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(71) Applicant: **BSH Hausgeräte GmbH**
81739 München (DE)

(72) Inventors:
• **Hong, Tao**
Chuzhou, Anhui 239000 (CN)
• **Lu, Yong**
Nanjing, Anhui 210046 (CN)
• **Xie, Qingsong**
nanjing, Anhui 210046 (CN)
• **Yao, Xingen**
Nanjing, Anhui 211100 (CN)

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(54) **COOKER HOOD AND HOUSING ASSEMBLY THEREOF**

(57) The present invention provides a cooker hood and a housing assembly thereof. The housing assembly of the cooker hood provided in the present invention includes: a housing and a fume inlet portion. The fume inlet portion includes an air inlet and a guiding plate; the fume inlet portion is adapted to be switched between a first position and a second position; the fume inlet portion at least partially extends out of the housing when the fume inlet portion is switched from the first position to the second position; the guiding plate is adapted to be switched between a third position and a fourth position; the guiding plate seals the air inlet when the guiding plate is located at the third position; and when the guiding plate is located at the fourth position, the air inlet is open, and the guiding plate is adapted to guide an airflow to flow into the air inlet. The cooker hood includes the housing assembly. The present invention reduces the volume while resolving a problem of colliding with a head.

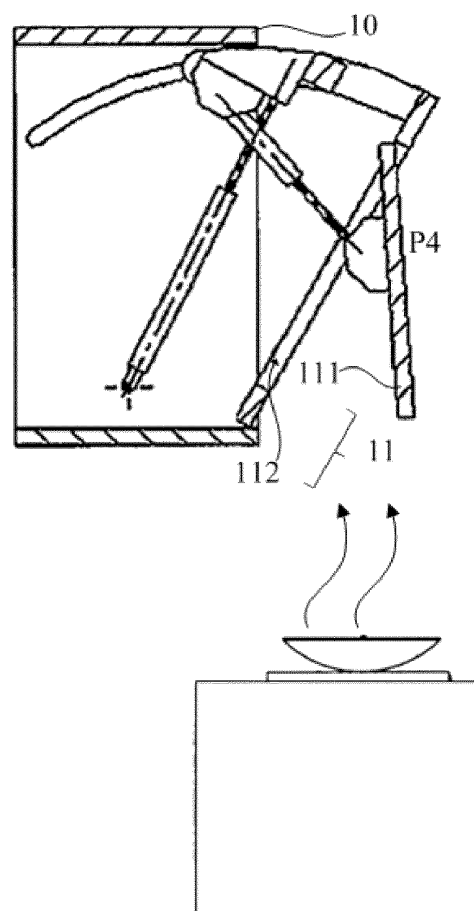


FIG. 3

Description

BACKGROUND

Technical Field

[0001] The present invention relates to kitchenware, and in particular, to a cooker hood and a housing assembly thereof.

Related Art

[0002] A cooker hood is a kitchen appliance for cleaning the kitchen environment. The cooker hood generally has an air inlet and a guiding plate fixed to the air inlet. Oil fumes generated during cooking may be guided by the guiding plate and enter the air inlet, to be sucked into an air channel and discharged.

[0003] Existing cooker hoods include top cooker hoods and inclined cooker hoods. The top cooker hood has a relatively good effect of pumping fumes, but has a disadvantage of easily colliding with a head during use. The inclined cooker hood does not have the problem of colliding with a head, but the volume of the inclined cooker hood is relatively large.

SUMMARY

[0004] The present invention provides a cooker hood and a housing assembly thereof, to reduce the volume while resolving the problem of colliding with a head.

[0005] To resolve the foregoing problem, the present invention provides a housing assembly of a cooker hood, including: a housing and a fume inlet portion, where the fume inlet portion includes an air inlet and a guiding plate; the fume inlet portion is adapted to be switched between a first position and a second position; the fume inlet portion at least partially extends out of the housing when the fume inlet portion is switched from the first position to the second position; the guiding plate is adapted to be switched between a third position and a fourth position; the guiding plate seals the air inlet when the guiding plate is located at the third position; and when the guiding plate is located at the fourth position, the air inlet is open, and the guiding plate is adapted to guide an airflow to flow into the air inlet.

[0006] Optionally, when the fume inlet portion is located at the first position and the guiding plate is located at the third position, the housing assembly is overall of a rectangular parallelepiped structure.

[0007] Optionally, when being switched from the first position to the second position, the fume inlet portion rotates around a rotating shaft at the bottom of the fume inlet portion.

[0008] Optionally, when being switched from the first position to the second position, the fume inlet portion is adapted to be driven by a first drive mechanism to rotate, and the first drive mechanism includes: an arc-shaped

chute disposed in a side wall of the housing; and a support arm fixed to an inner wall of the fume inlet portion, where the support arm is disposed in parallel with the side wall, a sliding block is disposed on a surface of the support arm towards the side wall, and the sliding block is adapted to move in the arc-shaped chute, to drive the fume inlet portion to rotate around the rotating shaft at the bottom of the fume inlet portion.

[0009] Optionally, the first drive mechanism further includes: a generator connected to the support arm and adapted to drive the support arm to enable the sliding block to move in the arc-shaped chute.

[0010] Optionally, the sliding block is located at a tail end of the arc-shaped chute when the fume inlet portion is located at the first position.

[0011] Optionally, a limiting mechanism is disposed at an opening end of the arc-shaped chute, and the sliding block is located at a limiting position of the limiting mechanism when the fume inlet portion is located at the second position.

[0012] Optionally, the limiting mechanism is a limiting protruding block adapted to block the sliding block from moving, or the limiting mechanism is a sensor for sensing a position of the sliding block.

[0013] Optionally, the bottom of the fume inlet portion is movably connected to the housing; and when being switched from the first position to the second position, the fume inlet portion rotates by using the connection position as the rotating shaft.

[0014] Optionally, when being switched from the third position to the fourth position, the guiding plate rotates around a rotating shaft at the top of the guiding plate.

[0015] Optionally, when being switched from the third position to the fourth position, the guiding plate is adapted to be driven by a second drive mechanism to rotate; and there are two support arms respectively disposed corresponding to side walls of the housing, and the second drive mechanism includes: a beam located between the two support arms; and a generator fixed to the beam and connected to an inner wall of the guiding plate, and adapted to: when the guiding plate is switched from the third position to the fourth position, drive the guiding plate to rotate around a rotating shaft at the top of the guiding plate.

[0016] Optionally, one end of the generator is fixed to a center position of the beam, and the other end is connected to a center position of the guiding plate.

[0017] Optionally, the top of the guiding plate is movably connected to the air inlet; and when being switched from the third position to the fourth position, the guiding plate rotates by using the connection position as the rotating shaft.

[0018] Optionally, the generator is a cylinder or a motor.

[0019] Correspondingly, the present invention further provides a cooker hood, including: a housing assembly described above.

[0020] Compared with the prior art, the technical solu-

tions of the present invention have the following advantages:

The present invention provides a housing assembly of a cooker hood. When the housing assembly is in a working state, the fume inlet portion is switched from the first position to the second position and at least partially extends out of the housing, to enable the guiding plate to extend forward related to the housing by a distance. The guiding plate may also perform position switching. Specifically, the guiding plate is switched from a position of sealing the air inlet to a position of opening the air inlet. Moreover, the position of the guiding plate may be adjusted to a position above a cooktop, thereby improving an effect of collecting fumes and further improving efficiency of pumping fumes.

[0021] Further, when the fume inlet portion is located at the first position and the guiding plate is located at the third position, the housing assembly is overall of a rectangular parallelepiped structure. The rectangular parallelepiped structure is compact and is suitable to be hung on the wall, therefore the housing assembly does not occupy space and the problem of colliding with a head does not easily occur.

BRIEF DESCRIPTION OF THE DRAWINGS

[0022]

FIG. 1 is a structural diagram when a fume inlet portion is located at a first position in a housing assembly according to the present invention;

FIG. 2 is a structural diagram when a fume inlet portion is located at a second position and a guiding plate is located at a third position in a housing assembly according to the present invention;

FIG. 3 is a structural diagram when a guiding plate is located at a fourth position in a housing assembly according to the present invention;

FIG. 4 is a schematic diagram of the housing assembly in FIG. 1 along a sectional line AA';

FIG. 5 is a schematic diagram of the housing assembly in FIG. 1 along a sectional line BB'; and

FIG. 6 is a locally enlarged diagram of an opening position of an arc-shaped chute in FIG. 1.

[0023] 10: Housing; 11: Fume inlet portion; 111: Guiding plate; 112: Air inlet; 12: First drive mechanism; 121: Arc-shaped chute; 122: Support arm; 123: Sliding block; 124, 132: Generator; 125: Limiting mechanism; 13: Second drive mechanism; 131: Beam; P1: First position; P2: Second position; P3: Third position; P4: Fourth position.

DETAILED DESCRIPTION

[0024] An inclined cooker hood of the prior art has a relatively large volume. One of the reasons is that to collect fumes, a panel at an air inlet of the inclined cooker hood is disposed inclined to a direction to which oil fumes rise, and consequently, relatively large space is occupied. If the panel of the air inlet is disposed in parallel with the direction to which the oil fumes rise, an effect of collecting fumes is difficult to be achieved, and an effect of pumping fumes is affected.

[0025] The present invention provides a housing assembly of a cooker hood. When the housing assembly is in a working state, a fume inlet portion performs position switching and at least partially extends out of a housing. The guiding plate may also be switched from a position of sealing an air inlet to a position of opening the air inlet. Therefore, the guiding plate is enabled to extend forward relative to the housing by a distance, and the guiding plate may be adjusted to a position above the cooktop, thereby improving an effect of collecting fumes and further improving efficiency of pumping fumes.

[0026] Moreover, the guiding plate seals the air inlet and the fume inlet portion does not extend out of the housing when the cooker hood is not in a working state, and therefore the volume is relatively small.

[0027] To make the objectives, features, and advantages of the present invention more comprehensible, the following describes in detail the specific embodiments of the present invention with reference to the accompanying drawings.

[0028] Referring to FIG. 1 to FIG. 3, FIG. 1 to FIG. 3 show structural diagrams of different positions of an embodiment of a housing assembly of a cooker hood in a working state according to the present invention. The housing assembly of the cooker hood according to this embodiment includes:

a housing 10, where the housing 10 is a housing for accommodating a fan and for providing accommodation space for other components of the housing assembly; and the housing 10 is sheet metal; and

a fume inlet portion 11, where the fume inlet portion 11 is located at a side of the housing 10 close to a cooktop and is used to guide oil fumes into the housing 10; and the fume inlet portion 11 includes an air inlet 112 and a guiding plate 111.

[0029] The air inlet 112 is a channel through which the oil fumes enter the inside of the housing 10. In this embodiment, the air inlet 112 is formed in a panel, and the air inlet 112 is in a shape of a rectangle.

[0030] The fume inlet portion 11 further includes the guiding plate 111 used to collect oil fumes rising from the cooktop.

[0031] The fume inlet portion 11 is of a position adjustable structure. Specifically, the fume inlet portion 11 is

adapted to be switched between a first position P1 and a second position P2. As shown in FIG. 1, the fume inlet portion 11 seals the housing 10 when the fume inlet portion 11 is located at the first position P1. As shown in FIG. 2, when being switched from the first position P1 to the second position P2, the fume inlet portion 11 extends out of the housing 10, to enable the guiding plate 111 to extend forward (towards a direction close to the cooktop) relative to the housing 10 by a distance, so as to improve the effect of collecting fumes.

[0032] The guiding plate 111 is also of a position adjustable structure. Specifically, the guiding plate 111 is adapted to be switched between a third position P3 and a fourth position P4. Specifically, as shown in FIG. 2, the guiding plate 111 seals the air inlet 112 when the guiding plate 111 is located at the third position P3. As shown in FIG. 3, when the guiding plate 111 is located at the fourth position P4, the air inlet 112 is open, and the guiding plate 111 is adapted to guide an airflow to flow into the air inlet 112. When the guiding plate 111 is located at the fourth position P4, to open the air inlet 112, the guiding plate 111 further extends forward (towards the direction close to the cooktop), so that the guiding plate 111 is closer to a position where the oil fumes of the cooktop rise, thereby optimizing the effect of collecting fumes.

[0033] During actual use, when the cooker hood is turned on to pump fumes, the fume inlet portion 11 is switched from the first position P1 to the second position P2 to open the panel of the housing, then the guiding plate 111 is switched from the third position P3 to the fourth position P4 to open the air inlet 112, and at last, the fan in the housing 10 is controlled to start. When the use of the cooker hood ends, the fan is turned off first, then the guiding plate 111 is switched from the fourth position P4 to the third position P3 to seal the air inlet 112, and at last, the fume inlet portion is switched from the second position P2 to the first position P1 to seal the housing 10. In other words, when the cooker hood is in a working state, the fume inlet portion 11 and the guiding plate 111 extend forward, and when the cooker hood is not in the working state, the fume inlet portion 11 seals the housing 10 and the guiding plate 111 seals the air inlet 112. Thereby, an overall structure is compact and relatively small space is occupied.

[0034] In this embodiment, when the fume inlet portion 11 is located at the first position P1 and the guiding plate 111 is located at the third position P3, the housing assembly is overall of a rectangular parallelepiped structure. The rectangular parallelepiped structure is compact and is suitable to be hung on the wall, therefore the housing assembly does not occupy space and the problem of colliding with a head does not easily occur.

[0035] Referring to FIG. 1 and FIG. 2, in this embodiment, when the fume inlet portion 11 is switched from the first position P1 to the second position P2, the fume inlet portion 11 rotates around a rotating shaft at the bottom of the fume inlet portion 11 to enable a top area of the fume inlet portion 11 to extend out of the housing 10.

[0036] Position switching of the fume inlet portion 11 is implemented by means of rotation, so that the structure is simple and is easily achieved. In another embodiment, the fume inlet portion 11 may extend out of the housing by using another manner. For example, the fume inlet portion 11 extends out of the housing 10 by means of overall translation. In this embodiment, the bottom of the fume inlet portion 11 is movably connected to the housing 10; and when being switched from the first position P1 to the second position P2, the fume inlet portion 11 rotates by using the connection position as the rotating shaft. For example, the bottom of the fume inlet portion 11 is movably connected to the housing 10 (for example, a side wall of the housing 10) by using a screw; and when being switched from the first position P1 to the second position P2, the fume inlet portion 11 rotates by using the screw position as the rotating shaft.

[0037] The connection implemented by using the screw is simple in structure and is securely fixed. In another embodiment, the bottom of the fume inlet portion 11 may alternatively be movably connected to the housing 10 by using a loose leaf structure.

[0038] Referring to FIG. 4 and FIG. 5 together, FIG. 4 and FIG. 5 respectively show schematic diagrams of the housing assembly in FIG. 1 along a sectional line AA' and a sectional line BB'.

[0039] In this embodiment, when being switched from the first position P1 to the second position P2, the fume inlet portion 11 is adapted to be driven by a first drive mechanism 12 to rotate.

[0040] The first drive mechanism 12 includes: an arc-shaped chute 121 disposed in a side wall of the housing 10; and a support arm 122 fixed to an inner wall of the fume inlet portion 11.

[0041] The support arm 122 is disposed in parallel with the side wall, a sliding block 123 is disposed on a surface of the support arm 122 towards the side wall, and the sliding block 123 is adapted to move in the arc-shaped chute 121, to drive the fume inlet portion 11 to rotate around the rotating shaft at the bottom of the fume inlet portion 11, so that the fume inlet portion 11 is switched between the first position P1 and the second position P2.

[0042] A position of the support arm 122 matches that of the arc-shaped chute 121. The term "match" means that a setting of the positions of the support arm 122 and the arc-shaped chute 121 can enable the sliding block 123 of the support arm 122 to move in the arc-shaped chute 121. In this embodiment, to enable the guiding plate 111 to have a largest translation position when the fume inlet portion 11 is switched from the first position P1 to the second position P2, the fume inlet portion 11 needs a relatively large rotation radius. Therefore, the support arm 122 is disposed at a position flush with a top end of the fume inlet portion 11. Correspondingly, the arc-shaped chute 121 is disposed at a position of the side wall of the housing close to the top.

[0043] The first drive mechanism 12 further includes: a generator 124 connected to the support arm 122 and

adapted to drive the support arm 122 to enable the sliding block 123 to move in the arc-shaped chute 121. Specifically, a fixed end of the generator 124 is movably connected (for example, connected by using a screw) to the side wall of the housing 10, and an extendable end of the generator 124 is connected to the support arm 122. The extendable end of the generator 124 drives the support arm 122 to move, so as to enable the sliding block 123 to move in the arc-shaped chute 121.

[0044] The generator 124 may electrically control the fume inlet portion 11 to be switched between the first position P1 and the second position P2, to enable consumers to have better use feelings.

[0045] Specifically, the generator 124 may be a motor or a cylinder.

[0046] It should be noted that to avoid a position deviation when the fume inlet portion 11 is switched between the first position P1 and the second position P2, the first drive mechanism 12 is further provided with a component having a limiting effect.

[0047] Specifically, the arc-shaped chute 121 and the sliding block 123 are configured in such a manner that the sliding block 123 is located at a tail end of the arc-shaped chute 121 when the fume inlet portion 11 is located at the first position P1, so that the sliding block 123 cannot further move inward, and the fume inlet portion 11 may not rotate into the housing 10, thereby implementing position limiting in a process in which the fume inlet portion 11 is switched from the second position P2 to the first position P1.

[0048] With reference to FIG. 6, FIG. 6 is a locally enlarged diagram of an opening position of the arc-shaped chute in FIG. 1.

[0049] A limiting mechanism 125 is disposed at an opening end of the arc-shaped chute 121, and the sliding block 123 is located at a limiting position of the limiting mechanism 125 when the fume inlet portion 11 is located at the second position P2. At the limiting position, the limiting mechanism 125 enables the sliding block 123 to not further move outward, and the fume inlet portion 11 does not rotate towards a direction away from the housing 10, thereby implementing position limiting in a process in which the fume inlet portion 11 is switched from the first position P1 to the second position P2.

[0050] Specifically, the limiting mechanism 125 may be a mechanical limiting component. For example, the limiting mechanism 125 is a limiting protruding block adapted to block the sliding block 123 from moving.

[0051] Alternatively, the limiting mechanism 125 may be an electrical limiting component. For example, the limiting mechanism 125 is a sensor adapted to sense a position of the sliding block 123. When it is sensed that the sliding block 123 reaches the limiting position, the generator 124 is controlled to stop working.

[0052] Still, referring to FIG. 2 and FIG. 3, when the fume inlet portion 11 is switched to the second position P2, the guiding plate 111 starts being switched from the third position P3 to the fourth position P4, so that a state

of sealing the air inlet 112 is switched to a state of opening the air inlet 112, to guide an airflow to flow into the air inlet 112. Before the position of the guiding plate 111 is switched, the fume inlet portion 11 already extends out of the housing by a distance. A switching position of the guiding plate 111 may further be adjusted according to a position of the cooktop, so as to be adjusted to a position with an optimal effect of collecting fumes. Therefore, the volume of the cooker hood of this embodiment is relatively small, and the effect of pumping fumes is better than a conventional inclined cooker hood.

[0053] In this embodiment, the guiding plate 111 rotates around a rotating shaft at the top of the guiding plate 111, to implement switching from the third position P3 to the fourth position P4. The top of the guiding plate 111 is movably connected to the air inlet 112, to enable the guiding plate 111 to have the largest rotation radius when rotating. In another embodiment, the guiding plate 111 may implement position switching by using another manner. Specifically, the top of the guiding plate 111 is movably connected to the air inlet 112; and when being switched from the third position P3 to the fourth position P4, the guiding plate 111 rotates by using the connection position as the rotating shaft. In this embodiment, the top of the guiding plate 111 is movably connected to the air inlet 112 by using a screw; and when being switched from the third position P3 to the fourth position P4, the guiding plate 111 rotates by using the screw position as the rotating shaft, to open the air inlet 112.

[0054] Referring to FIG. 5, FIG. 5 is a schematic diagram of the housing assembly shown in FIG. 1 along a sectional line BB'. In this embodiment, when being switched from the third position P3 to the fourth position P4, the guiding plate 111 is adapted to be driven by a second drive mechanism 13 to rotate.

[0055] As shown in FIG. 5, in this embodiment, there are two support arms 122 in the first drive mechanism 12 that are respectively disposed corresponding to two side walls of the housing 10; and the second drive mechanism 12 includes:

a beam 131 located between the two support arms 122, and a generator 132 fixed to the beam 131 and connected to an inner wall (a surface towards the housing) of the guiding plate 111, and adapted to: when the guiding plate 111 is switched from the third position P3 to the fourth position P4, drive the guiding plate 111 to rotate around a rotating shaft at the top of the guiding plate 111.

[0056] In this embodiment, one end (a fixed end) of the generator 132 is fixed to a center position of the beam 131, and the other end (an extending end) is connected to a center position of the guiding plate 111. In this way, when the guiding plate 111 is switched from the third position P3 to the fourth position P4, the center position of the guiding plate 111 bears force, and therefore force-bearing is uniform, and a rotation process is relatively stable.

[0057] Specifically, the generator 132 may be a motor or a cylinder.

[0058] Correspondingly, the present invention further provides a cooker hood. The cooker hood includes a housing assembly described above. The cooker hood of the present invention reduces the volume while resolving the problem of colliding with a head.

[0059] Although disclosed above, the present invention is not limited hereto. A skilled person in the art may make various alterations and modifications without departing from the spirit and scope of the present invention. Therefore, the protection scope of the present invention should be subject to the scope of the claims.

Claims

1. A housing assembly of a cooker hood, **characterized by** comprising:

a housing (10) and a fume inlet portion (11), wherein
the fume inlet portion (11) comprises an air inlet (112) and a guiding plate (111);
the fume inlet portion (11) is adapted to be switched between a first position (P1) and a second position (P2);
the fume inlet portion (11) at least partially extends out of the housing (10) when the fume inlet portion (11) is switched from the first position (P1) to the second position (P2);
the guiding plate (111) is adapted to be switched between a third position (P3) and a fourth position (P4);
the guiding plate (111) seals the air inlet (112) when the guiding plate (111) is located at the third position (P3); and
when the guiding plate (111) is located at the fourth position (P4), the air inlet (112) is open, and the guiding plate (111) is adapted to guide an airflow to flow into the air inlet (112).

2. The housing assembly according to claim 1, **characterized in that**, when the fume inlet portion (11) is located at the first position (P1) and the guiding plate (111) is located at the third position (P3), the housing assembly is overall of a rectangular parallelepiped structure.

3. The housing assembly according to claim 1 or 2, **characterized in that**, when being switched from the first position (P1) to the second position (P2), the fume inlet portion (11) rotates around a rotating shaft at the bottom of the fume inlet portion (11).

4. The housing assembly according to claim 3, **characterized in that**, when being switched from the first position (P1) to the second position (P2), the fume inlet portion (11) is adapted to be driven by a first drive mechanism (12) to rotate, and the first drive

mechanism (12) comprises:

an arc-shaped chute (121) disposed in a side wall of the housing (10); and
a support arm (122) fixed to an inner wall of the fume inlet portion (11), wherein the support arm (122) is disposed in parallel with the side wall, a sliding block (123) is disposed on a surface of the support arm (122) towards the side wall, and the sliding block (123) is adapted to move in the arc-shaped chute (121), to drive the fume inlet portion (11) to rotate around the rotating shaft at the bottom of the fume inlet portion (11).

5. The housing assembly according to claim 4, **characterized in that**, the first drive mechanism (12) further comprises: a generator (124, 132) connected to the support arm (122) and adapted to drive the support arm (122) to enable the sliding block (123) to move in the arc-shaped chute (121).

6. The housing assembly according to claim 4 or 5, **characterized in that**, the sliding block (123) is located at a tail end of the arc-shaped chute (121) when the fume inlet portion (11) is located at the first position (P1).

7. The housing assembly according to any one of the claims 4 to 6, **characterized in that**, a limiting mechanism (125) is disposed at an opening end of the arc-shaped chute (121), and the sliding block (123) is located at a limiting position of the limiting mechanism (125) when the fume inlet portion (11) is located at the second position (P2).

8. The housing assembly according to claim 7, **characterized in that**, the limiting mechanism (125) is a limiting protruding block adapted to block the sliding block (123) from moving, or the limiting mechanism (125) is a sensor for sensing a position of the sliding block (123).

9. The housing assembly according to any of the preceding claims, **characterized in that**, the bottom of the fume inlet portion (11) is movably connected to the housing (10); and
when being switched from the first position (P1) to the second position (P2), the fume inlet portion (11) rotates by using the connection position as the rotating shaft.

10. The housing assembly according to any of the preceding claims, **characterized in that**, when being switched from the third position (P3) to the fourth position (P4), the guiding plate (111) rotates around a rotating shaft at the top of the guiding plate (111).

11. The housing assembly according to any of the pre-

ceding claims, **characterized in that**, when being switched from the third position (P3) to the fourth position (P4), the guiding plate (111) is adapted to be driven by a second drive mechanism (13) to rotate; and

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there are two support arms (122) respectively disposed corresponding to side walls of the housing (10), and the second drive mechanism (13) comprises:

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a beam located between the two support arms (122); and

a generator (124, 132) fixed to the beam and connected to an inner wall of the guiding plate (111), and adapted to: when the guiding plate (111) is switched from the third position to the fourth position (P4), drive the guiding plate (111) to rotate around a rotating shaft at the top of the guiding plate (111).

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12. The housing assembly according to claim 11, **characterized in that**, one end of the generator (124, 132) is fixed to a center position of the beam, and the other end is connected to a center position of the guiding plate (111).

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13. The housing assembly according to any of the preceding claims, **characterized in that**, the top of the guiding plate (111) is movably connected to the air inlet (112); and when being switched from the third position (P3) to the fourth position (P4), the guiding plate (111) rotates by using the connection position as the rotating shaft.

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14. The housing assembly according to claim 5 or 11, **characterized in that**, the generator (124, 132) is a cylinder or a motor.

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15. A cooker hood, comprising:

a housing assembly according to any one of claims 1 to 14.

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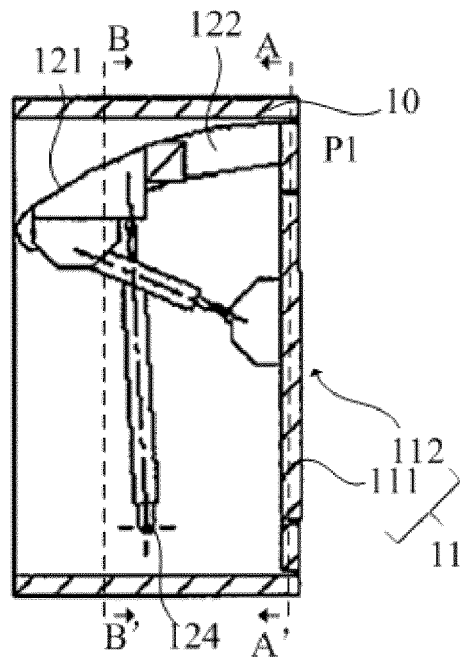


FIG. 1

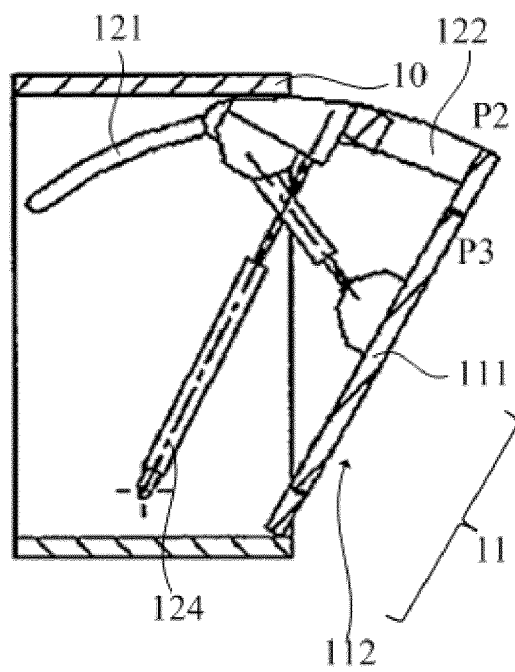


FIG. 2

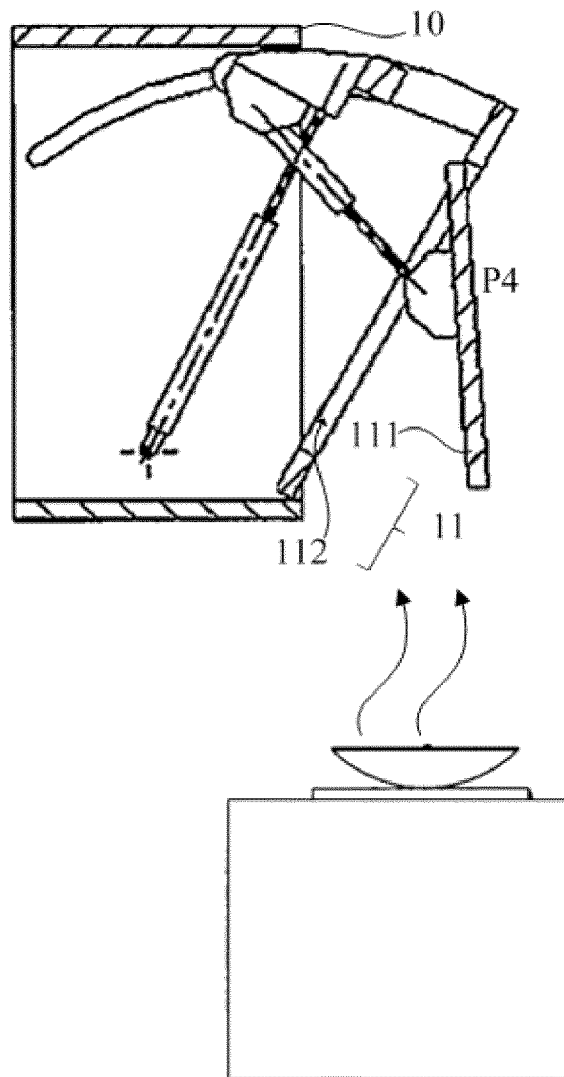


FIG. 3

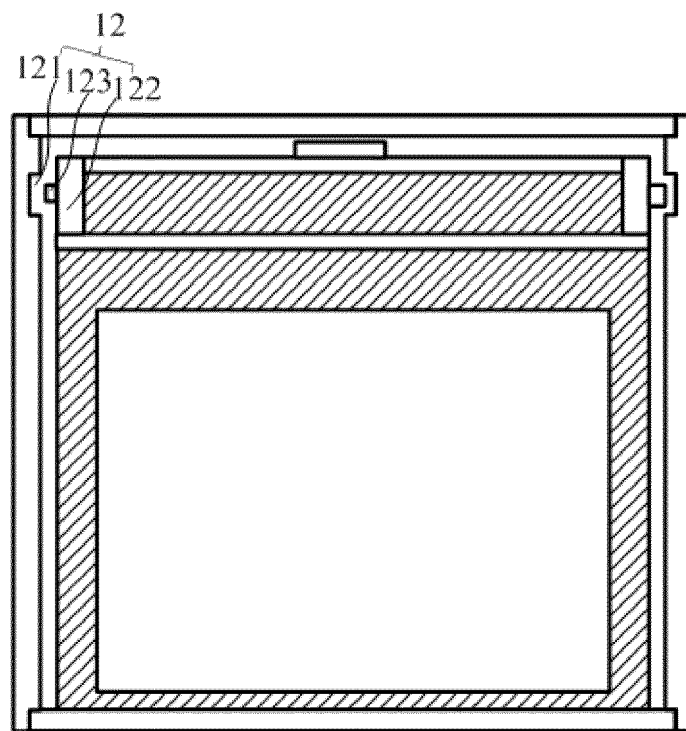


FIG. 4

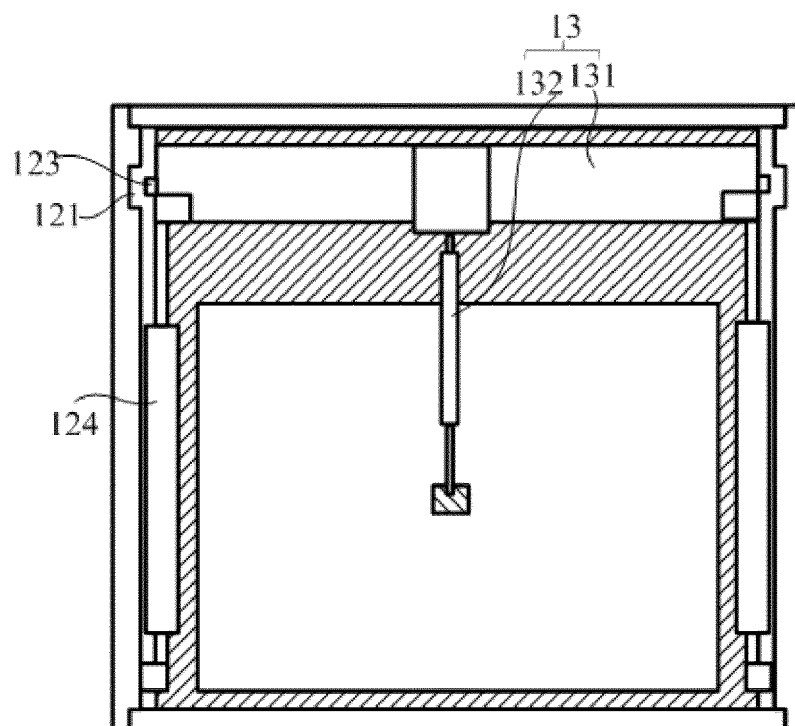


FIG. 5

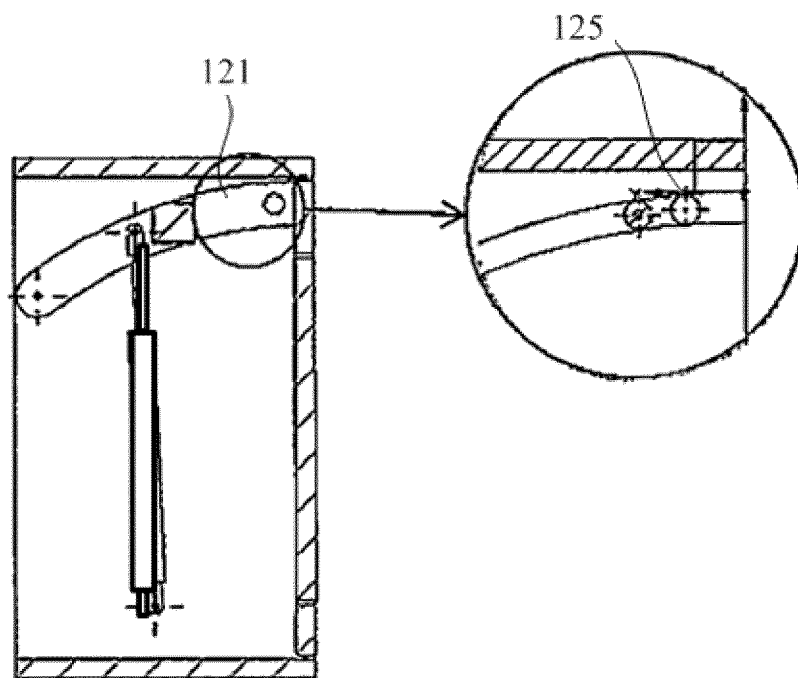


FIG. 6



EUROPEAN SEARCH REPORT

 Application Number
 EP 18 17 4425

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EPO FORM 1503 03.82 (P04C01)

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	CN 106 016 393 A (UNIV JIANGSU NORMAL) 12 October 2016 (2016-10-12)	1-10, 13-15	INV. F24C15/20
Y	* paragraphs [0031], [0036]; figures 1-3 *	11,12	
X	EP 0 017 790 A1 (NEFF WERKE [DE]) 29 October 1980 (1980-10-29) * page 3, line 23 - page 4, line 25; figures 1-3 *	1-3,9, 10,13,15	
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Y	CN 202 018 078 U (ZHEJIANG SUPOR ELEC APPL MFG) 26 October 2011 (2011-10-26) * figures 1-5 *	11,12	
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The present search report has been drawn up for all claims			
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