

(19)



(11)

EP 3 441 680 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent:

19.01.2022 Bulletin 2022/03

(51) International Patent Classification (IPC):

F24C 15/20 ^(2006.01) **B03C 3/68** ^(2006.01)
B03C 3/72 ^(2006.01) **B03C 3/82** ^(2006.01)

(21) Application number: **18185443.1**

(52) Cooperative Patent Classification (CPC):

B03C 3/017; B03C 3/155; B03C 3/368; B03C 3/41;
B03C 3/68; B03C 3/72; B03C 3/82; F24C 15/2021;
F24C 15/2035; B03C 2201/04

(22) Date of filing: **25.07.2018**

(54) **COOKER HOOD AND ELECTROSTATIC ADSORPTION APPARATUS APPLIED TO COOKER HOOD**

DUNSTABZUGSHAUBE UND AN DER DUNSTABZUGSHAUBE ANGEBRACHTE
ELEKTROSTATISCHE ADSORPTIONSVORRICHTUNG

HOTTE DE CUISINIÈRE ET APPAREIL D'ADSORPTION ÉLECTROSTATIQUE APPLIQUÉ À LA
HOTTE DE CUISINIÈRE

(84) Designated Contracting States:

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR

(30) Priority: **07.08.2017 CN 201720976408 U**

(43) Date of publication of application:
13.02.2019 Bulletin 2019/07

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Description

BACKGROUND

Technical Field

[0001] This application relates to the field of cooker hoods, and to the field of electrostatic adsorption apparatuses applied to a cooker hood.

Related Art

[0002] Currently, a solution of a cooker hood provided with an electrostatic adsorption apparatus has been proposed, this type of cooker hood is further provided with a power supply module supplying power to the electrostatic adsorption apparatus. For consideration of safety, when the electrostatic adsorption apparatus is removed from the cooker hood, power should be cut off first. However, a case in which a user forgets to cut off the power may also occur. In this case, after the electrostatic adsorption apparatus is removed from the cooker hood, the power supply module still outputs high voltage, and if the power supply module is touched by the user, there will be danger.

[0003] CN 204987149U discloses a hood comprising a casing and a second high-voltage electrostatic fume removal device. The second high-voltage electrostatic fume removal device comprises at least one positive and at least one negative electrode plate. The positive and negative electrode plates of the first and second high-voltage electrostatic fume removal device can be detachably inserted into the square insulating ceramic seat. The square ceramic seat is fixedly mounted on the inner wall of the air duct. The negative electrode of the first high-voltage electrostatic fume removal device is provided with a linkage switch, which uses a micro switch, when the negative electrode plate is pulled out from the insulating ceramic seat. The micro switch is actuated to shut down the entire.

[0004] CN 204665427 U discloses a switch for controlling electric disconnection, in particular to an on-off electric contact device of a range hood. The switch comprises a fixed cylinder fixed on a surface of the purifier, wherein the fixed cylinder is fixed with a fixed spring.

[0005] EP 2 664 857 A1 discloses a hood filter comprising an air purification device with a processing unit to ionize and filter the air taken in by centrifugal ventilator means. According to one embodiment, the purification device comprises a safety switch associated to the ionization means which cooperates with the filter means and is configured to interrupt the electric supply to the ionization means as a function of the presence of the filter means.

SUMMARY

[0006] This application proposes an improved cooker

hood and an electrostatic adsorption apparatus applied to the cooker hood.

[0007] The cooker hood proposed in this application includes an electrostatic adsorption apparatus and a power supply module supplying power to the electrostatic adsorption apparatus, and the power supply module includes a power supply circuit and a switching element for controlling on and off of the power supply circuit; when the electrostatic adsorption apparatus is mounted to the cooker hood, the electrostatic adsorption apparatus abuts against the switching element, the switching element switches on the power supply circuit, and the electrostatic adsorption apparatus is electrically connected to the power supply circuit; and when the electrostatic adsorption apparatus is detached from the switching element, the switching element switches off the power supply circuit. In this way, it can be ensured when the electrostatic adsorption apparatus is removed from the cooker hood, the power supply circuit is switched off.

[0008] According to the invention, the electrostatic adsorption apparatus includes an abutting element; when the electrostatic adsorption apparatus is mounted to the cooker hood, the abutting element of the electrostatic adsorption apparatus abuts against the switching element, the switching element switches on the power supply circuit, and the electrostatic adsorption apparatus is electrically connected to the power supply circuit; the abutting element is disposed to be adapted to elastic compression when abutting against the switching element; and when the abutting element is detached from the switching element, the elastic compression of the abutting element is recovered. In this way, disadvantage that travel of the switching element is short can be overcome.

[0009] According to the invention, the abutting element includes a spring; and the switching element presses the spring to implement the elastic compression.

[0010] According to the invention, the electrostatic adsorption apparatus further includes a mounting hole; the abutting element further includes a base and an abutting end; and the abutting end is connected to a side of the base, the spring abuts against the other side of the base, to enable the abutting end to pass through the mounting hole, and the base is stopped by an edge of the mounting hole.

[0011] Optionally, the power supply module supplies power to the electrostatic adsorption apparatus in an insertion manner.

[0012] Optionally, the switching element is a micro switch.

[0013] Optionally, one of the power supply module and the electrostatic adsorption apparatus is provided with a plug portion, and the other one is provided with a socket portion adapted to be inserted by the plug portion.

[0014] Optionally, the socket portion includes an insertion elastic piece.

[0015] Optionally, the power supply circuit includes a high voltage power supply module.

[0016] Optionally, the cooker hood includes an accommodating cavity; and the electrostatic adsorption apparatus is horizontally inserted into the accommodating cavity and is mounted to the cooker hood.

[0017] Optionally, the accommodating cavity is provided with a bottom inlet and a top outlet.

[0018] According to the invention, this application proposes an electrostatic adsorption apparatus applied to a cooker hood, the cooker hood further includes a power supply module supplying power to the electrostatic adsorption apparatus, the power supply module includes a power supply circuit and a micro switch for controlling on and off of the power supply circuit, the power supply module supplies power to the electrostatic adsorption apparatus in an insertion manner, and the electrostatic adsorption apparatus includes an abutting element; when the electrostatic adsorption apparatus is mounted to the cooker hood, the abutting element abuts against the micro switch; and the abutting element is disposed to be adapted to elastic compression when abutting against the micro switch, wherein further the elastic compression of the abutting element is recovered when the abutting element is detached from the micro switch, the abutting element comprises a spring, the micro switch presses the spring to implement the elastic compression and the electrostatic adsorption apparatus further comprises a mounting hole which is disposed on a rear plate piece of the electrostatic adsorption apparatus, the abutting element further comprises a base, a spring and an abutting end, and the spring abuts against the side of the base opposite to the abutting end, to enable the abutting end to pass through the mounting hole, and the base is stopped by an edge of the mounting hole.

[0019] It should be noted that, the position expressions "back wall", "bottom inlet", "top outlet", "above", "below" appear in this application, if there is no specific description, are described based on a usual use status of the cooker hood.

[0020] It should be noted that, the terms "first" and "second" appear in the specification are used only for describing objectives, and are not used for indicating relative importance. In addition, the terms are not to define a quantity of features limited thereof. Moreover, the terms are not to define a logical relationship or a sequential relationship of the features limited thereof.

[0021] The foregoing technical solutions of this application are not used for describing all possible implementations of this application. In the whole application, examples are listed at many places for providing instructions, and these examples can be used in various feasible combinations.

BRIEF DESCRIPTION OF THE DRAWINGS

[0022] The following accompanying drawings perform only schematic description and explanation on this application, and are not intended to limit the scope of this application. In the accompanying drawings:

FIG. 1 is a sectional diagram of an embodiment of a cooker hood according to this application;

FIG. 2 is a schematic structural diagram of an embodiment of a cooker hood according to this application;

FIG. 3 is a schematic partial structural diagram of an embodiment of a cooker hood according to this application;

FIG. 4 is an enlarged diagram of A in FIG. 3;

FIG. 5 is a schematic structural diagram of an electrostatic adsorption apparatus of an embodiment of a cooker hood according to this application;

FIG. 6 is a sectional diagram of a rear plate piece of an electrostatic adsorption apparatus of an embodiment of a cooker hood according to this application;

FIG. 7 is an exploded diagram of a rear plate piece of an electrostatic adsorption apparatus of an embodiment of a cooker hood according to this application;

FIG. 8 is another schematic partial structural diagram of an embodiment of a cooker hood according to this application;

FIG. 9 is a sectional diagram along A-A line in FIG. 8;

FIG. 10 is an enlarged diagram of B in FIG. 9; and

FIG. 11 is a circuit principle diagram of an embodiment of a cooker hood according to this application.

Reference numerals:

[0023] 1-Electrostatic adsorption apparatus; 2-Power supply module; 3-Housing; 4-Smoke collection hood; 5-Filter mesh; 6-Oil cup; 7-Accommodating cavity; 8-Insertion elastic piece; 9-Ground electrode plug portion; 10-Adsorption electrode plug portion; 11-Ionization electrode plug portion; 12-Switching element; 13-Base; 14-Abutting end; 15-Spring; 16-Stop piece; 17-Mounting slot; 18-Rear plate piece; 19-Electric box; 20-Protection resistance; 21-First voltage conversion module; 22-Second voltage conversion module.

DETAILED DESCRIPTION

[0024] To make objectives, solutions and beneficial effects of this application more clearly, the following further describes this application with reference to accompanying drawings and preferable embodiments.

[0025] This application proposes an embodiment of a cooker hood, which includes a fan, a filter mesh 5, a oil

cup 6, a housing 3, a smoke collection hood 4, a decorative hood, an electric box 19, an electrostatic adsorption apparatus 1, a power supply module 2 for directly supplying power to the electrostatic adsorption apparatus 1, and an accommodating cavity 7 adapted to accommodate the electrostatic adsorption apparatus 1, as shown in FIG. 1 and FIG. 2. The fan is disposed in the housing 3. The oil cup 6 is fastened to a bottom end of the smoke collection hood 4. The accommodating cavity 7 is located between the housing 3 and the smoke collection hood 4. The accommodating cavity (7) is provided with a bottom inlet and a top outlet, as shown in FIG. 3. Specifically, the fan is located above the top outlet of the accommodating cavity 7, and the filter mesh 5 is located below the bottom inlet of the accommodating cavity. The power supply module 2 is used as a part of wall body of the accommodating cavity 7. Specifically, the power supply module 2 is used as a back wall of the accommodating cavity 7. The power supply module (2) supplies power to the electrostatic adsorption apparatus (1) in an insertion manner.

[0026] The accommodating cavity 7 is cuboid-shaped. As shown in FIG. 3 and FIG. 8, the bottom inlet is located at a bottom side of the cuboid-shaped accommodating cavity 7, and the top outlet is located at a top side of the cuboid-shaped accommodating cavity 7. The accommodating cavity 7 includes a placing opening disposed opposite to a back wall gap. The placing opening is located at a side of the cuboid-shaped accommodating cavity 7. The power supply module 2 plugs the back wall gap. The electrostatic adsorption apparatus 1 is disposed to be adapted to pass through the placing opening toward the back wall of the accommodating cavity 7 and along a horizontal direction to place into the accommodating cavity 7 until being inserted to the power supply module 2, as shown in FIG. 1 and FIG. 2. The decorative cover (not shown in the figure) is placed on the smoke collection hood 4, to obscure the housing 3 and the electrostatic adsorption apparatus 1.

[0027] The electrostatic adsorption apparatus 1 is provided with a plug portion, and the power supply module 2 is provided with a socket portion adapted to be inserted by the plug portion.

[0028] Specifically, the plug portion of the electrostatic adsorption apparatus 1 includes a ground electrode plug portion 9, an adsorption electrode plug portion 10 and an ionization electrode plug portion 11 that are sequentially arranged. As shown in FIG. 5, the plug portions are all disposed on a rear plate piece 18 of the electrostatic adsorption apparatus 1. The adsorption electrode plug portion 10 is electrically connected to an adsorption electrode plate of the electrostatic adsorption apparatus 1. The ionization electrode plug portion 11 is electrically connected to an ionization wire of the electrostatic adsorption apparatus 1. An insulation wall is provided between the ground electrode plug portion 9 and the adsorption electrode plug portion 10, and two insulation walls that are disposed in parallel are provided between

the adsorption electrode plug portion 10 and the ionization electrode plug portion 11. The power supply module 2 is provided with a socket portion in a one-to-one correspondence with the ground electrode plug portion 9, the adsorption electrode plug portion 10, and the ionization electrode plug portion 11 of the electrostatic adsorption apparatus 1. When the power supply module 2 is inserted into the electrostatic adsorption apparatus 1, the ground electrode plug portion 9, the adsorption electrode plug portion 10, and the ionization electrode plug portion 11 are respectively inserted into corresponding socket portions. Structures of the socket portions are the same, and each socket portion includes an insertion elastic piece 8. A socket portion that is shown in FIG. 4 and is inserted by and matching the ground electrode plug portion 9 is used as an example. The socket portion includes two pieces of insertion elastic pieces 8, a gap is provided between the two pieces of insertion elastic pieces 8, and when the ground electrode plug portion 9 is inserted into the gap, the two pieces of insertion elastic pieces 8 generate elastic deformation and mutually go away from each other (the gap becomes large), so that the ground electrode plug portion 9 is pressed by the two pieces of insertion elastic pieces 8, and the power supply module 2 is inserted into the electrostatic adsorption apparatus 1. In this case, if a user takes the electrostatic adsorption apparatus 1 out of the accommodating cavity 7, the ground electrode plug portion 9 is detached from the two pieces of insertion elastic pieces 8, and elastic deformation of the two pieces of insertion elastic pieces 8 is recovered. A quantity of electrostatic adsorption apparatuses 1 is two, and the two electrostatic adsorption apparatuses 1 are completely the same and may mutually be replaced with each other. In FIG. 2, the two electrostatic adsorption apparatuses 1 are both mounted. In structures shown in FIG. 3 and FIG. 8, a left electrostatic adsorption apparatus 1 is mounted only. Herein, it should be noted that, because a quantity of electrostatic adsorption apparatuses 1 is two, correspondingly, a total quantity of socket portions of the power supply module 2 is six.

[0029] The power supply module 2 further includes a power supply circuit and a switching element 12 for controlling on and off of the power supply circuit. Specifically, the switching element 12 is a micro switch. The micro switch is inserted into a groove, to prevent from being accidentally touched. The power supply circuit includes a high voltage power supply module. When the power supply module 2 is inserted into the electrostatic adsorption apparatus 1, the high voltage power supply module is electrically connected to the electrostatic adsorption apparatus 1, and the high voltage power supply module supplies, through the insertion place, to the electrostatic adsorption apparatus 1, high-voltage direct current needed by the electrostatic adsorption apparatus 1 for work. An electric box 19 supplies 220V alternating current to the high voltage power supply module through mains supply cables. The mains supply cables are as line L and line N shown in FIG. 11. In addition, in FIG. 11, line L1

represents a feedback signal cable (Feedback Signal 2), line L2 represents a ground cable (GND), line L3 represents a 5V voltage supply cable, L4 represents a feedback signal cable (Feedback Signal 1), and L5 and L6 represent a control signal cable (Control signal-, Control signal+). The high voltage power supply module is also named as a high voltage generator, and is referred to as a HVPS (high voltage power supply) in English. As shown in FIG. 11, the high voltage power supply module includes a first voltage conversion module 21, a second voltage conversion module 22, and a protection resistance 20 that are sequentially electrically connected. The first voltage conversion module 21 converts the 220V alternating current into 36V direct current for output. The second voltage conversion module 22 converts the 36V direct current into 7.49KV direct current and 3.56KV direct current for output. The 7.49KV direct current outputted by the second voltage conversion module 22 finally outputs 6.7KV direct current after flowing through the protection resistance 20. That is, the socket portion inserted by and matching the ionization electrode plug portion 11 outputs 6.7KV direct current. The 3.56KV direct current outputted by the second voltage conversion module 22 finally outputs 3.4KV direct current after flowing through the protection resistance 20. That is, the socket portion inserted by and matching the absorption electrode plug portion 10 outputs 3.4KV direct current. In addition, it should be noted that, a quantity of switching elements 12 is two, and the two switching elements 12 are in a one-to-one correspondence with the two electrostatic adsorption apparatuses 1. The two switching elements 12 are disposed to be tandem, as shown in FIG. 1. The two tandem switching elements 12 are electrically connected to a place between an output end of the first voltage conversion module 21 and an input end of the second voltage conversion module 22.

[0030] The electrostatic adsorption apparatus 1 includes a mounting hole and a mounting slot 17, which are both disposed on the rear plate piece 18 of the electrostatic adsorption apparatus 1. The electrostatic adsorption apparatus 1 further includes an abutting element. The abutting element includes a spring 15, a base 13, an abutting end 14 and a stop piece 16. As shown in FIG. 6 and FIG. 7, the abutting element is also disposed on the rear plate piece 18 of the electrostatic adsorption apparatus 1. The abutting end 14 is connected to a side of the base 13, and the spring 15 abuts against the other side of the base 13, to enable the abutting end 14 to pass through the mounting hole (that is, the abutting end 14 passes through the mounting hole under a push force of the spring 15), the base 13 is disposed in the mounting slot 17, and the base 13 is stopped by an edge of the mounting hole. As shown in FIG. 7, the other side of the base 13 is provided with an accommodating slot, an end of the spring 15 abuts against the accommodating slot, the other end of the spring 15 is stopped by the stop piece 16, and the stop piece 16 is fastened to an edge of the mounting slot 17 by using a screw. The abutting element

is disposed to be adapted to elastic compression when abutting against the switching element 12. When the abutting element is detached from the switching element 12, elastic compression of the abutting element is recovered. Specifically, the spring 15 is indirectly pressed by the switching element 12 to implement elastic compression.

[0031] The electrostatic adsorption apparatus 1 is mounted to the cooker hood, the power supply module 2 is inserted into the electrostatic adsorption apparatus 1, and the abutting element of the electrostatic adsorption apparatus 1 abuts against the micro switch, as shown in FIG. 9 and FIG. 10. When the abutting element is elastically compressed, the abutting end 14 of the abutting element retreats into the mounting hole to a certain extent. Under press of the abutting element, the micro switch is triggered, so that the micro switch switches on the power supply circuit (that is, the output end of the first voltage conversion module 21 is electrically connected to the input end of the second voltage conversion module 22), and the electrostatic adsorption apparatus 1 is electrically connected to the power supply circuit. In this case, if the electric box 19 supplies 220V alternating current through mains supply cables to the high voltage power supply module and a control signal cable controls to enable the first voltage conversion module 21, the power supply module 2 inputs 6.7KV direct current to the ionization electrode plug portion 11 of the electrostatic adsorption apparatus 1, the power supply module 2 inputs 3.4KV direct current to the adsorption electrode plug portion 10 of the electrostatic adsorption apparatus 1, and the electrostatic adsorption apparatus 1 is electrified and in a working state. It should be noted that, "the micro switch switches on the power supply circuit" may be understood as "the micro switch switches on a part of circuit controlled by the micro switch", and "the micro switch switches on the power supply circuit" does not necessarily mean that the power supply module 2 will input high voltage direct current to the electrostatic adsorption apparatus 1 that is already connected to the power supply module 2, because another control node further exists. For example, that the electric box 19 does not supply 220V alternating current to the high voltage power supply module through the mains supply cables or that the control signal cable controls the first voltage conversion module 21 to turn off can both cause a result (even if the micro switch switches on the power supply circuit, and the electrostatic adsorption apparatus 1 is electrically connected to the power supply circuit) that the electrostatic adsorption apparatus 1 is not electrified. For this embodiment, that the output end of the first voltage conversion module 21 is electrically connected to the input end of the second voltage conversion module 22 may not be implemented unless the two electrostatic adsorption apparatuses 1 are both mounted in the cooker hood.

[0032] If the electrostatic adsorption apparatus 1 is took out of the accommodating cavity 7 of the cooker hood, the electrostatic adsorption apparatus 1 is de-

tached from the switching element 12. Because the abutting element no longer abuts against the micro switch, elastic compression of the abutting element is recovered, and the abutting end 14 that is of the abutting element and that retreats into the mounting hole stretches out of the mounting hole, until the base 13 is stopped by an edge of the mounting hole. Because the abutting element no longer abuts against the micro switch, the micro switch switches off the power supply circuit, and the electrical connection between the output end of the first voltage conversion module 21 and the input end of the second voltage conversion module 22 is disconnected. In this case, even if the control signal cable controls to enable (a user forgets to use a control operation to send a corresponding control signal to disable the first voltage conversion module 21) the first voltage conversion module 21, because the power supply circuit is switched off by the micro switch, socket portions corresponding to the adsorption electrode plug portion 11 of the electrostatic adsorption apparatus 1 also have no high voltage output. For this embodiment, when at least one electrostatic adsorption apparatus 1 is taken out of the accommodating cavity 7 of the cooker hood, that the electrical connection between the output end of the first voltage conversion module 21 and the input end of the second voltage conversion module 22 is disconnected can be implemented.

[0033] When the fan operates, airflow flows through the filter mesh 5, flows into the bottom inlet of the accommodating cavity 7, then flows through the electrostatic adsorption apparatus 1, then flows out of the top outlet of the accommodating cavity 7, and then is discharged after flowing through the fan.

Claims

1. An electrostatic adsorption apparatus (1) suitable to be applied to a cooker hood, wherein the electrostatic adsorption apparatus is suitable for being applied to a cooker hood which comprises a power supply module (2) for supplying power to the electrostatic adsorption apparatus (1), the power supply module (2) comprising a power supply circuit and a micro switch for controlling on and off of the power supply circuit, and the power supply module (2) supplying power to the electrostatic adsorption apparatus (1) in an insertion manner, wherein further the electrostatic adsorption apparatus (1) comprises an abutting element; the electrostatic adsorption apparatus (1) is configured to be mounted to the cooker hood, such that the abutting element is configured to abut against the micro switch; and the abutting element is disposed to be adapted to elastic compression when abutting against the micro switch, wherein further the elastic compression of the abutting element is configured to be recovered when the abutting element is detached from the micro switch (12), the

abutting element comprises a spring (15), the spring (15) is configured to be pressed by the micro switch (12) to implement the elastic compression and the electrostatic adsorption apparatus (1) further comprises a mounting hole which is disposed on a rear plate piece (18) of the electrostatic adsorption apparatus (1), the abutting element further comprises a base (13), a spring (15) and an abutting end (14), and the spring (15) abuts against the side of the base (13) opposite to the abutting end (14), to enable the abutting end (14) to pass through the mounting hole, and the base (13) is stopped by an edge of the mounting hole.

2. A cooker hood, comprising an electrostatic adsorption apparatus (1) according to claim 1 and a power supply module (2) for supplying power to the electrostatic adsorption apparatus (1), wherein

the power supply module (2) comprises a power supply circuit and a switching element (12) for controlling on and off of the power supply circuit; when the electrostatic adsorption apparatus (1) is mounted to the cooker hood, the electrostatic adsorption apparatus (1) abuts against the switching element (12), the switching element (12) switches on the power supply circuit, and the electrostatic adsorption apparatus (1) is electrically connected to the power supply circuit; and

when the electrostatic adsorption apparatus (1) is detached from the switching element (12), the switching element (12) switches off the power supply circuit wherein further the electrostatic adsorption apparatus (1) comprises an abutting element;

when the electrostatic adsorption apparatus (1) is mounted to the cooker hood, the abutting element of the electrostatic adsorption apparatus (1) abuts against the switching element (12), the switching element (12) switches on the power supply circuit, and the electrostatic adsorption apparatus (1) is electrically connected to the power supply circuit; the abutting element is disposed to be adapted to elastic compression when abutting against the switching element (12);

the elastic compression of the abutting element is recovered when the abutting element is detached from the switching element (12);

the abutting element comprises a spring (15); the switching element (12) presses the spring (15) to implement the elastic compression and the electrostatic adsorption apparatus (1) further comprises a mounting hole which is disposed on a rear plate piece (18) of the electrostatic adsorption apparatus (1);

the abutting element further comprises a base

- (13), a spring and an abutting end (14); and the spring (15) abuts against the side of the base (13) opposite to the abutting end (14), to enable the abutting end (14) to pass through the mounting hole, and the base (13) is stopped by an edge of the mounting hole. 5
3. The cooker hood according to claim 2, **characterized in that:** the power supply module (2) supplies power to the electrostatic adsorption apparatus (1) in an insertion manner. 10
4. The cooker hood according to any of claims 2-3, **characterized in that:** the switching element (12) is a micro switch. 15
5. The cooker hood according to any of claims 2-4, **characterized in that:** one of the power supply module (2) and the electrostatic adsorption apparatus (1) is provided with a plug portion, and the other one is provided with a socket portion adapted to be inserted by the plug portion. 20
6. The cooker hood according to claim 5, **characterized in that:** the socket portion comprises an insertion elastic piece (8). 25
7. The cooker hood according to any of claims 2-6, **characterized in that:** the power supply circuit comprises a high voltage power supply module. 30
8. The cooker hood according to any of claims 2-7, **characterized in that:**
- the cooker hood comprises an accommodating cavity (7); and 35
- the electrostatic adsorption apparatus (1) is horizontally inserted into the accommodating cavity (7) and is mounted to the cooker hood. 40
9. The cooker hood according to claim 8, **characterized in that:**
- the accommodating cavity (7) is provided with a bottom inlet and a top outlet. 45

Patentansprüche

1. Elektrostatische Adsorptionsvorrichtung (1), die sich für die Anwendung bei einer Dunstabzugshaube eignet, wobei sich die elektrostatische Adsorptionsvorrichtung für die Anwendung bei einer Dunstabzugshaube eignet, die ein Stromversorgungsmodul (2) zum Versorgen der elektrostatischen Adsorptionsvorrichtung (1) mit Strom umfasst, das Stromversorgungsmodul (2) einen Versorgungsstromkreis und einen Mikroschalter zum Regeln des Ein- und Ausschaltens des Versorgungsstromkreises umfasst 50
- 55

und das Stromversorgungsmodul (2) die elektrostatische Adsorptionsvorrichtung (1) im eingesteckten Zustand mit Strom versorgt, wobei die elektrostatische Adsorptionsvorrichtung (1) ferner ein anliegendes Element umfasst, die elektrostatische Adsorptionsvorrichtung (1) so konfiguriert ist, dass sie sich an der Dunstabzugshaube anbringen lässt, so dass das anliegende Element so konfiguriert ist, dass es an dem Mikroschalter anliegt, und das anliegende Element so angeordnet ist, dass es sich an ein elastisches Zusammendrücken anpasst, wenn es an dem Mikroschalter anliegt, wobei das elastische Zusammendrücken des anliegenden Elements ferner so konfiguriert ist, dass es aufgehoben ist, wenn das anliegende Element von dem Mikroschalter (12) getrennt ist, das anliegende Element eine Feder (15) umfasst, die so konfiguriert ist, dass der Mikroschalter (12) darauf drückt und so für das elastische Zusammendrücken sorgt, und die elektrostatische Adsorptionsvorrichtung (1) ferner ein Montageloch umfasst, das an einem Rückplattenteil (18) der elektrostatischen Adsorptionsvorrichtung (1) angeordnet ist, das anliegende Element ferner einen Sockel (13), eine Feder (15) und ein anliegendes Ende (14) umfasst und die Feder (15) an der dem anliegenden Ende (14) gegenüberliegenden Seite des Sockels (13) anliegt und so ermöglicht, dass das anliegende Ende (14) durch das Montageloch hindurch verläuft, und der Sockel (13) von einem Rand des Montagelochs gestoppt wird.

2. Dunstabzugshaube mit einer elektrostatischen Adsorptionsvorrichtung (1) nach Anspruch 1 und einem Stromversorgungsmodul (2) zum Versorgen der elektrostatischen Adsorptionsvorrichtung (1) mit Strom, wobei

das Stromversorgungsmodul (2) einen Versorgungsstromkreis und ein Schaltelement (12) zum Regeln eines Ein- und Ausschaltens des Versorgungsstromkreises umfasst, die elektrostatische Adsorptionsvorrichtung (1), wenn sie an der Dunstabzugshaube angebracht ist, an dem Schaltelement (12) anliegt, das Schaltelement (12) den Versorgungsstromkreis einschaltet und die elektrostatische Adsorptionsvorrichtung (1) elektrisch mit dem Versorgungsstromkreis verbunden ist und

das Schaltelement (12), wenn die elektrostatische Adsorptionsvorrichtung (1) davon getrennt ist, den Versorgungsstromkreis ausschaltet, wobei die elektrostatische Adsorptionsvorrichtung (1) ferner ein anliegendes Element umfasst,

das anliegende Element der elektrostatischen Adsorptionsvorrichtung (1), wenn die elektrostatische Adsorptionsvorrichtung (1) an der Dunstabzugshaube angebracht ist, an dem

- Schaltelement (12) anliegt, das Schaltelement (12) den Versorgungsstromkreis einschaltet und die elektrostatische Adsorptionsvorrichtung (1) elektrisch mit dem Versorgungsstromkreis verbunden ist, das anliegende Element so angeordnet ist, dass es sich an ein elastisches Zusammendrücken anpasst, wenn es an dem Schaltelement (12) anliegt, das elastische Zusammendrücken des anliegenden Elements aufgehoben ist, wenn das anliegende Element von dem Schaltelement (12) getrennt ist, das anliegende Element eine Feder (15) umfasst, das Schaltelement (12) auf die Feder (15) drückt und so für das elastische Zusammendrücken sorgt und die elektrostatische Adsorptionsvorrichtung (1) ferner ein Montageloch umfasst, das an einem Rückplattenteil (18) der elektrostatischen Adsorptionsvorrichtung (1) angeordnet ist, das anliegende Element ferner einen Sockel (13), eine Feder und ein anliegendes Ende (14) umfasst und die Feder (15) an der dem anliegenden Ende (14) gegenüberliegenden Seite des Sockels (13) anliegt und so ermöglicht, dass das anliegende Ende (14) durch das Montageloch hindurch verläuft, und der Sockel (13) von einem Rand des Montagelochs gestoppt wird.
3. Dunstabzugshaube nach Anspruch 2, **dadurch gekennzeichnet, dass:**
das Stromversorgungsmodul (2) die elektrostatische Adsorptionsvorrichtung (1) im eingesteckten Zustand mit Strom versorgt.
4. Dunstabzugshaube nach einem der Ansprüche 2 bis 3, **dadurch gekennzeichnet, dass:**
es sich bei dem Schaltelement (12) um einen Mikro-schalter handelt.
5. Dunstabzugshaube nach einem der Ansprüche 2 bis 4, **dadurch gekennzeichnet, dass:**
das Stromversorgungsmodul (2) oder die elektrostatische Adsorptionsvorrichtung (1) mit einem Steckerschnitt und das jeweils andere Element mit einem Buchsenabschnitt versehen ist, der so ausgelegt ist, dass sich der Steckerabschnitt einstecken lässt.
6. Dunstabzugshaube nach Anspruch 5, **dadurch gekennzeichnet, dass:**
der Buchsenabschnitt ein elastisches Einsteckteil (8) umfasst.
7. Dunstabzugshaube nach einem der Ansprüche 2 bis 6, **dadurch gekennzeichnet, dass:**

der Versorgungsstromkreis ein Hochspannungsstromversorgungsmodul umfasst.

8. Dunstabzugshaube nach einem der Ansprüche 2 bis 7, **dadurch gekennzeichnet, dass:**
die Dunstabzugshaube einen Aufnahmehohlraum (7) umfasst und die elektrostatische Adsorptionsvorrichtung (1) horizontal in den Aufnahmehohlraum (7) eingesteckt und an der Dunstabzugshaube angebracht ist.
9. Dunstabzugshaube nach Anspruch 8, **dadurch gekennzeichnet, dass:**
der Aufnahmehohlraum (7) mit einem unteren Einlass und einem oberen Auslass versehen ist.

Revendications

1. Appareil d'adsorption électrostatique (1) approprié pour être appliqué à une hotte aspirante, dans lequel l'appareil d'adsorption électrostatique est approprié pour être appliqué à une hotte aspirante qui comprend un module d'alimentation électrique (2) pour alimenter en électricité l'appareil d'adsorption électrostatique (1), le module d'alimentation électrique (2) comprenant un circuit d'alimentation électrique et un micro-commutateur pour commander la mise sous tension et hors tension du circuit d'alimentation électrique, et le module d'alimentation électrique (2) alimentant en électricité l'appareil d'adsorption électrostatique (1) d'une manière par insertion, dans lequel en outre l'appareil d'adsorption électrostatique (1) comprend un élément de butée ; l'appareil d'adsorption électrostatique (1) est configuré pour être monté sur la hotte aspirante, de sorte que l'élément de butée soit configuré pour être en butée contre le micro-commutateur ; et l'élément de butée est disposé pour être adapté à une compression élastique lorsqu'il est en butée contre le micro-commutateur, dans lequel en outre la compression élastique de l'élément de butée est configurée pour être rétablie lorsque l'élément de butée est détaché du micro-commutateur (12), l'élément de butée comprend un ressort (15), le ressort (15) est configuré pour être pressé par le micro-commutateur (12) pour mettre en œuvre la compression élastique et l'appareil d'adsorption électrostatique (1) comprend en outre un trou de montage qui est disposé sur une pièce de plaque arrière (18) de l'appareil d'adsorption électrostatique (1), l'élément de butée comprend en outre une base (13), un ressort (15) et une extrémité de butée (14), et le ressort (15) est en butée contre le côté de la base (13) opposé à l'extrémité de butée (14), pour permettre à l'extrémité de butée (14) de traverser le trou de montage, et la base (13) est ar-

rêtée par un bord du trou de montage.

2. Hotte aspirante, comprenant un appareil d'adsorption électrostatique (1) selon la revendication 1 et un module d'alimentation électrique (2) pour alimenter en électricité l'appareil d'adsorption électrostatique (1), dans laquelle

le module d'alimentation électrique (2) comprend un circuit d'alimentation électrique et un élément de commutation (12) pour commander la mise sous tension et hors tension du circuit d'alimentation électrique ;

lorsque l'appareil d'adsorption électrostatique (1) est monté sur la hotte aspirante, l'appareil d'adsorption électrostatique (1) est en butée contre l'élément de commutation (12), l'élément de commutation (12) commute sous tension le circuit d'alimentation électrique, et l'appareil d'adsorption électrostatique (1) est électriquement connecté au circuit d'alimentation électrique ; et

lorsque l'appareil d'adsorption électrostatique (1) est détaché de l'élément de commutation (12), l'élément de commutation (12) commute hors tension le circuit d'alimentation électrique dans laquelle outre l'appareil d'adsorption électrostatique (1) comprend un élément de butée ; lorsque l'appareil d'adsorption électrostatique (1) est monté sur la hotte aspirante, l'élément de butée de l'appareil d'adsorption électrostatique (1) est en butée contre l'élément de commutation (12), l'élément de commutation (12) commute sous tension le circuit d'alimentation électrique, et l'appareil d'adsorption électrostatique (1) est électriquement connecté au circuit d'alimentation électrique ;

l'élément de butée est disposé pour être adapté à une compression élastique lorsqu'il est en butée contre l'élément de commutation (12) ;

la compression élastique de l'élément de butée est rétablie lorsque l'élément de butée est détaché de l'élément de commutation (12) ;

l'élément de butée comprend un ressort (15) ; l'élément de commutation (12) presse le ressort (15) pour mettre en œuvre la compression élastique et

l'appareil d'adsorption électrostatique (1) comprend en outre un trou de montage qui est disposé sur une pièce de plaque arrière (18) de l'appareil d'adsorption électrostatique (1) ; l'élément de butée comprend en outre une base (13), un ressort et une extrémité de butée (14) ; et

le ressort (15) est en butée contre le côté de la base (13) opposé à l'extrémité de butée (14), pour permettre à l'extrémité de butée (14) de traverser le trou de montage, et la base (13) est

arrêtée par un bord du trou de montage.

3. Hotte aspirante selon la revendication 2, **caractérisée en ce que** :

le module d'alimentation électrique (2) alimente en électricité l'appareil d'adsorption électrostatique (1) d'une manière par insertion.

4. Hotte aspirante selon l'une quelconque des revendications 2 à 3, **caractérisée en ce que** : l'élément de commutation (12) est un micro-commutateur.

5. Hotte aspirante selon l'une quelconque des revendications 2 à 4, **caractérisée en ce que** : l'un parmi le module d'alimentation électrique (2) et l'appareil d'adsorption électrostatique (1) est muni d'une partie de fiche, et l'autre est muni d'une partie de prise adaptée pour que la partie de fiche y soit insérée.

6. Hotte aspirante selon la revendication 5, **caractérisée en ce que** :

la partie de prise comprend une pièce élastique d'insertion (8).

7. Hotte aspirante selon l'une quelconque des revendications 2 à 6, **caractérisée en ce que** :

le circuit d'alimentation électrique comprend un module d'alimentation électrique à haute tension.

8. Hotte aspirante selon l'une quelconque des revendications 2 à 7, **caractérisée en ce que** :

la hotte aspirante comprend une cavité de réception (7) ; et

l'appareil d'adsorption électrostatique (1) est inséré horizontalement dans la cavité de réception (7) et est monté sur la hotte aspirante.

9. Hotte aspirante selon la revendication 8, **caractérisée en ce que** :

la cavité de réception (7) est munie d'une entrée inférieure et d'une sortie supérieure.

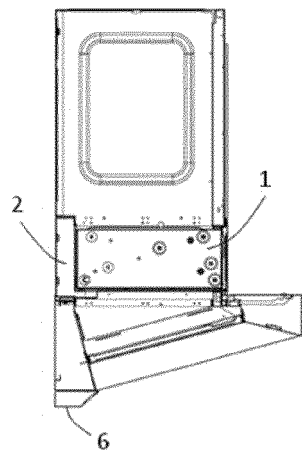


FIG. 1

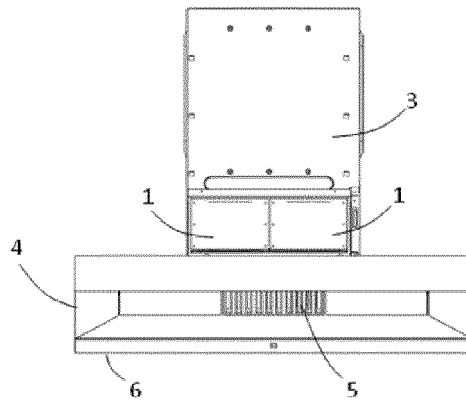


FIG. 2

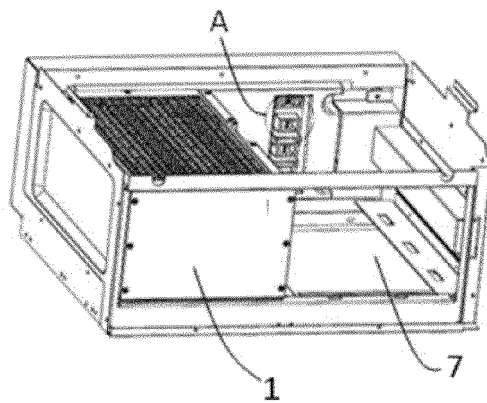


FIG. 3

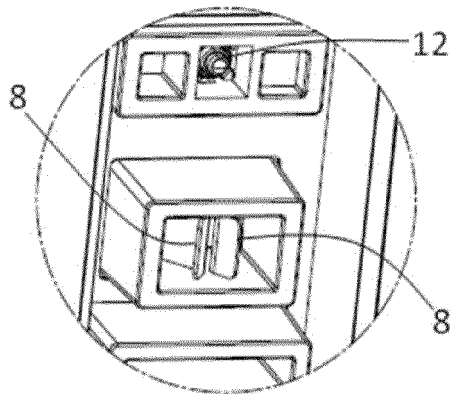


FIG. 4

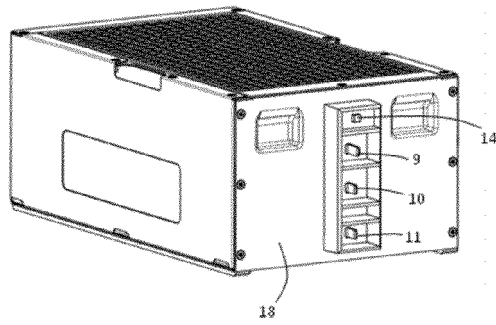


FIG. 5

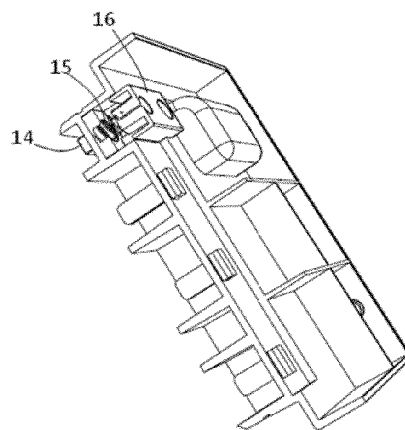


FIG. 6

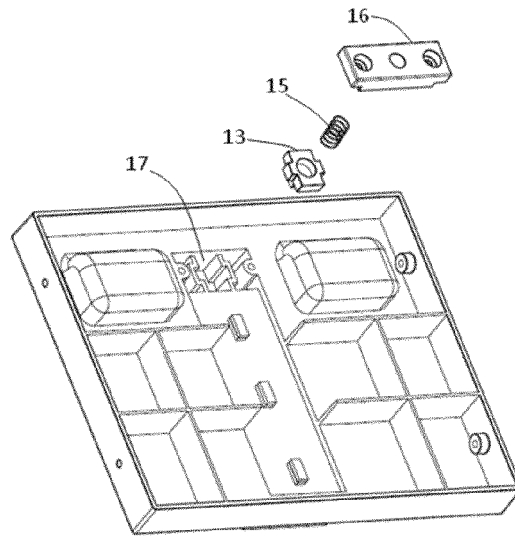


FIG. 7

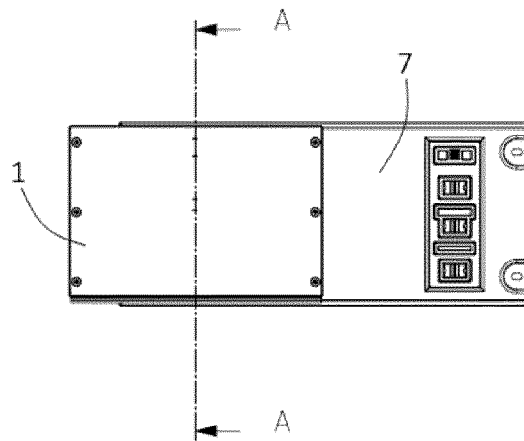


FIG. 8

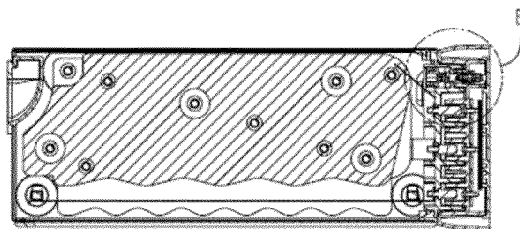


FIG. 9

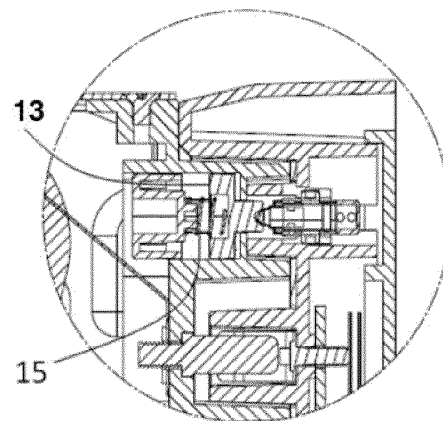


FIG. 10

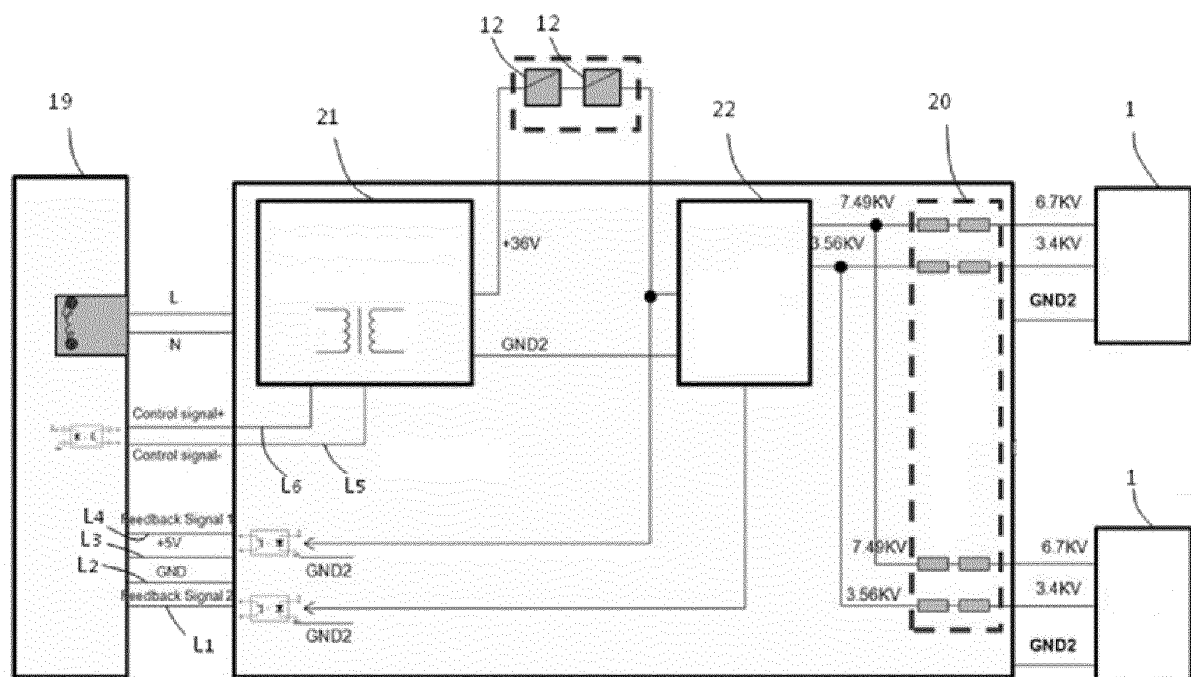


FIG. 11

REFERENCES CITED IN THE DESCRIPTION

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