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(54) **AIR GUIDE ASSEMBLY AND AIR CONDITIONER PROVIDED WITH SAME**

(57) The present disclosure provides an air deflector assembly and an air conditioner with the air deflector assembly, it includes a first driving portion, a second driving portion, an air deflector portion and an air sweeping portion, the first driving portion is connected to the air deflector portion, and the air deflector portion driven by the first driving portion is rotatably arranged; the air sweeping portion is located on a side of the air deflector portion, the second driving portion is connected to the air sweeping portion, and the air sweeping portion driven by the second driving portion is rotatably arranged; wherein the air sweeping portion includes an air sweeping connecting rod, the air sweeping connecting rod includes a rod body portion and a snap assembly, the rod body portion is connected to the air deflector portion, the snap assembly is provided at an end portion of the rod body portion, and the snap assembly is snap-fitted with the second driving portion. By arranging the snap assembly on the air sweeping connecting rod of the air sweeping portion and snap-fitted the snap assembly with the second driving portion, the separation of the air sweeping portion from the air deflector portion is realized, so that the service life of the portions is extended, the assembly reliability of the air deflector assembly is enhanced, the production efficiency is improved, and the cost of the whole machine is decreased.

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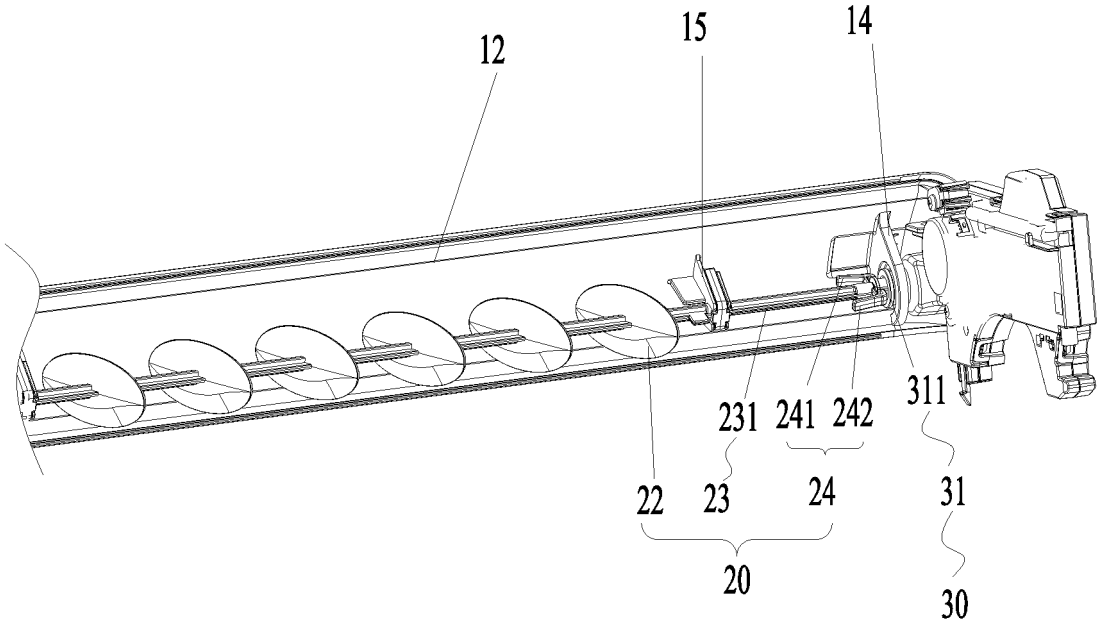

Fig.3

Description

Technical Field

[0001] The present disclosure relates to a technical field of an air conditioner device, and in particular to an air deflector assembly and an air conditioner with the air deflector assembly.

Background

[0002] In the prior art, an air sweeping blade and an air deflector of an air conditioner adopt different axial arrangement methods. In this method, the number of parts of the whole machine is increased, the cost of the whole machine is increased, the assembly process of the product is increased, and the production efficiency is reduced. By adopting the solution in the prior art, the reliability of the assembly mode of the air deflector assembly is low, and after many times disassembling the sweeping blade, the motor shaft driving the sweeping blade is easy to break, which results in a problem of poor assembly reliability of the air deflector portion.

Summary

[0003] The main purpose of the present disclosure is to provide an air deflector assembly and an air conditioner with the same to solve the problem of poor assembly reliability of the air deflector portion in the prior art.

[0004] In order to achieve the above purpose, according to one aspect of the present disclosure, an air deflector assembly is provided, the air deflector assembly includes: a first driving portion; a second driving portion; an air deflector portion, wherein the first driving portion is connected to the air deflector portion, and the air deflector portion driven by the first driving portion is rotatably arranged; and an air sweeping portion, wherein the air sweeping portion is located on a side of the air deflector portion, the second driving portion is connected to the air sweeping portion, and the air sweeping portion driven by the second driving portion is rotatably arranged; wherein the air sweeping portion includes an air sweeping connecting rod, and the air sweeping connecting rod includes: a rod body portion connected to the air deflector portion; and a snap assembly provided at an end portion of the rod body portion, and the snap assembly being snap-fitted with the second driving portion.

[0005] In an exemplary embodiment, the snap assembly includes a first snap element and a second snap element, wherein the first snap element and the second snap element are arranged symmetrically along a circumferential direction of the rod body portion, the snap assembly has an unlocking position and a locking position, and when the snap assembly is in the locking position, pressing the snap assembly can move a part of the first snap element and a part of the second snap element outward in a radial direction of the rod body portion to an unlocking position.

[0006] In an exemplary embodiment, the air deflector assembly further includes: a support portion, wherein the support portion is connected to the air deflector portion, the rod body portion is connected to the air deflector portion by the support portion, and one of the air deflector portion and the air sweeping portion is rotatably arranged relative to the other of the air deflector portion and the air sweeping portion.

[0007] In an exemplary embodiment, the first driving portion has a first output shaft, the second driving portion has a second output shaft, and the first output shaft and the second output shaft are arranged coaxially.

[0008] In an exemplary embodiment, the first driving portion has a first output shaft, and the air deflector portion includes: an air deflector connected to the first driving portion, and the air deflector is arranged to extend along an axial direction of the first output shaft.

[0009] In an exemplary embodiment, the air deflector portion includes an air deflector, the first driving portion has a first output shaft, and the support portion further includes: a first supporting block, which is arranged on a side, close to the first driving portion, of the air deflector , the first supporting block is provided with a connecting hole, the first output shaft is penetrated into the connection hole, the outer circumferential surface of the first output shaft is cooperatively connected to a hole wall of the connecting hole.

[0010] In an exemplary embodiment, a cross section of the connecting hole in a radial direction is a cross-shaped groove, and the outer circumferential surface of the first output shaft is provided with a rib matching with the cross-shaped groove.

[0011] In an exemplary embodiment, the air deflector assembly further includes a support portion, and the support portion includes: a second supporting block, wherein the second supporting block is arranged on a side, close to the second driving portion, of the air deflector, and the second supporting block is arranged on a side, facing towards the air sweeping connecting rod, of the air deflector ; an end of the second supporting block is provided with a barb for connecting with a mounting base, and the air deflector is rotatably disposed relative to the mounting base by the barb.

[0012] In an exemplary embodiment, the support portion further includes: a first supporting block, wherein the first supporting block is provided on a side, close to the first driving portion, of the air deflector; and a third supporting block, wherein the third supporting block is connected to the air deflector, the third supporting block is arranged between the first supporting block and the second supporting block, the third supporting block is provided with a through hole, and a center of the through hole coincides with an axis of a second output shaft.

[0013] In an exemplary embodiment, the air sweeping connecting rod is arranged along a longitudinal direction of the air deflector portion, one end of the air sweeping connecting rod is connected to the second output shaft,

and an axis of the air sweeping connecting rod is arranged coaxially with the first output shaft and the second output shaft.

[0014] In an exemplary embodiment, the air sweeping portion further includes: a plurality of air sweeping blades, the plurality of air sweeping blades are arranged on the air sweeping connecting rod at intervals, and the second output shaft drives the air sweeping connecting rod to rotate so as to change an air sweeping direction of the plurality of air sweeping blades.

[0015] In an exemplary embodiment, the second driving portion has a second output shaft, and the first snap element includes: a cantilever, a first end of the cantilever is connected to the rod body portion, and a second end of the cantilever extends outward in a radial direction of the rod body portion; a handle, wherein a middle portion of the handle is connected to the second end of the cantilever, a first end of the handle extends toward the second output shaft and gradually bends toward a side of an axial of the rod body portion to form a hook, and a second end of the handle is gradually extended away from the second output shaft along an axial direction of the rod body portion; pressing the second end of the handle can move the first end of the handle outward in a radial direction of the rod body portion to the unlocking position, and the hook is snap-fitting to an outer surface of the second output shaft, or the hook is used for snap-fitted to the mounting base.

[0016] In an exemplary embodiment, a structure of the second snap element is the same as that of the first snap element, and the second snap element is configured to be snap-fitted to an outer surface of the second output shaft, or the second snap element is configured to be snap-fitted to the mounting base.

[0017] In an exemplary embodiment, the second output shaft includes an output shaft body; an axial direction of the output shaft body is provided with a shaft hole for connecting with the rod body portion; an outer circumferential surface of the output shaft body is provided with a first limiting flange cooperated with the hook ; or the mounting base is provided with a second limiting flange cooperated with the hook.

[0018] In an exemplary embodiment, a cross section of the shaft hole in a radial direction is of hexagonal shaped.

[0019] According to another aspect of the present disclosure, an indoor unit is provided, it includes an air deflector assembly, wherein the air deflector assembly is the above-said air deflector assembly.

[0020] In an exemplary embodiment, the indoor unit includes: a housing, wherein the air deflector assembly is arranged on the housing, a shaft sleeve is arranged on the housing, the second output shaft is penetrated into the shaft sleeve, and a barb of the second supporting block of the air deflector assembly is sleeved on an outer surface of the shaft sleeve.

[0021] In an exemplary embodiment, when a snap assembly of the air deflector assembly is in the locking position, the snap assembly is snap-fitted with the second output shaft, or when the snap assembly of the air deflector assembly is in a locking position, the snap assembly is snap-fitted with the shaft sleeve.

[0022] According to another aspect of the present disclosure, an air conditioner is provided, it includes an air deflector assembly, wherein the air deflector assembly is the above-said air deflector assembly.

[0023] By applying the technical solutions of the present disclosure, the separation between the air sweeping portion and the air deflector portion is realized by arranging the snap assembly on the air sweeping connecting rod of the air sweeping portion and snap-fitting the snap assembly with the second driving portion, so that the service life of the portions is prolonged, the assembly reliability of the air deflector assembly is enhanced, the production efficiency is improved, and the cost of the whole machine is decreased.

Brief Description of the Drawings

[0024] The accompanying drawings, which form a part of the present disclosure, provide a further understanding of the present disclosure, and the schematic embodiments of the present disclosure and the description thereof are used to explain the present disclosure, and do not limit the present disclosure.

Fig. 1 is a structural schematic diagram of an embodiment of an air deflector assembly according to the present disclosure;

Fig. 2 is a schematic diagram of a left side structure of an embodiment of an air deflector assembly according to the present disclosure;

Fig. 3 is a schematic diagram of a right side structure of an embodiment of an air deflector assembly according to the present disclosure;

Fig. 4 is a schematic diagram of a snap assembly structure of an embodiment of an air deflector assembly according to the present disclosure;

Fig. 5 is an enlarged structural schematic diagram of A in Fig. 4.

[0025] Wherein, the above drawings include the following reference numerals:

10. air deflector portion;

11. first driving portion; 111. first output shaft; 112. rib;

12. air deflector; 13. first supporting block; 131. connecting hole; 132. cross-shaped groove; 14. second supporting block; 141. barb; 15. third supporting block;

20. air sweeping portion;

21. second driving portion; 211. second output shaft; 212. shaft hole; 213. first limiting flange;

22. air sweeping blades; 23. air sweeping connecting rod; 231. rod body portion;

24. snap assembly; 241. first snap element; 242. second snap element; 243. handle; 244. cantilever; 245. hook;
30. housing; 31. shaft sleeve; 311. second limiting flange.

Detailed Description of the Embodiments

[0026] It should be noted that the embodiments and the features in the embodiments of the present disclosure can be combined with each other without conflict. Hereinafter, the present disclosure will be described in detail with reference to the accompanying drawings and embodiments.

[0027] With reference to Figs. 1 to 5, an air deflector assembly is provided according to an embodiment of the present disclosure.

[0028] Specifically, as shown in Fig. 1, the air deflector assembly includes a first driving portion 11, a second driving portion 21, an air deflector portion 10 and an air sweeping portion 20, wherein the first driving portion 11 is connected to the air deflector portion 10, the air deflector portion 10 driven by the first driving portion 11 is rotatably arranged, and the air sweeping portion 20 is located at one side of the air deflector portion 10, the second driving portion 21 is connected to the air sweeping portion 20, and the air sweeping portion 20 driven by the second driving portion 21 is rotatably arranged, wherein the air sweeping portion 20 includes an air sweeping connecting rod 23, the air sweeping connecting rod 23 includes a rod body portion 231 and a snap assembly 24, and the rod body portion 231 is connected to the air deflector portion 10; the snap assembly 24 is arranged at an end portion of the rod body portion 231, and the snap assembly 24 is snaped-fitted with the second driving portion 21.

[0029] In the present embodiment, the separation between the air sweeping portion and the air deflector portion is realized by arranging the snap assembly on the air sweeping connecting rod of the air sweeping portion and snap-fitting the snap assembly with the second driving portion, so that the service life of the portions is prolonged, the assembly reliability of the air deflector assembly is enhanced, the production efficiency is improved, and the cost of the whole machine is decreased.

[0030] The snap assembly 24 includes a first snap element 241 and a second snap element 242, the first snap element 241 and the second snap element 242 are arranged symmetrically along the circumferential direction of the rod body portion 231, the snap assembly 24 has an unlocking position and a locking position, and when the snap assembly 24 is in the locking position, pressing the snap assembly 24 can move a part of the first snap element 241 and a part of the second snap element 242 outward in a radial direction of the rod body portion 231 to an unlocking position.

[0031] Wherein, the air deflector assembly further includes a support portion, the support portion is connected to the air deflector portion 10, the rod body portion 231 is connected to the air deflector portion 10 by the support portion, and one of the air deflector portion 10 and the air sweeping portion 20 is rotatably arranged relative to the other of the air deflector portion 10 and the air sweeping portion 20. In this way, the air deflector portion 10 and the air sweeping portion 20 work in cooperation with each other, and the reliability of the machine body is improved.

[0032] In the present embodiment, the first driving portion 11 has a first output shaft 111, the second driving portion 21 has a second output shaft 211, and the first output shaft 111 and the second output shaft 211 are arranged coaxially. This arrangement facilitates improving the stability of the output shaft, and reduces vibration and reduces noise.

[0033] In addition, the first driving portion 11 has a first output shaft 111, the air deflector portion 10 includes an air deflector 12, the air deflector is connected to the first driving portion 11, and the air deflector 12 extends along the axial direction of the first output shaft 111. This arrangement facilitates the air deflector 12 to achieve a better air deflector effect.

[0034] As shown in Fig. 2, the air deflector portion 10 includes an air deflector 12, the first driving portion 11 has a first output shaft 111, the support portion further includes a first supporting block 13, the first supporting block 13 is arranged on a side, close to the first driving portion 11, of the air deflector 12, and a connecting hole 131 is arranged on the first supporting block 13, the first output shaft 111 penetrates through the connecting hole 131, and an outer circumferential surface of the first output shaft 111 is connected cooperatively with a hole wall of the connecting hole 131. In this way, the driving shaft and the first supporting block are conveniently connected, so that the first driving portion 11 better acts on the air deflector 12 so as to change the direction of the air deflector 12.

[0035] In an exemplary embodiment, the cross section of the connecting hole 131 in the radial direction is a cross-shaped groove 132, and the outer circumferential surface of the first output shaft 111 is provided with a rib 112 matching with the cross-shaped groove. This arrangement makes the drive shaft and the first supporting block more closely connected.

[0036] As shown in Figs. 2 and 5, the air deflector assembly further includes a support portion, the support portion further includes a second supporting block 14, the second supporting block 14 is arranged on a side, close to the second driving portion 21, of the air deflector 12, and the second supporting block 14 is arranged on a side, facing the air sweeping connecting rod 23, of the air deflector 12, the end of the second supporting block 14 is provided with a barb 141 for connecting with the mounting base, and the air deflector 12 is rotatably arranged relative to the mounting base by the barb 141. This arrangement enables the second supporting block not only to support the circumferential rotation of the air

deflector 12, but also facilitates the disassembly of other components due to the arrangement of the barbs 141. The mounting base here is an motor housing of the motor assembly of the second driving portion, the motor housing achieve an effect of a protection of a motor, and the motor housing can be integrally arranged with the housing 30 or can be arranged separately from the motor.

[0037] As shown in Figs. 4 and 5, the support portion further includes a first supporting block 13 and a third supporting block 15, the first supporting block 13 is arranged on a side, close to the first driving portion 11, of the air deflector 12, and the third supporting block 15 is connected to the air deflector 12, the third supporting block 15 is arranged between the first supporting block 13 and the second supporting block 14, the third supporting block 15 is provided with a through hole, and the center of the through hole coincides with the axis of the second output shaft 211. This arrangement facilitates the third supporting block 15 to support the air sweeping connecting rod 23 circumferentially.

[0038] As shown in Figs. 3 and 4, the air sweeping connecting rod 23 is connected to the air deflector portion 10 by a support portion, the air sweeping connecting rod 23 is arranged along the longitudinal direction of the air deflector portion 10, and one end of the air sweeping connecting rod 23 is connected to the second output shaft 211, the axis of the air sweeping connecting rod 23 is coaxially arranged with the first output shaft 111 and the second output shaft 211, so as to reduce vibration and noise of the first output shaft 111 and the second output shaft 211.

[0039] In an exemplary embodiment, the air sweeping portion further includes a plurality of air sweeping blades, the plurality of air sweeping blades 22 are arranged on the air sweeping connecting rod 23 at intervals, and the second output shaft 211 drives the air sweeping connecting rod 23 to rotate to change the air sweeping direction of the plurality of air sweeping blades 22. In this way, the air sweeping portion 20 is conveniently arranged to change the wind direction.

[0040] As shown in Fig. 5, the second driving portion 21 has a second output shaft 211, the first snap element 241 includes a cantilever 244 and a handle 243, the first end of the cantilever 244 is connected to the rod body portion 231, and the second end of the cantilever 244 extends outward in the radial direction of the rod body portion 231; the middle portion of the handle 243 is connected to the second end of the cantilever 244, and the first end of the handle 243 extends toward the second output shaft 211 and gradually bends toward the axial side of the rod body portion 231 to form a hook 245, the second end of the handle 243 is gradually extended away from the second output shaft 211 in the axial direction of the rod body portion 231, and the second end of the handle 243 is pressed to move the first end of the handle 243 outward to the unlocking position in the radial direction of the rod body portion 231, the hook 245 is snap-fitted to the outer surface of the second output shaft 211, or the hook 245 is snap-fitted to the mounting base. The mounting base here is that the motor housing of the motor assembly being provided on the second driving portion, the motor housing serves to protect the motor, and the motor housing may be integrally provided with the housing 30, or may be individually connected with the motor. In this way, the snap assembly 24 is conveniently snap-fitted with the outer surface of the second output shaft 211 or the mounting base, preferably, the snap assembly 24 is snap-fitted to the outer surface of the second output shaft 211, so that the snap assembly 24 and the second output shaft 211 are conveniently rotated at the same speed and avoiding noisy caused by relative movement.

[0041] In an exemplary embodiment, the structure of the second snap element 242 is the same as that of the first snap element 241, and the second snap element 242 is configured to be snap-fitted to the outer surface of the second output shaft 211, or the second snap element 242 is configured to be snap-fitted to the mounting base. In this way, the snap assembly 24 is arranged to keep symmetrical left and right, so that the snap assembly 24 is better connected.

[0042] In the present embodiment, the second output shaft 211 includes an output shaft body, the axial direction of the output shaft body is provided with a shaft hole 212 for connecting with the rod body portion 231, the outer circumferential surface of the output shaft body is provided with a first limiting flange 213 cooperated with the hook 245, or the mounting base is provided with a second limiting flange 311 cooperated with the hook 245. In this way, the hook 245 of the snap assembly 24 is snap-fitting to the first limiting flange 213, which implements a limit of the second output shaft 211 in the axial direction, and implements the snap assembly 24 to rotate along the circumferential direction of the first limiting flange 213, or the hook 245 of the snap assembly 24 is snap-fitted to the second limiting flange 311, which implements a limit of the second output shaft 211 in the axial direction, and implements the snap assembly 24 to rotate along the circumferential direction of the second limiting flange 311.

[0043] The cross section of the shaft hole 212 in the radial direction is of hexagonal shaped. In this way, the second output shaft 211 is conveniently connected to the rod body portion 231 by the shaft hole 212.

[0044] As shown in Figs. 1 to 5, the air deflector assembly of the above embodiment can also be used in the technical field of air conditioner device, that is, according to another aspect of the present disclosure, an indoor unit is provided. The indoor unit includes an air deflector assembly, and the air deflector assembly is the air deflector assembly in the above mentioned embodiment.

[0045] In the present embodiment, the indoor unit includes a housing 30, the air deflector assembly is arranged on the housing 30, the housing 30 is provided with a shaft sleeve 31, the second output shaft 211 is penetrated into the shaft sleeve 31, and the barb 141 of

the second supporting block 14 of the air deflector assembly is sleeved on the outer surface of the shaft sleeve 31. In this way, it is easy to disassemble the air deflector portion.

[0046] In the present embodiment, when the snap assembly 24 of the air deflector assembly is in the locking position, the snap assembly 24 is snap-fitted with the second output shaft 211, or when the snap assembly 24 of the air deflector assembly is in the locking position, the snap assembly 24 is snap-fitted with the shaft sleeve 31. This arrangement facilitates easy disassembly of the air sweeping portion.

[0047] In addition, in the technical field of air conditioner device in the above mentioned embodiments, according to another aspect of the present disclosure, an air conditioner is further provided, wherein the air conditioner includes an air deflector assembly, and the air deflector assembly is the air deflector assembly in the above mentioned embodiments.

[0048] In the prior art, the reliability of the assembly method of the air sweeping blade is low, and after many times disassembling the air sweeping blade, the motor shaft driving the air sweeping blade is easy to be break, and in order to solve this problem, a new assembly method of the air sweeping portion isprovided, that is, the air sweeping connecting rod is snap-fitted with the driving structure by the snap assembly, meanwhile, the air sweeping portion and the air deflector portion are rotated coaxially, thereby improving overall assembly production efficiency and overall product reliability.

[0049] As shown in Fig. 1, in order to reduce the cost of the whole machine, improve the assembly production efficiency and improve the reliability of the whole machine, the present disclosure provides a new assembly manner of a air sweeping blades, and it can be seen from the drawing that the air sweeping blades are mounted on an air deflector by a first supporting block 13 and a second supporting block 14. The first driving portion 11 is configured to drive the air deflector, and the second driving portion 21 is configured to drive the air sweeping blades. It can be seen from the drawing that the first output shaft 111 driving the air deflector and the second output shaft 211 driving the air sweeping blades are on the same axis, that is, are driven coaxially.

[0050] As shown in Figs. 3 to 5, a snap assembly 24 is arranged on the connection end of the air sweeping connecting rod 23, and its working principle is that: when assembling or disassembling the air sweeping portion, when the handle 243 is pressed, and the cantilever 244 is deformed, and the opening of the hook 245 opens, and when the handle is released, the opening of the hook 245 returns to the original position, thereby assembling or disassembling the air sweeping blades. In addition, a six-pillar structure is designed on the end of the air sweeping connecting rod, and a six-pillar hole is designed on the second output shaft on the driving structure, and the six-pillar structure is inserted into the six-pillar hole to realize the hexagonal transmission mode. Through the improvement of the above structure, the problem of breakage of the drive shaft of the motor after many times disassembled is avoided, and the reliability of the whole machine is improved.

[0051] In addition, two solutions of snap-fitted are engaged with the air sweeping connecting rod:

In a first solution, the snap assembly of the air sweeping connecting rod 23 is snap-fitted to the mounting base, wherein the mounting base may be the shaft sleeve 31 of the motor on the motor assembly, and the second limiting flange 311 on the shaft sleeve 31 in Fig. 5 is designed to facilitate the snap-fitting of the snap assembly without disengaging. The shaft sleeve 31 is not moving, that is, there is relative movement between the snap assembly on the air sweeping connecting rod and the shaft sleeve. Such a structure can be conveniently disassembled, but there is a defect that there is relative movement between the snap assembly on the air sweeping connecting rod and the shaft sleeve 31 of the motor, which causes friction, thereby causing an anomalous noisy.

[0052] In a second solution, the snap assembly on the air sweeping connecting rod is snap-fitted to the first limiting flange 213 of the second output shaft, and the rotation of the second output shaft drives the air sweeping connecting rod to rotate. The snap assembly on the air sweeping connecting rod rotates with the second output shaft, and they are relatively stationary, and this design can effectively avoid the occurrence of an anomalous noisy due to friction, thereby improving the user's feeling.

[0053] The above description is merely a preferred embodiment of the present disclosure, and is not intended to limit the present disclosure, and various changes and modifications may be made by those skilled in the art. Any modifications, equivalent replacements and improvements made within the spirit and principle of the present disclosure shall fall within the scope of protection of the present disclosure.

Claims

1. An air deflector assembly, comprising:

a first driving portion (11);
a second driving portion (21);
an air deflector portion (10), wherein the first driving portion (11) is connected to the air deflector portion (10), and the air deflector portion (10) driven by the first driving portion (11) is rotatably arranged; and
an air sweeping portion (20), wherein the air sweeping portion (20) is located on a side of the air deflector portion (10), the second driving portion (21) is connected to the air sweeping portion (20), and the air sweeping portion (20) driven by the second driving portion (21) is rotatably arranged;
wherein the air sweeping portion (20) comprises

an air sweeping connecting rod (23), and the air sweeping connecting rod (23) comprises:

a rod body portion (231) connected to the air deflector portion (10); and
a snap assembly (24) provided at an end portion of the rod body portion (231), the snap assembly (24) being snap-fitted with the second driving portion (21).

2. The air deflector assembly as claimed in claim 1, wherein the snap assembly (24) comprises a first snap element (241) and a second snap element (242), the first snap element (241) and the second snap element (242) are arranged symmetrically along a circumferential direction of the rod body portion (231), the snap assembly (24) has an unlocking position and a locking position, and when the snap assembly (24) is in the locking position, pressing the snap assembly (24) can move a part of the first snap element (241) and a part of the second snap element (242) outward in a radial direction of the rod body portion (231) to the unlocking position.

3. The air deflector assembly as claimed in claim 1, further comprising:
a support portion, wherein the support portion is connected to the air deflector portion (10), the rod body portion (231) is connected to the air deflector portion (10) by the support portion, and one of the air deflector portion (10) and the air sweeping portion (20) is rotatably arranged relative to the other of the air deflector portion (10) and the air sweeping portion (20).

4. The air deflector assembly as claimed in claim 1, wherein the first driving portion (11) has a first output shaft (111), the second driving portion (21) has a second output shaft (211), and the first output shaft (111) and the second output shaft (211) are arranged coaxially.

5. The air deflector assembly as claimed in claim 1, wherein the first driving portion (11) has a first output shaft (111), and the air deflector portion (10) comprises:
an air deflector (12) connected to the first driving portion (11), and the air deflector (12) extends along an axial direction of the first output shaft (111).

6. The air deflector assembly as claimed in claim 3, wherein the air deflector portion (10) comprises an air deflector (12), the first driving portion (11) has a first output shaft (111), and the support portion further comprises:
a first supporting block (13), wherein the first supporting block (13) is arranged on a side, close to the first driving portion (11), of the air deflector (12), and the first supporting block (13) is provided with a connecting hole (131); the first output shaft (111) is penetrated into the connecting hole (131), and an outer circumferential surface of the first output shaft (111) is cooperatively connected to a hole wall of the connecting hole (131).

7. The air deflector assembly as claimed in claim 6, wherein a cross section of the connecting hole (131) in a radial direction is a cross-shaped groove (132), and the outer circumferential surface of the first output shaft (111) is provided with a rib (112) matching with the cross-shaped groove (132).

8. The air deflector assembly as claimed in claim 5, wherein the air deflector assembly further comprises a support portion, and the support portion comprises:
a second supporting block (14), wherein the second supporting block (14) is arranged on a side, close to the second driving portion (21), of the air deflector (12), and the second supporting block (14) is arranged on a side, facing towards the air sweeping connecting rod (23), of the air deflector (12), an end of the second supporting block (14) is provided with a barb (141) for connecting with a mounting base, and the air deflector (12) is rotatably disposed relative to the mounting base by the barb (141).

9. The air deflector assembly as claimed in claim 8, wherein the support portion further comprises:

a first supporting block (13), wherein the first supporting block (13) is provided on a side, close to the first driving portion (11), of the air deflector (12); and
a third supporting block (15), wherein the third supporting block (15) is connected to the air deflector (12), the third supporting block (15) is arranged between the first supporting block (13) and the second supporting block (14), the third supporting block (15) is provided with a through hole, and a center of the through hole coincides with an axis of a second output shaft (211).

10. The air deflector assembly as claimed in claim 4, wherein
the air sweeping connecting rod (23) is arranged along a longitudinal direction of the air deflector portion (10), one end of the air sweeping connecting rod (23) is connected to the second output shaft (211), and an axis of the air sweeping connecting rod (23) is arranged coaxially with the first output shaft (111) and the second output shaft (211).

11. The air deflector assembly as claimed in claim 4, wherein the air sweeping portion (20) further comprises:
a plurality of air sweeping blades; the plurality of air

sweeping blades (22) are arranged on the air sweeping connecting rod (23) at intervals, the second output shaft (211) drives the air sweeping connecting rod (23) to rotate to change an air sweeping direction of the plurality of air sweeping blades (22).

12. The air deflector assembly as claimed in claim 2, wherein the second driving portion (21) has a second output shaft (211), and the first snap element (241) comprises:

a cantilever (244), a first end of the cantilever (244) being connected to the rod body portion (231), and a second end of the cantilever (244) extending outward in a radial direction of the rod body portion (231);
a handle (243), wherein a middle portion of the handle (243) is connected to the second end of the cantilever (244), a first end of the handle (243) extends toward the second output shaft (211) and gradually bends toward a side of an axis of the rod body portion (231) to form a hook (245), a second end of the handle (243) is gradually extended away from the second output shaft (211) along an axial direction of the rod body portion (231), pressing the second end of the handle (243) can move the first end of the handle (243) outward in a radial direction of the rod body portion (231) to the unlocking position, and the hook (245) is snap-fitting to an outer surface of the second output shaft (211), or the hook (245) is used for snap-fitted to a mounting base.

13. The air deflector assembly as claimed in claim 12, wherein a structure of the second snap element (242) is the same as a structure of the first snap element (241), and the second snap element (242) is configured to be snap-fitted to an outer surface of the second output shaft (211), or the second snap element (242) is configured to be snap-fitted to the mounting base.

14. The air deflector assembly as claimed in claim 12, wherein
the second output shaft (211) comprises an output shaft body, an axial direction of the output shaft body is provided with a shaft hole (212) for connecting with the rod body portion (231), an outer circumferential surface of the output shaft body is provided with a first limiting flange (213) cooperated with the hook (245), or
the mounting base is provided with a second limiting flange (311) cooperated with the hook (245).

15. The air deflector assembly as claimed in claim 14, wherein a cross section of the shaft hole (212) in a radial direction is of hexagonal shaped.

16. An indoor unit, comprising an air deflector assembly, wherein the air deflector assembly is the air deflector assembly as claimed in any one of claims 1 to 15.

17. The indoor unit as claimed in claim 16, wherein the indoor unit comprises:
a housing (30), wherein the air deflector assembly is arranged on the housing (30), the housing (30) is provided with a shaft sleeve (31), a second output shaft (211) is penetrated into the shaft sleeve (31), and a barb (141) of a second supporting block (14) of the air deflector assembly is sleeved on an outer surface of the shaft sleeve (31).

18. The indoor unit as claimed in claim 17, wherein when a snap assembly (24) of the air deflector assembly is in a locking position, the snap assembly (24) is snap-fitted with the second output shaft (211), or when the snap assembly (24) of the air deflector assembly is in a locking position, the snap assembly (24) is snap-fitted with the shaft sleeve (31).

19. An air conditioner, comprising an air deflector assembly, wherein the air deflector assembly is the air deflector assembly as claimed in any one of claims 1 to 15.

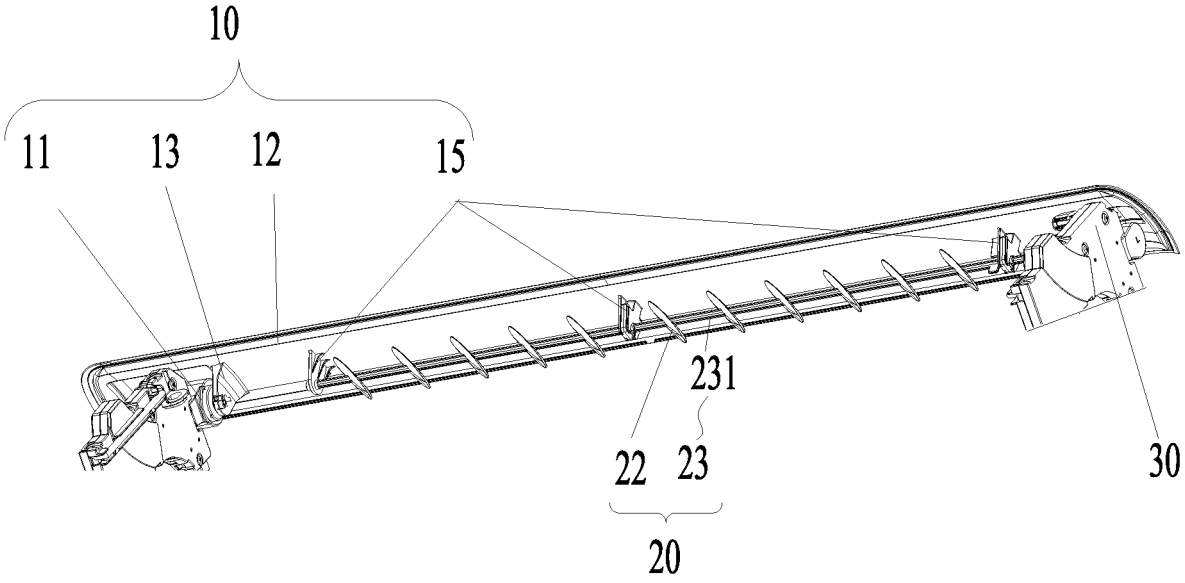

Fig.1

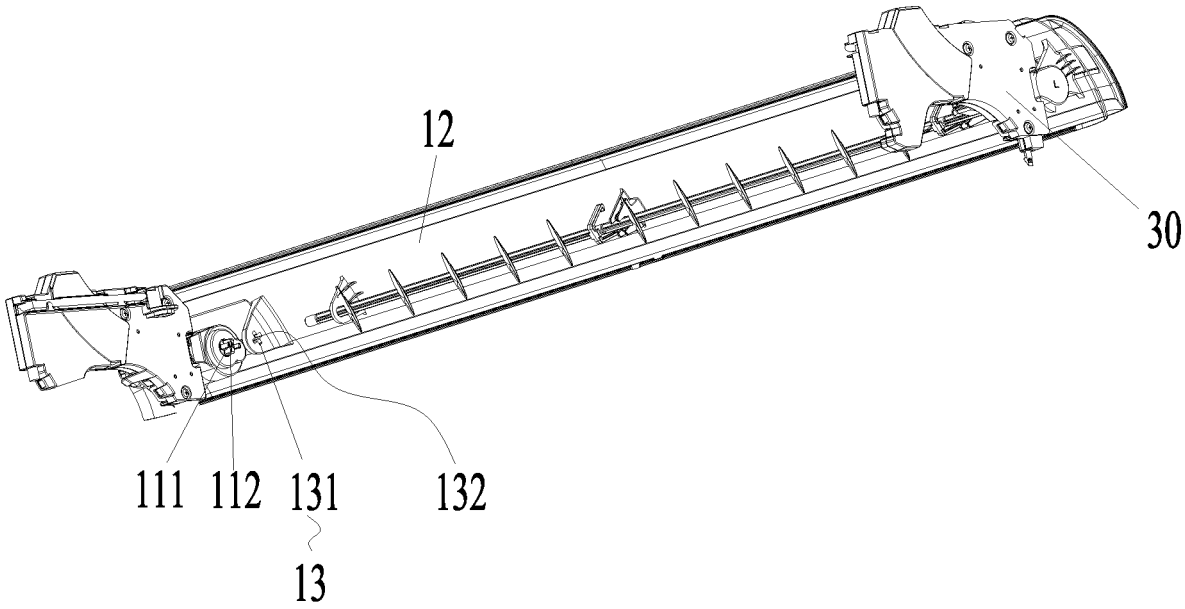

Fig.2

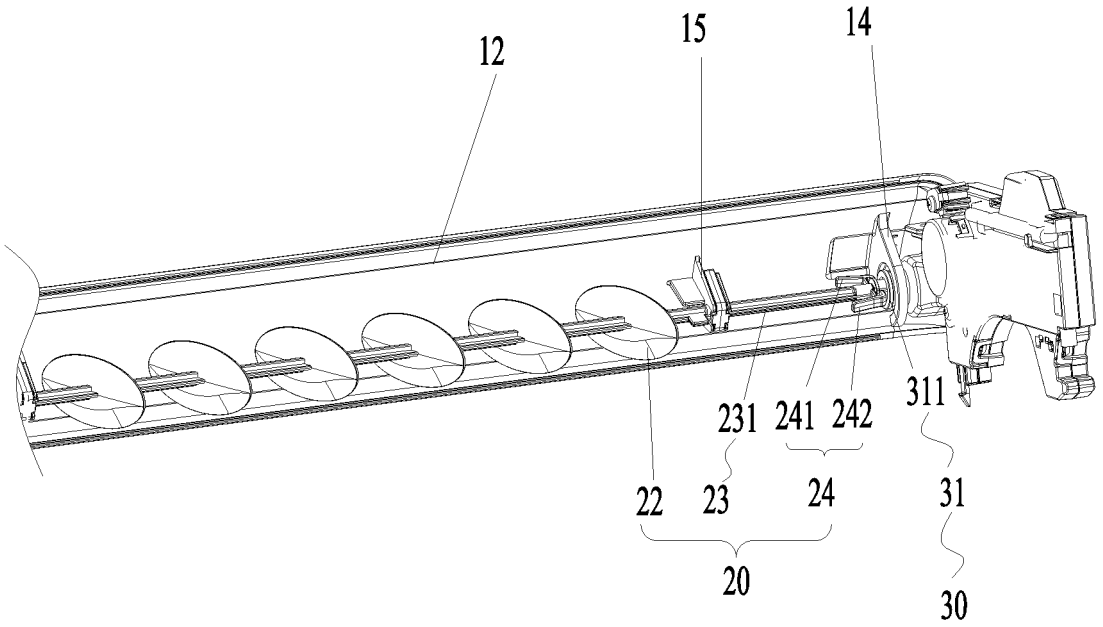

Fig.3

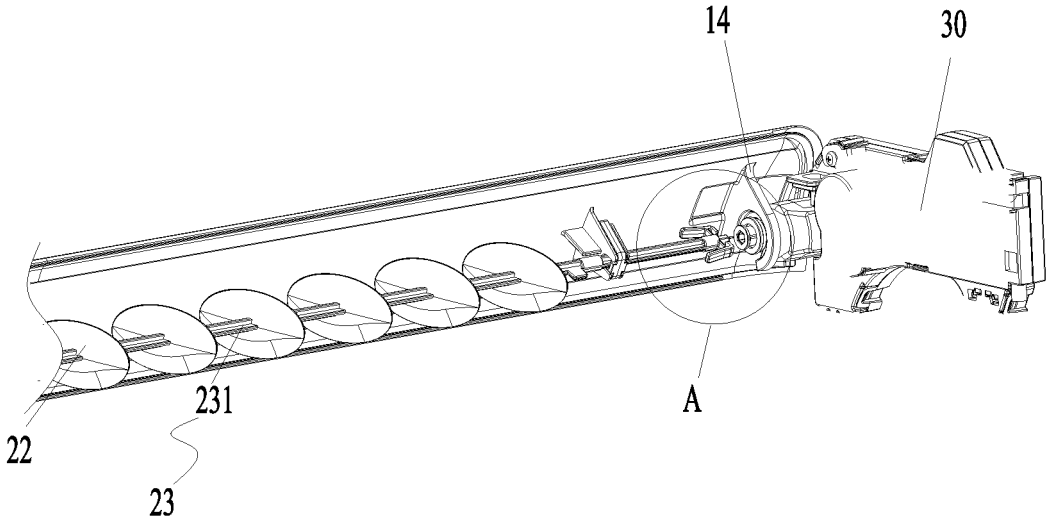

Fig.4

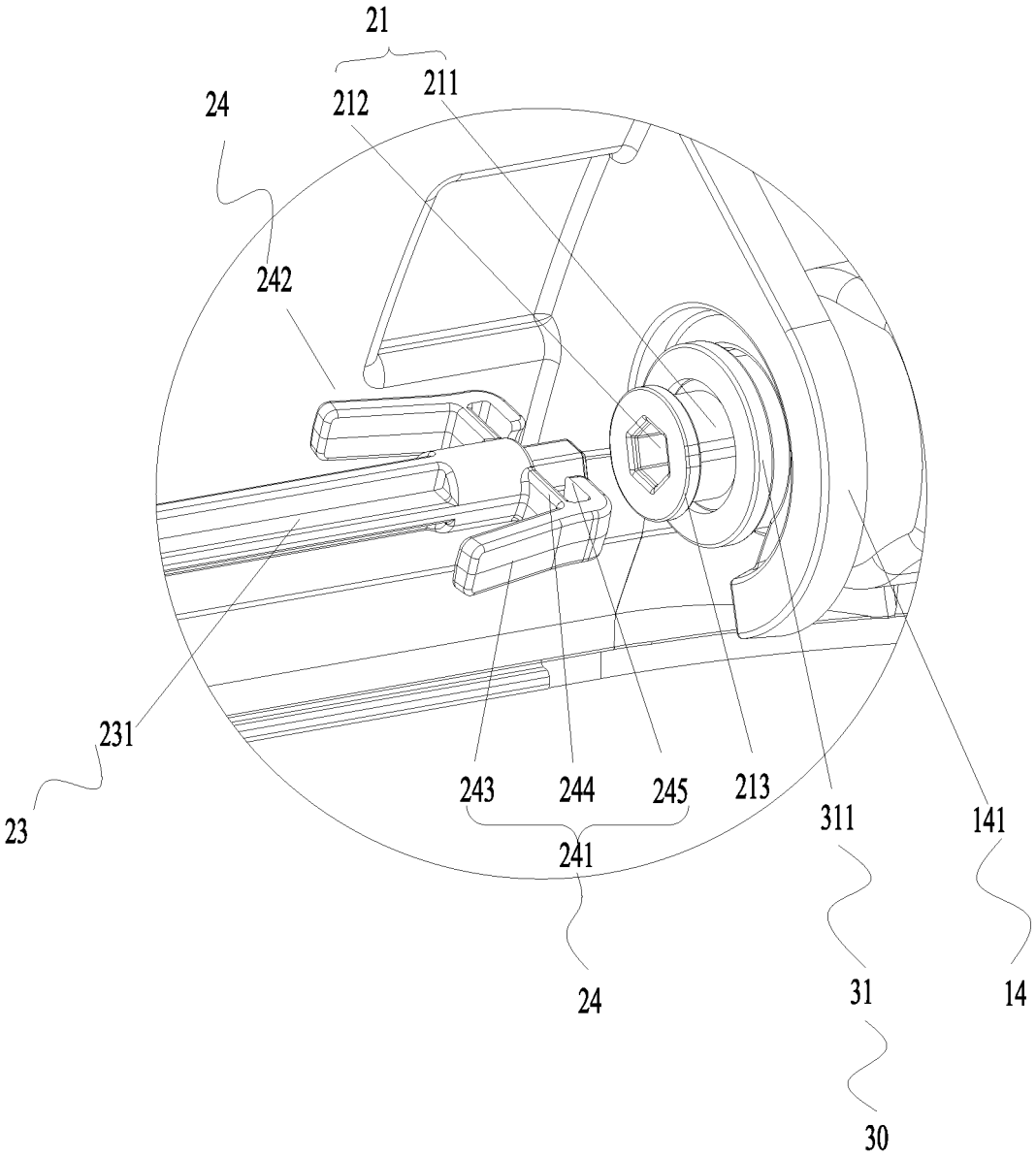

Fig.5

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2018/103557

A. CLASSIFICATION OF SUBJECT MATTER

F24F 13/15(2006.01)i; F24F 13/10(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)

F24F

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, CNKI, DWPI, VEN: 空调, 导风, 叶片, 百叶, 驱动, 电机, 扫风, 连接, 卡接, 卡扣, 连杆, air, conditioner, wind, guid+, blade?, vane?, louver?, driv+, motor, swing, sweeping, connect+, rod?, fix+, block, clip

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 103528175 A (TCL AIR CONDITIONER (ZHONGSHAN) CO., LTD.) 22 January 2014 (2014-01-22) description, paragraphs [0038]-[0053], and figures 3-5 and 9	1-8, 10-19
Y	CN 103528175 A (TCL AIR CONDITIONER (ZHONGSHAN) CO., LTD.) 22 January 2014 (2014-01-22) description, paragraphs [0038]-[0053], and figures 3-5 and 9	9
Y	CN 102124278 A (TOSHIBA CARRIER CORPORATION) 13 July 2011 (2011-07-13) description, paragraphs [0047]-[0103], and figure 9	9
A	KR 100399856 B1 (SANYO ELECTRIC CO., LTD.) 29 September 2003 (2003-09-29) entire document	1-19
A	JP H0953854 A (DAIKIN INDUSTRIES, LTD.) 25 February 1997 (1997-02-25) entire document	1-19
A	JP 2010078273 A (DAIKIN INDUSTRIES, LTD.) 08 April 2010 (2010-04-08) entire document	1-19

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

* Special categories of cited documents:

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
16 November 2018	**21 November 2018**

Name and mailing address of the ISA/CN	Authorized officer
State Intellectual Property Office of the P. R. China (ISA/CN) **No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088** **China**	
Facsimile No. **(86-10)62019451**	Telephone No.

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2018/103557

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