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(54) **BASE OF CLEANING SYSTEM, CLEANING SYSTEM AND ROLLING BRUSH DRYING METHOD**

(57) Disclosed is a base for a cleaning system. The base includes a base body and an air drying assembly, where a cavity is provided in the base body, and the air drying assembly is located in the cavity; an upper surface of the base body is recessed downwards to form a first placement area and a second placement area, the first placement area is configured for accommodating a rolling brush, an air outlet in communication with the cavity is provided on the first placement area, and the second placement area is configured for accommodating other floor brush assemblies except for the rolling brush; and several protrusions are arranged on the first placement

area, and one ends of the several protrusions are inserted into the rolling brush. According to the base for a cleaning system, the several protrusions are arranged on the first placement area, and one ends of the several protrusions are inserted into the rolling brush, to increase a contact surface between the rolling brush and air, such that air generated by the air drying assembly enters the rolling brush more easily, thereby improving an air drying effect of the rolling brush, and increasing an air drying speed of the rolling brush. Further disclosed are a cleaning system including the base and a method for drying a rolling brush.

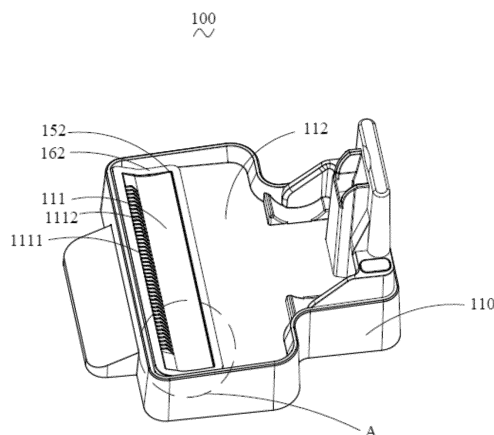


Fig. 4

Description

Technical Field

[0001] The disclosure relates to the technical field of cleaning systems, and in particular to a base for a cleaning system, a cleaning system and a method for drying a rolling brush.

Background

[0002] For a better cleaning effect, an existing cleaning system generally requires water for cleaning. After cleaning operation is completed, waste water still remains on a rolling brush of the cleaning system, and the existing cleaning system cannot rapidly clean and dry the rolling brush after completing cleaning operation, such that the rolling brush becomes smelly and mildewed, breeds bacteria and generates peculiar smell, bringing risk to health of users.

Summary

[0003] Aiming at the defects in the prior art, one of the objectives of the disclosure is to provide a base for a cleaning system. According to the base for a cleaning system, several protrusions are placed on a first placement area, and one ends of the several protrusions are inserted into a rolling brush, to increase a contact surface between the rolling brush and air, such that air generated by an air drying assembly may enter the rolling brush, thereby improving an air drying effect of the rolling brush, and increasing an air drying speed of the rolling brush.

[0004] In order to achieve the above objective, the technical means used by some embodiments of the disclosure is as follows: a base for a cleaning system is configured for a floor brush assembly of the cleaning system to be placed detachably, and the floor brush assembly includes a rolling brush. The base for a cleaning system includes a base body and an air drying assembly, where a cavity is provided in the base body, and the air drying assembly is located in the cavity; an upper surface of the base body is recessed downwards to form a first placement area and a second placement area, the first placement area is configured for accommodating the rolling brush, an air outlet in communication with the cavity is provided on the first placement area, and the second placement area is configured for accommodating other floor brush assemblies except for the rolling brush; and several protrusions are arranged on the first placement area, and one ends of the several protrusions are inserted into the rolling brush.

[0005] In one embodiment, the several protrusions are arranged in an axial direction of the rolling brush, and more protrusions may be arranged in the axial direction of the rolling brush compared with a radial direction of the rolling brush, thereby increasing a contact surface between the whole rolling brush and air.

[0006] In one embodiment, the air outlet is provided in the axial direction of the rolling brush, in this case, a length of the air outlet is long, the amount of air flowing out of the air outlet is large, and air flowing out of the air outlet may directly act on all surfaces of the rolling brush.

[0007] In one embodiment, the several protrusions separate the air outlet. The air outlet and the protrusions are designed in an associated manner, such that the protrusions may guide air blown out of the air outlet, and the air flows along a gap between the two protrusions and directly acts on an interior of the rolling brush, to maximize an effect.

[0008] In one embodiment, in the radial direction of the rolling brush in the first placement area, the protrusions completely cover the first placement area, and a contact surface between the protrusions and the rolling brush is increased by increasing the area of the protrusions.

[0009] In one embodiment, a first recess is provided between the first placement area and the second placement area, a first seal is arranged in the first recess, and the first placement area is separated from the second placement area by the first seal. The first seal is arranged between the first placement area and the second placement area, and may prevent the situation that waste water overflows to the second placement area in a self-cleaning process, the second placement area is difficult to self-clean after being polluted, and manual cleaning is needed, thereby reducing use experience of a user; and in addition, the first seal is arranged, such that the rolling brush may be sealed in the first placement area when the rolling brush is air-dried, thereby improving an air drying effect of the rolling brush, and increasing an air drying speed of the rolling brush.

[0010] In one embodiment, a second recess is provided in the air outlet, a second seal is arranged in the second recess, and the second seal abuts against part of the air outlet. The second seal is arranged at the air outlet, and may change a direction of air flowing out of the air outlet, such that the air directly acts on the rolling brush along the second seal.

[0011] In one embodiment, a third recess is provided at a periphery of the first placement area, a third seal is arranged in the third recess, and the first placement area is separated from other parts of the upper surface of the base body by the third seal. The third seal is arranged at the periphery of the first placement area, and may separate the first placement area from other parts of the upper surface of the base body, such that the rolling brush is completely sealed between a rolling brush housing and the first placement area, and waste water is prevented from splashing from the first placement area to other parts of the base or ground around placement of base in the self-cleaning process of the rolling brush; and in addition, the rolling brush may further be sealed in the first placement area when being air-dried, thereby improving the air drying effect of the rolling brush, and increasing the air drying speed of the rolling brush.

[0012] In one embodiment, the air drying assembly in-

cludes an air source member, an air outlet end of the air source member being arranged opposite the air outlet, such that air generated by the air source member may flow out of the air outlet.

[0013] In one embodiment, the air drying assembly further includes a heat source member, the heat source member being arranged between an air outlet end of the air source member and the air outlet, cold air may be converted into hot air to flow out of the air outlet, and the hot air makes the air drying speed of the rolling brush more quicker.

[0014] In one embodiment, the air source member includes at least one fan. Compared with a traditional mode that only one fan is arranged, wind power of the two or more fans is larger, such that air drying may be accelerated.

[0015] In one embodiment, the heat source member is at least partially located below the first placement area. In this case, the heat source member may convert cold air into hot air to increase the air drying speed of the rolling brush, and may further transfer heat to the base body, thereby indirectly transferring the heat to the rolling brush, to accelerate drying of the rolling brush.

[0016] In one embodiment, the base for a cleaning system further includes a pedal, where the pedal is fixedly connected to an outer side of the base body, to be configured for assisting the floor brush assembly to be detached from the base for a cleaning system.

[0017] Another embodiment of the disclosure is to provide a cleaning system. The cleaning system includes a main cleaning machine and the base for a cleaning system, where the main cleaning machine is detachably arranged on the base for a cleaning system.

[0018] The disclosure further provides a method for drying a rolling brush of a cleaning system. The cleaning system includes a main cleaning machine and a base, the base being configured for the main cleaning machine to be, the main cleaning machine including a rolling brush and a rolling brush driving device for driving the rolling brush to rotate, the base including a base body and an air drying assembly, a cavity being provided in the base body, the air drying assembly being located in the cavity, and an air outlet in communication with the cavity being provided on an upper surface of the base body; and the method for drying a rolling brush of a cleaning system includes: sending a starting signal to the air drying assembly, to control the air drying assembly to supply air to the air outlet; and sending a starting signal to the rolling brush driving device once every preset time, so as to control the rolling brush driving device to start working, and sending a stopping signal to the rolling brush driving device once every preset time, so as to control the rolling brush driving device to stop working.

[0019] The disclosure has the beneficial effects: according to the base for a cleaning system, the several protrusions are arranged on the first placement area, and one ends of the several protrusions are inserted into the rolling brush, to increase the contact surface between

the rolling brush and the air, such that air generated by the air drying assembly enters the rolling brush more easily, thereby improving the air drying effect of the rolling brush, and increasing the air drying speed of the rolling brush.

[0020] Moreover, the first seal is arranged between the first placement area and the second placement area, and may prevent waste water from overflowing to the second placement area in the self-cleaning process, and a user does not need to clean the second placement area, thereby improving user experience; and secondly, the first seal is arranged, and may seal the rolling brush in the first placement area when the rolling brush is air-dried, thereby improving the air drying effect of the rolling brush, and increasing the air drying speed of the rolling brush. In addition, the second seal is arranged at the air outlet, and may change a direction of air flowing out of the air outlet, such that the air generated by the air drying assembly directly acts on the rolling brush.

[0021] In addition, according to the method for drying a rolling brush of the disclosure, the starting signal is sent to the rolling brush driving device once every preset time, so as to control the rolling brush driving device to start working, and the stopping signal is sent to the rolling brush driving device once every preset time, so as to control the rolling brush driving device to stop working. That is, the rolling brush may rest for a period of time after working every other period of time, and then works, and so on. In this case, the rolling brush driving device does not need to continuously work in an air drying process, such that energy loss is small, and service life of the rolling brush driving device may be prolonged.

Brief Description of the Drawings

[0022]

Fig. 1 shows a schematic structural diagram of a cleaning system 1000 of an implementation of the disclosure;

Fig. 2 shows a schematic structural diagram of a base 100 for a cleaning system 1000 of an implementation of the disclosure;

Fig. 3 shows a schematic structural diagram of a base 100 for a cleaning system 1000 of another implementation of the disclosure;

Fig. 4 shows a schematic structural diagram of a base 100 for a cleaning system 1000 of still another implementation of the disclosure;

Fig. 5 shows a schematic enlarged diagram of a portion A in Fig. 4 in an application scenario;

Fig. 6 shows a partial structural sectional view of a cleaning system 1000 of an implementation of the

disclosure;

Fig. 7 shows a schematic enlarged diagram of a portion B in Fig. 6 in an application scenario;

Fig. 8 shows a schematic structural diagram of a base 100 for a cleaning system 1000 of yet another implementation of the disclosure;

Fig. 9 shows a schematic partial structural diagram of a seal 160 of an implementation of the disclosure; and

Fig. 10 shows a schematic flow diagram of a method for drying a rolling brush 911 of a cleaning system 1000 of an implementation of the disclosure.

Detailed Description of the Embodiments

[0023] According to requirements, the specific implementation of the disclosure will be disclosed herein. However, it should be understood that implementations disclosed herein are only typical examples of the disclosure, which may be embodied in various forms. Therefore, specific details disclosed herein are not considered to be restrictive, but merely serve as the basis for the claims and as the representative basis for teaching those skilled in the art to apply the disclosure differently in any appropriate way in practice, and includes use of various features disclosed herein and combination of features that may not be explicitly disclosed herein.

[0024] In the description of the disclosure, it is to be understood that the orientation or positional relations indicated by the terms "length", "up", "down", "front", "rear", "left", "right", "horizontal", "top", "bottom", "inside", "outside", "circumferential", etc. are based on the orientation or positional relation shown in the accompanying drawings, are merely for facilitating the description of the disclosure and simplifying the description, rather than indicating or implying that an apparatus or element referred to must have a particular orientation or be constructed and operated in a particular orientation, and therefore will not be interpreted as limiting the disclosure.

[0025] In combination with Figs. 1 and 6, a cleaning system 1000 includes a base 100 for the cleaning system 1000 and a main cleaning machine 900, where the main cleaning machine 900 is configured for cleaning a daily living environment. For example, the main cleaning machine may clean a ground, a carpet, etc. According to different uses, the main cleaning machine 900 may be a scrubber, a dust collector, etc. A floor brush assembly 910 is arranged at a bottom of the main cleaning machine 900, the floor brush assembly 910 includes a rolling brush 911 and a rolling brush housing 912, the rolling brush housing 912 covering part of the rolling brush 911, the rolling brush housing 912 and the base 100 being capable of forming a rolling brush accommodating area together, and the floor brush assembly 910 is arranged at the bot-

tom of the main cleaning machine 900, such that when a user holds the main cleaning machine 900 with hands, the floor brush assembly 910 at the bottom of the main cleaning machine is configured for cleaning the ground or other surfaces to be cleaned.

[0026] Understandably, it is required to separate the main cleaning machine 900 from the base 100 during daily use, the main cleaning machine 900 may be placed on the base 100 after cleaning is completed, and the base 100 provides a placement place for the main cleaning machine 900. Certainly, as technology advances, the base 100 is also endowed with more functions. For example, a charging assembly (not shown in the figures) is arranged in the main cleaning machine 900, and the base 100 may charge the main cleaning machine 900 when the main cleaning machine 900 is placed on the base 100 after being used. For another example, after cleaning is completed by the main cleaning machine 900, the main cleaning machine may perform self-cleaning, self-detection, etc. on the base 100, and in this case, an auxiliary element may be arranged on the base 100, to assist the main cleaning machine 900 in completing the above functions.

[0027] In an implementation, in combination with in Figs. 4, 5 and 6, a base 100 includes a base body 110 and an air drying assembly 130, where a cavity 120 is provided in the base body 110, and the air drying assembly 130 is located in the cavity 120; an upper surface of the base body 110 is recessed downwards to form a first placement area 111 and a second placement area 112, the first placement area 111 is configured for accommodating the rolling brush 911, an air outlet 1111 in communication with the cavity 120 is provided on the first placement area 111, and the second placement area 112 is configured for accommodating other floor brush assemblies 910 except for the rolling brush 911. Several protrusions 1112 are arranged on the first placement area 111, and one ends of the several protrusions 1112 are inserted into the rolling brush 911, to increase a contact surface between the rolling brush 911 and air, such that air generated by the air drying assembly 130 enters the rolling brush 911 more easily, thereby improving an air drying effect of the rolling brush 911, and increasing an air drying speed of the rolling brush 911.

[0028] It should be noted that the first placement area 111 and the second placement area 112 are only for convenience of illustrating an area on the upper surface of the base body 110, to accommodate different parts of the floor brush assembly 910, and do not indicate that the first placement area 111 and the second placement area 112 are two separate components, and the first placement area and the second placement area may be an integrally-formed structure or a split structure, which will not be specifically limited herein.

[0029] Specifically, the protrusion 1112 is a plate that is vertically arranged in a radial direction of the rolling brush 911, and the regular plate has better mechanical strength, and is more likely to being inserted into an in-

terior of the rolling brush 911. In other implementations, a specific structure of a protrusion is not limited as long as the protrusion may be inserted into an interior of a rolling brush, to separate bristles of the rolling brush, such that the interior of the rolling brush is exposed to air. In addition, the protrusion may be not vertically arranged and may be slightly inclined at a certain angle in a vertical direction as long as one end of the protrusion may be inserted into the rolling brush.

[0030] In combination with Figs. 4 and 5, in an implementation, several protrusions 1112 are arranged in an axial direction of a rolling brush 911, an air outlet 1111 is provided in an axial direction of the rolling brush 911, and the several protrusions 1112 separate the air outlet 1111. Specifically, the air outlet 1111 is provided in one side of a first placement area 111 away from a second placement area 112, and the protrusions 1112 are vertically arranged on the air outlet 1111 and extend towards a middle of the first placement area 111. The air outlet 1111 and the protrusions 1112 are designed in an associated manner, such that the protrusions 1112 may guide air blown out of the air outlet 1111, and the air flows along a gap between the two protrusions 1112 and directly acts on an interior of the rolling brush 911, to maximize an effect. In addition, compared with arrangement of the several protrusions 1112 in the radial direction of the rolling brush 911, more protrusions 1112 may be arranged in the axial direction of the rolling brush 911 under the condition that the gap between the two protrusions 1112 is the same, thereby increasing a contact surface between the whole rolling brush 911 and air; and secondly, all parts of the rolling brush 911 in a length direction of the rolling brush make contact with the protrusions 1112, such that all the parts of the rolling brush 911 may be dried at the same time, to maximize an effect. When the air outlet 1111 is provided in the axial direction of the rolling brush 911, the length of the air outlet 1111 is long, air amount flowing out of the air outlet 1111 is large, and the air flowing out of the air outlet 1111 may directly act on all surfaces of the rolling brush 911. In other implementations, protrusions may be dispersed in various parts of a first placement area, instead of being restrictively arranged in an axial direction of a rolling brush, as long as the protrusions may be inserted into the rolling brush. The air outlets may also be randomly provided in various parts of the first placement area, instead of being restrictively provided in the axial direction of the rolling brush, as long as air generated by an air drying assembly may flow out of the air outlet, and the air may act on the rolling brush by means of other sealing means. The protrusion and the air drying assembly may be arranged separately without a fixed position relation and are merely required to perform own functions. Obviously, the air outlet may be randomly provided while the protrusion is arranged in the axial direction of the rolling brush, alternatively, the protrusion may be randomly arranged while the air outlet is arranged in the axial direction of the rolling brush, and positions of the protrusion and the air outlet

are not specifically limited.

[0031] In an implementation, several protrusions 1112 are parallel to each other, and a distance between every two protrusions is the same, such that a rolling brush 911 may be uniformly air-dried, and the situation that some of the protrusions are air-dried while some of the protrusions are not air-dried is avoided. In other implementations, in combination with a position of an air source member in an air drying assembly, a few protrusions may be arranged at a position of a rolling brush opposite an air outlet end of the air source member, and a few more protrusions may be arranged in other areas. That is, a few protrusions may be arranged at a place in which wind is strong, and a few more protrusions may be arranged at a place in which wind is weak, so as to air-dry all parts of the rolling brush at the same time.

[0032] As shown in Fig. 5, in an implementation, one ends of several protrusions 1112 inserted into a rolling brush 911 are chamfered, such that service life of the rolling brush 911 may be prolonged, and bristles of the rolling brush 911 and the protrusions 1111 may be prevented from scratching or even breaking. In a self-cleaning process, the protrusions 1112 may also press the rolling brush 911, to accelerate water exudation in the rolling brush 911, and in addition, the protrusions 1112 may further have an effect of collecting hair on the rolling brush 911, to assist in cleaning the rolling brush 911.

[0033] In an implementation, with reference to Fig. 8, it may be seen that in a radial direction of a rolling brush 911 in a first placement area 111, protrusions 1112 completely cover the first placement area 111, that is, the protrusions 1112 in this implementation extend from the air outlet 1111 to the first placement area 111 until the whole first placement area 111 is full of the protrusions, a contact surface between the protrusions 1112 and the rolling brush 911 is increased by increasing area of the protrusions 1112, and in this case, the protrusions 1112 support the rolling brush 911, that is, the rolling brush 911 has no area completely attached to the first placement area 111, such that air may circulate around the rolling brush 911 between every two protrusions 1112. In another implementation, protrusions 1112 do not completely cover a first placement area 111, and with reference to Fig. 4, the protrusions 1112 are only arranged at an end of the first placement area 111 close to the air outlet 1111, that is, in this case, part of a rolling brush 911 is completely attached to the first placement area 111, the protrusions 1112 in this implementation are smaller relative to the protrusions 1112 shown in Fig. 8, a contact surface between the protrusion and the rolling brush 911 is smaller, however, the protrusions are more likely to be inserted into the rolling brush 911 compared with the protrusions 1112 shown in Fig. 8, and even though only a small amount of hot air may circulate around the rolling brush 911 since part of the rolling brush 911 is completely attached to the first placement area 111 in this implementation, the whole rolling brush 911 may be still air-dried by means of rotation of the rolling

brush 911. In addition, compared with the arrangement mode that the protrusions 1112 completely cover the first placement area 111, and the protrusions 1112 may be arranged only at an end of the first placement area 111, such that the situation that waste water seeping out of the rolling brush 911 makes contact with the protrusions 1112 for a long time, polluting the protrusions 1112 may be avoided. In other implementations, when protrusions are arranged and do not completely cover a first placement area, positions of the protrusions are not limited to an end close to an air outlet shown in Fig. 4, and the protrusions may be randomly arranged in the first placement area.

[0034] As shown in Fig. 2, in an implementation, a first recess 150 is provided between a first placement area 111 and a second placement area 112, a first seal 160 is arranged in the first recess 150, and the first placement area 111 is separated from the second placement area 112 by the first seal 160. The first seal 160 is arranged between the first placement area 111 and the second placement area 112, and may prevent waste water from overflowing to the second placement area 112 in the self-cleaning process, the second placement area 112 is difficult to self-clean after being polluted, and manual clearing is needed, thereby reducing use experience of a user; and in addition, the first seal 160 is arranged, and may seal the rolling brush 911 in the first placement area 111 when the rolling brush 911 is air-dried, thereby improving an air drying effect of the rolling brush 911, and increasing an air drying speed of the rolling brush 911.

[0035] As shown in Fig. 3, in another implementation, a second recess 151 is provided in an air outlet 1111, a second seal 161 is arranged in the second recess 151, and the second seal 161 abuts against part of the air outlet 1111. The second seal 161 is arranged at the air outlet 1111, and may change a direction of air flowing out of the air outlet 1111, such that the air directly acts on a rolling brush 911 along the second seal 161. In this implementation, the air outlet 1111 is provided in an axial direction of the rolling brush 911 and located at an end of a first placement area 111 away from a second placement area 112, protrusions 1112 are also arranged in the axial direction of the rolling brush 911 and separate the air outlet 1111, in this case, the second seal 161 abuts against the protrusions 1112, and after the protrusions 1112 match the second seal 161, air direction is guided more favorably. In this case, the second seal 161 is arranged, and may seal the rolling brush 911 in the first placement area 111 when the rolling brush 911 is self-cleaned and air-dried, thereby improving an air drying effect of the rolling brush 911, and increasing an air drying speed of the rolling brush 911.

[0036] In another implementation, a first seal 160 and a second seal 161 may be arranged, and the arrangement mode is the same as the above manner, which will not be repeated herein. A base 100 of this implementation may prevent waste water from overflowing from a first placement area 111 to a second placement area 112,

and may also change a direction of air flowing out of an air outlet 1111, such that air directly acts on a rolling brush 911.

[0037] In combination with Fig. 4, in another implementation, a third recess 152 is provided at a periphery of a first placement area 111, a third seal 162 is arranged in the third recess 152, and the first placement area 111 is separated from other parts of the upper surface of the base body 110 by the third seal 162. The third seal 162 is arranged at the periphery of the first placement area 111, and may separate the first placement area 111 from other parts of the upper surface of the base body 110, such that the rolling brush 911 is completely sealed between a rolling brush housing 912 and the first placement area 111, and waste water is prevented from splashing from the first placement area 111 to other parts of the base body 110 or ground around placement of the base 100 in the self-cleaning process of the rolling brush 911. In addition, compared with the mode that the first seal 160 is arranged only between the first placement area 111 and the second placement area 112, the third seal 162 is arranged surrounding the first placement area 111 and may completely seal the rolling area 911 in the first placement area 111 when the rolling brush 911 is air-dried, thereby improving an air drying effect of the rolling brush 911, and increasing an air drying speed of the rolling brush 911. When an air outlet 1111 is located at any position at a periphery of the first placement area 111, the third seal 162 further has an effect of guiding an air direction, and in addition, in combination with the above, it may be obviously seen that when protrusions 1112 are arranged in combination with the air outlet 1111 and are located at any position at the periphery of the first placement area 111, the third seal 162 abuts against the protrusions 1112, to change the air direction, which will not be repeated herein.

[0038] As shown in Fig. 9, the first seal 160 is a T-shaped seal, that is, the first seal 160 has a T-shaped cross-section and includes a vertical plate 1601 and a transverse plate 1602 that are perpendicular to each other, the vertical plate 1601 being adapted to the first recess 150, to fix a position of the first seal 160, thereby avoiding movement of the first seal 160 when the main cleaning machine 900 is taken from the base 100. The second seal 161 and the third seal 162 are both T-shaped seals and each include a vertical plate 1601 and a transverse plate 1602 that are perpendicular to each other. Integral structures of the first seal 160, the second seal 161 and the third seal 162 are adapted to the first recess 150, the second recess 151 and the third recess 152 respectively.

[0039] In an implementation, with reference to Figs. 4, 6 and 7, it may be seen that one end of a transverse plate 1602 of a third seal 162 close to a protrusion 1112 is pressed and deformed by a rolling brush housing 912 and then is attached to the protrusion 1112, and a third recess 152 is in communication with an air outlet 1111, such that the third seal 162 is arranged in the third recess 152, to generate an effect of guiding an air direction and

preventing air generated by an air drying assembly 130 from overflowing. The air flows out along a vertical plate 1601 of the third seal 162 and then flows out along a transverse plate 1602 of the third seal 162 instead of flowing out along the air outlet 1111, and finally the air flows between the protrusions 1112 and directly acts on an interior of the rolling brush between the protrusions 1112, to increase a contact surface between the rolling brush and air, such that the air enters the interior of the rolling brush 911, thereby improving an air drying effect of the rolling brush 911, and increasing an air drying speed of the rolling brush 911.

[0040] In addition, compared with other seals, a surface area of the transverse plate 1602 of the T-shaped seal is larger. That is, the surface area of the transverse plate 1602 making contact with other components is larger, such that the first seal 160 and/or the second seal 161 or the third seal 162 may completely cover the rolling brush housing 912 on a floor brush assembly 910 and a bottom of the floor brush assembly 910, and it may be ensured that air generated by the air drying assembly 130 circulates in a space delimited by the first placement area 111, the rolling brush housing 912 and the floor brush assembly 910 to the maximum extent to maximize an effect. The vertical plate 1601 of the first seal 160 may be configured as a hollow structure to increase elasticity of the first seal 160 and reduce weight of the first seal 160. In addition, in order to increase structural strength of the first seal 160, reinforcing ribs may be additionally arranged in the hollow structure of the vertical plate 1601. The second seal 161 and the third seal 162 may each have the same structure as the first seal 160, which will not be repeated herein. Certainly, the vertical plate 1601 may also be arranged as a solid structure or other structure that facilitates assembly, which will not be limited herein.

[0041] As shown in Fig. 2, in an implementation, a first placement area 111 is arc-shaped, and the arc-shaped first placement area 111 may better cover and support a rolling brush 911, such that a base 100 for a cleaning system 1000 may stably support a main cleaning machine 900. In addition, when protrusions 1112 are located at an end of the first placement area 111, the arc-shaped first placement area 111 is more beneficial for the protrusions 1112 to be inserted into the rolling brush 911, to increase a contact surface between the protrusions 1112 and the rolling brush 911, thereby increasing an air drying speed of the rolling brush 911. In addition, the arc-shaped first placement area 111 may better accommodate waste water generated during self-cleaning of the rolling brush 911, thereby preventing the water from flowing into a second placement area 112. In this implementation, a height of two sides of the first placement area 111 in a vertical direction in a radial direction of the rolling brush 911 is higher than that of the second placement area 112, such that firstly, mounting of the seals is facilitated, secondly, overflow of the water is avoided, and in addition, the first placement area may match the floor brush assembly 910

better. In other implementation, whether the height of the two sides of the first placement area in a vertical direction in the radial direction of the rolling brush is higher than that of the second placement area is not limited, and the height of the first placement area may be the same as that of the second placement area.

[0042] As shown in Fig. 2, a base 100 further includes a support column 180, where the support column 180 is connected to an upper portion of a base 100, such that a machine body of a main cleaning machine 900 is hung on the support column 180 when a floor brush assembly 910 is placed on the base 100. The support column 180 is of a hollow structure, a charging assembly and a controller (not shown in the figures) are arranged inside the support column, and the charging assembly and the controller are arranged inside the support column 180, such that the charging assembly and the controller may be protected by the support column 180. An area of the base 100 is much greater than that of the support column 180, and the base 100 may have an effect of supporting the support column 180, such that a structure of the support column 180 is stable, and the main cleaning machine 900 is conveniently supported subsequently. When a floor brush assembly 910 of the main cleaning machine 900 is arranged on the base 100, a machine body 910 of the main cleaning machine 900 may be hung on the support column 180, and the support column 180 having a stable position may increase a contact area between the base 100 and the main cleaning machine 900, and improve position stability of the main cleaning machine 900, such that the main cleaning machine 900 may be stably dried.

[0043] Optionally, the base 100 and the support column 180 are made in an integrated forming process. The integrated forming process ensures that the base 100 and the support column 180 do not need to be subjected to early-stage welding, screw connection, etc. in an assembling process of the base 100, thereby effectively simplifying an assembly procedure, and improving assembly efficiency of the base 100. Moreover, deformation of the base 100 caused by early-stage machining may be effectively avoided through the integrated forming process, thereby effectively improving assembly precision of the base 100 and the support column 180.

[0044] Certainly, in some other examples, a base 100 and a support column 180 may be two separate structures, after the base 100 and the support column 180 are separately machined, the support column 180 may be connected to the base 100 in a non-detachable manner, such as by welding and bonding, and the support column 180 may be connected to the base 100 in a detachable manner, such as bolted connection and buckled connection, such that the base 100 is convenient to dismount, mount, maintain and replace.

[0045] As shown in Fig. 6, an air drying assembly 130 includes a heat source member 131 and an air source member 132, where the heat source member 131 is arranged between an air outlet end of the air source mem-

ber 132 and an air outlet 1111, cold air may be converted into hot air to flow out of the air outlet 1111, and the hot air makes an air drying speed of a rolling brush 911 higher. The heat source member 131 may be a positive temperature coefficient (PTC) heating sheet, a heating wire, an electric heating pipe, an electric heating disc, etc. In this implementation, the heat source member 131 is the PTC heating sheet, the PTC heating sheet is composed of a ceramic heating element and an aluminum pipe, has the advantages of small thermal resistance, high heat exchange efficiency, automatic constant temperature and electricity saving, and may not generate the phenomenon that a surface of an electric heating pipe heater is "red", and therefore potential safety hazards such as scalding and fire hazards are caused, and use safety of household electric appliances is facilitated. The heat source member 131 is at least partially located below the first placement area 111. In this case, the heat source member 131 converts cold air into hot air to increase the air drying speed of the rolling brush 911, and may further transfer heat to the base body 110, thereby indirectly transferring heat to the rolling brush 911, to accelerate drying of the rolling brush 911.

[0046] The air source member 132 may be an axial flow fan or a centrifugal fan, an air inlet direction and an air outlet direction of the axial flow fan are both along an axis of the fan, and the centrifugal fan may achieve air inlet in an axial direction and air outlet in a radial direction. The air source member 132 may be a bladed fan, or a bladeless fan, and embodiments of the disclosure do not particularly limit a specific form of the air source member 132. In this implementation, the air source member 132 includes at least one fan. Compared with a traditional mode that only one fan is arranged, wind power of more fans is larger, such that air drying may be accelerated. In this implementation, the air source member 132 is located below a second placement area 112, such that compared with the traditional manner in which the air source member 132 is arranged in a support column 180, the air source member 132 is arranged below a second placement area 112 in this implementation, such that an air duct may be shortened, and air amount loss may be reduced, thereby maximizing an effect. Preferably, the air source member 132 is arranged below the second placement area 112 close to the first placement area 111.

[0047] In other implementations, an air drying assembly may be not provided with a heat source member but is only provided with an air source member, a rolling brush may be air-dried by cold air, and the problems of bacteria breeding, etc. after heating are reduced. A position of the air source member and the number of fans are not limited, and may be the same as the prior art, such that the function of generating air may be achieved.

[0048] In an implementation, an air drying assembly 130 further includes an indicator light, where the indicator light is configured for displaying a working state of an air drying assembly 130, when the indicator light turns on, it is indicated that the air drying assembly 130 is in a

normal working state, and when the indicator light turns off, it is indicated that the air drying assembly 130 is not in a working state.

[0049] As shown in Fig. 2, the base 100 further includes a pedal 170, where the pedal 170 is fixedly connected to an outer side of the base body 110 to be configured for assisting the floor brush assembly 910 to be detached from the base 100. In order to stably fix the main cleaning machine 900 on the base 100, the floor brush assembly 910 is fixedly connected to the base body 110 in a clamped manner, when the main cleaning machine 900 is taken from the base 100, the main cleaning machine 900 is difficult to separate from the base 100, the base 100 is easily driven to move together in a taking process, and in order to avoid the situation, the pedal 170 is arranged, and when the main cleaning machine 900 is taken from the base 100, the pedal 170 is treaded or pressed, and the base 100 may be fixed to easily take the main cleaning machine 900.

[0050] As shown in Fig. 10, the disclosure further provides a method for drying a rolling brush 911 of a cleaning system 1000, which uses the cleaning system 1000 in the above embodiment. The method includes: a starting signal is sent to an air drying assembly 130, so as to control the air drying assembly 130 to supply air to an air outlet 1111; and a starting signal is sent to a rolling brush driving device once every preset time, so as to control the rolling brush driving device to start working, and a stopping signal is sent to the rolling brush driving device once every preset time, so as to control the rolling brush driving device to stop working. That is, the rolling brush 911 is rotated for a while every certain time, such that the rolling brush driving device does not need to continuously work in a drying process, energy loss is small, and service life of the rolling brush driving device may be prolonged.

[0051] Specifically, the cleaning system 1000 further includes a timer (not shown in the figures), where the time at which the starting signal or the stopping signal is sent to the rolling brush driving device is controlled by means of the timer.

[0052] In an implementation, an air drying assembly 130 includes an air source member 132 and an indicator light, where an air outlet end of the air source member 132 is arranged opposite an air outlet 1111, and the indicator light is configured for displaying a working state of the air drying assembly 130. The step of sending a starting signal to an air drying assembly 130, so as to control the air drying assembly 130 to supply air to an air outlet 1111 includes: the starting signal is sent to the air drying assembly 130, the air source member 132 and the indicator light 133 start to work at the same time, the air source member and the indicator light run for a specified time, and the air source member 132 and the indicator light stop working.

[0053] In another implementation, an air drying assembly 130 further includes a heat source member 131, where the heat source member 131 is arranged between

the air outlet end of the air source member 132 and the air outlet 1111. The step of sending a starting signal to an air drying assembly 130, so as to control the air drying assembly 130 to supply air to an air outlet 1111 includes: the starting signal is sent to the air drying assembly 130, the air source member 132, the heat source member 131 and the indicator light 133 start to work at the same time, the air source member, the heat source member and the indicator light run for a specified time, the heat source member 131 stops working, the air source member 132 and the indicator light 133 continue running for a set time, and the air source member and the indicator light stop working, so as to carry out heat dissipation treatment on the heat source member 131, prevent the base body 110 making indirect contact with the heat source member 131 from deforming due to high temperature, and reduce a safety risk.

[0054] In this implementation, if the air drying assembly 130 does not run for a set time, the stopping signal is sent to the air drying assembly 130, in this case, the heat source member 131 and the indicator light stop working, and the air source member 132 continues running for the set time and then stops working, so as to carry out heat dissipation treatment on the heat source member 131, prevent the base body 110 making indirect contact with the heat source member 131 from deforming due to high temperature, and reduce the safety risk; and the indicator light 133 immediately stops working to indicate to a user that this air drying stopping operation is valid.

[0055] In this implementation, if the air drying assembly runs for the set time, the heat source member 131 stops working, but the air source member 132 and the indicator light do not run for the set time, the stopping signal is sent to the air drying assembly 130, and in this case, the indicator light stops working, and the air source member 132 continues running for the set time and then stops working, so as to carry out heat dissipation treatment on the heat source member 131, prevent the base body 110 making indirect contact with the heat source member 131 from deforming due to high temperature, and reduce the safety risk; and the indicator light immediately stops working to indicate to the user that the air drying stopping operation is valid.

[0056] According to the base 100 for a cleaning system 1000 of the disclosure, the several protrusions 1112 are arranged on the first placement area 111, and one ends of the several protrusions 1112 are inserted into the rolling brush 911, to increase the contact surface between the rolling brush 911 and the air, such that air generated by the air drying assembly 130 enters the rolling brush 911 more easily, thereby improving the air drying effect of the rolling brush 911, and increasing the air drying speed of the rolling brush 911.

[0057] Meanwhile, the first seal 160 is arranged between the first placement area 111 and the second placement area 112, and may prevent waste water from overflowing to the second placement area 112 in the self-cleaning process, and the user does not need to clean

the second placement area 112, thereby improving user experience. Further, the first seal 160 is arranged, and may seal the rolling brush 911 in the first placement area 111 when the rolling brush 911 is air-dried, thereby improving the air drying effect of the rolling brush 911, and increasing the air drying speed of the rolling brush 911. In addition, the second seal 161 is arranged at the air outlet 1111, and may change a direction of air flowing out of the air outlet 1111, such that the air generated by the air drying assembly 130 directly acts on the rolling brush 911.

[0058] In addition, according to the method for drying a rolling brush 911 of the disclosure, the starting signal is sent to the rolling brush driving device once every preset time, so as to control the rolling brush driving device to start working, and the stopping signal is sent to the rolling brush driving device once every preset time, so as to control the rolling brush driving device to stop working. That is, the rolling brush 911 may rest for a period of time after working every other period of time, and then works, and so on. In this case, the rolling brush driving device does not need to continuously work in an air drying process, such that energy loss is small, and service life of the rolling brush driving device may be prolonged.

[0059] The technical content and technical features of the disclosure have been disclosed as above. However, it is to be understood that under the creative idea of the disclosure, those skilled in the art can make various changes and improvements to the above structure and materials, including a combination of technical features disclosed separately or set forth herein, and obviously including other combinations of these features. These variations and/or combinations all fall within the technical field of the disclosure and fall within the scope of protection of the claims of the disclosure.

Claims

1. A base for a cleaning system, configured for a floor brush assembly of the cleaning system to be placed detachably, the floor brush assembly comprising a rolling brush, wherein the base for the cleaning system comprises a base body and an air drying assembly, wherein a cavity is provided in the base body, and the air drying assembly is located in the cavity;

an upper surface of the base body is recessed downwards to form a first placement area and a second placement area, the first placement area is configured for accommodating the rolling brush, an air outlet in communication with the cavity is provided on the first placement area, and the second placement area is configured for accommodating other floor brush assemblies except for the rolling brush; and several protrusions are arranged on the first

- placement area, and one ends of the several protrusions are inserted into the rolling brush.
2. The base for a cleaning system as claimed in claim 1, wherein the several protrusions are arranged in an axial direction of the rolling brush. 5
 3. The base for a cleaning system as claimed in claim 1, wherein the air outlet is provided in an axial direction of the rolling brush. 10
 4. The base for a cleaning system as claimed in claim 1, wherein the several protrusions separate the air outlet. 15
 5. The base for a cleaning system as claimed in claim 1, wherein the protrusions completely cover the first placement area in a radial direction of the rolling brush in the first placement area. 20
 6. The base for a cleaning system as claimed in claim 1, wherein a first recess is provided between the first placement area and the second placement area, a first seal is arranged in the first recess, and the first placement area is separated from the second placement area by the first seal. 25
 7. The base for a cleaning system as claimed in claim 1, wherein a second recess is provided in the air outlet, a second seal is arranged in the second recess, and the second seal abuts against part of the air outlet. 30
 8. The base for a cleaning system as claimed in claim 1, wherein a third recess is provided at a periphery of the first placement area, a third seal is arranged in the third recess, and the first placement area is separated from other parts of the upper surface of the base body by the third seal. 35
 9. The base for a cleaning system as claimed in claim 1, wherein the air drying assembly comprises an air source member, an air outlet end of the air source member being arranged opposite the air outlet. 40
 10. The base for a cleaning system as claimed in claim 9, wherein the air drying assembly further comprises a heat source member, the heat source member being arranged between the air outlet end of the air source member and the air outlet. 45
 11. The base for a cleaning system as claimed in claim 9, wherein the air source member comprises at least one fan. 50
 12. The base for a cleaning system as claimed in claim 10, wherein the heat source member is at least partially located below the first placement area. 55

13. The base for a cleaning system as claimed in claim 1, further comprising a pedal, the pedal being fixedly connected to an outer side of the base body to be configured for assisting the floor brush assembly to be detached from the base for a cleaning system.
14. A cleaning system, comprising a main cleaning machine and the base for a cleaning system as claimed in any one of claims 1-13, wherein the main cleaning machine is detachably arranged on the base for a cleaning system.
15. A method for drying a rolling brush of a cleaning system, wherein the cleaning system comprises a main cleaning machine and a base, the base being configured for the main cleaning machine to be placed detachably, the main cleaning machine comprising a rolling brush and a rolling brush driving device for driving the rolling brush to rotate, the base comprising a base body and an air drying assembly, a cavity being provided in the base body, the air drying assembly being located in the cavity, and an air outlet in communication with the cavity being provided on an upper surface of the base body; and the method comprises:

sending a starting signal to the air drying assembly, to control the air drying assembly to supply air to the air outlet;
 meanwhile sending a starting signal to the rolling brush driving device once every preset time, so as to control the rolling brush driving device to start working, and sending a stopping signal to the rolling brush driving device once every preset time, so as to control the rolling brush driving device to stop working.

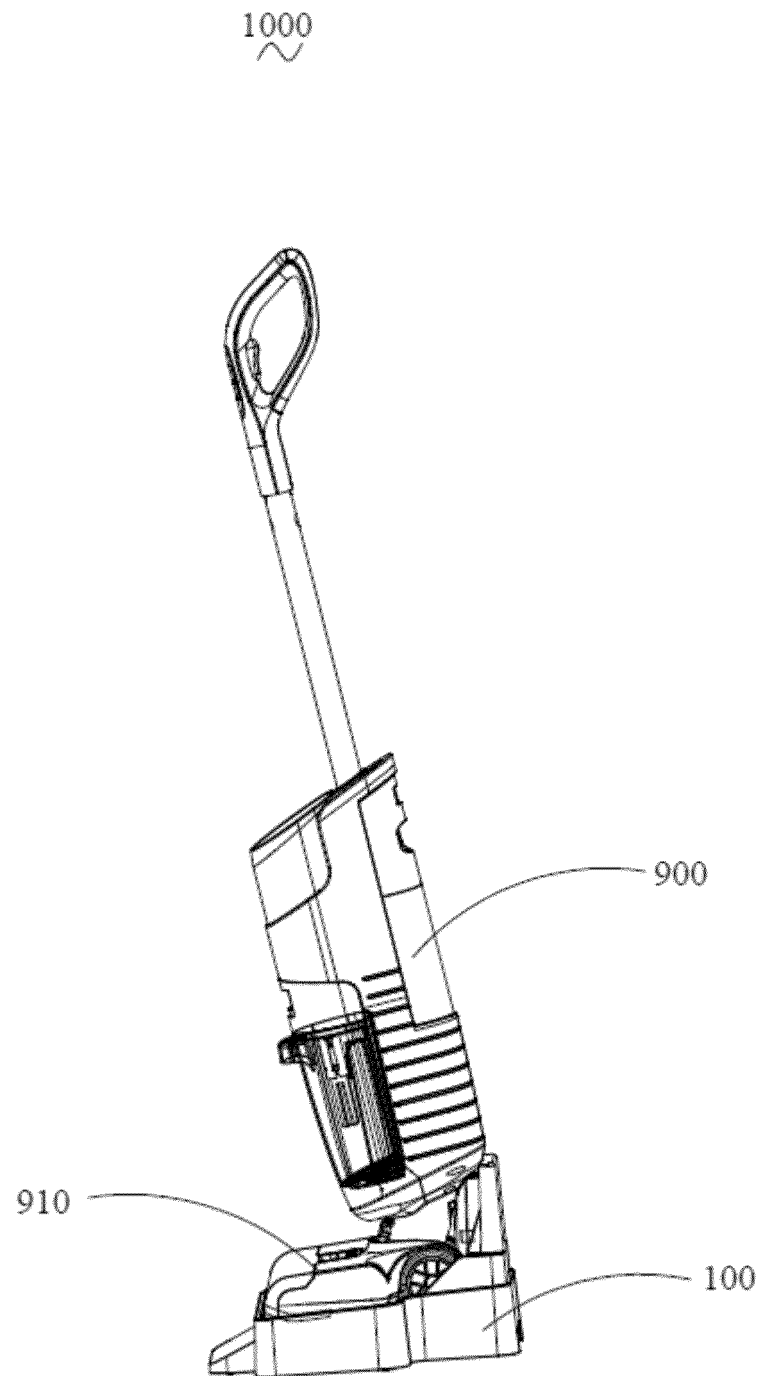


Fig. 1

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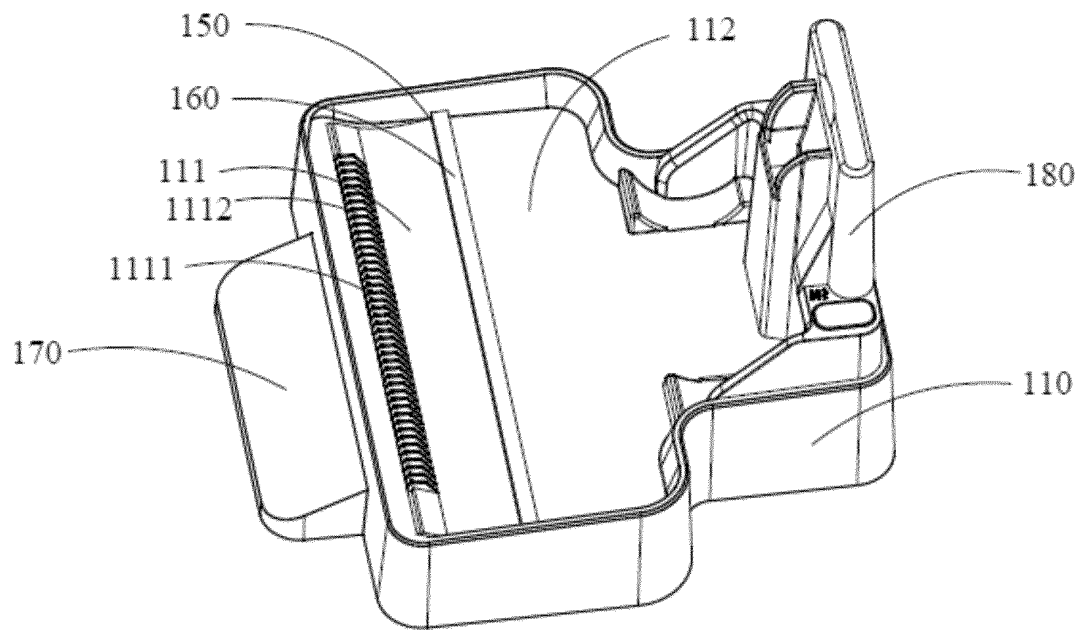


Fig. 2

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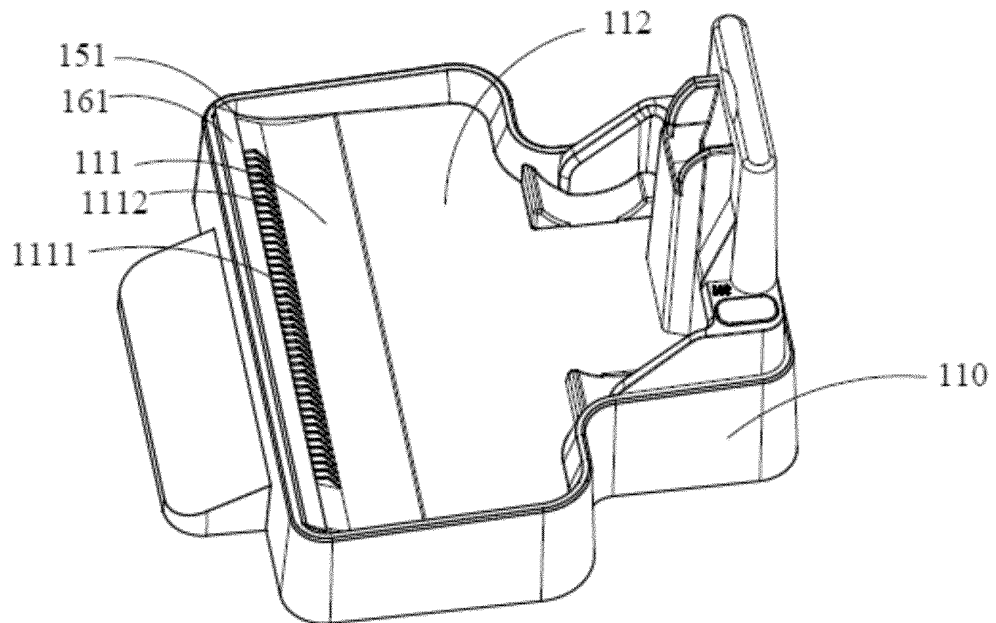


Fig. 3

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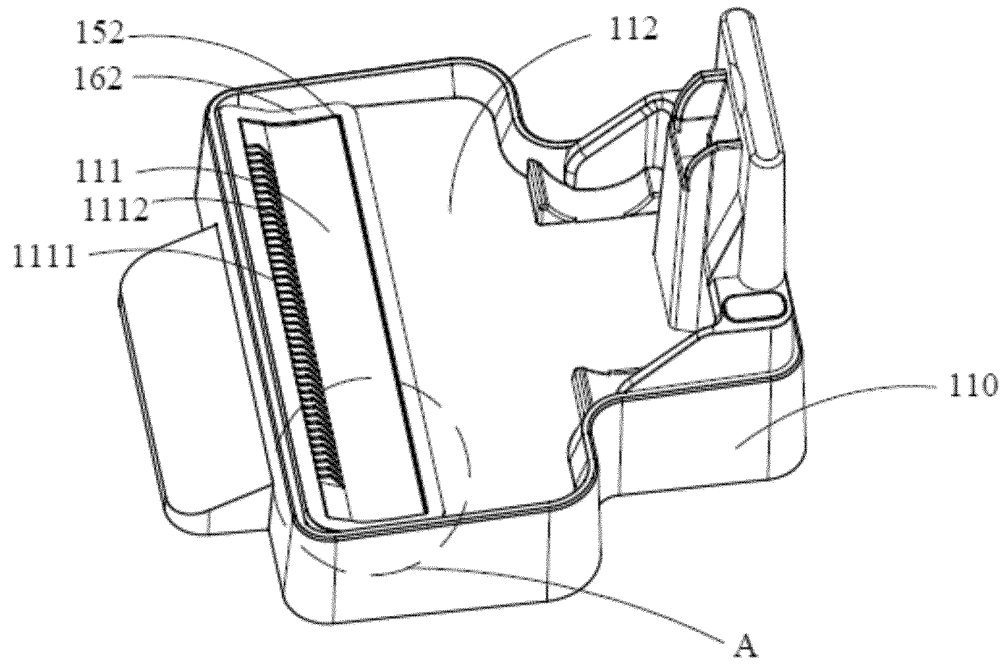


Fig. 4

A

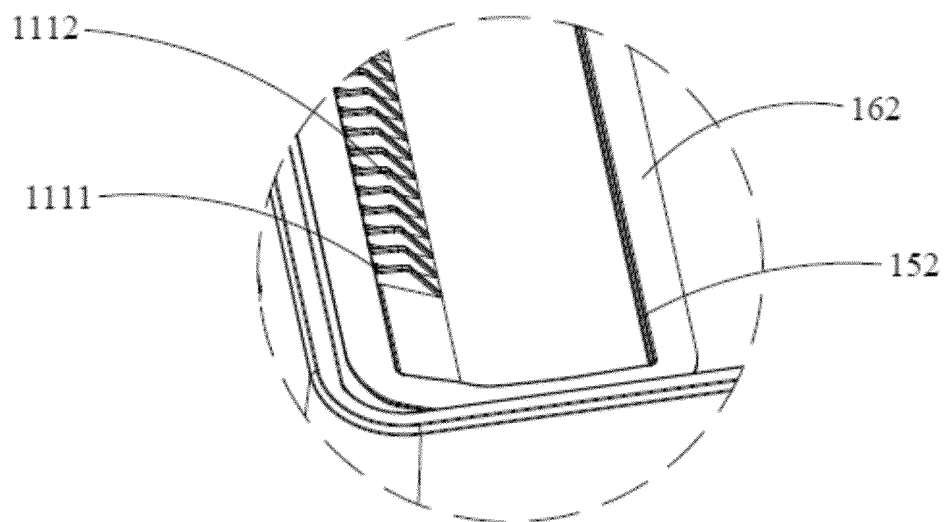


Fig. 5

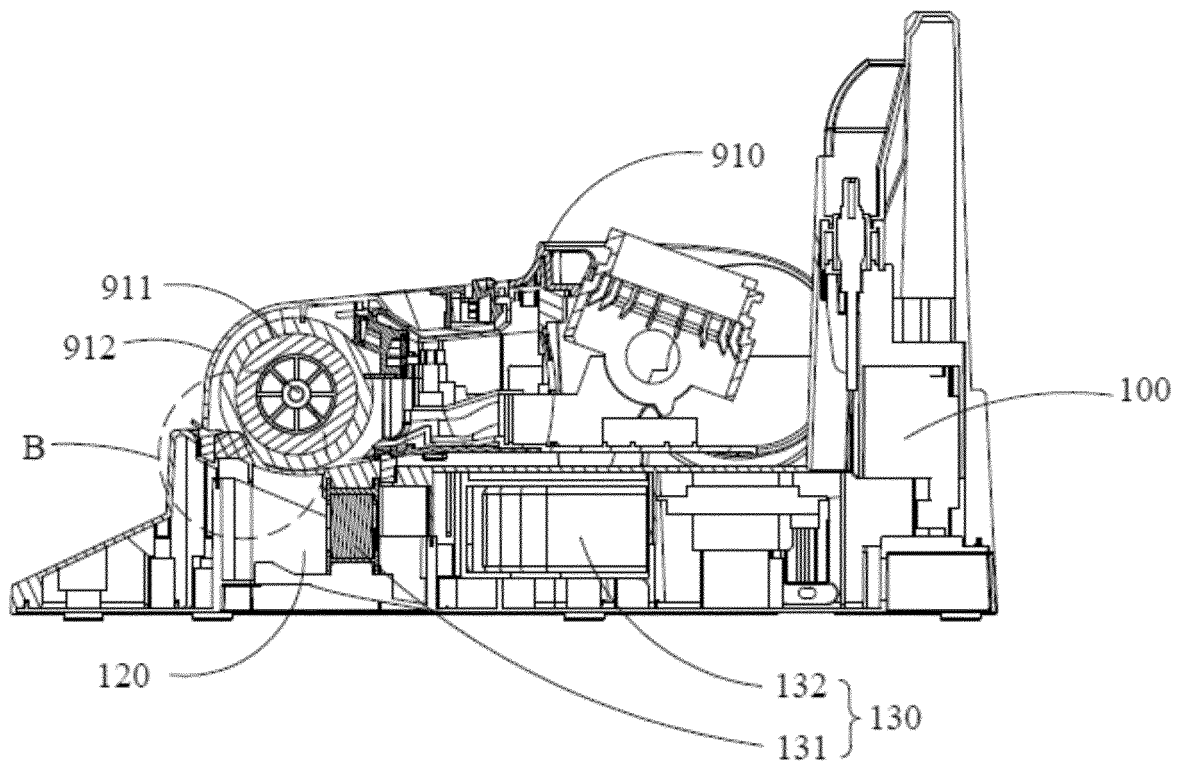


Fig. 6

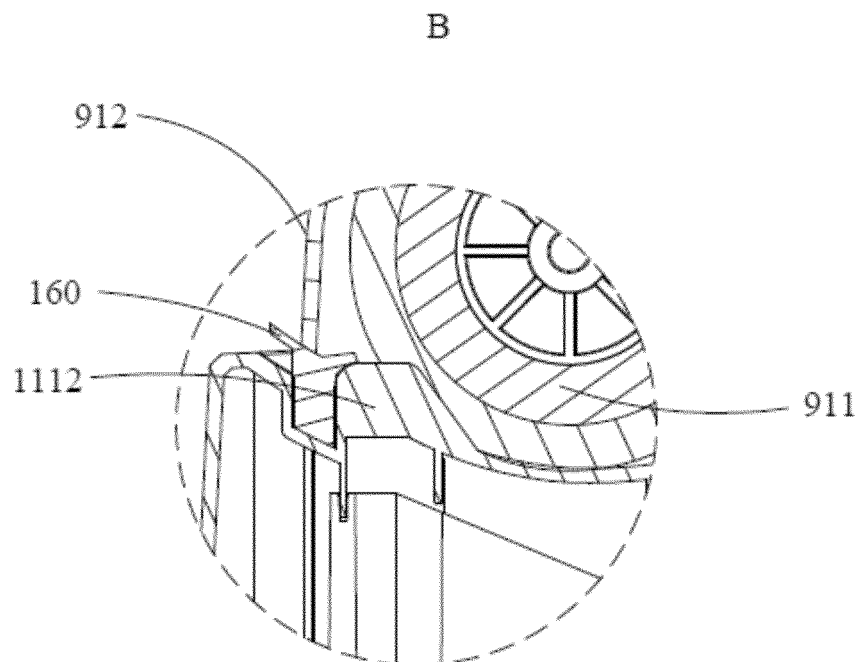


Fig. 7

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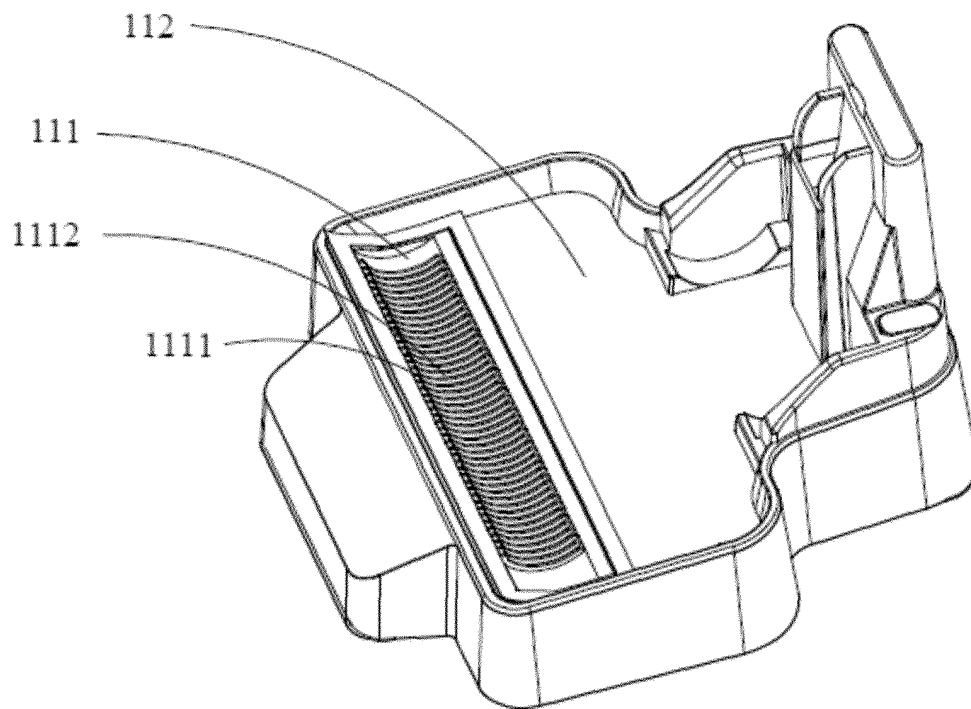


Fig. 8

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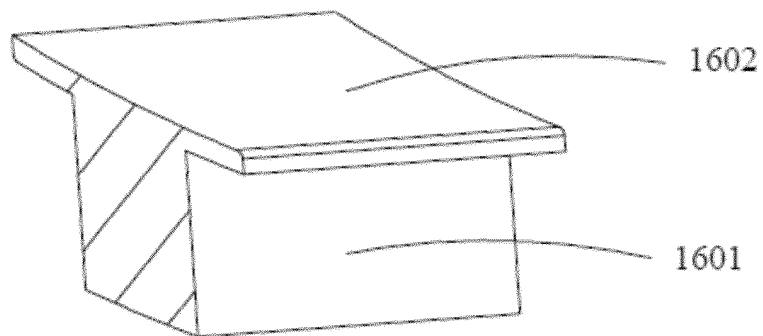


Fig. 9

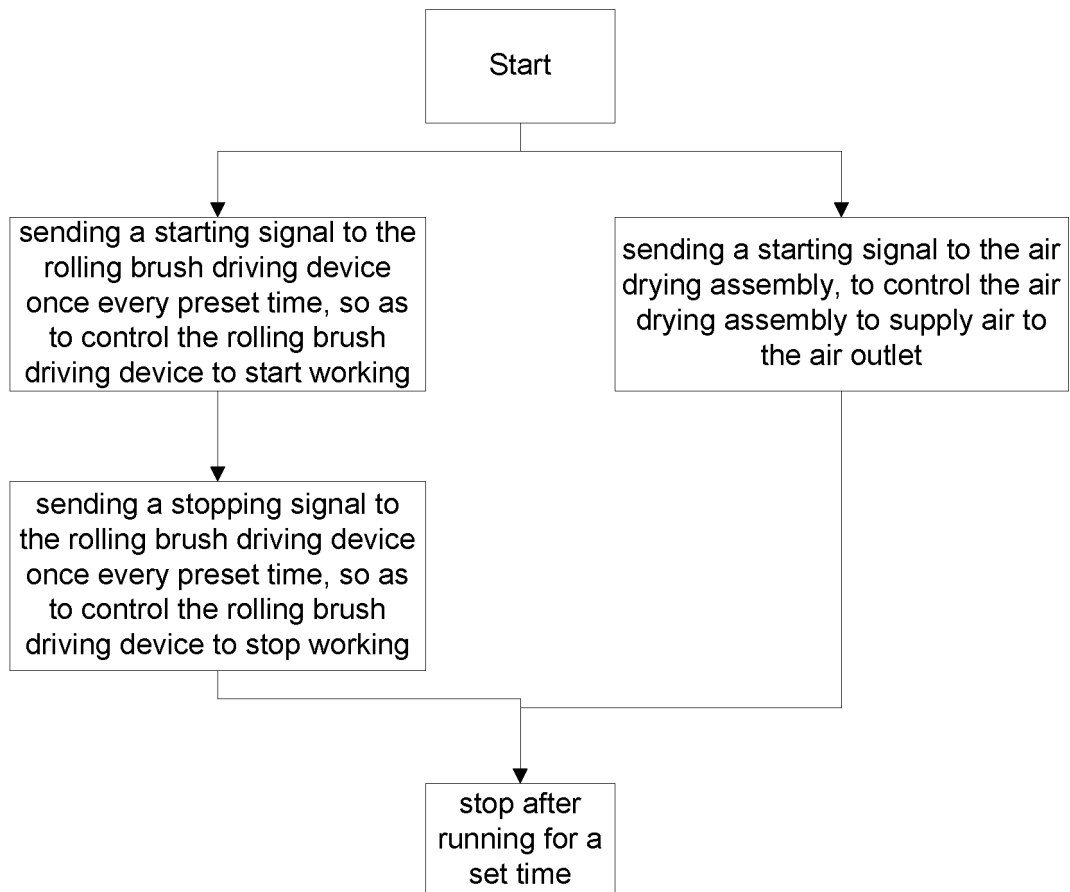


Fig. 10

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2022/110138

A. CLASSIFICATION OF SUBJECT MATTER A47L 11/40(2006.01)i; A47L 11/282(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) A47L11/- 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) CNKI, CNPAT, WPI, EPODOC: 清洁, 地刷, 凸起, 出风口, 滚刷, 风干, 接触面积, 干燥, 控制, 间隔, 预设时间, clean+, brush, dry+, air, contact+, area, interval																		
C. DOCUMENTS CONSIDERED TO BE RELEVANT																		
<table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>CN 114617491 A (JIANGSU MIDEA CLEAN ELECTRIC APPLIANCE CO., LTD. et al.) 14 June 2022 (2022-06-14) description, paragraphs [0092]-[0326], and figures 1-18</td> <td>1-15</td> </tr> <tr> <td>Y</td> <td>CN 112617684 A (JIANGSU MIDEA CLEAN ELECTRIC APPLIANCE CO., LTD. et al.) 09 April 2021 (2021-04-09) description, paragraphs [0026]-[0058], and figures 1-7</td> <td>1-14</td> </tr> <tr> <td>Y</td> <td>CN 112401771 A (JIANGSU MIDEA CLEAN ELECTRIC APPLIANCE CO., LTD. et al.) 26 February 2021 (2021-02-26) description, paragraphs [0039]-[0092], and figures 1-4</td> <td>15</td> </tr> <tr> <td>A</td> <td>CN 216364949 U (GUANGDONG XINBAO ELECTRICAL APPLIANCES HOLDINGS CO., LTD.) 26 April 2022 (2022-04-26) entire document</td> <td>1-15</td> </tr> <tr> <td>A</td> <td>CN 214906479 U (CHANGZHOU XINQIDA ELECTRIC CO., LTD.) 30 November 2021 (2021-11-30) entire document</td> <td>1-15</td> </tr> </tbody> </table>	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	Y	CN 114617491 A (JIANGSU MIDEA CLEAN ELECTRIC APPLIANCE CO., LTD. et al.) 14 June 2022 (2022-06-14) description, paragraphs [0092]-[0326], and figures 1-18	1-15	Y	CN 112617684 A (JIANGSU MIDEA CLEAN ELECTRIC APPLIANCE CO., LTD. et al.) 09 April 2021 (2021-04-09) description, paragraphs [0026]-[0058], and figures 1-7	1-14	Y	CN 112401771 A (JIANGSU MIDEA CLEAN ELECTRIC APPLIANCE CO., LTD. et al.) 26 February 2021 (2021-02-26) description, paragraphs [0039]-[0092], and figures 1-4	15	A	CN 216364949 U (GUANGDONG XINBAO ELECTRICAL APPLIANCES HOLDINGS CO., LTD.) 26 April 2022 (2022-04-26) entire document	1-15	A	CN 214906479 U (CHANGZHOU XINQIDA ELECTRIC CO., LTD.) 30 November 2021 (2021-11-30) entire document	1-15
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Date of the actual completion of the international search 07 December 2022	Date of mailing of the international search report 20 December 2022																	
Name and mailing address of the ISA/CN China National Intellectual Property Administration (ISA/CN) No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088, China Facsimile No. (86-10)62019451	Authorized officer Telephone No.																	

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2022/110138

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 113693487 A (SHENZHEN QIWEI ROBOT TECHNOLOGY CO., LTD.) 26 November 2021 (2021-11-26) entire document	1-15
A	CN 215820817 U (JIANGSU MIDEA CLEAN ELECTRIC APPLIANCE CO., LTD. et al.) 15 February 2022 (2022-02-15) entire document	1-15
A	CN 214906476 U (SHENZHEN JIEAO INTELLIGENT TECHNOLOGY CO., LTD.) 30 November 2021 (2021-11-30) entire document	1-15
A	CN 114271740 A (TINECO INTELLIGENT TECHNOLOGY CO., LTD.) 05 April 2022 (2022-04-05) entire document	1-15
A	JP 2019166239 A (MITSUBISHI ELECTRIC CORP. et al.) 03 October 2019 (2019-10-03) entire document	1-15

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2022/110138

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN 114617491 A	14 June 2022	CN 215424446 U WO 2022121304 A1	07 January 2022 16 June 2022
CN 112617684 A	09 April 2021	None	
CN 112401771 A	26 February 2021	None	
CN 216364949 U	26 April 2022	None	
CN 214906479 U	30 November 2021	None	
CN 113693487 A	26 November 2021	None	
CN 215820817 U	15 February 2022	None	
CN 214906476 U	30 November 2021	None	
CN 114271740 A	05 April 2022	None	
JP 2019166239 A	03 October 2019	None	

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