

AN AIR PURIFICATION UNIT

Utility Model Patent — English Translation

English translation prepared for reference only. In case of any discrepancy, the original Chinese patent publication (CN 208493688 U) shall prevail.

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(73)	Patentee	Dongguan Pengchi Purification Technology Co., Ltd.
	Address	Tangyilangwei Road, Tangjiao Village, Chashan Town, Dongguan City, Guangdong Province 523378, China
(72)	Inventors	Wang Haiou; Hu Guopeng; Li Dexiong
(74)	Patent agency	Dongguan Yongqiao Intellectual Property Agency (General Partnership) 44400
	Patent agent	He Xinhua
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(57) ABSTRACT

The present utility model provides an air purification unit, comprising a purification device, wherein the purification device comprises a housing and a top cover; a first filter barrel is disposed in the purification device; a cathode wire is fixed in the middle of the first filter barrel; a second filter barrel is sleeved outside the first filter barrel; a nylon mesh is sleeved outside the second filter barrel; an anode plate is sleeved outside the nylon mesh; a small fan is disposed at a lower side of the first filter barrel; a plurality of air outlet holes are formed in a lower side surface of the housing; and a pleated filter element is disposed on an inner side surface of the housing. The air purification unit of the present utility model has high working efficiency and a good air cleaning effect.

CLAIMS

1. An air purification unit, characterized by comprising a purification device, wherein the purification device comprises a housing (1) and a top cover (2);
a first filter barrel (3) is disposed in the purification device;
a cathode wire (31) is fixed in the middle of the first filter barrel (3);
a second filter barrel (4) is sleeved outside the first filter barrel (3);
a nylon mesh (5) is sleeved outside the second filter barrel (4);
an anode plate (6) is sleeved outside the nylon mesh (5);
a small fan (7) is disposed at a lower side of the first filter barrel (3);
a plurality of air outlet holes (11) are formed in a lower side surface of the housing (1);
a pleated filter element (8) is disposed on an inner side surface of the housing (1).
2. The air purification unit according to claim 1, characterized in that a plurality of first mesh holes are formed in an outer side surface of the first filter barrel (3).
3. The air purification unit according to claim 2, characterized in that the second filter barrel (4) comprises a filter portion (41) and a cylindrical portion (42);
a plurality of second mesh holes are formed in an outer side surface of the filter portion (41);
a pore diameter of the second mesh holes is smaller than a pore diameter of the first mesh holes.
4. The air purification unit according to claim 3, characterized in that a vibration disc (421) is further sleeved outside the cylindrical portion (42).
5. The air purification unit according to claim 1, characterized in that an opening (21) is formed in the top cover (2), and the opening (21) corresponds to an air inlet of the first filter barrel (3);
a piece of honeycomb activated carbon cotton (32) is further disposed at the air inlet of the first filter barrel (3).
6. The air purification unit according to claim 1, characterized in that the pleated filter element (8) is coated with aromatherapy oil.

DESCRIPTION

An Air Purification Unit

TECHNICAL FIELD

[0001] The present utility model relates to the technical field of air purification, and specifically relates to an air purification unit.

BACKGROUND ART

[0002] An air filter refers to an air filtering device, which is generally used in clean public places, vehicle interiors, laboratories and clean rooms, or used for dust prevention of electronic, mechanical and communication equipment and the like. Air filters can be classified into types such as primary filters, intermediate filters, HEPA filters and sub-HEPA filters, and various types have different standards and use performances.

[0003] At present, most air filters generally suffer from the phenomena that dust is easily accumulated and through holes are blocked, and the overall structure is a fixed structure, so that filter membranes are difficult to disassemble, assemble and replace, which is extremely inconvenient for users.

SUMMARY OF THE UTILITY MODEL

[0004] In view of the above problems, the present utility model provides an air purification unit which has high working efficiency and a good air cleaning effect.

[0005] To achieve the above objective, the present utility model solves the problems through the following technical solutions:

[0006] An air purification unit comprises a purification device, wherein the purification device comprises a housing and a top cover; a first filter barrel is disposed in the purification device; a cathode wire is fixed in the middle of the first filter barrel; a second filter barrel is sleeved outside the first filter barrel; a nylon mesh is sleeved outside the second filter barrel; an anode plate is sleeved outside the nylon mesh; a small fan is disposed at a lower side of the first filter barrel; a plurality of air outlet holes are formed in a lower side surface of the housing; and a pleated filter element is disposed on an inner side surface of the housing.

[0007] Specifically, a plurality of first mesh holes are formed in an outer side surface of the first filter barrel.

[0008] Specifically, the second filter barrel comprises a filter portion and a cylindrical portion; a plurality of second mesh holes are formed in an outer side surface of the filter portion; and a pore diameter of the second mesh holes is smaller than a pore diameter of the first mesh holes.

[0009] Specifically, a vibration disc is further sleeved outside the cylindrical portion.

[0010] Specifically, an opening is formed in the top cover, and the opening corresponds to an air inlet of the first filter barrel; and a piece of honeycomb activated carbon cotton is further disposed at the air inlet of the first filter barrel.

[0011] Specifically, the pleated filter element is coated with aromatherapy oil.

[0012] The present utility model has the following beneficial effects:

[0013] In the air purification unit of the present utility model, a piece of honeycomb activated carbon cotton is added at the air inlet, which can adsorb large-particle dust on the honeycomb activated carbon cotton and avoid blockage caused after the dust enters the unit; then, after the air enters the first filter barrel, the dust moves towards the anode plate under the electrostatic action of the cathode wire and the anode plate, so that the dust is accumulated in the second filter barrel, thereby removing most of the dust; in addition, a pleated filter element coated with aromatherapy oil is disposed at the positions of the air outlet holes, so that the blown air carries a fresh fragrance, and the dust removal efficiency is high.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] FIG. 1 is a three-dimensional structural schematic view of an air purification unit of the present utility model.

[0015] FIG. 2 is an enlarged view of part A in FIG. 1.

[0016] The reference numerals are as follows: housing 1, air outlet hole 11, top cover 2, opening 21, first filter barrel 3, cathode wire 31, honeycomb activated carbon cotton 32, second filter barrel 4, filter portion 41, cylindrical portion 42, vibration disc 421, nylon mesh 5, anode plate 6, small fan 7, and pleated filter element 8.

DETAILED DESCRIPTION OF EMBODIMENTS

[0017] The present utility model is described in further detail below in combination with the embodiments and the accompanying drawings, but the embodiments of the present utility model are not limited thereto.

[0018] As shown in FIG. 1 and FIG. 2:

[0019] An air purification unit comprises a purification device, wherein the purification device comprises a housing 1 and a top cover 2; a first filter barrel 3 is disposed in the purification device; a cathode wire 31 is fixed in the middle of the first filter barrel 3, and the cathode wire 31 is connected to a negative pole of a power supply; a second filter barrel 4 is sleeved outside the first filter barrel 3; a nylon mesh 5 is sleeved outside the second filter barrel 4; an anode plate 6 is sleeved outside the nylon mesh 5, and the anode plate 6 is connected to a positive pole of the power supply; after the anode plate 6 and the cathode wire 31 are energized, an electric field is generated, so that the dust moves towards the anode plate 6; a small fan 7 is disposed at a lower side of the first filter barrel 3; a plurality of air outlet holes 11 are formed in a lower side surface of the housing 1; and a pleated filter element 8 is disposed on an inner side surface of the housing 1.

[0020] Preferably, a plurality of first mesh holes are formed in an outer side surface of the first filter barrel 3, and the dust in the gas can enter the second filter barrel 4 through the first mesh holes.

[0021] Preferably, the second filter barrel 4 comprises a filter portion 41 and a cylindrical portion 42; a plurality of second mesh holes are formed in an outer side surface of the filter portion 41; and a pore diameter of the second mesh holes is smaller than a pore diameter of the first mesh holes. The formation of the first mesh holes and the second mesh holes facilitates the electric field action generated by the cathode wire 31 and the anode plate 6, while the pore diameter of the second mesh holes is relatively small, so that the dust cannot pass through the second filter barrel 4 and is accumulated in the second filter barrel 4.

[0022] Preferably, a vibration disc 421 is further sleeved outside the cylindrical portion 42, and the vibration disc 421 functions to vibrate the first filter barrel 3 so as to avoid the dust blocking the first mesh holes.

[0023] Preferably, an opening 21 is formed in the top cover 2, and the opening 21 corresponds to an air inlet of the first filter barrel 3; a piece of honeycomb activated carbon cotton 32 is further disposed at the air inlet of the first filter barrel 3; and the honeycomb activated carbon cotton 32 disposed at the position of the air inlet can adsorb large-particle dust, sundries and the like so as to prevent them from entering the interior of the unit.

[0024] Preferably, the pleated filter element 8 serves as the last filtering barrier of the purification device and can adsorb residual dust; in addition, the pleated filter element 8 is coated with aromatherapy oil, so that the blown air carries a fresh fragrance.

[0025] The above-mentioned embodiments only describe one embodiment of the present utility model, and the description thereof is relatively specific and detailed, but should not be construed as limiting the patent scope of the present utility model. It should be noted that, for a person of ordinary skill in the art, several variations and improvements can be made without departing from the concept of the present utility model, and all of these fall within the protection scope of the present utility model. Therefore, the protection scope of the present utility model patent shall be subject to the appended claims.



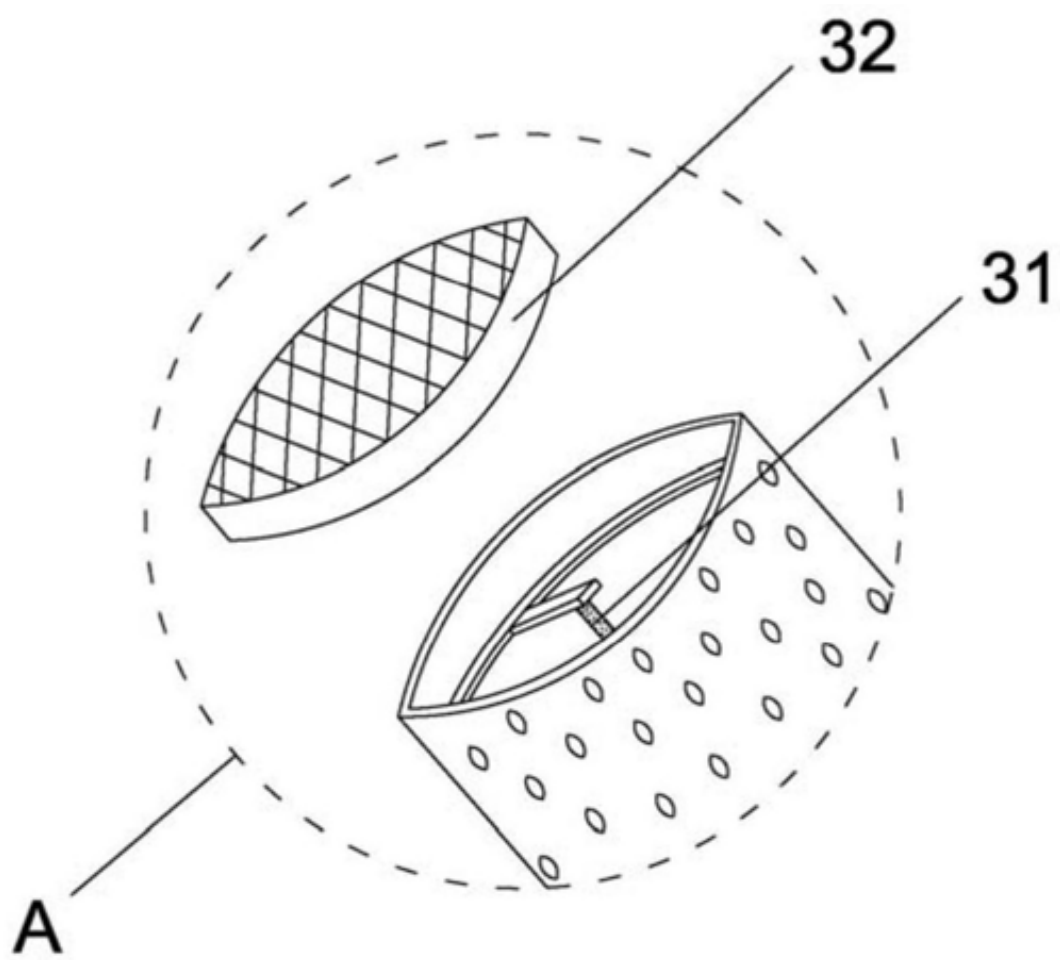


FIG. 2 — enlarged view of part A in FIG. 1