel is driven to rotate. When the wheel disc deviates in the radial direction thereof, the limiting wheel limits the wheel disc in the form of rolling contact, so as to assist the wheel disc to run on a set rotation trajectory without causing significant rotation resistance. This prevents the wheel disc from directly contacting the housing itself, thereby reducing the risk of damage to the wheel disc.

[0124] In the related art, the limiting wheel is rotatably connected to a limiting wheel shaft. During assembly, the limiting wheel needs to be first assembled to the limiting wheel shaft, and then the limiting wheel shaft with the limiting wheel is assembled into the housing. The assembly method is relatively complex and needs to be

further improved.

[0125] Based on this, the present disclosure provides a drying assembly and a clothing treatment device to improve the assembly efficiency of a limiting wheel set G to a certain extent.

[0126] FIG. 22 is a schematic view of an arrangement of a limiting wheel set in the second housing, FIG. 23 is a schematic structural view of the limiting wheel set in FIG. 22, and FIG. 24 is a schematic bottom view of FIG. 23. With reference to FIGs. 22 to 24, the drying assembly includes a housing 100, a wheel disc 200, and a plurality of limiting wheel sets G, the wheel disc 200 is rotatably arranged in the housing 100, the plurality of limiting wheel sets G are arranged spaced apart in the housing 100, the limiting wheel set G includes a limiting wheel 1000 and a limiting wheel shaft 1005, the limiting wheel 1000 is fixedly arranged on the limiting wheel shaft 1005, and a circumferential surface of the limiting wheel 1000 may be in contact with a circumferential surface of the wheel disc 200.

[0127] In the drying assembly provided by the present disclosure, since the limiting wheel 1000 of the limiting wheel set G is fixedly arranged on the limiting wheel shaft 1005, the limiting wheel set G can be directly assembled at a corresponding position of the housing 100 during assembly, without the need to first mount the limiting wheel 1000 on the limiting wheel shaft 1005 and then mount the limiting wheel shaft 1005 into the housing 100 for assembly. This can improve the assembly efficiency, achieving high practicability.

[0128] FIG. 25 is a schematic assembly view of the limiting wheel set in 22 on the second housing, FIG. 26 is a schematic structural view of a position of the second housing where the limiting wheel set is assembled, and FIG. 27 is a schematic assembly cross-sectional view of the limiting wheel set in FIG. 26 on the second housing. With reference to FIGs. 25 to 27, during specific implementation, a third mounting hole 120 is formed in a side surface of the second housing 102 of the housing 100 facing the wheel disc 200, and an end portion of the limiting wheel set G 1001 is rotatably arranged in the third mounting hole 120.

[0129] With reference to FIGs. 25 to 27, a second protrusion 119 is arranged on the side surface of the second housing 102 of the housing 100 facing the wheel disc 200, the above third mounting hole 120 is formed in the second protrusion 119, and one end of the limiting wheel shaft 1005 is rotatably arranged in the third mounting hole 120.

[0130] With reference to FIGs. 25 to 27, a third mounting groove 121 is formed in the side surface of the second housing 102 of the housing 100 facing the wheel disc 200, and the second protrusion 119 is arranged in the third mounting groove 121. This arrangement can reduce the thickness of the second protrusion 119 arranged on the second housing 102 of the housing 100, thereby facilitating the overall injection molding of the second housing 102.

[0131] With reference to FIGs. 25 to 27, a first bevel 122 is arranged at an opening of the third mounting groove 121, a height of an inner side of the first bevel 122 relative to the side surface of the second housing 102 facing the wheel disc 200 is less than a height of an outer side of the first bevel 122 relative to the side surface of the second housing 102 facing the wheel disc 200, and an outer peripheral surface of the limiting wheel 1000 falls on the first bevel 122 to limit the axial movement of the limiting wheel 1000.

[0132] Since the third mounting groove 121 is formed in the housing 100, the outer peripheral surface of the limiting wheel 1000 falls on the first bevel 122 on the third mounting groove 121. In this way, the contact between the limiting wheel 1000 and the housing 100 is in the form of an annular contact to reduce an area of contact between the limiting wheel 1000 and the housing 100. When the wheel disc 200 rotates in the housing 100 to drive the limiting wheel 1000 to rotate, the friction between the limiting wheel 1000 and the housing 100 is also reduced due to the reduction in the area of contact therebetween, so that the rotation of the limiting wheel 1000 is smooth, thereby further reducing the rotational resistance on the wheel disc 200 and enabling the wheel disc 200 to operate normally.

[0133] During specific implementation, the third mounting groove 121 is of a columnar structure or a substantially columnar structure, and an inner diameter of the first bevel 122 gradually decreases in a direction from the opening of the third mounting groove 121 to an inside of the third mounting groove 121. The second protrusion 119 may also be of a columnar structure, and the second protrusion 119 may be coaxially arranged in the second mounting groove 121. Certainly, the second protrusion 119 may also be of other structures such as a square shape or a frustum shape, which is not limited herein.

[0134] As described above, the housing 100 includes a first housing 101 and a second housing 102 connected to each other, the first housing 101 is provided with a first accommodating chamber 104, and the second housing 102 is provided with a second accommodating chamber 105. After the first housing 101 and the second housing 102 are assembled, the first accommodating chamber 104 and the second accommodating chamber 105 are configured to form an accommodating chamber for loading the wheel disc 200, the wheel disc 200 is rotatably arranged in the accommodating chamber, and the first housing 101 may be located above the second housing 102. With reference to FIG. 27, an axial direction of the limiting wheel 1000 is parallel or nearly parallel to an axial direction of the wheel disc 200, and the limiting wheel 1000 can fall on the second housing 102 under the action of gravity. Therefore, the third mounting groove 121 is arranged in the side surface of the second housing 102 facing the wheel disc 200, and the first housing 101 may be provided with only a fourth mounting hole 123 corresponding to the limiting wheel shaft 1005, the fourth

mounting hole 123 may be a blind hole, the fourth mounting hole 123 and the third mounting hole 120 in the second protrusion 119 are coaxially formed, an upper end of the limiting wheel shaft 1005 is rotatably arranged in the fourth mounting hole 123, and a lower end of the limiting wheel shaft 1005 is rotatably arranged in the third mounting hole 120 of the second protrusion.

[0135] FIG. 28 is a schematic assembly view of the limiting wheel set in the housing when the third mounting hole is a blind hole. With reference to FIG. 28, in other embodiments, the side surface of the second housing 102 facing the wheel disc 200 may be provided with only the third mounting hole 120, and the third mounting groove 120 and the second protrusion 119 are not arranged. The third mounting hole 120 is also a blind hole, the upper end of the limiting wheel shaft 1005 is rotatably arranged in the fourth mounting hole 123, and the lower end of the limiting wheel shaft 1005 is rotatably arranged in the third mounting hole 120 of the second housing 102.

[0136] With reference to FIG. 22, a second supporting ring 112 is arranged in the second accommodating chamber 105 of the second housing 102, and the plurality of limiting wheel sets G are assembled spaced apart in the second accommodating chamber 105 on an outer side of the second supporting ring 112.

[0137] With reference to FIGs. 23 and 24, the limiting wheel 1000 includes an outer wheel body 10001, an inner wheel body 10002, and supporting ribs 10003, the inner wheel body 10002 may be fixedly arranged on the limiting wheel shaft 1005 in an integrally formed manner, the outer wheel body 10001 is arranged on a side of the inner wheel body 10002 away from the limiting wheel shaft 1005; that is, the outer wheel body 10001 is arranged on the outer side of the inner wheel body 10002, and the outer wheel body 10001 and the inner wheel body 10002 are connected by the plurality of supporting ribs 10003. The outer wheel body 10001 of the limiting wheel 1000 falls on the first bevel 122; that is, the first bevel 122 can limit the movement of the outer wheel body 10001 toward the outside of the third mounting groove 121.

[0138] With reference to FIGs. 25 to 27, a second bevel 124 is further arranged at an opening of the third mounting hole 120 of the second protrusion 119, a height of an inner side of the second bevel 124 relative to the side surface of the second housing 102 facing the wheel disc 200 is less than a height of an outer side of the second bevel 124 relative to the side surface of the second housing 102 facing the wheel disc 200, and an inner diameter of the second bevel 124 may gradually decrease in a direction from the opening of the third mounting hole 120 toward an inside of the third mounting hole 120. The inner wheel body 10002 of the limiting wheel 1000 abuts against the second protrusion 119, an end of the inner wheel body 10002 facing the second protrusion 119 is provided with a supporting ring 10004, and the projection of the supporting ring 10004 on the second protrusion 119 is located on the outer side of the second bevel 124.

[0139] With reference to FIGs. 25 to 27, the supporting ring 10004 on the inner wheel body 10002 can reduce an area of contact between the inner wheel body 10002 and the second protrusion 119, and correspondingly reduce the contact between the limiting wheel 1000 and the housing 100. When the wheel disc 200 rotates in the housing 100 to drive the limiting wheel 1000 to rotate, the friction between the limiting wheel 1000 and the housing 100 is reduced, so that the rotation of the limiting wheel 1000 is smooth, thereby further reducing the rotational resistance on the wheel disc 200 and enabling the wheel disc 200 to operate normally. The arranged second bevel 124 can provide space for floating movement generated when the limiting wheel shaft 1005 rotates, thereby allowing the limiting wheel shaft 1005 to rotate smoothly.

[0140] With reference to FIG. 26, one or more second reinforcing rib 125 may be arranged between a circumferential surface of the second protrusion 119 and a side wall of the third mounting groove 121, and the second reinforcing rib 125 is also connected to a bottom of the third mounting groove 121, thereby improving the connection strength of the second protrusion 119 in the third mounting groove 121 and improving the assembly reliability.

[0141] Since a hole pitch is formed between the circumferential surface of the second protrusion 119 and the side wall of the third mounting groove 121, a thickness of a position of the second housing 102 provided with the second protrusion 119 is relatively small. This enables a wall thickness of a position of the second housing 102 provided with the third mounting groove 121 to be uniform, thereby avoiding a local injection molding defect caused by an excessive thickness in a production process, and improving the flatness of the end surface of the housing 100.

[0142] With reference to FIG. 26, the bottom and the side wall of the third mounting groove 121 may transition through a curved linking portion 126, and the linking portion 126 may be a curved surface to facilitate the processing and manufacturing of the third mounting groove 121.

[0143] In addition, the circumferential surface of the limiting wheel 1000 is made of an elastic material. When the wheel disc 200 is offset in a small range, the limiting wheel 1000 may be deformed to a certain extent to adapt to the offset of the wheel disc 200 in a small range. The supporting rib 10003 has a curved structure in at least one segment, and when the limiting wheel 1000 is deformed, the supporting rib 10003 may be forced to deform accordingly. If the supporting rib 10003 is of a linear structure, the supporting rib 10003 may break. Therefore, the supporting rib 10003 may have a curved structure in at least one segment, which can adapt to the deformation of the limiting wheel 1000. The curved structure may be one or a combination of an arc shape, a wave shape, and the like, which is not limited herein.

[0144] To improve the smoothness of the rotation of the limiting wheel 1000, inner walls of the third mounting hole

120 of the second protrusion 119 and the fourth mounting hole 123 of the first housing 101 may be provided with a lubricating layer. During specific implementation, the lubricating layer may be arranged only on an inner wall of a corresponding hole body by means of attachment or coating. The lubricating layer may be made of a soft metal material, or the first housing 101 and the second housing 102 are made of a self-lubrication material as a whole. The self-lubrication material may be a mixture of nylon and glass fiber, or a polymer-based material, a ceramic-based material, or the like. Accordingly, the inner wall of the hole body also has a self-lubrication function, so that the limiting wheel shaft 1005 can rotate smoothly.

[0145] For the sake of clarity, in FIG. 8, part of an outer housing of the washer-dryer combo is omitted. With reference to FIG. 8, the washer-dryer combo W includes a clothing accommodating member R and a drying assembly D. The clothing accommodating member R may be a drum including an inner drum and an outer drum, the inner drum of the clothing accommodating member R may be driven to rotate by an external force, the outer drum is configured to be suspended or hung on a frame of the washer-dryer combo, and a water inlet and a water outlet are respectively in communication with the clothing accommodating member R. The drying assembly D includes a moisture adsorption-desorption part D1, a moisture adsorption channel D2, and a moisture desorption channel D3. The moisture adsorption channel D2 includes a moisture adsorption channel air inlet and a moisture adsorption channel air outlet, and the clothing accommodating member R is in communication with the moisture adsorption channel air inlet and the moisture adsorption channel air outlet, respectively. A moisture adsorption channel fan D21 is further arranged in the moisture adsorption channel D2 to form a circulating moisture adsorption airflow within the clothing accommodating member R and the moisture adsorption channel D2. A moisture desorption channel fan D31 is arranged in the moisture desorption channel D3 to form a moisture desorption airflow within the moisture desorption channel D3. The moisture adsorption-desorption part D1 is namely the above wheel disc 200, and the moisture adsorption-desorption part D1 is arranged in a path of the moisture adsorption channel D2 and the moisture desorption channel D3, so that the moisture adsorption airflow and the moisture desorption airflow both flow through the moisture adsorption-desorption part D1. Thus, the moisture adsorption-desorption part D1 adsorbs the moisture in the moisture adsorption airflow during rotation and desorbs the adsorbed moisture through the moisture desorption airflow. Certainly, the washer-dryer combo W may further include, but is not limited to, an outer housing provided with at least a clothing access port and a detergent dispensing port, a door body for closing the clothing access port, a display and operation device arranged on the outer housing, a frame, a controller, a drain pipe, and the like, so as to realize the washing and drying functions of the clothing

and enable the control over the washer-dryer combo.

[0146] With reference to FIGs. 8 and 26, since water vapor enrichment regions of the housing are at an air inlet of the moisture adsorption channel D2 and an air outlet of the moisture desorption channel D3, part of the third mounting groove 121 may be arranged in the water vapor enrichment region of the housing 100, and a drain hole 128 may be formed in the bottom of the third mounting groove 121 located in the water vapor enrichment region of the housing 100. The drain hole is in communication with the outside of the housing 100 to discharge water droplets formed by condensation of water vapor, thereby improving the moisture adsorption efficiency. A bottom of the third mounting groove 121 in a water vapor deficiency region of the housing 100 may not be provided with the drain hole 128, and the water vapor deficiency region of the housing 100 may be an air outlet of the moisture adsorption channel D2 and an air inlet of the moisture desorption channel D3.

[0147] Based on the above drying assembly, the present disclosure further provides a clothing treatment device. The clothing treatment device includes the above drying assembly.

[0148] In the clothing treatment device provided with the above drying assembly, since the limiting wheel 1000 of the drying assembly is fixedly arranged on the limiting wheel shaft 1005, during assembly, the limiting wheel set G can be directly assembled at a corresponding position of the housing 100, without the need to first mount the limiting wheel 1000 on the limiting wheel shaft 1005 and then mount the limiting wheel shaft 1005 into the housing 100 for assembly. This can improve assembly efficiency, thus achieving high practicability.

[0149] The clothing treatment device may be a clothes dryer or a washer-dryer combo, and certainly, the drying assembly therein may also be applied to various devices requiring dehumidification, such as a dehumidifier and a dishwasher.

Example 6:

[0150] The present disclosure provides a clothing treatment device, which may be a clothes dryer or a washer-dryer combo, and the drying assembly therein may be any one in Examples 1 to 5, or may be a combination of at least two in Examples 1 to 5. The specific structure may refer to the above description and will not be repeated herein.

[0151] Specific embodiments of the present specification described above, together with other embodiments, fall within the scope of the appended claims. In some cases, actions or steps recited in the claims may be performed in an order different from that in the embodiments and still achieve the desired results. In addition, the processes depicted in the drawings do not necessarily follow the particular order or a sequential order shown to achieve the desired results. In certain embodiments, multitasking and parallel processing are also feasible or

advantageous.

[0152] It should be further noted that the terms "comprise", "include", or any other variants thereof, are intended to encompass a non-exclusive inclusion, so that a process, a method, a commodity, or a device including a list of elements includes not only those elements, but also other elements not explicitly listed or inherent to such process, method, commodity, or device. Without further limitation, an element defined by the phrase "comprising a/an..." or "including a/an..." does not exclude the presence of other identical elements in the process, method, commodity, or device including the element.

[0153] It should be understood that the above embodiments are only for the purpose of illustrating the present disclosure and are not intended to limit the present disclosure. Those skilled in the art may also implement the present disclosure in other ways without departing from the basic spirit and characteristics of the present disclosure. The scope of the present disclosure is subject to the appended claims, and any modification, equivalent replacement, improvement, and the like made within the spirit and principle of one or more embodiments of the present specification shall fall within the scope of the present disclosure.

Claims

1. A drying assembly, wherein the drying assembly comprises:
 - a housing;
 - a wheel disc rotatably arranged in the housing;
 - and
 - a buffering component arranged on at least one inner wall of the housing facing an end surface of the wheel disc, wherein the buffering component comprises a connecting member and a contact member, one end of the connecting member is connected to the inner wall of the housing, the contact member is arranged at an end of the connecting member away from the inner wall of the housing, the contact member is in contact with the wheel disc, and at least one of the connecting member and the contact member is elastic.
2. The drying assembly according to claim 1, wherein at least a part of the connecting member is elastic, and the contact member is a rigid member.
3. The drying assembly according to claim 2, wherein the contact member is in point contact with the end surface of the wheel disc.
4. The drying assembly according to claim 3, wherein a side surface of the contact member facing the wheel disc is arc-shaped.

5. The drying assembly according to claim 4, wherein the contact member is spherical.
6. The drying assembly according to any one of claims 2 to 5, wherein the buffering component further comprises a limiting member, the limiting member is arranged on the inner wall of the housing, the connecting member is deformed in the limiting member, the contact member is provided with a contact portion protruding from the limiting member, and the contact portion is in contact with the end surface of the wheel disc.
7. The drying assembly according to claim 6, wherein the limiting member comprises a first limiting groove and/or a limiting protrusion arranged on the inner wall of the housing, and the limiting protrusion is provided with a limiting hole.
8. The drying assembly according to claim 1, wherein the connecting member is rigid, and at least part of the contact member is elastic.
9. The drying assembly according to claim 8, wherein a position of the contact member in contact with the end surface of the wheel disc is elastic.
10. The drying assembly according to claim 1, wherein at least part of the connecting member and the contact member are both elastic.
11. The drying assembly according to any one of claims 1 to 5 and 7 to 10, wherein a plurality of buffering components are arranged, and the plurality of buffering components are arranged spaced apart around a rotating shaft of the wheel disc.
12. The drying assembly according to claim 11, wherein the housing comprises a first housing and a second housing connected to each other, the first housing is provided with a first accommodating chamber, the second housing is provided with a second accommodating chamber, the first accommodating chamber and the second accommodating chamber cooperate to form an accommodating chamber for loading the wheel disc, and the plurality of buffering components are arranged in the first accommodating chamber of the first housing.
13. The drying assembly according to claim 12, wherein a first rotation shaft is arranged in the first housing, a second rotation shaft is arranged in the second housing, and the first rotation shaft and the second rotation shaft are connected to form the rotating shaft for the wheel disc to rotate; and the wheel disc is provided with a central hole, a sleeve is arranged in the central hole, the sleeve is rotatably connected to the rotating shaft, and the

contact member of the buffering component is in contact with an end portion of the sleeve facing the first housing.

14. The drying assembly according to claim 13, wherein a supporting member is arranged in the second housing, the supporting member is arranged on an outer side of the second rotation shaft, and at least part of the supporting member is in contact with an end portion of the sleeve facing the second housing.
15. The drying assembly according to claim 14, wherein the supporting member is rigid.
16. The drying assembly according to claim 14 or 15, wherein the supporting member and the second rotation shaft are connected by a plurality of connecting ribs.
17. The drying assembly according to any one of claims 1 to 16, wherein a plurality of damping wheels are arranged on the inner side of the housing, the damping wheel is rotatably connected in the housing, and a circumferential surface of the damping wheel is in rolling contact with the wheel disc.
18. The drying assembly according to claim 17, wherein a mounting chamber corresponding to the damping wheel is arranged in the housing, an opening of the mounting chamber 1 faces the wheel disc, the damping wheel is arranged in the mounting chamber, and the damping wheel at least partially protrudes from a plane where the opening of the mounting chamber is located.
19. The drying assembly according to claim 18, wherein the damping wheel is fixedly connected to a damping wheel shaft, and two ends of the damping wheel shaft are rotatably connected to a side wall of the mounting chamber.
20. The drying assembly according to claim 19, wherein the side wall of the mounting chamber is provided with a first mounting hole, the first mounting hole extends from the opening of the mounting chamber in a direction away from the wheel disc, the first mounting hole comprises a first hole body and a second hole body sequentially in communication with the opening of the mounting chamber, the damping wheel shaft is in interference fit with at least part of the first hole body, and the damping wheel shaft is arranged in the second hole body in a clearance fit manner.
21. The drying assembly according to claim 20, wherein the second hole body is partially arc-shaped, and the first hole body has at least a pore size less than a diameter of the second hole body.
22. The drying assembly according to claim 21, wherein the first hole body is rectangular.
23. The drying assembly according to any one of claims 20 to 22, wherein the first mounting hole further comprises a first guiding hole, the first guiding hole is formed between the opening of the mounting chamber and the first hole body, and a hole pitch of the first guiding hole on a side close to the opening of the mounting chamber is greater than a hole pitch on a side thereof close to the first hole body.
24. The drying assembly according to claim 23, wherein two opposite sides of the mounting chamber are each provided with the first mounting hole.
25. The drying assembly according to claim 24, wherein a baffle is further arranged on the mounting chamber, and the baffle covers at least an outer side of the second hole body of the first mounting hole.
26. The drying assembly according to any one of claims 20 to 22, 24, and 25, wherein an inner wall of the second hole body of the first mounting hole is provided with a lubricating layer.
27. The drying assembly according to any one of claims 18 to 22, 24, and 25, wherein an end surface of the housing is provided with a first mounting groove, a mounting frame is arranged at an opening of the first mounting groove, the mounting frame is provided with a through hole, and the through hole of the mounting frame is in communication with the opening of the first mounting groove to form the mounting chamber.
28. The drying assembly according to any one of claims 19 to 22, 24, and 25, wherein the damping wheel and the damping wheel shaft are integrally formed.
29. The drying assembly according to any one of claims 17 to 22, 24, and 25, wherein the housing comprises a first housing and a second housing connected to each other, the first housing is provided with a first accommodating chamber, the second housing is provided with a second accommodating chamber, and the first accommodating chamber and the second accommodating chamber cooperate to form an accommodating chamber for loading the wheel disc; and a first supporting portion for limiting movement of the wheel disc is arranged in the first accommodating chamber of the first housing, and the damping wheel is arranged on the first supporting portion.
30. The drying assembly according to claim 17, wherein a damping member is further arranged on the first supporting portion, and the damping wheel and the

damping member are arranged spaced apart.

31. The drying assembly according to any one of claims 1 to 30, wherein the drying assembly further comprises a plurality of supporting wheel sets, a plurality of second mounting grooves are formed on the inner side of the housing, a side wall of the second mounting groove is provided with a second mounting hole, the second mounting hole extends from an opening of the second mounting groove in the direction away from the wheel disc, and the second mounting hole comprises a third hole body and a fourth hole body sequentially in communication with the opening of the second mounting groove; and the supporting wheel set and the second mounting groove are correspondingly arranged, the supporting wheel set comprises a supporting wheel and a supporting wheel shaft, the supporting wheel is fixedly connected to the supporting wheel shaft, the supporting wheel shaft is in interference fit with at least part of the third hole body, the supporting wheel shaft is arranged in the fourth hole body in a clearance fit manner, the supporting wheel at least partially protrudes from a plane where the opening of the second mounting groove is located, and the supporting wheel is in rolling contact with the wheel disc.
32. The drying assembly according to claim 31, wherein the fourth hole body is arc-shaped, and the third hole body has at least a pore size less than a diameter of the fourth hole body.
33. The drying assembly according to claim 32, wherein the third hole body is rectangular.
34. The drying assembly according to claim 31, wherein the second mounting hole further comprises a second guiding hole, the second guiding hole is formed between the opening of the second mounting groove and the third hole body, and a hole pitch of the second guiding hole on a side close to the opening of the second mounting groove is greater than a hole pitch on a side thereof close to the third hole body.
35. The drying assembly according to any one of claims 31 to 34, wherein two opposite sides of the second mounting groove are each provided with a second mounting hole.
36. The drying assembly according to any one of claims 31 to 34, wherein a baffle is further arranged on the second mounting groove, and the baffle covers at least an outer side of the fourth hole body of the second mounting hole.
37. The drying assembly according to any one of claims 31 to 34, wherein an inner wall of the fourth hole body of the second mounting hole is provided with a

lubricating layer.

38. The drying assembly according to any one of claims 31 to 34, wherein the supporting wheel and the supporting wheel shaft are integrally formed.
39. The drying assembly according to any one of claims 31 to 34, wherein the housing comprises a first housing and a second housing connected to each other, the first housing is provided with a first accommodating chamber, the second housing is provided with a second accommodating chamber, and the first accommodating chamber and the second accommodating chamber cooperate to form an accommodating chamber for loading the wheel disc; and a second supporting portion for limiting movement of the wheel disc is arranged in the second accommodating chamber of the second housing, and the second supporting portion is provided with the supporting wheel set.
40. The drying assembly according to claim 39, wherein the second supporting portion is provided with a plurality of groove bodies spaced apart, a supporting plate is arranged on a side of the groove body facing and/or facing away from an inside of the second supporting portion, the supporting plate and the groove body are configured to form the second mounting groove, and the second mounting hole is formed in the supporting plate.
41. The drying assembly according to claim 40, wherein the supporting plate and the groove body are integrally formed.
42. The drying assembly according to claim 40, wherein a gap is formed between two sides of the supporting plate in a circumferential direction of the second supporting portion and the groove body.
43. The drying assembly according to any one of claims 31 to 34 and 40 to 42, wherein the supporting wheel is made of a hard material.
44. The drying assembly according to any one of claims 1 to 43, wherein the drying assembly further comprises a plurality of limiting wheel sets, the plurality of limiting wheel sets are arranged spaced apart in the housing, the limiting wheel set comprises a limiting wheel and a limiting wheel shaft, the limiting wheel is fixedly arranged on the limiting wheel shaft, and a circumferential surface of the limiting wheel is in contact with a circumferential surface of the wheel disc.
45. The drying assembly according to claim 44, wherein a side surface of the housing facing the wheel disc is provided with a third mounting hole, and an end

portion of the limiting wheel shaft is rotatably arranged in the third mounting hole.

46. The drying assembly according to claim 45, wherein the side surface of the housing facing the wheel disc is provided with a second protrusion, the third mounting hole is formed in the second protrusion, and the end portion of the limiting wheel shaft is rotatably arranged in the third mounting hole.
47. The drying assembly according to claim 46, wherein the side surface of the housing facing the wheel disc is provided with a third mounting groove, and the second protrusion is arranged in the third mounting groove.
48. The drying assembly according to claim 47, wherein a first bevel is arranged at an opening of the third mounting groove, a height of an inner side of the first bevel relative to the side surface of the housing facing the wheel disc is less than a height of an outer side of the first bevel relative to the side surface of the housing facing the wheel disc, and an outer peripheral surface of the limiting wheel falls on the first bevel.
49. The drying assembly according to claim 48, wherein the limiting wheel comprises an outer wheel body, an inner wheel body, and supporting ribs, the inner wheel body is connected to the limiting wheel shaft, the outer wheel body is arranged on a side of the inner wheel body away from the limiting wheel shaft, the outer wheel body and the inner wheel body are connected by a plurality of the supporting ribs, and the outer wheel body falls on the first bevel.
50. The drying assembly according to claim 49, wherein the supporting rib has a curved structure in at least one segment.
51. The drying assembly according to claim 49, wherein the third mounting hole is further provided with a second bevel, a height of an inner side of the second bevel relative to the side surface of the housing facing the wheel disc is less than a height of an outer side of the second bevel relative to the side surface of the housing facing the wheel disc, the inner wheel body abuts against the second protrusion, an end of the inner wheel body facing the second protrusion is provided with a supporting ring, and a projection of the supporting ring on the second protrusion is located at the outer side of the second bevel.
52. The drying assembly according to any one of claims 47 to 51, wherein part of the third mounting groove is arranged in a water vapor enrichment region of the housing, a bottom of the third mounting groove located in the water vapor enrichment region of the

housing is provided with a drain hole, and the drain hole is in communication with an outside of the housing.

53. The drying assembly according to claim 52, wherein the drying assembly further comprises a moisture adsorption channel and a moisture desorption channel, and the wheel disc is arranged in a path of the moisture adsorption channel and the moisture desorption channel; and the water vapor enrichment region of the housing comprises at least an air inlet of the moisture adsorption channel and an air outlet of the moisture desorption channel.
54. The drying assembly according to any one of claims 47 to 51, wherein the housing comprises a first housing and a second housing connected to each other, the first housing is arranged above the second housing, the first housing is provided with a first accommodating chamber, the second housing is provided with a second accommodating chamber, and the first accommodating chamber and the second accommodating chamber cooperate to form an accommodating chamber for loading the wheel disc; and the second housing is provided with the third mounting hole, the first housing is provided with a fourth mounting hole corresponding to the limiting wheel shaft, and the fourth mounting hole is a blind hole.
55. An electrical device, wherein the electrical device comprises the drying assembly according to any one of claims 1 to 54.
56. The electrical device according to claim 55, wherein the electrical device is a dryer or a washer-dryer combo.

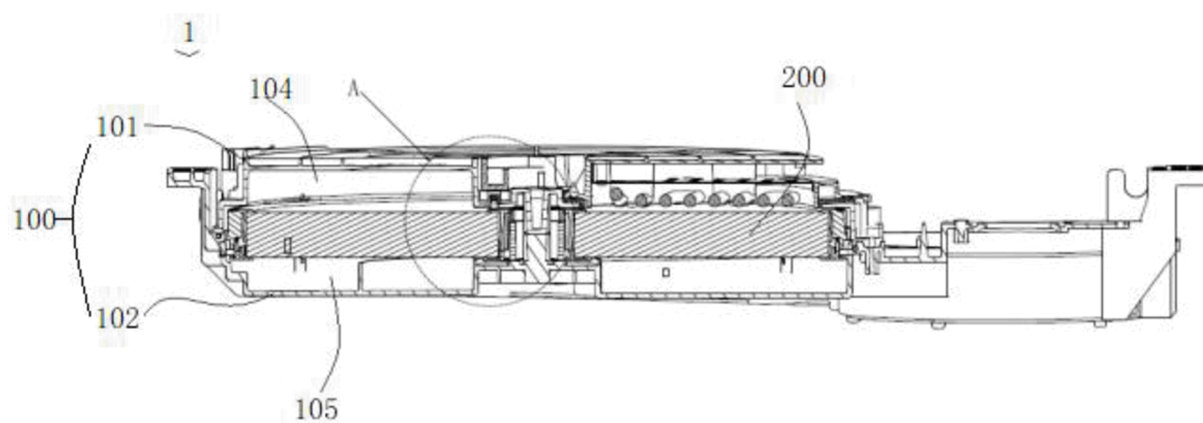


FIG. 1

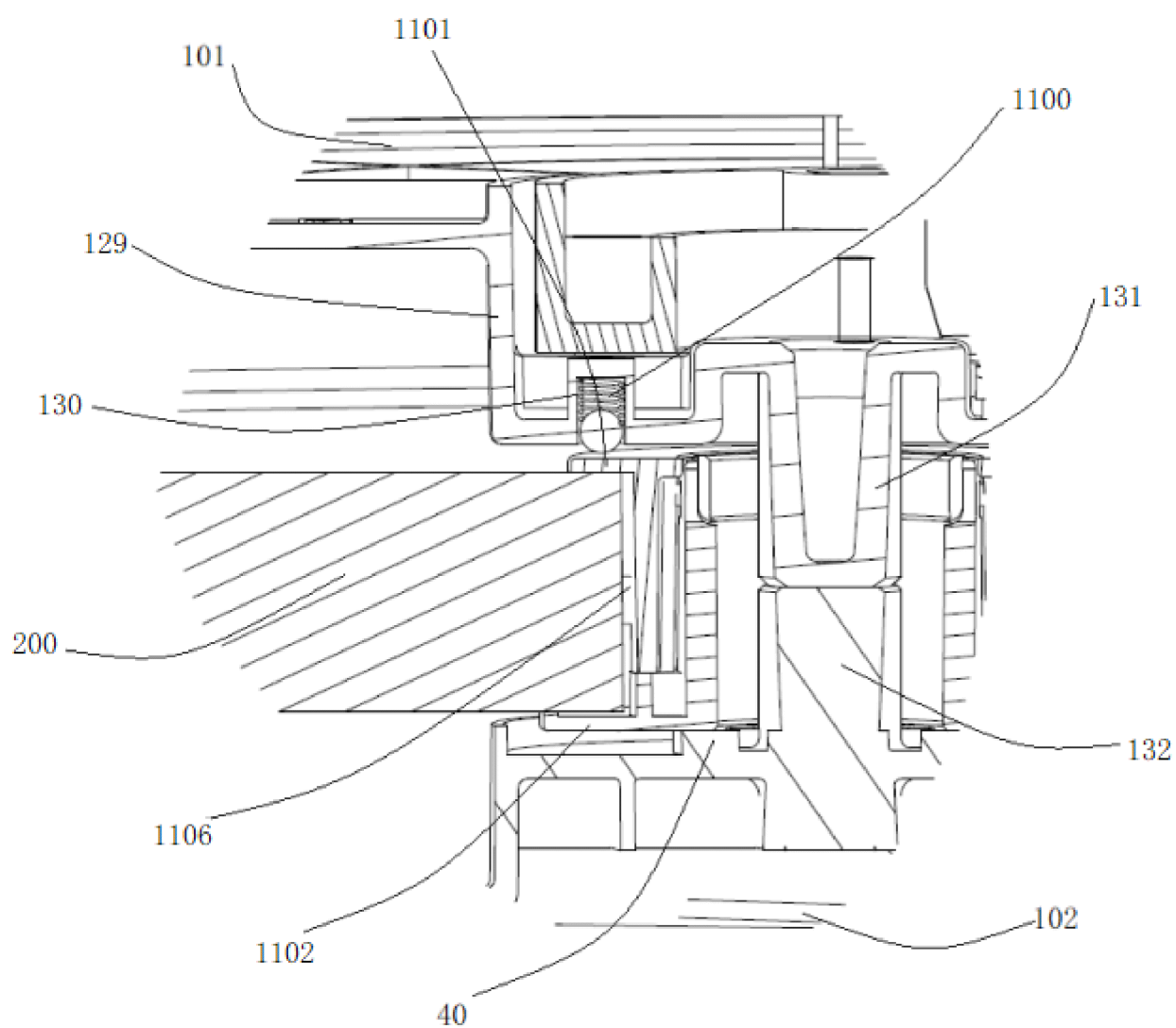


FIG. 2

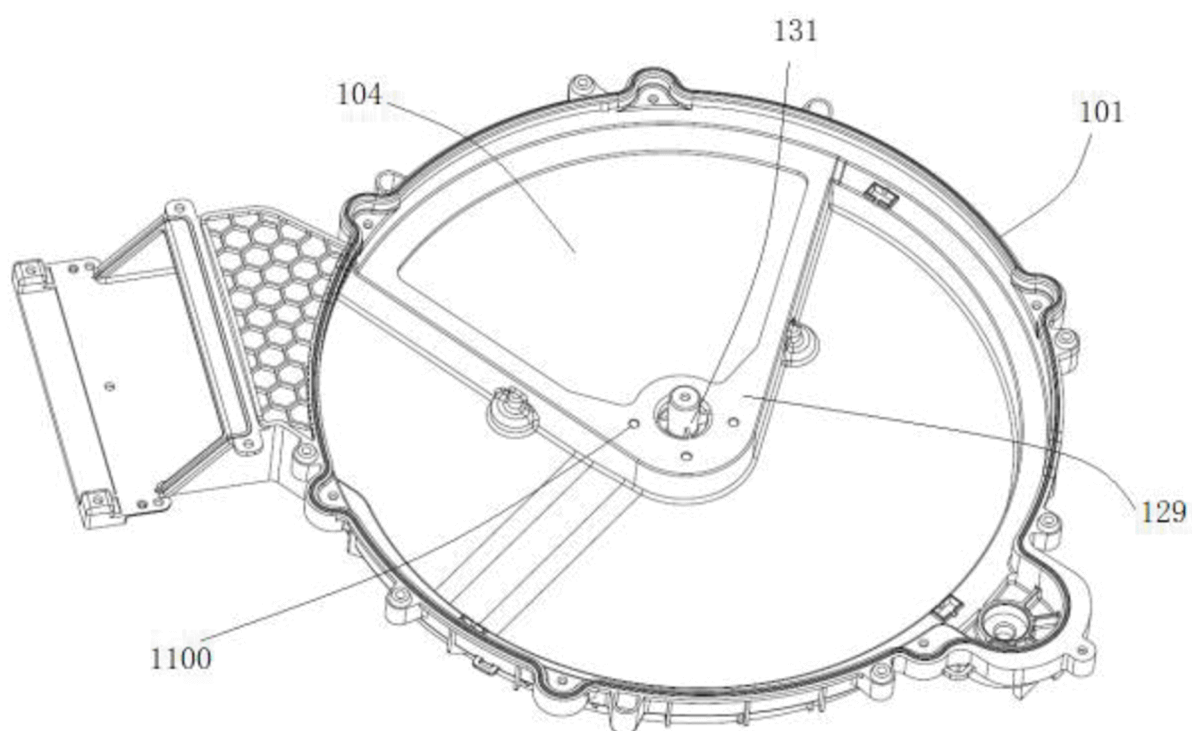


FIG. 3

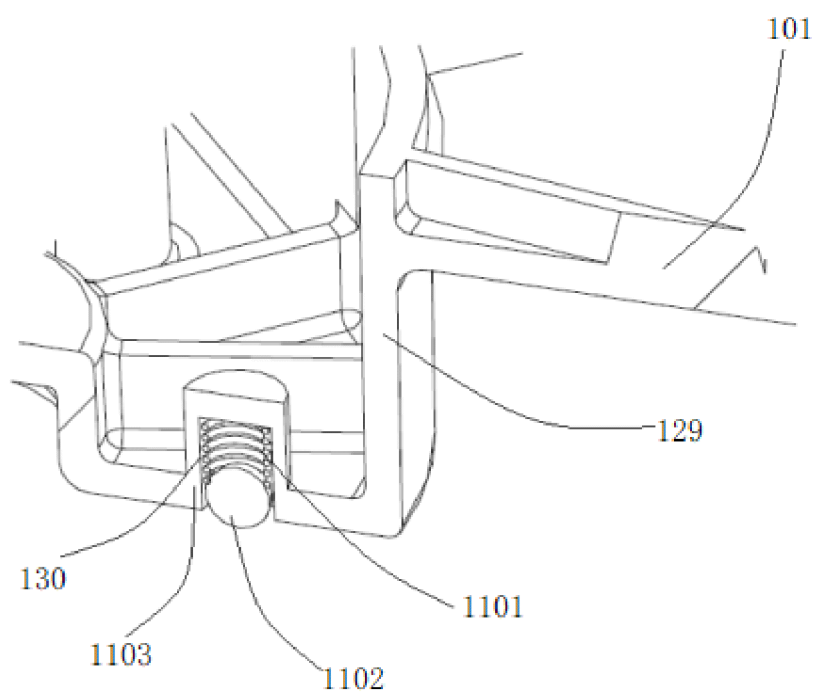


FIG. 4

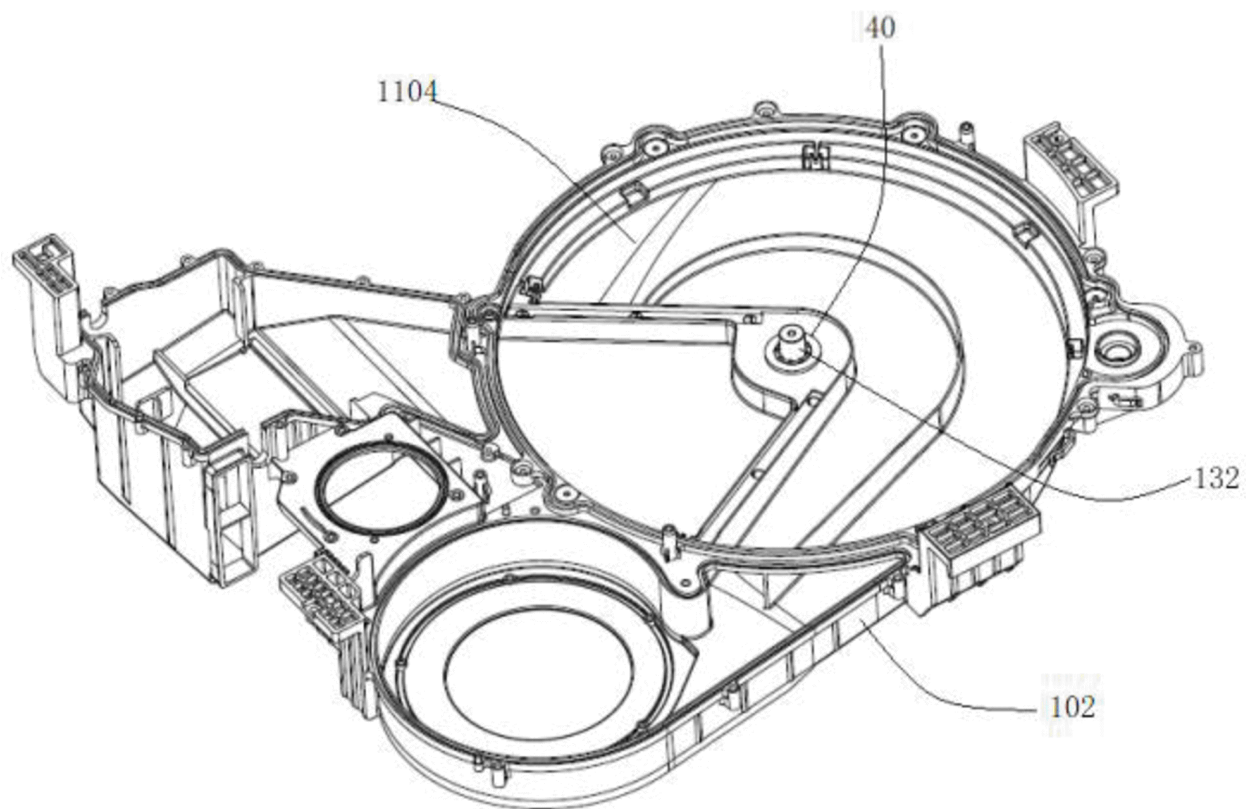


FIG. 5

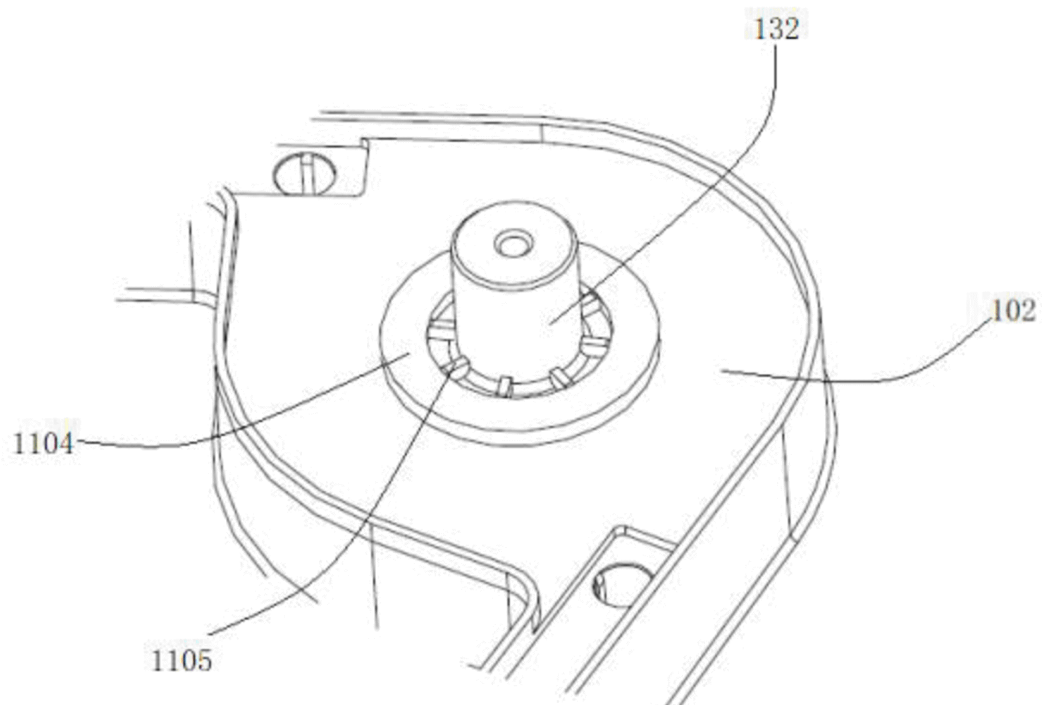


FIG. 6

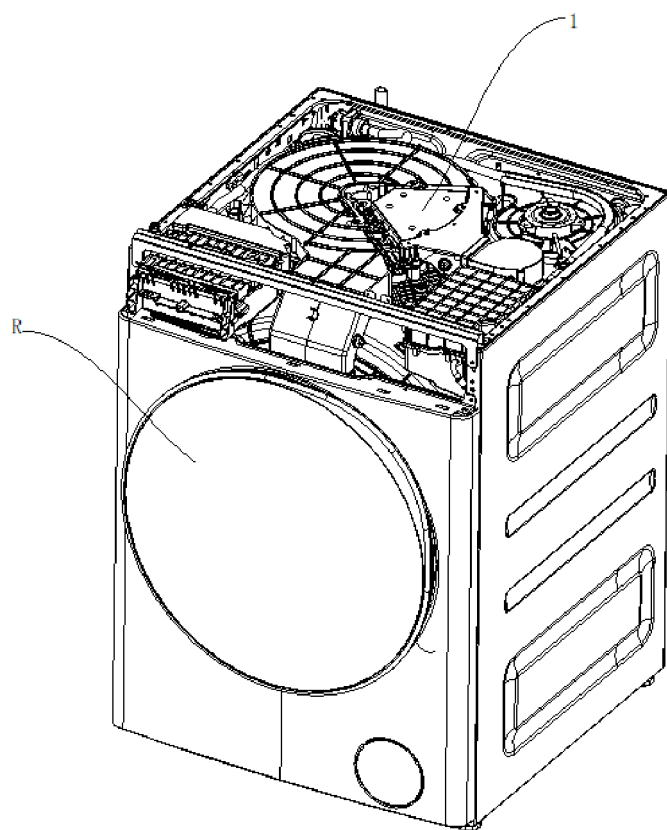


FIG. 7

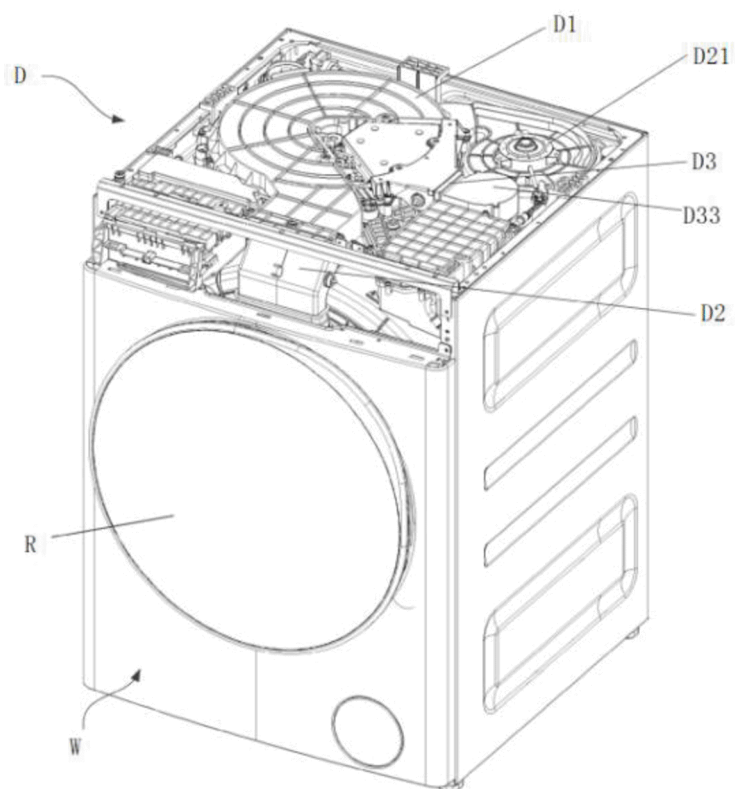


FIG. 8

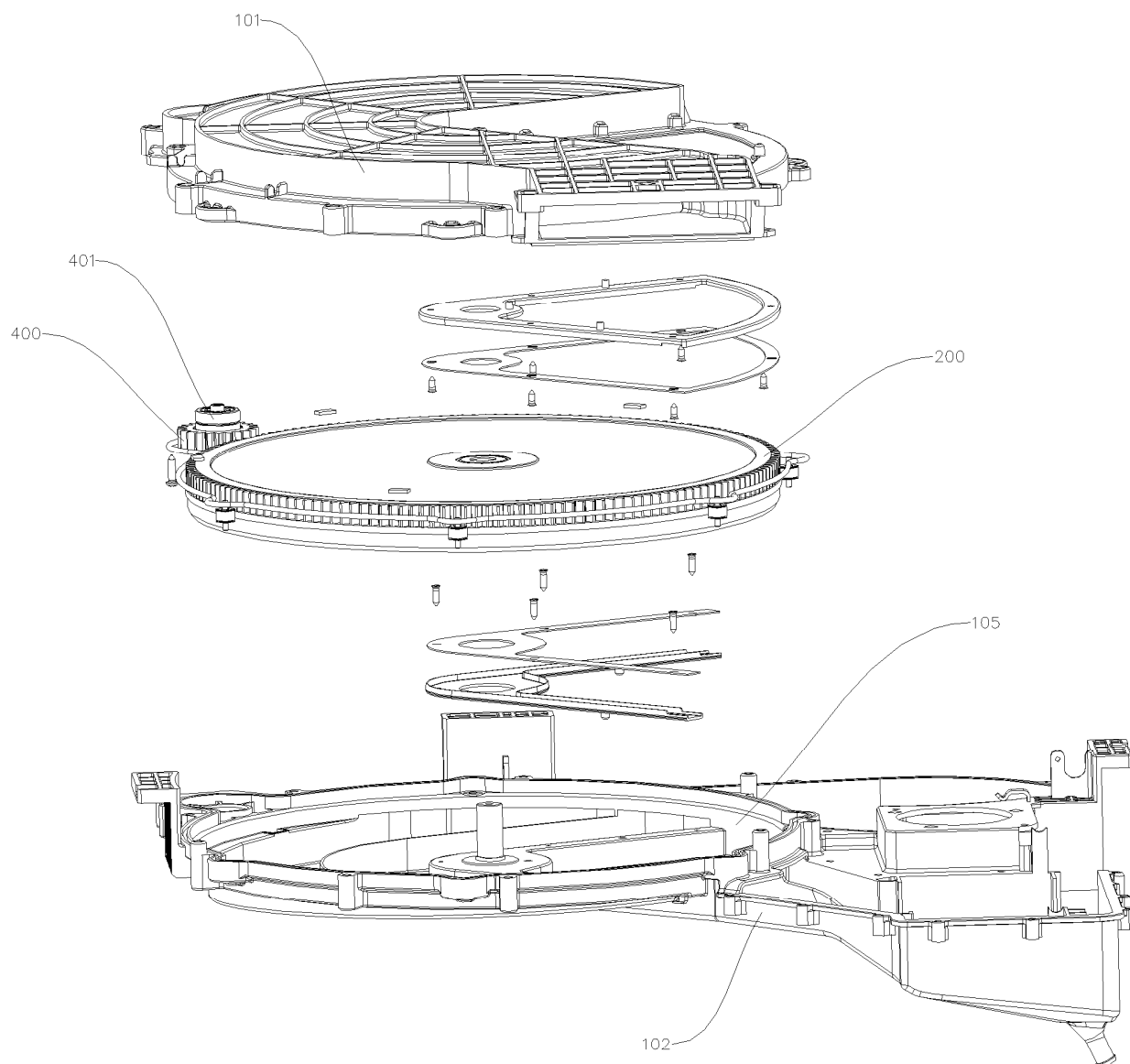


FIG. 9

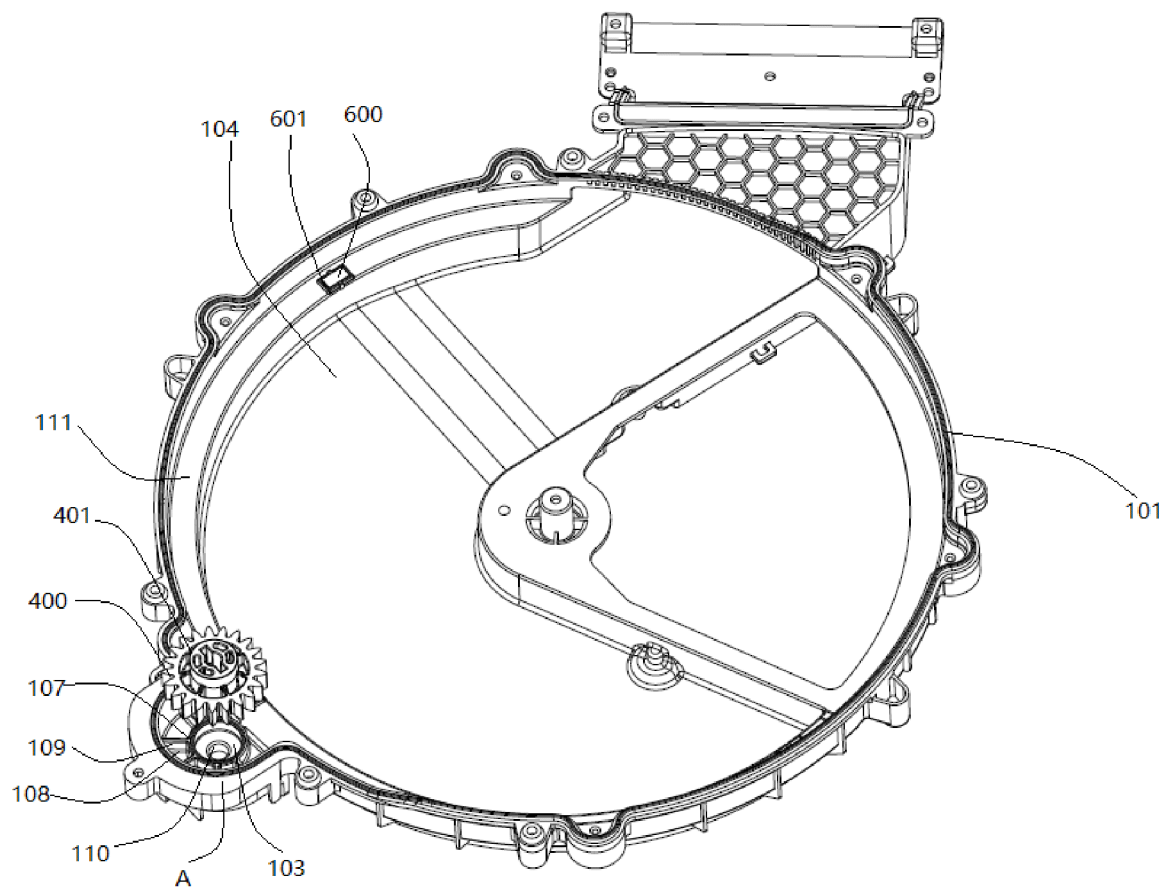


FIG. 10

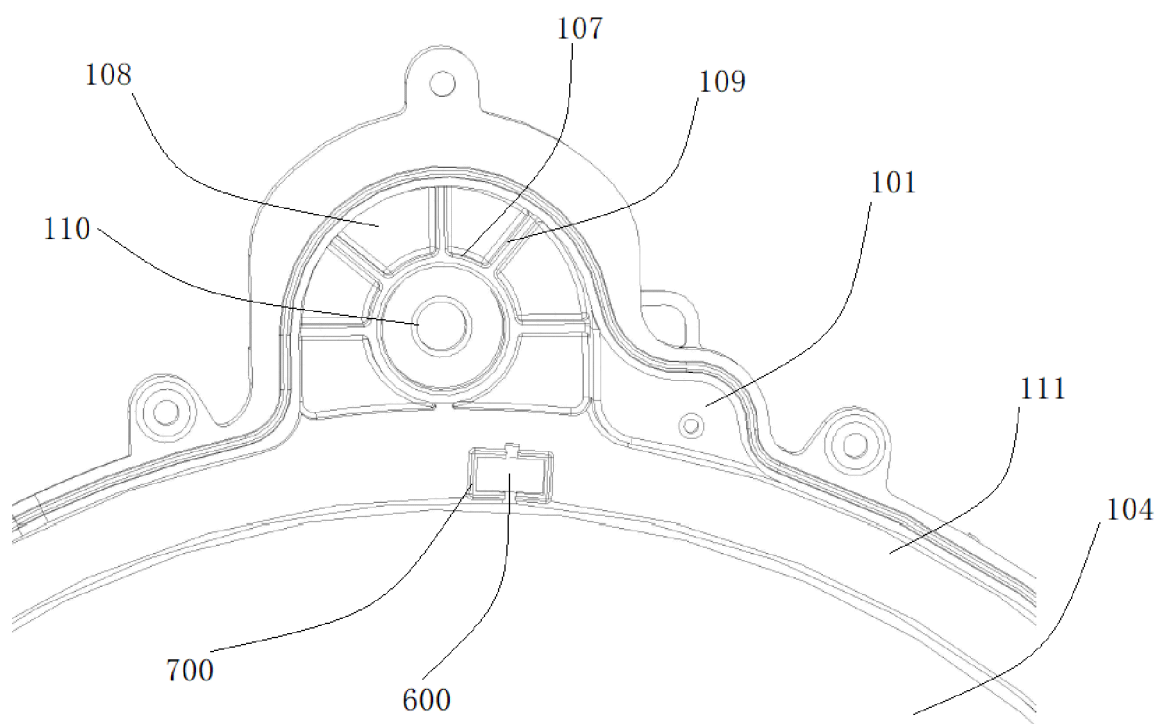


FIG. 11

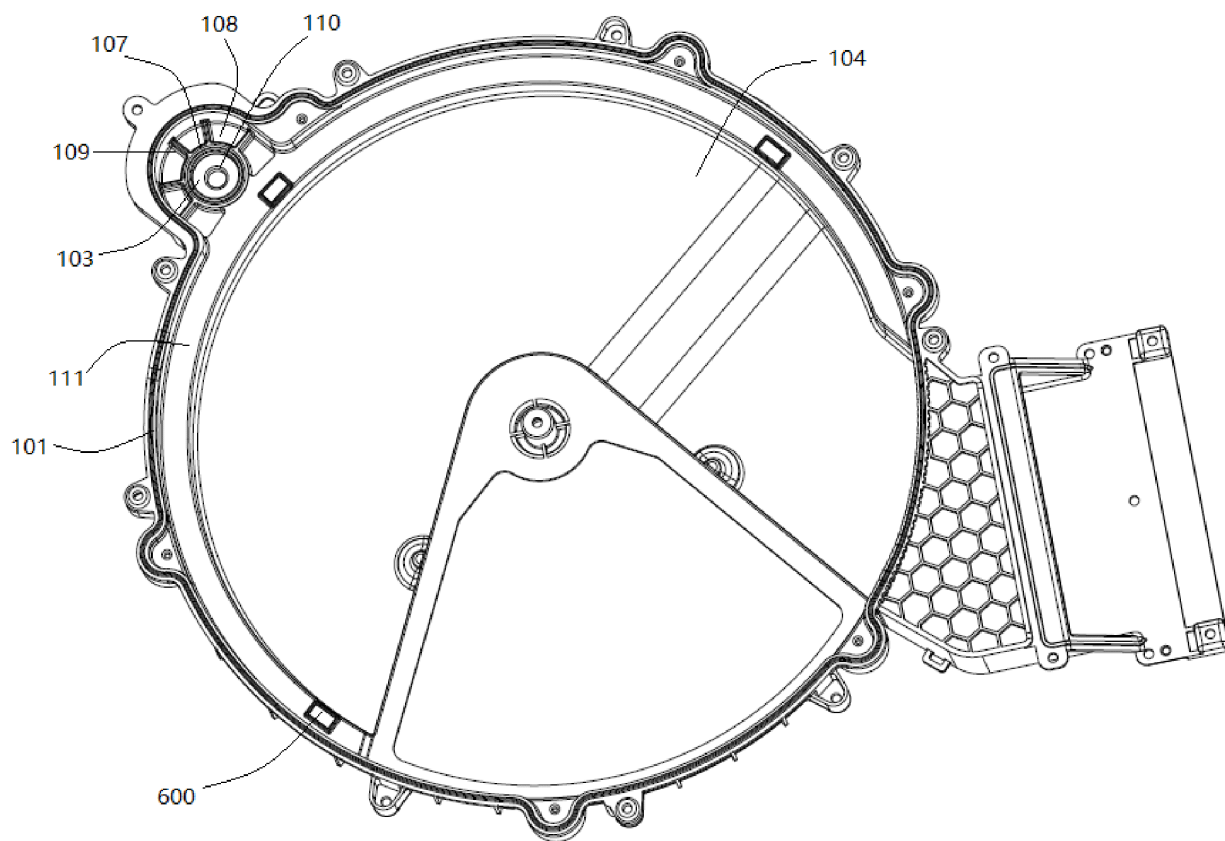


FIG. 12

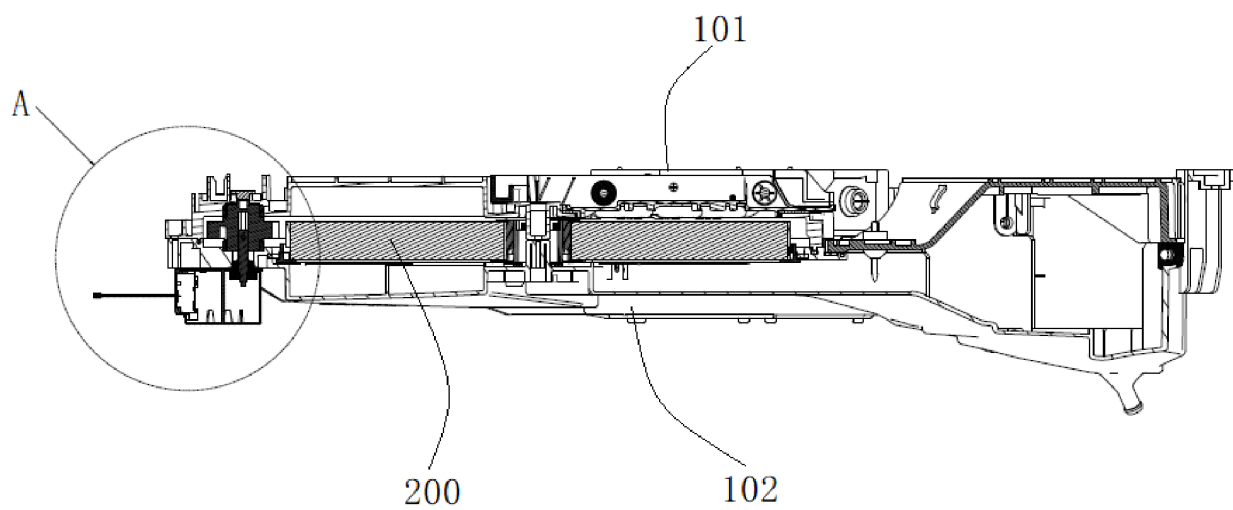


FIG. 13

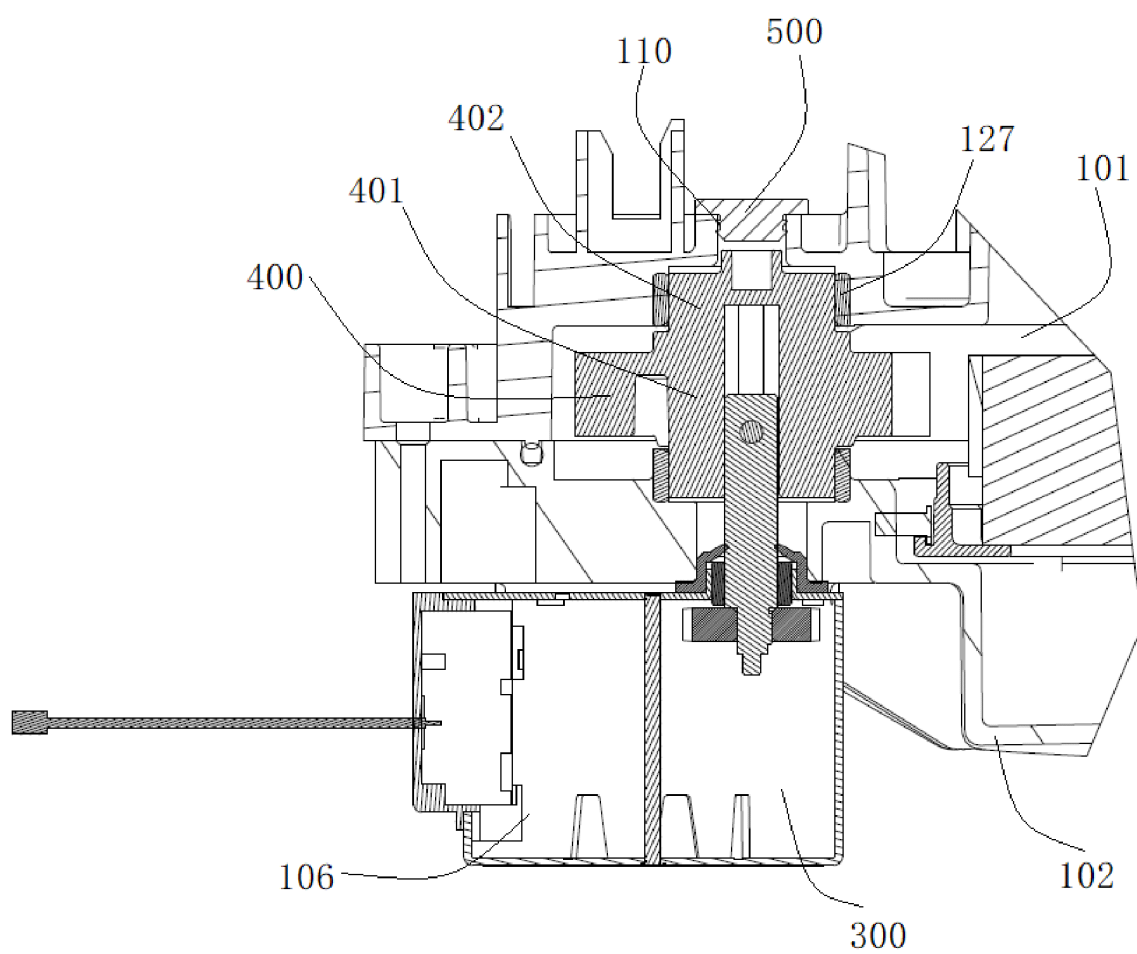


FIG. 14

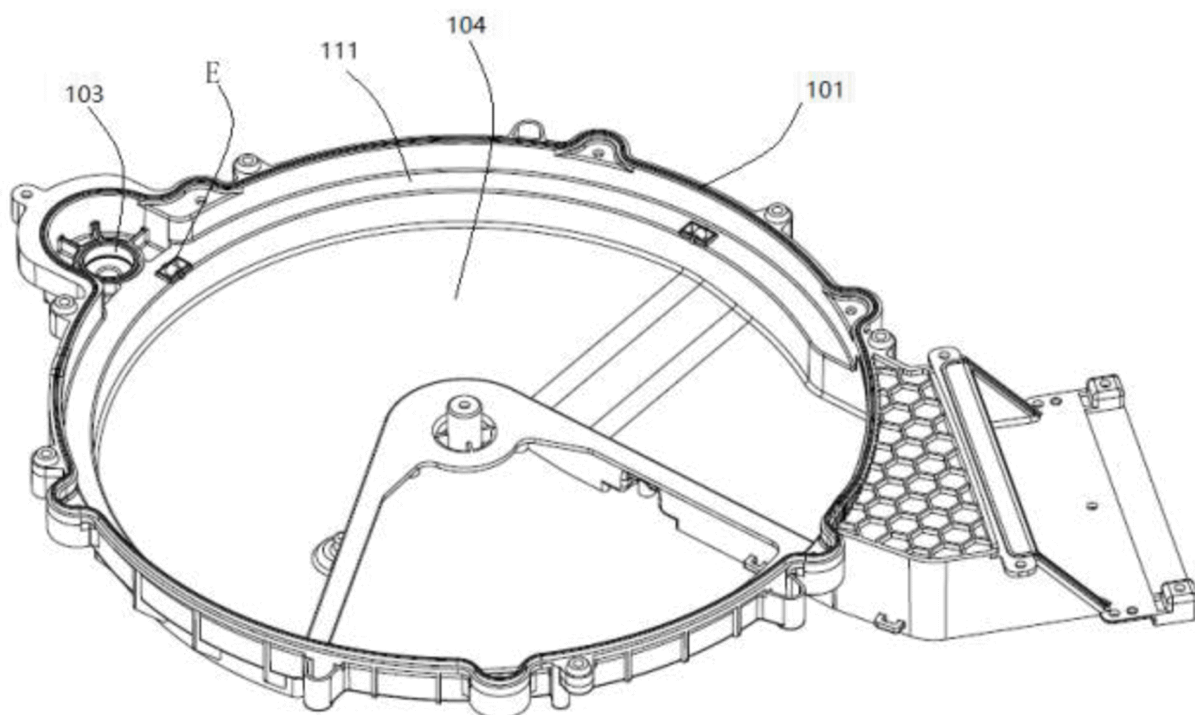


FIG. 15

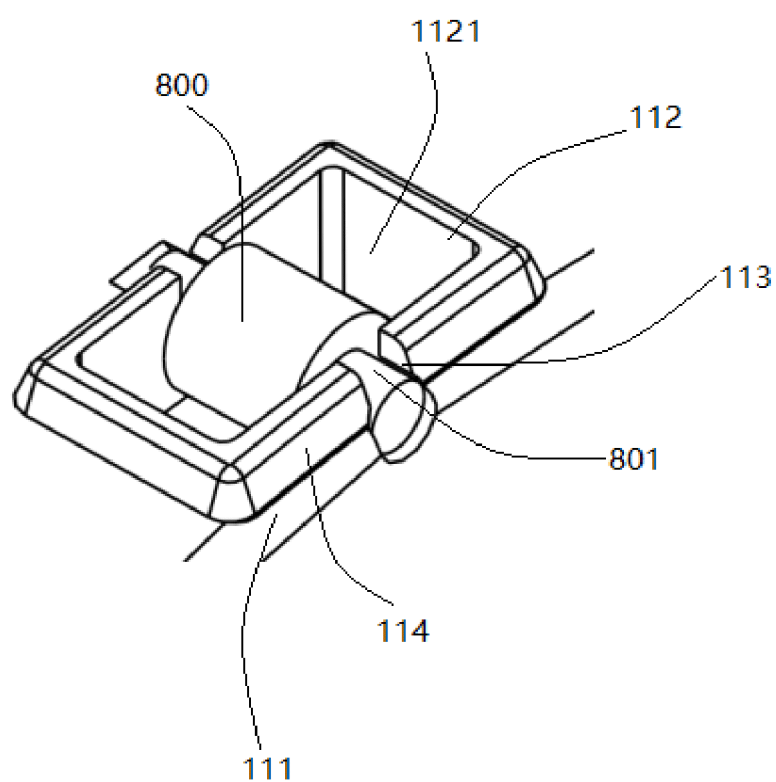


FIG. 16

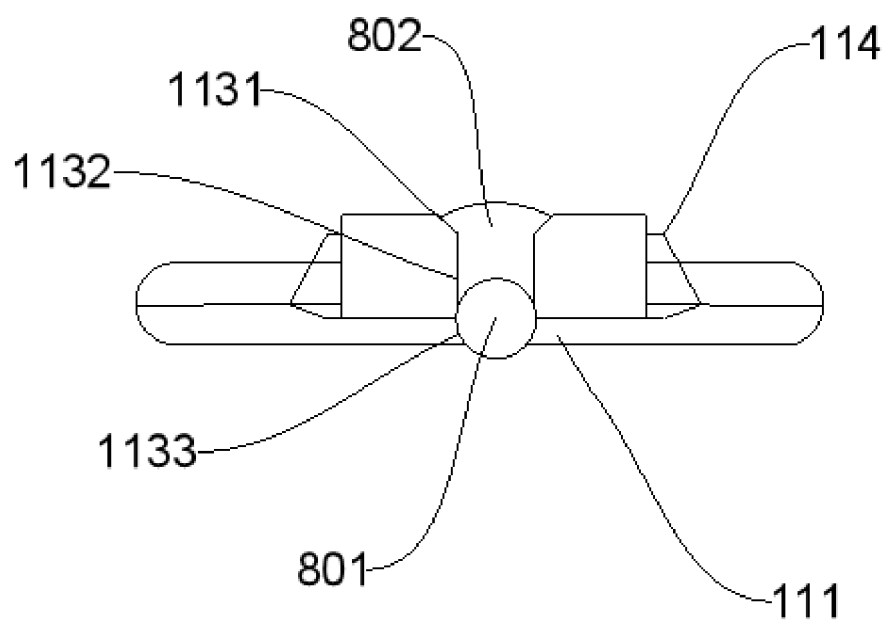


FIG. 17

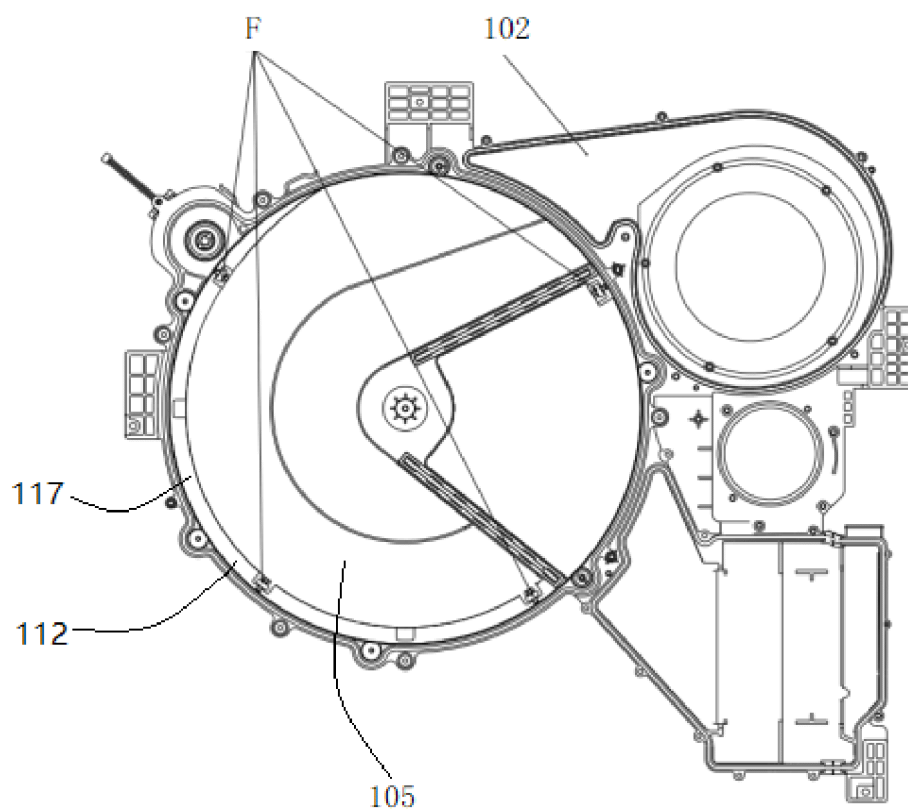


FIG. 18

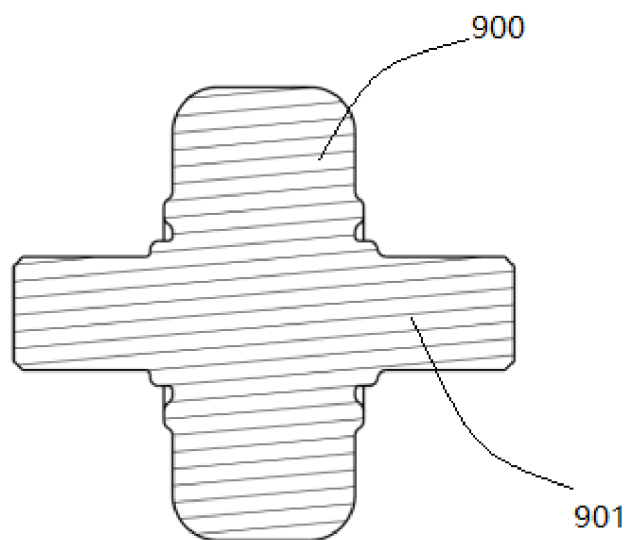


FIG. 19

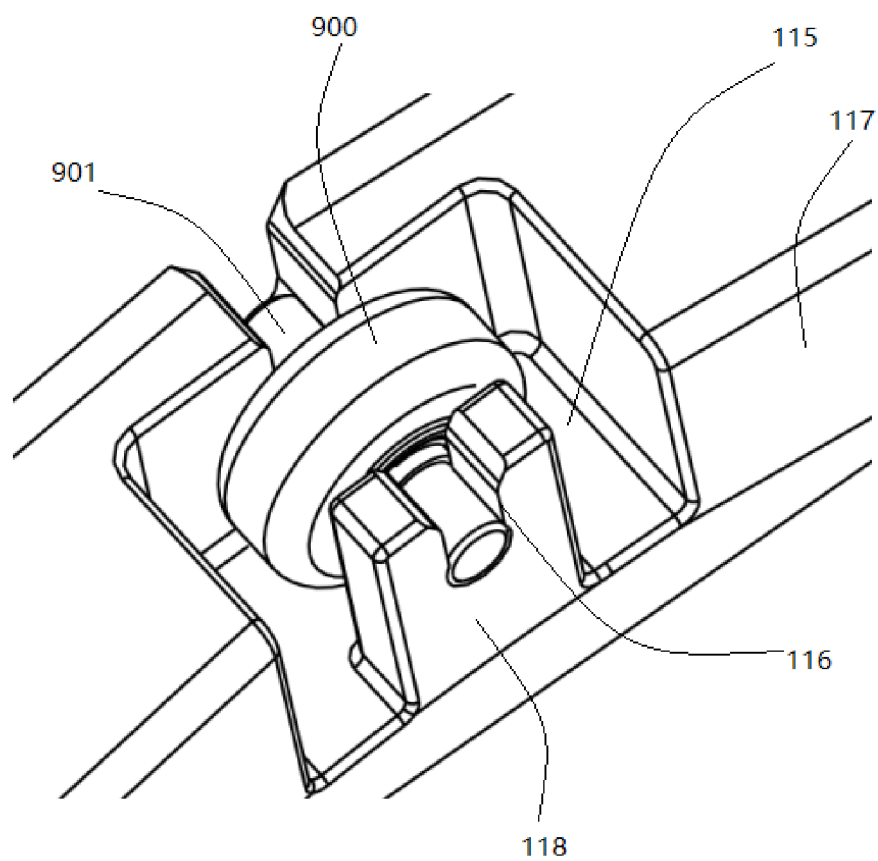


FIG. 20

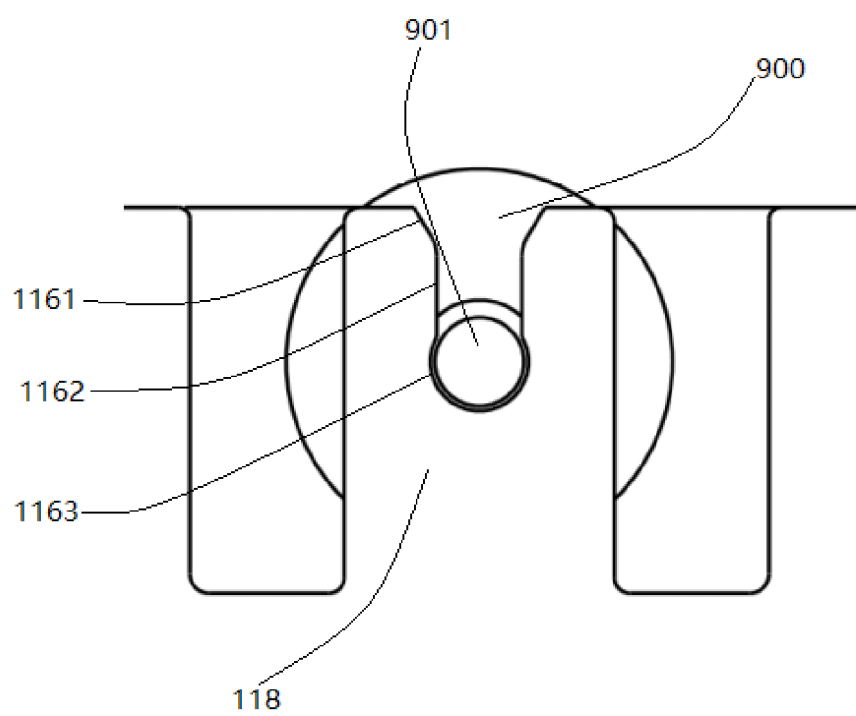


FIG. 21

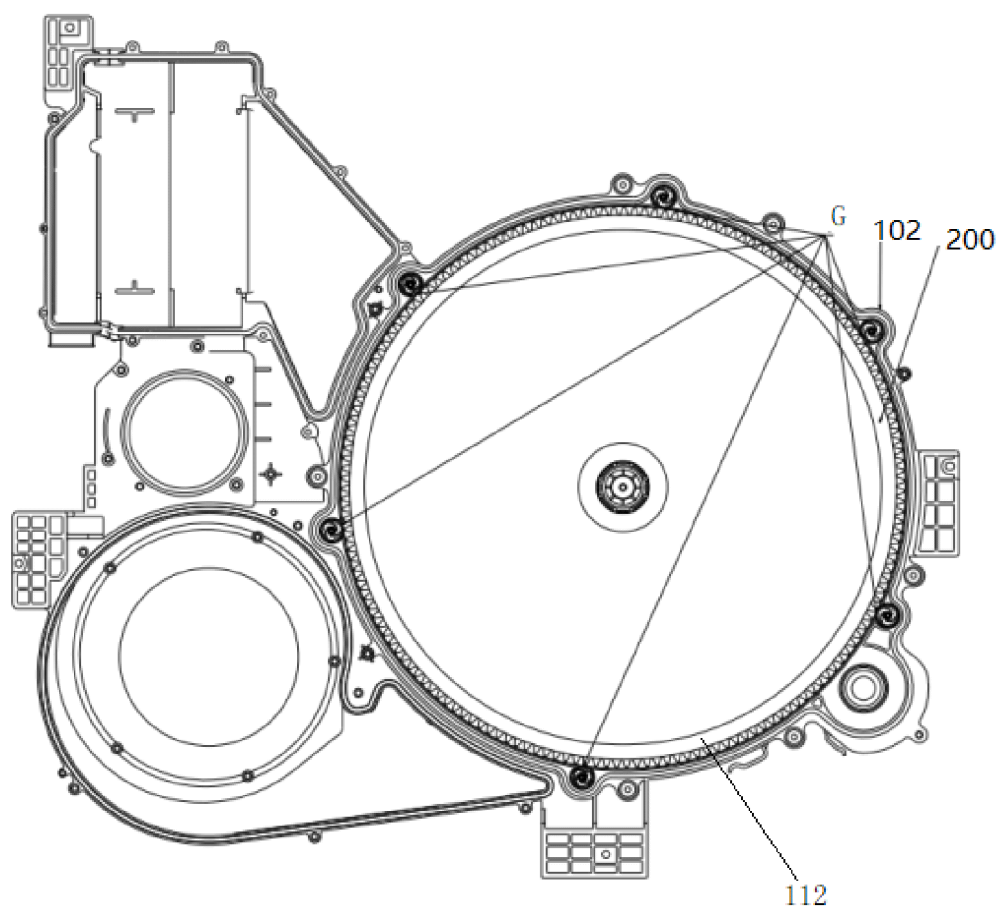


FIG. 22

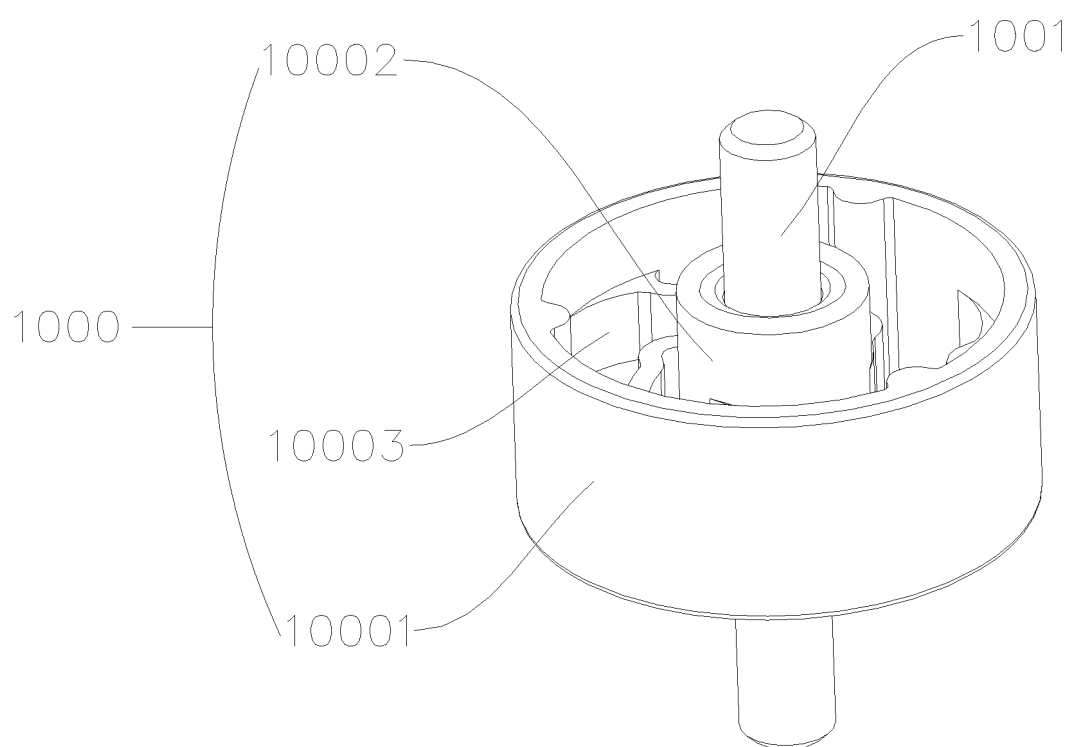


FIG. 23

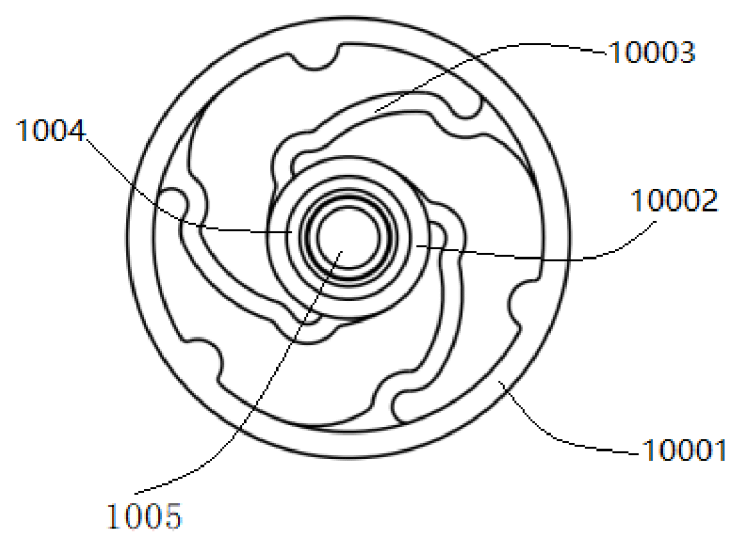


FIG. 24

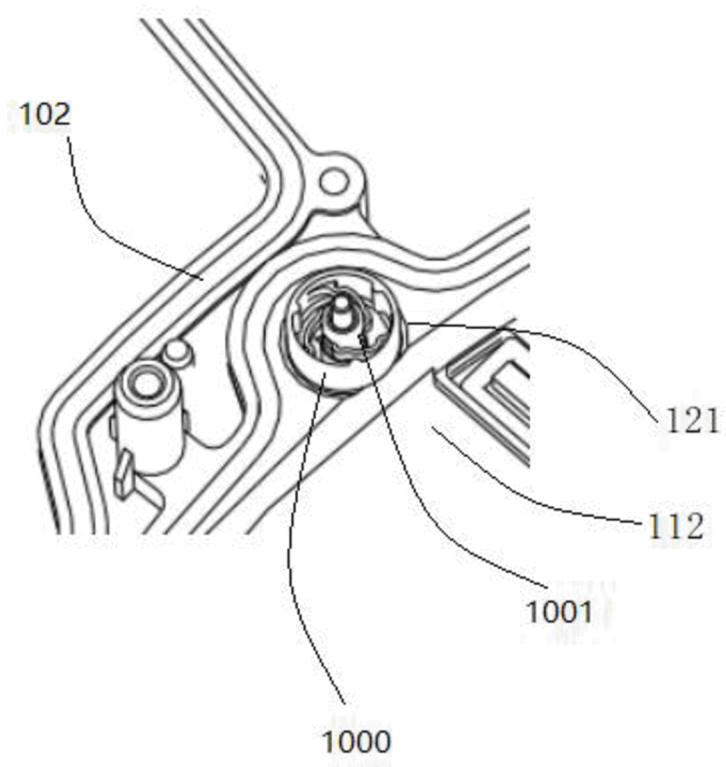


FIG. 25

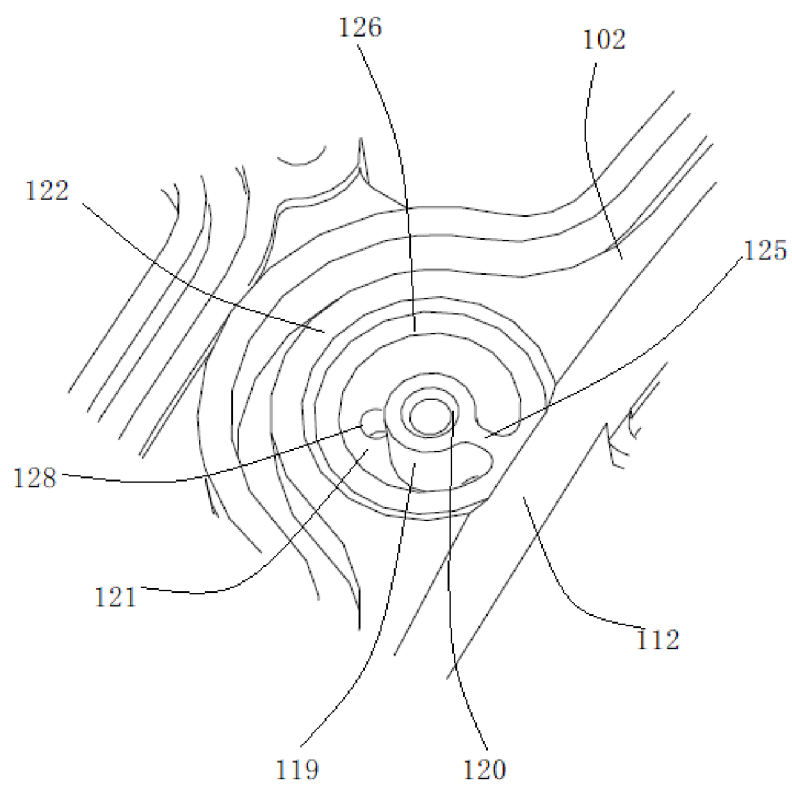


FIG. 26

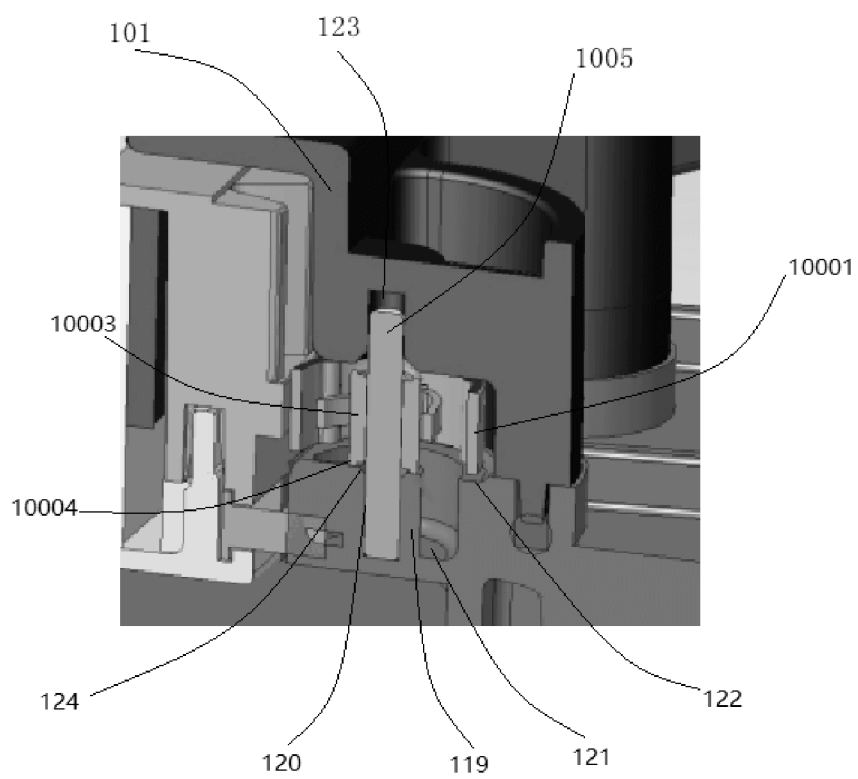


FIG. 27

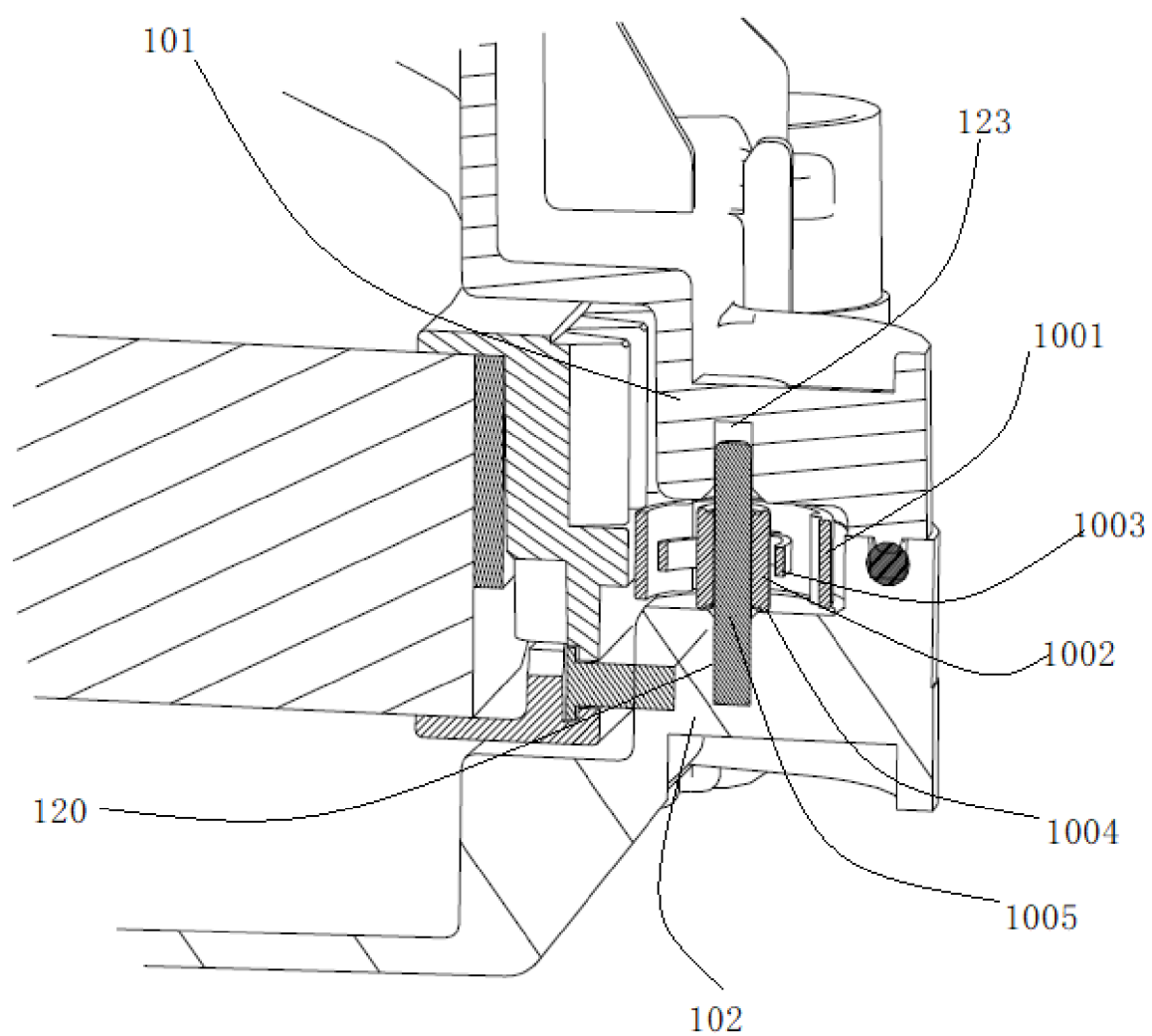


FIG. 28

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2024/082528

A. CLASSIFICATION OF SUBJECT MATTER

D06F25/00(2006.01)i; D06F58/20(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC:D06F

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

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

CNABS, CNTXT, ENTXTC, CNKI: 烘干, 干衣, 转盘, 转轮, 缓冲, 减震, 减振, 震动, 振动, 碰撞, 弹性, 簧, 球, 珠; VEN, EPTXT, WOTXT, ENTXT: dry, wheel, buffer, shock, vibrate, collision, elastic, spring, ball.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CN 218842642 U (SHENZHEN LUOKE INNOVATION TECHNOLOGY CO., LTD.) 11 April 2023 (2023-04-11) description, paragraphs 28-56, and figures 1-4	1-56
Y	CN 113794345 A (HUZHOU TONGRUI INTELLIGENT TECHNOLOGY CO., LTD.) 14 December 2021 (2021-12-14) description, paragraphs 21-29, and figures 1-6	1-56
Y	CN 206843770 U (SHANGHAI CLOUD LAUNDERING EQUIPMENT GROUP CO., LTD.) 05 January 2018 (2018-01-05) description, paragraphs 17-18, and figures 1-2	17-56
Y	CN 115247341 A (SHENZHEN LUOKE INNOVATION TECHNOLOGY CO., LTD.) 28 October 2022 (2022-10-28) description, paragraphs 17-36, and figures 1-7	49-56
Y	WO 2023098763 A1 (SHENZHEN LUOKE INNOVATION TECHNOLOGY CO., LTD.) 08 June 2023 (2023-06-08) description, page 7 line 12-page 31 line 20, and figures 1-40	1-56

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"D" document cited by the applicant in the international application	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"E" earlier application or patent but published on or after the international filing date	"&" document member of the same patent family
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 14 June 2024	Date of mailing of the international search report 16 June 2024
Name and mailing address of the ISA/CN China National Intellectual Property Administration (ISA/CN) China No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088	Authorized officer Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2024/082528

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C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CN 214567630 U (QINGHAI INSTITUTE FOR ENDEMIC DISEASE PREVENTION AND CONTROL) 02 November 2021 (2021-11-02) description, paragraphs 18-20, and figures 1-4	1-56
Y	CN 206843786 U (SHANGHAI YOUXI WASHING FACILITY CO., LTD.) 05 January 2018 (2018-01-05) description, paragraphs 16-18, and figure 1	17-56
A	CN 218540129 U (SHENZHEN LUOKE INNOVATION TECHNOLOGY CO., LTD.) 28 February 2023 (2023-02-28) entire document	1-56
A	JP 2012161355 A (TOSHIBA CORP. et al.) 30 August 2012 (2012-08-30) entire document	1-56

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2024/082528

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Patent document cited in search report				Publication date (day/month/year)		Patent family member(s)			Publication date (day/month/year)	
CN	218842642	U	11 April 2023	CN	115216913	A			21 October 2022	
				CN	218492017	U			17 February 2023	
				CN	218812688	U			07 April 2023	
				WO	2024046197	A1			07 March 2024	
CN	113794345	A	14 December 2021			None				
CN	206843770	U	05 January 2018			None				
CN	115247341	A	28 October 2022	CN	218508057	U			21 February 2023	
				WO	2024046211	A1			07 March 2024	
WO	2023098763	A1	08 June 2023	WO	2023098763	A9			22 February 2024	
				CN	218508058	U			21 February 2023	
CN	214567630	U	02 November 2021			None				
CN	206843786	U	05 January 2018			None				
CN	218540129	U	28 February 2023	CN	115262161	A			01 November 2022	
				CN	218711570	U			24 March 2023	
				TW	202411489	A			16 March 2024	
JP	2012161355	A	30 August 2012			None				

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CN 202322404522 [0001]
- CN 202322404504 [0001]
- CN 202322387829 [0001]
- CN 202322404480 [0001]