The circumferential air conditioning fan includes a housing, centrifugal fan, and a drive motor. The housing has a containing space, and one end of the containing space has an air inlet, and the side of the containing space has a circumferential air outlet. A centrifugal fan is placed in the containing space that can be driven by drive motor, and the centrifugal fan has rotary diversion component. The first end is corresponding with the air inlet, and the second end is corresponding with the circumferential air outlet. A centrifugal fan is placed in the containing space that circulates airflow in the directions of circumferential air outlet. The circumferential air conditioning fan disclosed in the present invention can receive circumferential airflow in the circular direction, and further improve the quality of air and degree of comfort.
CIRCUMFERENTIAL AIR CONDITIONING FAN
RELATED U.S. APPLICATIONS

[0001] Not applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not applicable.

REFERENCE TO MICROFICHE APPENDIX

[0003] Not applicable.

FIELD OF THE INVENTION

[0004] The present invention relates generally to a fan, and more particularly to a new circumferential air conditioning fan that can fan in multiple directions at the same time.

BACKGROUND OF THE INVENTION

[0005] Fans save more electricity than air conditioning; therefore, many users are still using fans for indoor or outdoor air conditioning systems. The structure of the conventional fan is familiar to users, and it mostly has a fan blade placed in a certain style of housing or cover. The fan blade is driven by a motor to form the air stream by circulating the air by fan blade; however, the conventional fan has the following problems.

[0006] 1. When using the conventional fan, because its fan blade faces people directly, the air formed often is too forceful, and would cause discomfort after a long period of time.

[0007] 2. Another problem is that the conventional fan is designed with for a single direction. Though some have functions of auto turn, it is still circulating air in one direction, and unable to achieve the effect of multi-directional circulation at the same time.

[0008] Thus, to overcome the aforementioned problems of the prior art, it would be an advancement in the art to provide an improved structure that can significantly improve the efficacy.

[0009] To this end, the inventor has provided the present invention of practicability after deliberate design and evaluation based on years of experience in the production, development and design of related products.

BRIEF SUMMARY OF THE INVENTION

[0010] 1. The circumferential air conditioning fan provided in the present invention mainly focuses on the new design of the centrifugal fan 20 of the air inlet 12 of the rotary diversion component 22 that is placed in the containing space 11 of the housing. The fan guides the airflow of the air inlet 12 and turns it into circumferential airflow, so that the air from the circumferential air conditioning fan is gentler than the conventional fan, and it can increase the degree of comfort using the fan.

[0011] 2. When the fan is operating, it can provide circumferential airflow in 360° at the same time, and let the people within all directions of the fan receive constant air. Under the same circumstances, the number of the fans of the present invention needed is much less than the conventional fan. It provides gentler air quality; therefore, it is applicable for home and business office use.

[0012] 3. By adding a mist sprinkler 50 on the circumferential air outlet 13 of the housing 10, it causes the air from the circumferential air conditioning fan to be spread further, and adds moisture in the air, which gives people an after rain freshness.

[0013] 4. By the structural design, the expanded rim 14 at the air inlet 12 of the housing 10 to has a certain degree of stopping effect for the mist that comes out of the mist sprinkler 50 to reduce the amount sucked in through the air inlet 12 and to avoid excessive humidity of the containing space 11 of the housing 10, which may affect the life of the drive motor 30 and its circuits.

[0014] 5. The design of the casing 70 placed on the end of the air inlet 12 of the housing 10, when the air inlet 12 is facing upward, can create raining stopping and decorative effects.

[0015] Although the invention has been explained in relation to its preferred embodiment, it is to be understood that many other possible modifications and variations can be made without departing from the spirit and scope of the invention as hereinafter claimed.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0016] FIG. 1 shows a perspective view of the preferred embodiment of the present invention.

[0017] FIG. 2 shows an exploded perspective view of the preferred embodiment of the present invention.

[0018] FIG. 3 shows a sectional view of the preferred embodiment of the present invention, and the path of the airflow and mist spray.

[0019] FIG. 4 shows a sectional view of another embodiment of the assembly of the housing.

[0020] FIG. 5 shows a sectional view of another embodiment of the assembly of the housing.

[0021] FIG. 6 shows a sectional view of an embodiment of the housing of the present invention.

[0022] FIG. 7 shows an elevation view of another embodiment of the assembly of the housing.

DETAILED DESCRIPTION OF THE INVENTION

[0023] The features and the advantages of the present invention will be more readily understood upon a thoughtful deliberation of the following detailed description of a preferred embodiment of the present invention with reference to the accompanying drawings.

[0024] As shown in FIGS. 1-3, there is a preferred embodiment of the circumferential air conditioning fan.

[0025] A housing 10 is round, and a containing space 11 is placed internally. One of the containing spaces has at least one air inlet 12, and the side of the containing space 11 has a circumferential air outlet 13.
A centrifugal fan 20 is placed in the containing space 11 of the housing 10 that is close to the circumferential air outlet 13, and the centrifugal fan 20 includes several centrifugal blades 21 that are spaced in a circle and rotary diversion component 22. The first end of the rotary diversion component 22 is placed correspondingly to the air inlet 12 of the main housing, and the second end is placed correspondingly to the air outlet 13. The rotary diversion component 22 of the present invention includes a first arc rim 221 that is on the air inlet 12 of the centrifugal blade 21, and a second arc rim 222 that is on the end of the circumferential air outlet 13. It blows air by the turning of the centrifugal fan 21 from the air inlet 12 to the directions of the circumferential air outlet 13.

A drive motor 30 is placed in the containing space 11 of the main housing 10, and the output axle 31 of the drive motor 30 can be connected with the axle holes in the center of the centrifugal fan 20 to make the centrifugal fan 20 turning.

A stationary stand 40 includes a first assembly component 41 and a second assembly component 42, and the combination of the first assembly component 41 is connected with the main housing, and the second assembly component 42 may be placed or assembled on the designated environment or foundation.

The stationary stand 40 of the present invention is a floor structure. It has a first assembly component 41 on the top that has through hole 43, and by screwing the screw hole 44 designated on one end (the bottom end) of the air inlet 12 of the main housing to achieve the positioning.

Through the above structure and design, the operation of the revolving engine disclosed by the present is explained as follows:

As shown in FIG. 3, when the centrifugal fan 20 is turning, it may use the design of its rotary diversion component 22 and generate the vertical airflow A1 through the air inlet on top of the housing 10, and guide it and turn it into horizontal airflow in 360° and generate circumferential airflow A2.

Among them, the circumferential air outlet 13 of the main housing 10 can have a mist sprinkler 50 added, and the mist sprinkler can be made of conduit 51 and nozzle 52. The spray of the mist can be controlled by the pressure driven device from the far end. The nozzle 52 can be spaced in a circle on the external part of air outlet 13 of the main housing 10, so that the mist spray when the air is blown can be spread further (please see FIG. 3), and by adding the mist primarily to increase the humidity in the air and give people a refreshing feeling.

Among them, the air inlet 12 of the main housing 10 can have an expanded rim 15. The placement of this expanded rim 15 is related to the mist sprinkler 50 mentioned above, and the expanded rim 15 can form a stopper on the edge of the air inlet 12 of the housing 10 to create certain stopping effect for the mist from the mist sprinkler 50, and to reduce the amount the mist is being absorbed by the air inlet 12, and to avoid the heavy humidity inside the containing space 11 of the housing 10 to affect the life of the drive motor 30 and its circuits.

Among them, as shown in FIG. 4, the stationary stand 403 mentioned above may also be a stand with suspension on one end of air inlet 12 in the housing. The air inlet 12 of the housing is a net support 61 of the place in the center, so that the first assembly component 41 of the stationary stand 403 can be placed on the plate 60. The second assembly component 42 of the stationary stand 403 may be placed on the ceiling, so that the housing 10 may be suspended on the ceiling, and by so doing to make the suspension of the circumferential air conditioning fan.

Among them, as shown in FIG. 5, the stationary stand 403 can also be a wall-mounted stand. The difference between this style and the above mentioned embodiment is that the stand of the stationary stand 403 is assembled horizontally, so that the second assembly component 42 of the stationary stand 403 can be placed on the wall. The air inlet 12 of the housing 10 can suck air horizontally facing the wall, and the circumferential air outlet 13 can circulate the air vertically.

Among them, as shown in FIG. 6, the air inlet 12 of the housing 10 mentioned above has a casing 70 where it is spaced, and the casing can be locked in by the holder 71 on the central plate 60 of the net support 61 of the air inlet 12. The design of the casing 70 is when the air inlet 12 is assembled facing upward, it can create the effect of raining stopping. When the circumferential air conditioning face is placed outdoors (as shown in FIG. 7), it can prevent the rain from falling into the housing 10 through air inlet 12 and affect the life of the drive motor 30 and its circuit. Of course, the casing 70 on the other hand can be decorative.

I claim:

1. A circumferential air conditioning fan comprising:
   - a housing having a containing space, one end of the containing space being comprised of at least one air inlet, a side of the containing space having a circumferential air outlet;
   - a centrifugal fan, placed in the containing space of the housing close to the circumferential air outlet, said centrifugal fan being comprised of a centrifugal blade and rotary diversion component, a first end of the rotary diversion component placed correspondingly to the air inlet of the housing, a second end placed correspondingly to the air outlet, turning of the centrifugal fan blowing air in a direction of circumferential air outlets of the housing;
   - a drive motor, placed in the containing space of the housing, an output axle of the drive motor being connected to the centrifugal fan to make the centrifugal fan turn;
   - a stationary stand, being comprised of a first assembly component and a second assembly component, a combination of the first assembly component being connected with the housing, the second assembly component being placed or assembled on a designated environment or foundation.

2. The fan defined in claim 1, further comprising:
   - an expanded rim placed on the air inlet of the housing.

3. The fan defined in claim 1, wherein said rotary diversion component is comprised of a first arc rim on the air inlet
of the centrifugal blade, and a second arc rim on an end of the circumferential air outlet.

4. The fan defined in claim 1, wherein said stationary stand is a floor stand on one end of the air inlet of the housing.

5. The fan defined in claim 1, wherein said stationary stand is a stand with suspension on one end of air inlet in the housing.

6. The fan defined in claim 1, wherein said stationary stand is a wall-mounted stand.

7. The fan defined in claim 1, further comprising:
   a. mist sprinkler in said housing.

8. The fan defined in claim 1, wherein the air inlet of the housing has a casing where spaced.

   * * * * *