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(71) Applicant: **Wuhu Midea Smart Kitchen Appliance Manufacturing Co., Ltd.**
Wuhu, Anhui 241000 (CN)

(72) Inventors:
- **JIANG, Jiwu**
  Wuhu, Anhui 241000 (CN)
- **JIA, Zhiqiang**
  Wuhu, Anhui 241000 (CN)
- **RAO, Yusha**
  Wuhu, Anhui 241000 (CN)
- **HE, Xiaoyi**
  Wuhu, Anhui 241000 (CN)
- **HAO, Meng**
  Wuhu, Anhui 241000 (CN)

(74) Representative: **Ran, Handong et al**
Maucher Jenkins
Seventh Floor Offices
Artillery House
11-19 Artillery Row
London SW1P 1RT (GB)

(54) TUYERE PLATE AND RANGE HOOD

(57) The present disclosure discloses a deflector and a range hood. The deflector provided by the present disclosure is applied in the range hood. The range hood includes a housing having an oil fume collection chamber and a mounting opening in communication with the oil fume collection chamber, and the deflector is connected to the housing and covers the mounting opening. The deflector includes two separate plates that are arranged in a left-right direction. Each of the two separate plates has plate surfaces facing towards a front-rear direction. The two separate plates have distal ends away from each other and proximal ends close to each other. The distal ends of the two separate plates are connected to the housing. The proximal ends of the two separate plates are connected to each other to form a first ridge at a connection between the two separate plates, and the first ridge is constructed to protrude forwards relative to the distal ends in the front-rear direction. The deflector has an air inlet in communication with the oil fume collection chamber. The air inlet is configured to allow for passing of an external oil fume to enter the oil fume collection chamber, and the air inlet includes air sub-inlets formed on the two separate plates, respectively.

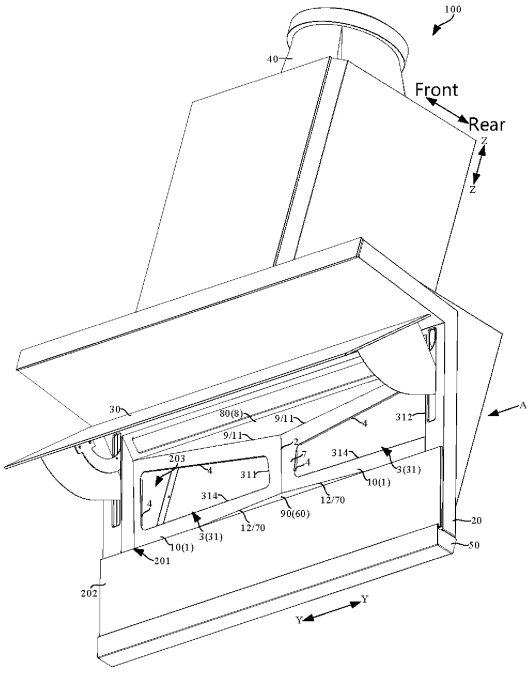

FIG. 1

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Description

[0001] This application claims priority to Chinese Patent Applications No. 202310438263.X, No. 202320921817.7, No. 202320921829.X, and No. 202320921847.8, all filed on April 20, 2023 and entitled "DEFLECTOR AND RANGE HOOD". The afore-mentioned patent applications are hereby incorporated by reference in their entireties.

FIELD

[0002] The present disclosure relates to the technical field of kitchen electrical appliances, and more particularly, to a deflector and a range hood applying the deflector.

BACKGROUND

[0003] A range hood is capable of quickly removing combustion waste from a cooking range and oil fumes that are produced during cooking and harmful to human body, and discharging them to the outdoors, while condensing the oil fumes to collect them. At present, a side suction range hood is widely used because of its aesthetically pleasing effect and good suction and discharge effect.

[0004] Generally, the side suction range hood includes a housing and a deflector disposed at the housing. The housing has an oil fume collection chamber. The deflector is in communication with the oil fume collection chamber. An external oil fume can enter the oil fume collection chamber through the deflector. However, in the above-mentioned range hood, a distribution of suction pressure at the deflector is uneven, resulting in a poor suction and discharge effect of the range hood.

SUMMARY

[0005] The technical problem to be solved by the present disclosure is that a suction and discharge effect of the existing range hood is poor.

[0006] The technical solutions of the present disclosure to solve the above technical problems are as follows.

[0007] On the one hand, the present disclosure provides a deflector, which is applied in a range hood. The range hood includes a housing having an oil fume collection chamber and a mounting opening in communication with the oil fume collection chamber, and the deflector is connected to the housing and covers the mounting opening. The deflector includes two separate plates that are arranged in a left-right direction. Each of the two separate plates has plate surfaces facing towards a front-rear direction. The two separate plates have distal ends away from each other and proximal ends close to each other. The distal ends of the two separate plates are connected to the housing. The proximal ends of the two separate plates are connected to each other to form a first ridge at a connection between the two separate plates, and the first ridge is constructed to protrude forwards relative to the distal ends in the front-rear direction; and the deflector has an air inlet in communication with the oil fume collection chamber. The air inlet is configured to allow for passing of an external oil fume to enter the oil fume collection chamber, and the air inlet includes air sub-inlets formed on the two separate plates, respectively.

[0008] A middle structure of the deflector provided by the present disclosure is protruding. Compared with a flat-plate deflector, a distance between a side of the air inlet and a fan assembly can be shortened. In this way, a negative pressure in a middle part of the air inlet can be diffused to the side of the air inlet to some extent, and a volume of the air inlet on the side of the air inlet can be increased, enabling the suction and discharge effect of the range hood provided by this embodiment to be better. In addition, compared with a flat-shaped deflector, the deflector provided by the present disclosure is formed with the first ridge. In this way, part of an oil liquid at an upper part of the deflector can flow to an oil cup at a lower part of the housing along the first ridge. In addition to improving cleanliness of a surface of the range hood, the oil liquid can also be prevented from flowing to cooker and kitchen utensils located under the range hood to some extent.

[0009] In some implementations, the first ridge is constructed to extend in an up-down direction of the housing.

[0010] In some implementations, the first ridge is constructed to be inclined from a top end to a bottom end in a front-to-rear direction. The first ridge is just located in a middle position of the first air inlet. Moreover, when a top of the first ridge extends forwards, and when a bottom of the first ridge extends backwards, a top of the air inlet can be farther away from the fan assembly, and a distance between two sides of the air inlet and the fan assembly is closer, which can diffuse the negative pressure in the middle part of the air inlet to the outside more, and improve the suction and discharge effect of the range hood.

[0011] In some implementations, the two separate plates are axisymmetrically arranged with respect to the first ridge.

[0012] In some implementations, the deflector provided in the present disclosure further includes a baffle. The baffle includes two side enclosing panels opposite to each other in the left-right direction.

[0013] In some implementations, the two side enclosing panels are arranged to be connected to the housing, and are connected to the distal ends of the two separate plates, respectively.

[0014] In some implementations, each of the two side enclosing panels has a connection surface facing towards a corresponding separate plate of the two separate plates. A projection of the corresponding separate plate of the two separate plates on the connection surface is located within a contour of the connection surface. A front side of the baffle is located in front of the first ridge to

avoid an openable plate when the openable plate on the range hood is closed.

[0015] In some implementations, the baffle further includes an upper enclosing panel and a lower enclosing panel. Each of the upper enclosing panel and the lower enclosing panel is connected between the two side enclosing panels, and the upper enclosing panel and the lower enclosing panel are located at upper sides and lower sides of the two separate plates, respectively.

[0016] In some implementations, a flow guide chamber is defined by the two side enclosing panels, the upper enclosing panel, and the lower enclosing panel. The flow guide chamber is in communication with the air inlet.

[0017] In some implementations, an opening area of the flow guide chamber gradually decreases towards the air inlet. When the openable plate is opened, a flow guide chamber is defined between the two side enclosing panels, and the upper enclosing panel and the lower enclosing panel, and has a predetermined gathering effect on the external oil fume. In this way, more oil fumes can pass through the air inlet to enter the oil fume collection chamber, enabling the suction and discharge effect of the range hood to be better.

[0018] In some implementations, a connection edge is formed at a connection between the side enclosing panel and the corresponding separate plate.

[0019] In some implementations, the side enclosing panel has an outer end surface opposite to the connection edge in the front-rear direction

[0020] In some implementations, in a direction perpendicular to the outer end surface, a ratio of a maximum dimension of the projection of the corresponding separate plate on the connection surface to a minimum distance between the connection edge and the outer end surface ranges from 0.42 to 0.76. In this way, it is possible to ensure that outward protruding of the first ridge makes the suction and discharge effect of the range hood good. It is also possible to avoid that more outward protruding of the first ridge makes a noise of the range hood large.

[0021] In some implementations, in a horizontal direction, each of the two air sub-inlets has a first end and a second end opposite to each other in the left-right direction.

[0022] In some implementations, the first ends of the two air sub-inlets are located close to each other, and the second ends of the two air sub-inlets are located away from each other.

[0023] In some implementations, in an up-down direction, a dimension of the first end of the air sub-inlet is smaller than a dimension of the second end of the air sub-inlet. When an opening dimension in the middle part of the air inlet is smaller than an opening dimension on the side of the air inlet, the negative pressure in the middle part can be diffused to both sides to increase an amount of oil fumes entering through the side of the air inlet, which can improve the suction and discharge effect of the range hood.

[0024] In some implementations, the air sub-inlet further has a first inner wall and a second inner wall. Each of the first inner wall and the second inner wall is connected between the first end and the second end, and the first inner wall is located above the second inner wall.

[0025] In some implementations, a corresponding air sub-inlet is defined by the first end, the second end, the first inner wall, and the second inner wall.

[0026] In some implementations, at least one of the first inner wall and the second inner wall is an inclined wall.

[0027] In some implementations, the inclined wall extends upwards in a direction from the first end to the second end. Each of an upper end and a lower end of the air sub-inlet is closer to the fan assembly, which improves a negative pressure distribution on the side of the air inlet.

[0028] In some implementations, an angle of the inclined wall relative to a horizontal direction ranges from 10° to 30°. The negative pressure in an air opening is evenly distributed, which makes the suction and discharge effect of the range hood better.

[0029] In some implementations, in the up-down direction, a ratio of the dimension of the first end of the air sub-inlet to the dimension of the second end of the air sub-inlet ranges from 0.4 to 0.7. In this way, not only can the negative pressure located in the middle part of the air inlet be diffused, but the negative pressure in the air inlet can also be guaranteed to be evenly distributed, to facilitate suction and discharge of the oil fume.

[0030] In some implementations, a grille structure or a screen oil filter is formed in the air inlet and has a contour matching with a contour of the air inlet. The grille structure or the screen oil filter is provided, which enables part of waste oil to be adsorbed on the grille structure or the screen oil filter, to prevent the waste oil from dripping on the cooker or kitchen utensils to some extent.

[0031] In some implementations, the air inlet includes a plurality of air inlet holes arranged in rows and columns.

[0032] In some implementations, an inner edge of the air inlet is connected to a flange. The flange has an end connected to the inner edge of the air inlet and another end extending in a direction opposite to a protruding direction of the first ridge. In this way, by providing the flange, not only can a predetermined flow guide effect be played, but when the deflector is mounted, a side wall of the air inlet can also be prevented from causing damage to a human hand to some extent.

[0033] In some implementations, the two air sub-inlets are independent of each other or in communication with each other.

[0034] In some implementations, a partition portion is formed at an intersection position of the two separate plates and extends in an extending direction of the first ridge. The partition portion is provided with first flow guide structures.

[0035] In some implementations, the first flow guide structures are arranged at two sides of the first ridge.

[0036] In some implementations, the first flow guide structures extend in an up-down direction.

[0037] In some implementations, the two air sub-inlets

are axisymmetrically arranged with respect to the partition portion.

[0038] In some implementations, each of the first flow guide structures is a rib structure.

[0039] In some implementations, each of the first flow guide structures is a groove structure. In this way, an oil liquid attached to the deflector can flow more into the oil cup.

[0040] In some implementations, each of the two separate plates includes a top wall extending in the left-right direction. The top wall extends upwards away from the first ridge.

[0041] In some implementations, a first accommodation space is formed between the top walls of the two separate plates.

[0042] In some implementations, a first flow guide member is provided in the first accommodation space and connected to the two separate plates.

[0043] In some implementations, the first flow guide member has a first flow guide surface covering an opening region of the first accommodation space.

[0044] In some implementations, the first flow guide surface is connected to the top walls of the two separate plates to form two second ridges intersecting with a top end of the first ridge. The first flow guide surface is a triangular flow guide portion, and the oil liquid located on the first flow guide surface will flow into the oil cup along the second ridge and the first ridge.

[0045] In some implementations, an angle of each of the two second ridges relative to a horizontal direction ranges from 12° to 25°. By setting the angle of each of the two second ridges relative to the horizontal direction, an oil liquid located on the first flow guide member flows into the oil cup along the second ridge and the first ridge. Moreover, it can be prevented to some extent that when the oil liquid flows on the second ridge, the oil liquid directly falls and drops on the cooker or kitchen utensil located under the range hood.

[0046] In some implementations, the two second ridges are axisymmetrically arranged with respect to a central axis of the deflector. In this way, by providing the two second ridges axisymmetrically arranged with respect to the central axis of the deflector, the oil liquid, whether located at a left end of the deflector or a right end of the deflector, can flow into the oil cup.

[0047] In some implementations, the first flow guide surface is provided with two second flow guide structures in one-to-one correspondence with the two second ridges.

[0048] In some implementations, the two second flow guide structures extending towards the first ridge. In this way, through the arrangement of the second flow guide structure, an oil liquid that does not flow onto the second ridge can be allowed to flow onto the second flow guide structure, and then flow into the oil cup along the first ridge.

[0049] In some implementations, each of the two second flow guide structures is a rib structure.

[0050] In some implementations, each of the two second flow guide structures is a groove structure.

[0051] In some implementations, each of the separate plates has a bottom wall extending in the left-right direction. The bottom wall extends downwards away from the first ridge.

[0052] In some implementations, a second accommodation space is formed between the bottom walls of the two separate plates.

[0053] In some implementations, a second flow guide member is provided in the second accommodation space and connected to the two separate plates.

[0054] In some implementations, the second flow guide member has a second flow guide surface covering an opening region of the second accommodation space.

[0055] In some implementations, two third ridges are formed at a connection between the second flow guide surface and the bottom walls of the two separate plates. The second flow guide surface is a triangular flow guide surface, and an oil liquid at a bottom end of the second ridge can flow into the oil cup through the second flow guide surface. An oil liquid located at a bottom of the separate plate can also flow into the oil cup through the second flow guide surface. Therefore, a surface of the deflector can be avoided from being contaminated with many oil liquids to some extent, and overall cleanliness of the range hood can be improved.

[0056] In some implementations, the second flow guide member is provided with a third flow guide structure at a bottom of the second flow guide member. The third flow guide structure is configured to allow an oil liquid to flow into an oil cup located at a lower part of the housing.

[0057] In some implementations, the third flow guide structure has a flow guide opening facing towards the oil cup. In this way, the oil liquid can flow into the oil cup through the flow guide opening.

[0058] In some implementations, the third flow guide structure is an oil passing hole.

[0059] In some implementations, the third flow guide structure is an oil passing slit.

[0060] On the other hand, the present disclosure provides a range hood, including a housing, the deflector described above, and an openable plate. The housing has an oil fume collection chamber and a mounting opening in communication with the oil fume collection chamber. The deflector is connected to the housing and covers the mounting opening. The openable plate is turnably connected to the housing and configured to expose or cover the mounting opening.

[0061] In some implementations, the first ridge of the deflector is constructed to protrude towards the openable plate relative to the distal ends in the front-rear direction.

[0062] In some implementations, the deflector is embedded in the oil fume collection chamber through the mounting opening. In this way, generation of interference between the openable plate and the first ridge is avoided to some extent during the closing of the openable plate.

BRIEF DESCRIPTION OF THE DRAWINGS

[0063]

FIG. 1 is a schematic three-dimensional view of a structure of a range hood in a first state according to an embodiment of the present disclosure;
FIG. 2 is a schematic view of a plane structure along direction A in FIG. 1;
FIG. 3 is a schematic three-dimensional view of a structure of FIG. 1 from another viewing angle;
FIG. 4 is a view of a flow direction of an air flow of a range hood in a first state according to an embodiment of the present disclosure;
FIG. 5 is a schematic three-dimensional view of a structure of a range hood in a second state according to an embodiment of the present disclosure;
FIG. 6 is a schematic view of a plane structure along direction B in FIG. 5;
FIG. 7 is a cross-sectional view of FIG. 5 taken along line C-C in FIG. 5;
FIG. 8 is a schematic enlarged view of a partial structure at D in FIG. 7;
FIG. 9 is a schematic three-dimensional view of a structure of a deflector according to an embodiment of the present disclosure;
FIG. 10 is a schematic view of a plane structure along direction E in FIG. 9;
FIG. 11 is a schematic view of a plane structure along direction F in FIG. 9;
FIG. 12 is a cross-sectional view taken along line G-G in FIG. 9;
FIG. 13 is an exploded view of a range hood in a first state according to an embodiment of the present disclosure;
FIG. 14 is a cross-sectional view taken along line H-H in FIG. 1;
FIG. 15 is a schematic view of a plane structure along direction I in FIG. 4; and
FIG. 16 is a view of a flow direction of an oil liquid on a deflector according to an embodiment of the present disclosure.

Reference numerals:

[0064]

1, separate plate; 2, first ridge; 3, air inlet; 4, flange; 5, baffle; 6, connection edge; 7, partition portion; 8, first flow guide surface; 9, second ridge;
11, top wall; 12, bottom wall; 10, deflector; 20, housing; 30, openable plate; 40, fan assembly; 50, oil cup; 60, second flow guide surface; 70, third ridge; 80, first flow guide member; 90, second flow guide member; 31, air sub-inlet; 51, upper enclosing panel; 52, lower enclosing panel; 53, side enclosing panel; 54, flow guide chamber;
100, range hood; 200, cooker; 201, mounting opening; 202, lower panel; 203, oil fume collection chamber; 311, first end; 312, second end; 313, first inner wall; 314, second inner wall; 511, first outer side; 512, first inner side; 521, second outer side; 522, second inner side; 531, outer end surface.

DETAILED DESCRIPTION

[0065] A range hood is capable of quickly removing combustion waste from a cooking range and oil fumes that are produced during cooking and harmful to a human body, and discharging them to the outdoors, while condensing the oil fumes to collect them. At present, a side suction range hood is widely used because of its aesthetically pleasing effect and good suction and discharge effect. Generally, the side suction range hood includes a housing, an openable plate, and a deflector. An oil cup is provided at a bottom of the housing. A fan assembly is provided at a middle position of a top of the housing. The openable plate is turnably connected to a front side of the housing. The deflector is disposed in the housing. The housing has an oil fume collection chamber. The deflector has an air inlet defined thereon, and the air inlet is in communication with the oil fume collection chamber. The openable plate is rotatable relative to the housing. In this way, the deflector is hidden or exposed. When the deflector is exposed, an external oil fume can enter the oil fume collection chamber through the air inlet. However, in a general range hood, the deflector is in a flat shape, and a suction pressure generated by a fan is unevenly distributed at the air inlet. Specifically, a distance between a side of the air inlet and the fan assembly is relatively long. In this way, the negative pressure is made relatively concentrated and distributed in a middle region of the air inlet, which leads to a poor suction and discharge effect of the range hood.

[0066] It should be noted that during operation of the range hood, a fan impeller in the fan assembly rotates, and oil fumes entering the oil fume collection chamber through the air inlet is affected by centrifugal force. In this way, oil mist agglomerates into oil droplets, and smoke will be discharged out along a fixed path. A position of an air inlet closest to the fan impeller has the largest negative pressure, i.e., a negative pressure in the middle position of the air inlet is the largest, and a negative pressure on the side of the air inlet is relatively small.

[0067] Therefore, an embodiment of the present disclosure provides a deflector and a range hood with a better suction and discharge effect.

[0068] It should be noted that the range hood provided by the embodiments of the present disclosure is the side suction range hood.

[0069] The embodiments of the present disclosure will be described in detail below in conjunction with the accompanying drawings and specific implementations.

[0070] Referring to FIG. 1 to FIG. 3, FIG. 1 is a schematic three-dimensional view of a structure of a range hood in a first state according to an embodiment of the

present disclosure, FIG. 2 is a schematic view of a plane structure along direction A in FIG. 1, and FIG. 3 is a schematic three-dimensional view of a structure of FIG. 1 from another viewing angle. As shown in FIG. 1 to FIG. 3, the embodiment provides a deflector suitable for a range hood 100 and a range hood 100. The range hood 100 includes a housing 20 having a mounting opening 201 and an oil fume collection chamber 203. The mounting opening 201 is in communication with the oil fume collection chamber 203, and an openable plate 30 is provided on the housing 20. Moreover, the openable plate 30 is turnably connected to the housing 20. When the openable plate 30 rotates relative to the housing 20, the mounting opening 201 can be opened or closed. Moreover, when the mounting opening 201 is closed, a plate surface of the openable plate 30 is flush with a plate surface of a lower panel 202 of the housing 20. In this way, an appearance effect of the range hood 100 is good.

[0071] The deflector 10 provided by this embodiment is disposed in the housing 20 through the mounting opening 201. Moreover, when the mounting opening 201 is opened, the deflector 10 is exposed; and when the mounting opening 201 is closed, the deflector 10 is hidden. In an embodiment, in order to facilitate mounting between the deflector 10 and the housing 20, a detachable connection manner may be adopted between the deflector 10 and the housing 20. For example, it is that a snap is provided on one of the deflector 10 and the housing 20, and a snap groove is provided on the another of the deflector 10 and the housing 20. Here, a connection manner between the deflector 10 and the housing 20 is not limited.

[0072] In order to allow for an entry of the external oil fume into the oil fume collection chamber 203 after the mounting opening 201 is opened, an air inlet 3 for the entry of the oil fume is defined on the deflector 10. In this way, the external oil fume can enter the oil fume collection chamber 203 through the air inlet 3 when the mounting opening 201 is opened.

[0073] Further, in order to improve the suction and discharge effect of the range hood, in some implementations, the deflector 10 includes two separate plates 1 arranged in a left-right direction, and the two separate plates 1 are disposed at an angle. Specifically, each separate plate 1 has two plate surfaces. The two plate surfaces face towards a front-rear direction, respectively. A side surface is also formed through enclosing between the two plate surfaces. The air inlet 3 includes two air sub-inlets 31, and the two air sub-inlets 31 are defined on the two separate plates 1, respectively. More specifically, the two separate plates 1 each include a distal end and a proximal end. The distal ends of the two separate plates 1 are away from each other. The proximal ends of the two separate plates 1 are close to each other. The distal ends of the two separate plates 1 are connected to the housing 20. The proximal ends of the two separate plates 1 are connected to each other to form a first ridge 2 at a connection between the two separate plates 1. The distal ends of the two separate plates 1 can be understood as a left side and a right side of the deflector 10.

[0074] It can be understood that a suction force needs to be formed at the air inlet 3, and the fan assembly 20 needs to be provided on the housing 20. In order to shorten a distance between each of the left side and the right side of the air inlet 3 and the fan assembly 40, i.e., to shorten a distance between a side of one of the two air sub-inlets 31 away from another of the two air sub-inlets 31 and the fan assembly 40. In some implementations, the first ridge 2 is constructed to protrude forwards relative to the distal ends in the front-rear direction, i.e., the first ridge 2 is located at a front side of the distal end, i.e., the first ridge 2 is constructed to protrude towards the openable plate 30 relative to the distal ends in the front-rear direction. In this way, compared with a flat-shaped deflector, a middle part of the deflector 10 in a horizontal direction in this embodiment is farther from the fan assembly 40, and two sides of the deflector 10 in the horizontal direction are closer to the fan assembly 40. Thus, a negative pressure in a middle part of the air inlet 3 can be diffused to both sides, and an air intake volume on the side of the air inlet 3 can be increased. In this way, more oil fumes can enter the oil fume collection chamber 203 through the air inlet 3, improving the suction and discharge effect of the range hood 100. In addition, compared with the flat-shaped deflector, the deflector 10 in this embodiment is formed with the first ridge 2, and part of an oil liquid at an upper part of the deflector 10 can flow into an oil cup 50 at a lower part of the housing 20 along the first ridge 2, which not only improves cleanliness of a surface of the range hood 100, but also prevents the oil liquid from flowing to the cooker 200 and kitchen utensils located below the range hood 100 to some extent. A position relationship between the cooker 200 and the range hood 100 may be referred to FIG. 4, and FIG. 4 is a view of a flow direction of an air flow of the range hood in the first state according to an embodiment of the present disclosure. A structure located below the range hood 100 is a cooker 200 corresponding to each air sub-inlet 31, and an arrow direction in FIG. 4 is a flow direction of the oil fume.

[0075] It should be noted that the left-right direction and the horizontal direction described above can be understood as a width direction of the range hood 100, i.e., a Y-Y axis direction in each of FIG. 1 and FIG. 3, and the front-rear direction described above is the same as the front-rear directions in FIG. 1 to FIG. 3. In the following description, these three directions are omitted.

[0076] In some optional implementations, the first ridge 2 extends in an up-down direction, and is inclined and extends from a top end to a bottom end in a front-to-rear direction, i.e., the top end of the first ridge 2 is located at a front side of a bottom end of the first ridge 2, i.e., the top end of the first ridge 2 is disposed further away from the fan assembly 40, and the bottom end of the first ridge 2 is disposed closer to the fan assembly 40, i.e., a predetermined angle of the first ridge 2 relative to a vertical

direction is defined. That is, since an upper middle part of the air inlet 3 is far away from the fan assembly 40, not only can the distance between the side of the air inlet 3 and the fan assembly 40 be shortened, but a distance between a middle bottom end of the air inlet 3 and the fan assembly 40 can also be shortened. In this way, while the negative pressure in the middle part of the air inlet 3 can be diffused, uniformity of a distribution of negative pressure can also be improved, and the suction and discharge effect of the range hood 100 can be improved.

[0077] It should be noted that the above-mentioned up-down direction is the same as a Z-Z axis direction in each of FIG. 1 to FIG. 3.

[0078] In order to determine a position of the first ridge 2, specifically, the first ridge 2 is located in a middle position of the range hood 100 in the horizontal direction, and the distance between the two sides of the air inlet 3 and the fan assembly 40 can be reduced by determining the position of the first ridge 2. Therefore, in some optional implementations, the two separate plates 1 are axisymmetrically arranged with respect to the first ridge 2, and the first ridge 2 is just located in a middle position of the first air inlet 3. When the first ridge 2 protrudes towards the openable plate 30, the two sides of the air inlet 3 extend away from the openable plate 30 relative to the first ridge 2. In this way, the distance between the side of the air inlet 3 and the fan assembly 40 can be reduced, and the air intake volume on the side of the air inlet 3 can be increased.

[0079] Referring to FIG. 5 to FIG. 8, FIG. 5 is a schematic three-dimensional view of a structure of a range hood in a second state according to an embodiment of the present disclosure, FIG. 6 is a schematic view of a plane structure along direction B in FIG. 5, FIG. 7 is a cross-sectional view taken along line C-C in FIG. 5, and FIG. 8 is a schematic enlarged view of a partial structure at D in FIG. 7. As shown in FIG. 5 to FIG. 8, it can be understood that a side wall of the air inlet 3 may cause damage to a hand of an installer when the deflector 10 is mounted. Therefore, in order to avoid this phenomenon to some extent, in this embodiment, the air inlet 3 can be provided with a structure for increasing a smoothness degree of the side wall of the air inlet 3.

[0080] For example, an inner edge of the air inlet 3 may be provided with a flange 4. The inner edge of the air inlet 3 can be understood as a rear edge of the air inlet 3, and the flange 4 match a shape of the corresponding rear edge of the air inlet 3 and is connected to the corresponding rear edge of the air inlet 3, i.e., a length direction of the flange 4 is the same as an extending direction of the corresponding rear edge of the air inlet 3. The flange 4 has an end connected to the rear edge of the air inlet 3 and another end extending in a direction opposite to a protruding direction of the first ridge 2, i.e., a width direction of the flange 4 is opposite to the protruding direction of the first ridge 2. By providing the flange 4, not only can a flow guide effect be made on the oil fume to some extent, but the side wall of the air inlet 3 can also be prevented from causing damage to the human hand to some extent when the deflector 10 is mounted.

[0081] It should be noted that the aforementioned flange 4 may be formed on the side wall of the air inlet 3 by, for example, bending. Here, a forming manner of the flange 4 is not limited.

[0082] In some implementations, in order to prevent any inner wall of the air inlet 3 from causing damage to the hand of a person, the flange 4 described above may be provided on each inner wall of the air inlet 3. In order to prevent the inner wall of the air inlet 3 from causing damage to the human hand to a greater extent, in some specific implementations, a length of the flanges 4 is the same as an extending length of the corresponding inner wall of the air inlet 3. That is, the flange 4 may cover the corresponding inner wall of the air inlet 3 in a wide range, to prevent the hand of a person from being damaged.

[0083] Referring to FIG. 9 to FIG. 12, FIG. 9 is a schematic three-dimensional view of a structure of a deflector according to an embodiment of the present disclosure, FIG. 10 is a schematic view of a plane structure along direction E in FIG. 9, FIG. 11 is a schematic view of a plane structure along direction F in FIG. 9, and FIG. 12 is a cross-sectional view taken along line G-G in FIG. 9. An arrow direction in FIG. 12 is the flow direction of the oil liquid. As shown in FIG. 9 to FIG. 12, in order to prevent the formation of the first ridge 2 from interfering with the closing of the openable plate 30 and impart a predetermined flow guide effect to the deflector 10 simultaneously, the deflector 10 may also include a baffle 5, which includes an upper enclosing panel 51, a lower enclosing panel 52, and two side enclosing panels 53. The two side enclosing panels 53 are arranged opposite to each other in the left-right direction. Each of the upper enclosing panel 51 and the lower enclosing panel 52 is connected between the two side enclosing panels 53, and the upper enclosing panel 51 is located above the lower enclosing panel 52. A flow guide chamber 54 is defined by the upper enclosing panel 51, the lower enclosing panel 52, and the two side enclosing panels 53, and is in communication with the air inlet 3. An opening area of the flow guide chamber 54 gradually decreases in a direction close to the air inlet 3, i.e., the opening area of the flow guide chamber 54 gradually decreases in the front-to-rear direction. In addition to the deflector 10 being able to avoid the openable plate 30, the flow guide chamber 54 formed on the deflector 10 can not only guide the flow of the oil fume, but also has a predetermined gathering effect on the oil fume, improving the suction and discharge effect of the range hood 100.

[0084] In an embodiment, the deflector 10 is embedded in the oil fume collection chamber 203 through the mounting opening 201. Specifically, each of the upper enclosing panel 51, the lower enclosing panel plate 52, and the side enclosing panel 53 is connected to an inner side of the mounting opening 201, and when the openable plate 30 is in a closed state, the openable plate 30 and the lower panel 202 can be located in a same plane

while the openable plate 30 is avoided by the deflector 10, improving appearance performance of the range hood 100.

[0085] Specifically, the upper enclosing panel 51 has a first outer side 511 located at a front side of the upper enclosing panel 51 and a first inner side 512 located at a rear side of the upper enclosing panel 51, and the first outer side 511 is located above the first inner side 512. The lower enclosing panel 52 has a second outer side 521 located at a front side of the lower enclosing panel 52 and a second inner side 522 located at a rear side of the lower enclosing panel 52, and the second outer side 521 is located below the second inner side 522.

[0086] In order to avoid large noise of the range hood 100 caused by many protruding structures of the first ridge 2, in some optional implementations, the side enclosing panel 53 has an outer end surface 531 extending in the front-rear direction, the outer end surface 531 is disposed opposite to a connection edge 6, and the side enclosing panel 53 has a connection surface facing towards the corresponding separate plate 1. In a direction perpendicular to the outer end surface 531, a maximum dimension of the projection of the corresponding separate plate 1 on the connection surface is H1. In the direction perpendicular to the outer end surface 531, a minimum distance between the connection edge 6 and the outer end surface 531 is H2. A ratio of H1 to H2 ranges from 0.42 to 0.76. That is to say, the first ridge 2 is able to protrude outwards, which can also prevent the noise of the range hood 100 from being increased by more outward-protruding first ridges 2 while the suction and discharge effect of the range hood is improved.

[0087] A front plate surface and a rear plate surface of the separate plate 1 may not be two planes parallel to each other, and the connection edge 6 and the outer end surface 531 may also not be lines and surfaces parallel to each other. Therefore, in the above description, the maximum dimension of the projection of the corresponding separate plate 1 on the connection surface and the minimum distance between the connection edge 6 and the outer end surface 531 are limited.

[0088] It should be noted that the above-mentioned ratio of H1 to H2 may be 0.42, 0.53, 0.61, 0.76, and the like. Here, there is no specific limitation on the ratio of H1 to H2.

[0089] Further, the deflector 10 provided in this embodiment may be an integrally formed member. Both the baffle 5 and the separate plate 1 may be formed on the deflector 10 by, for example, bending.

[0090] Referring to FIG. 13 and FIG. 14, FIG. 13 is an exploded view of a range hood in a first state according to an embodiment of the present disclosure, and FIG. 14 is a cross-sectional view taken along line H-H in FIG. 13. In order to further expand the negative pressure concentrated in the middle part of the air inlet 3 to the sides of the air inlet 3, an amount of oil fumes passing through the air inlet 3 is increased. In some optional implementations, in the horizontal direction, each air sub-inlet 31 has a first end 311 and a second end 312 opposite to each other in the left-right direction. The first end 311 is located at a side close to the first ridge 2, and the second end 312 is located at a side away from the second ridge 2. In the up-down direction, a dimension of the first end 311 of each air sub-inlet 31 is smaller than a dimension of the second end 312 of each air sub-inlet 31, i.e., a dimension of a middle opening of the air sub-inlet 31 is smaller than a dimension of a side opening of the air sub-inlet 31. The negative pressure in the middle part can be diffused to both sides to increase the amount of oil fumes entering through the side of the air inlet 3, improving the suction and discharge effect of the range hood 100.

[0091] Referring to FIG. 4 and FIG. 15, FIG. 15 is a schematic view of a plane structure along direction I in FIG. 4, and an arrow direction in FIG. 15 is also the flow direction of the oil fume. As shown in FIG. 4 and FIG. 15, in order to form the air sub-inlet 31, in some implementations, the air sub-inlet 31 includes a first inner wall 313 and a second inner wall 314. Each of the first inner wall 313 and the second inner wall 314 is connected between the first end 311 and the second end 312, and the second inner wall 314 is located below the first inner wall 313. A corresponding air sub-inlet 31 is defined by the first inner wall 313, the second inner wall 314, the first end 311, and the second end 312.

[0092] In some implementations, at least one of the first inner wall 313 and the second inner wall 314 is an inclined wall, and the inclined wall extends upwards in a direction from the first end 311 to the second end 312. It can be understood that each of the first inner wall 313 and the second inner wall 314 may be an inclined wall, or the first inner wall 313 is an inclined wall, or the second inner wall 314 is an inclined wall. That is, a dimension of an opening at the second end 312 is greater than a dimension of an opening at the first end 311.

[0093] When each of the first inner wall 313 and the second inner wall 314 is inclined walls, each of an upper part and a lower part located on the side of the air inlet 3 is close to the fan assembly 40, which can increase the negative pressure distribution on the side of the air inlet 3.

[0094] In some specific implementations, the inclined wall is the first inner wall 313, i.e., a dimension of the opening at the second end 312 is greater than a dimension of the opening at the first end 311, which can further reduce the distance between the side of the air inlet 3 and the fan assembly 40, to diffuse the negative pressure at the middle part of the air inlet 3. In this way, the negative pressure at the side of the air inlet 3 can be increased, and the amount of oil fumes passing through the side of the air inlet 3 can be increased.

[0095] Referring to FIG. 16, FIG. 16 is a view of a flow direction of an oil liquid on a deflector according to an embodiment of the present disclosure. An arrow direction in FIG. 16 is the flow direction of the oil liquid. As shown in FIG. 16, in some optional implementations, an angle α of the inclined wall relative to the horizontal direction ranges from 10° to 30°. By setting the angle of the inclined wall

relative to the horizontal direction, the negative pressure in the air inlet 3 can be distributed more evenly, and the suction and discharge effect of the range hood 100 can be improved.

[0096] It should be noted that the above-mentioned angle α may be 10°, 15°, 20°, 30°, and the like. Here, the value of the angle α is not specifically limited.

[0097] Further, a dimension of a first end 31 on each air sub-inlet 31 in the up-down direction is L1, and a dimension of a second end 312 of each air sub-inlet 31 in the up-down direction is L2. In order to further improve the uniformity of the negative pressure distribution, a ratio of L1 to L2 ranges from 0.4 to 0.7. In this way, not only can the negative pressure located at the middle part of the air inlet 3 be diffused, but the negative pressure in the air inlet 3 can also be guaranteed to be evenly distributed, to facilitate suction and discharge of the oil fume.

[0098] It should be noted that the above-mentioned ratio of L1 to L2 may be 0.4, 0.5, 0.6, 0.7, and the like. Here, there is no specific limitation on the ratio of L1 to L2.

[0099] As shown in FIG. 4 and FIG. 15, in the deflector 10 provided in this embodiment, the two air sub-inlets 31 correspond to two cookers 200 in one-to-one correspondence. Moreover, the air volume decreases in sequence from the side of the air inlet 3 to the middle position the air inlet 3, and a suction amount of oil fumes on the side of the air inlet 3 is large. The negative pressure located in the middle part of the air inlet 3 can be expanded as much as possible, to increase a suction and discharge margin of the range hood 100, and the oil fumes generated by each cooker 200 can be fully sucked and discharged.

[0100] In some optional implementations, in order to prevent waste oil from dripping on the cooker 200 or kitchen utensils to some extent, a grille structure or a screen oil filter may be provided within the air inlet 3, and has a contour matching with a contour of the air inlet 3. By providing the grille structure or the screen oil filter, part of the waste oil can be adsorbed on the grille structure or the screen oil filter, to prevent the waste oil from dripping on the cooker 200 or the kitchen utensils to some extent.

[0101] In other optional implementations, the air inlet 3 may also include a plurality of air inlet holes arranged in rows and columns. When the air inlet 3 includes a plurality of air inlet holes arranged in rows and columns, an effect brought by the plurality of air inlet holes is the same as that brought by the above-mentioned grille structure or screen oil filter, i.e., the waste oil can be prevented from dripping on the cooker 200 or the kitchen utensil to some extent.

[0102] In some optional implementations, the two air sub-inlets 31 are independent of each other or in communication with each other. Mutual independence can be understood as the two air sub-inlets 31 being separated by a partition portion 7, and the communication can be understood as the first ends 311 of the two air sub-inlets 31 being in communication with each other. It should be noted that the purpose of the present disclosure can be satisfied as long as a dimension of the middle part of the air inlet 3 is smaller than dimensions of the left and right sides of the air inlet 3.

[0103] As shown in FIG. 10, when the two air sub-inlets 31 are separated by a partition portion 7, a central axis of the partition portion 3 extending in the up-down direction coincides with a central axis L of the deflector 10, i.e., the two air sub-inlets 31 are axisymmetrically arranged with respect to the partition portion 7.

[0104] A further description is made below by taking the two air sub-inlets 31 being independent of each other as an example.

[0105] Referring to FIG. 9, FIG. 10, and FIG. 16, in some specific implementations, the partition portion 7 is formed at an intersection position of the two separate plates 1 and has an extending direction same as an extending direction of the first ridge 2.

[0106] In some optional implementations, a first flow guide structure (not shown) may be provided on the partition portion 7 and is arranged at the left and right sides of the first ridges 2. Moreover, the first flow guide structure extends in the up-down direction. Under the action of the first flow guide structure, more oil liquids can flow into the oil cup 50 through the first ridge 2.

[0107] In some optional implementations, a top end of the first flow guide structure intersects with the first ridge 2. In other optional implementations, a bottom end of the first flow guide structure intersects with the first ridge 2. The former can be understood as a form of confluence at the first ridges 2, and the latter can be understood as a form of shunting at the first ridges 2.

[0108] Further, the first flow guide structure described above may be a rib structure or a groove structure formed on the partition portion 7. The rib structure can be understood as a protrusion extending in a surface direction of the partition portion, and the groove structure can be understood as a concave cavity extending in the surface direction of the partition portion. In this case, the rib structure or the groove structure provided on the partition portion 7 is not limited.

[0109] It should be noted that, in some implementations, in order to improve a flow guide effect of the first flow guide structure, the first flow guide structure located at a same side of the first ridge 2 may include a plurality of ridge structures or groove structures arranged at intervals. In this case, there is no limitation on a number of rib structures and a number of groove structures.

[0110] In this embodiment, a flow guide structure can be provided at upper parts of the two separate plates 1, and an oil liquid located at the upper parts of the separate plates 1 may flow into the oil cup 50 along the first ridge 2 through the action of the flow guide structure.

[0111] The flow guide structure may be a first flow guide member 80 provided on the upper part of each of the two separate plates 1. Specifically, the separate plate 1 has a top wall 11 extending in the left-right direction, and the top wall 11 extends upwards in the direction from the first end 311 to the second end 312. A first accommodation space is formed between the top walls 11 of the two separate

plates 1, and the first flow guide member 80 is arranged in the first accommodation space and fixedly connected to the two separate plates 1. In some optional implementations, the first flow guide member 80 has a first flow guide surface 8 covering an opening of the first accommodation space. The first flow guide surface 8 intersects with the top walls 11 of the two separate plates 1 to form two second ridges 9, i.e., left and right sides of the first flow guide surface 8 are respectively connected to the top walls 11 of the two separate plates 1, and extend in extending directions of the top walls 11 of the separate plates 1. Since the top wall 11 of the separate plate 1 gradually extends away from the bottom wall 12 of the separate plate 1 in a direction from being close to another separate plate 1 to being away from the other separate plate 1, the first flow guide surface 8 is a triangular flow guide surface, and an oil liquid located on the first flow guide surface 8 flows into the oil cup 50 along the second ridge 9 and the first ridge 2.

[0112] In some specific implementations, an angle β of each of the two second ridges 9 relative to a horizontal direction ranges from 12° to 25°. By setting the angle β of the second ridge 9 relative to the horizontal direction, the oil liquid located on the first flow guide member 808 can flow into the oil cup 50 along the second ridge 9 and the first ridge 2. Moreover, it is possible to prevent the oil liquid, when flowing on the second ridge 9, from falling directly and dripping on the cooker 200 or the kitchen utensil located under the range hood 100 to some extent.

[0113] It should be noted that the angle β may be 12°, 15°, 23°, 25°, and the like. Here, the value of the angle β is not specifically limited.

[0114] Further, in some implementations, the two second ridges 9 are axisymmetrically arranged with respect to a central axis L of the deflector 10, i.e., oil liquids located at the left and right sides of the deflector 10 each can flow into the oil cup.

[0115] During actual use of the range hood 100, an oil liquid on the first flow guide surface 8 may not all flow onto the second ridge 9 and then onto the first ridge 2. For this reason, a second flow guide structure (not shown) may be provided on the first flow guide surface 8, and an oil liquid not flowing onto the second ridge 9 can flow onto the second flow guide structure, and then flow into the oil cup 50 along the first ridge 2.

[0116] Specifically, two second flow guide structures may be provided. The two second flow guide structures are arranged in one-to-one correspondence with the two second ridges 9, and extend towards the second ridges 9, i.e., an end of each of the two second flow guide structures close to the first ridge 2 intersects with the first ridge 2. Therefore, the oil liquid on the second flow guide structure can flow from the second flow guide structure onto the first rib 2, and further into the oil cup 50.

[0117] In some optional implementations, the second flow guide structure is a rib structure or a groove structure provided on the first flow guide surface 8. The rib structure can be understood as a protrusion extending in an extending direction of the first flow guide surface 8, and the groove structure can be understood as a concave cavity extending in the extending direction of the first flow guide surface 8. Here, the rib structure or the groove structure provided on the first flow guide surface 8 is not limited.

[0118] It should be noted that in some implementations, in order to improve a flow guide effect of the second flow guide structure, the second flow guide structure may include a plurality of rib structures or groove structures arranged at intervals. In this case, there is no limitation on the number of rib structures and the number of groove structures.

[0119] In some implementations, a flow guide structure may also be provided at a lower part of the deflector 10, and an oil liquid located at the lower part of the deflector 10 can flow into the oil cup 50 along the flow guide structure.

[0120] In some implementations, each separate plate 1 has a bottom wall 12 extending in the left-right direction, and the bottom wall 12 extends downwards in the direction from the first end 311 to the second end 312, to form a second accommodation space between the bottom walls 12 of the two separate plates 1.

[0121] In some optional implementations, a flow guide structure provided at the lower part of the deflector 10 may be a second flow guide member 90 provided in the second accommodation space, and the second flow guide member 90 is connected to each of the bottom walls 12 of the two separate plates 1. The second flow guide member 90 has a second flow guide surface 60 covering an opening region of the second accommodation space, and two third ridges 70 are formed at a connection of the second flow guide surface 60 and the two bottom walls 12. That is, the second flow guide surface 60 is a triangular flow guide surface, and an oil liquid at the bottom end of the first ridge 2 can flow into the oil cup 50 through the second flow guide member 90. An oil liquid located at the bottom of the separate plate 1 can also flow into the oil cup 50 through the second flow guide surface 60. Therefore, a surface of the deflector 10 can be prevented from being contaminated with a large amount of oil liquids to some extent, and overall cleanliness of the range hood 100 can be improved.

[0122] In order to improve the flow guide effect of the second flow guide member 90, more oil liquids can flow into the oil cup 50 through the second flow guide member 90. In some optional implementations, a third flow guide member structure (not shown) may be provided at a bottom of the second flow guide member 90 and is capable of allowing the oil liquid to flow into the oil cup 50. The third flow guide member structure has a flow guide opening disposed facing towards the oil cup 50. In this way, the oil liquid can flow into the oil cup 50 through the flow guide opening.

[0123] It should be noted that the above-mentioned third flow guide structure may be an oil passing hole defined on the second flow guide member 90 or an oil

passing slit defined on the second flow guide member 90. Here, a specific form of the third flow guide structure is not limited.

[0124] Further, in order to improve a flow guide effect of the third flow guide structure, as described above, a plurality of oil passing holes or a plurality of oil passing slits may also be provided. Here, an arrangement manner and number of each of oil passing hole or oil passing slit are not limited.

Claims

1. A deflector, applied in a range hood, the range hood comprising a housing having an oil fume collection chamber and a mounting opening in communication with the oil fume collection chamber, and the deflector connected to the housing and covering the mounting opening, wherein:

the deflector comprises two separate plates that are arranged in a left-right direction, each of the two separate plates having plate surfaces facing towards a front-rear direction, the two separate plates having distal ends away from each other and proximal ends close to each other, the distal ends of the two separate plates connected to the housing, the proximal ends of the two separate plates connected to each other to form a first ridge at a connection between the two separate plates, and the first ridge constructed to protrude forwards relative to the distal ends in the front-rear direction; and

the deflector has an air inlet in communication with the oil fume collection chamber, the air inlet configured to allow for passing of an external oil fume to enter the oil fume collection chamber, and the air inlet comprising two air sub-inlets formed on the two separate plates respectively.

2. The deflector according to claim 1, wherein the first ridge is constructed to extend in an up-down direction of the housing and be inclined from a top end to a bottom end in a front-to-rear direction.

3. The deflector according to claim 2, wherein the two separate plates are axisymmetrically arranged with respect to the first ridge.

4. The deflector according to any one of claims 1 to 3, further comprising a baffle, the baffle comprising two side enclosing panels opposite to each other in the left-right direction, wherein:

the two side enclosing panels are arranged to be connected to the housing, and are connected to the distal ends of the two separate plates respectively; and

each of the two side enclosing panels has a connection surface facing towards a corresponding separate plate of the two separate plates, a projection of the corresponding separate plate of the two separate plates on the connection surface located within a contour of the connection surface.

5. The deflector according to claim 4, wherein:

the baffle further comprises an upper enclosing panel and a lower enclosing panel, each of the upper enclosing panel and the lower enclosing panel connected between the two side enclosing panels, the upper enclosing panel located at upper sides of the two separate plates, and the lower enclosing panel located at lower sides of the two separate plates; and

a flow guide chamber is defined by the two side enclosing panels, the upper enclosing panel, and the lower enclosing panel, the flow guide chamber in communication with the air inlet, and an opening area of the flow guide chamber gradually decreasing towards the air inlet.

6. The deflector according to claim 4 or 5, wherein:

a connection edge is formed at a connection between the side enclosing panel and the corresponding separate plate, the side enclosing panel having an outer end surface opposite to the connection edge in the front-rear direction; and

in a direction perpendicular to the outer end surface, a ratio of a maximum dimension of the projection of the corresponding separate plate on the connection surface to a minimum distance between the connection edge and the outer end surface ranges from 0.42 to 0.76.

7. The deflector according to any one of claims 1 to 6, wherein:

each of the two air sub-inlets has a first end and a second end opposite to each other in the left-right direction, the first ends of the two air sub-inlets located close to each other, and the second ends of the two air sub-inlets located away from each other; and

in an up-down direction, a dimension of the first end of the air sub-inlet is smaller than a dimension of the second end of the air sub-inlet.

8. The deflector according to claim 7, wherein:

each of the two the air sub-inlets further has a first inner wall and a second inner wall, each of the first inner wall and the second inner wall

connected between the first end and the second end, and the first inner wall located above the second inner wall;

a corresponding air sub-inlet is defined by the first end, the second end, the first inner wall, and the second inner wall; and

at least one of the first inner wall and the second inner wall is an inclined wall, the inclined wall extending upwards in a direction from the first end to the second end.

9. The deflector according to claim 8, wherein an angle of the inclined wall relative to a horizontal direction ranges from 10° to 30°.

10. The deflector according to any one of claims 7 to 9, wherein in the up-down direction, a ratio of the dimension of the first end of the air sub-inlet to the dimension of the second end of the air sub-inlet ranges from 0.4 to 0.7.

11. The deflector according to any one of claims 1 to 10, wherein a grille structure or a screen oil filter is formed in the air inlet and has a contour matching with a contour of the air inlet.

12. The deflector according to any one of claims 1 to 11, wherein the air inlet comprises a plurality of air inlet holes arranged in rows and columns.

13. The deflector according to any one of claims 1 to 12, wherein an inner edge of the air inlet is connected to a flange, the flange having an end connected to the inner edge of the air inlet and another end extending in a direction opposite to a protruding direction of the first ridge.

14. The deflector according to any one of claims 1 to 13, wherein the two air sub-inlets are independent of each other or in communication with each other.

15. The deflector according to claim 14, wherein:

a partition portion is formed at an intersection position of the two separate plates and extends in an extending direction of the first ridge; and

the partition portion is provided with first flow guide structures arranged at two sides of the first ridge and extending in an up-down direction.

16. The deflector according to claim 15, wherein the two air sub-inlets are axisymmetrically arranged with respect to the partition portion.

17. The deflector according to claim 15 or 16, wherein each of the first flow guide structures is a rib structure or a groove structure.

18. The deflector according to any one of claims 1 to 17, wherein:

each of the two separate plates comprises a top wall extending in the left-right direction, the top wall extending upwards away from the first ridge; and

a first accommodation space is formed between the top walls of the two separate plates, a first flow guide member provided in the first accommodation space and connected to the two separate plates, the first flow guide member having a first flow guide surface covering an opening region of the first accommodation space, and the first flow guide surface connected to the top walls of the two separate plates to form two second ridges intersecting with a top end of the first ridge.

19. The deflector according to claim 18, wherein an angle of each of the two second ridges relative to a horizontal direction ranges from 12° to 25°.

20. The deflector according to claim 18 or 19, wherein the two second ridges are axisymmetrically arranged with respect to a central axis of the deflector.

21. The deflector according to any one of claims 18 to 20, wherein the first flow guide surface is provided with two second flow guide structures in one-to-one correspondence with the two second ridges, the two second flow guide structures extending towards the first ridge.

22. The deflector according to claim 21, wherein each of the two second flow guide structures is a rib structure or a groove structure.

23. The deflector according to any one of claims 1 to 22, wherein:

each of the separate plates has a bottom wall extending in the left-right direction, the bottom wall extending downwards away from the first ridge; and

a second accommodation space is formed between the bottom walls of the two separate plates, a second flow guide member provided in the second accommodation space and connected to the two separate plates, the second flow guide member having a second flow guide surface covering an opening region of the second accommodation space, and two third ridges formed at a connection between the second flow guide surface and the bottom walls of the two separate plates.

24. The deflector according to claim 23, wherein the

second flow guide member is provided with a third flow guide structure at a bottom of the second flow guide member, the third flow guide structure configured to allow an oil liquid to flow into an oil cup located at a lower part of the housing, and the third flow guide structure having a flow guide opening facing towards the oil cup.

25. The deflector according to claim 24, wherein the third flow guide structure is an oil passing hole or an oil passing slit.

26. A range hood, comprising:

a housing having an oil fume collection chamber and a mounting opening in communication with the oil fume collection chamber;
a deflector connected to the housing and covering the mounting opening; and
an openable plate turnably connected to the housing and configured to expose or cover the mounting opening, wherein:

the deflector comprises two separate plates that are arranged in a left-right direction, each of the two separate plates having plate surfaces facing towards a front-rear direction, the two separate plates having distal ends away from each other and proximal ends close to each other, the distal ends of the two separate plates connected to the housing, the proximal ends of the two separate plates connected to each other to form a first ridge at a connection between the two separate plates, and the first ridge constructed to protrude forwards relative to the distal ends in the front-rear direction; and
the deflector has an air inlet in communication with the oil fume collection chamber, the air inlet configured to allow for passing of an external oil fume to enter the oil fume collection chamber, and the air inlet comprising two air sub-inlets formed on the two separate plates respectively,
wherein the first ridge is constructed to protrude towards the openable plate relative to the distal ends in the front-rear direction.

27. The range hood according to claim 26, wherein the deflector is embedded in the oil fume collection chamber through the mounting opening.

28. The range hood according to claim 26 or 27, wherein the first ridge is constructed to extend in an up-down direction of the housing and to be inclined from a top end to a bottom end in a front-to-rear direction.

29. The range hood according to claim 28, wherein the two separate plates are axisymmetrically arranged with respect to the first ridge.

30. The deflector according to any one of claims 26 to 29, further comprising a baffle, the baffle comprising two side enclosing panels opposite to each other in the left-right direction, wherein:

the two side enclosing panels are arranged to be connected to the housing, and are connected to the distal ends of the two separate plates respectively; and
each of the two side enclosing panels has a connection surface facing towards a corresponding separate plate of the two separate plates, a projection of the corresponding separate plate on the connection surface located within a contour of the connection surface.

31. The range hood according to claim 30, wherein:

the baffle further comprises an upper enclosing panel and a lower enclosing panel, each of the upper enclosing panel and the lower enclosing panel connected between the two side enclosing panels, the upper enclosing panel located at upper sides of the two separate plates, and the lower enclosing panel located at lower sides of the two separate plates; and
a flow guide chamber is defined by the two side enclosing panels, the upper enclosing panel, and the lower enclosing panel, the flow guide chamber in communication with the air inlet, and an opening area of the flow guide chamber gradually decreasing towards the air inlet.

32. The range hood according to claim 30 or 31, wherein:

a connection edge is formed at a connection between the side enclosing panel and the corresponding separate plate, the side enclosing panel having an outer end surface opposite to the connection edge in the front-rear direction; and
in a direction perpendicular to the outer end surface, a ratio of a maximum dimension of the projection of the corresponding separate plate on the connection surface to a minimum distance between the connection edge and the outer end surface ranges from 0.42 to 0.76.

33. The range hood according to any one of claims 26 to 32, wherein:

each of the two air sub-inlets has a first end and a second end opposite to the first end in the left-right direction, the first ends of the two air sub-

inlets located close to each other, and the second ends of the two air sub-inlets located away from each other; and
in an up-down direction, a dimension of the first end of the air sub-inlet is smaller than a dimension of the second end of the air sub-inlet.

34. The range hood according to claim 33, wherein:

each of the two air sub-inlets further comprises a first inner wall and a second inner wall, each of the first inner wall and the second inner wall connected between the first end and the second end, and the first inner wall located above the second inner wall;
a corresponding air sub-inlet is defined by the first end, the second end, the first inner wall, and the second inner wall; and
at least one of the first inner wall and the second inner wall is an inclined wall, the inclined wall extending upwards in a direction from the first end to the second end.

35. The range hood according to claim 34, wherein an angle of the inclined wall relative to a horizontal direction ranges from 10° to 30°.

36. The range hood according to any one of claims 33 to 35, wherein in the up-down direction, a ratio of the dimension of the first end of the air sub-inlet to the dimension of the second end of the air sub-inlet ranges from 0.4 to 0.7.

37. The range hood according to any one of claims 26 to 36, wherein a grille structure or a screen oil filter is formed in the air inlet and has a contour matching with a contour of the air inlet.

38. The range hood according to any one of claims 26 to 37, wherein the air inlet comprises a plurality of air inlet holes arranged in rows and columns.

39. The range hood according to any one of claims 26 to 38, wherein an inner edge of the air inlet is connected to a flange, the flange having an end connected to the inner edge of the air inlet and another end extends in a direction opposite to a protruding direction of the first ridge.

40. The range hood according to any one of claims 26 to 39, wherein the two air sub-inlets are independent of each other or in communication with each other.

41. The range hood according to claim 40, wherein:

a partition portion is formed at an intersection position of the two separate plates and extends in an extending direction of the first ridge; and
the partition portion is provided with first flow guide structures arranged at two sides of the first ridge and extending in an up-down direction.

42. The range hood according to claim 41, wherein the two air sub-inlets are axisymmetrically arranged with respect to the partition portion.

43. The range hood according to claim 41 or 42, wherein each of the first flow guide structures is a rib structure or a groove structure.

44. The range hood according to any one of claims 26 to 43, wherein:

each of the two separate plates has a top wall extending in the left-right direction, the top wall extending upwards away from the first ridge; and a first accommodation space is formed between the top walls of the two separate plates, a first flow guide member provided in the first accommodation space and connected to the two separate plates, the first flow guide member having a first flow guide surface covering an opening region of the first accommodation space, and the first flow guide surface connected to the top walls of the two separate plates to form two second ridges intersecting with a top end of the first ridge.

45. The range hood according to claim 44, wherein an angle of each of the two second ridges relative to a horizontal direction ranges from 12° to 25°.

46. The range hood according to claim 44 or 45, wherein the two second ridges are axisymmetrically arranged with respect to a central axis of the deflector.

47. The range hood according to any one of claims 44 to 46, wherein the first flow guide surface is provided with two second flow guide structures in one-to-one correspondence with the two second ridges, the two second flow guide structures extending towards the first ridge.

48. The range hood according to claim 47, wherein each of the two second flow guide structures is a rib structure or a groove structure.

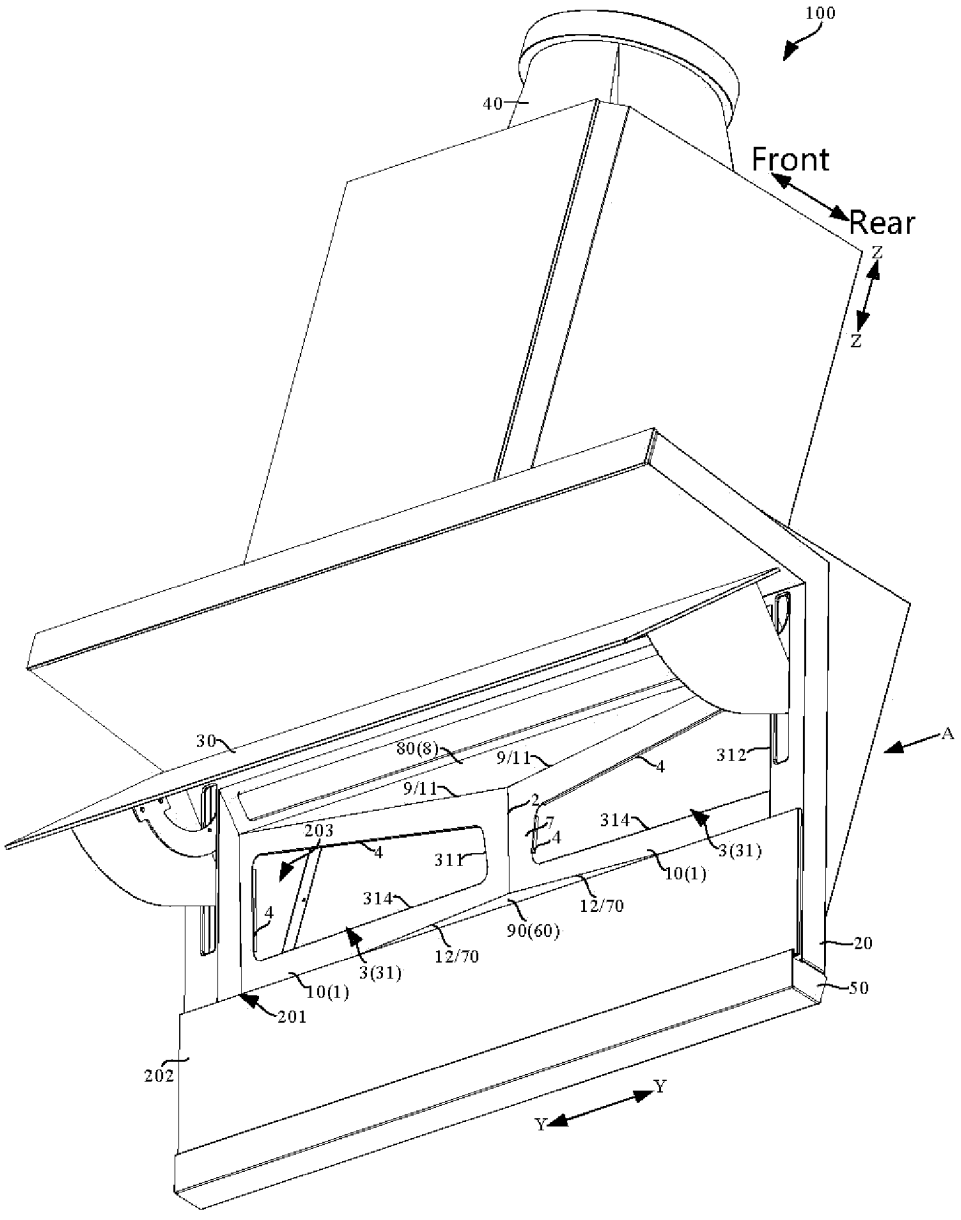
49. The range hood according to any one of claims 26 to 48, wherein:

each of the two separate plates has a bottom wall extending in the left-right direction, the bottom wall extending downwards away from the first ridge; and
a second accommodation space is formed between the bottom walls of the two separate

plates, a second flow guide member provided in the second accommodation space and connected to the two separate plates, the second flow guide member having a second flow guide surface covering an opening region of the second accommodation space, and two third ridges formed at a connection between the second flow guide surface and the bottom walls of the two separate plates.

50. The range hood according to claim 49, wherein the second flow guide member is provided with a third flow guide structure at a bottom of the second flow guide member, the third flow guide structure configured to allow an oil liquid to flow into an oil cup located at a lower part of the housing, and the third flow guide structure having a flow guide opening facing towards the oil cup.

51. The range hood according to claim 50, wherein the third flow guide structure is an oil passing hole or an oil passing slit.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Front
Rear
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Z
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80(8)
9/11
9/11
4
312
A
203
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311
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3(31)
10(1)
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12/70
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50
201
202
Y
Y

FIG. 1

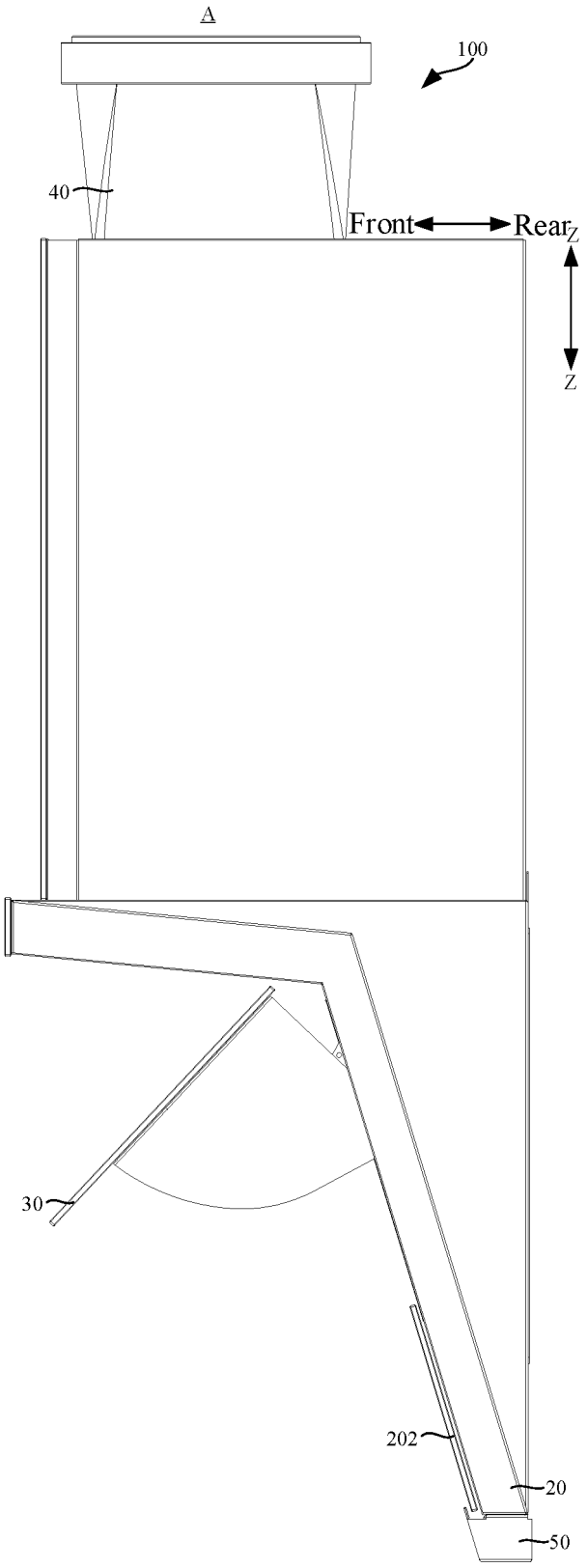
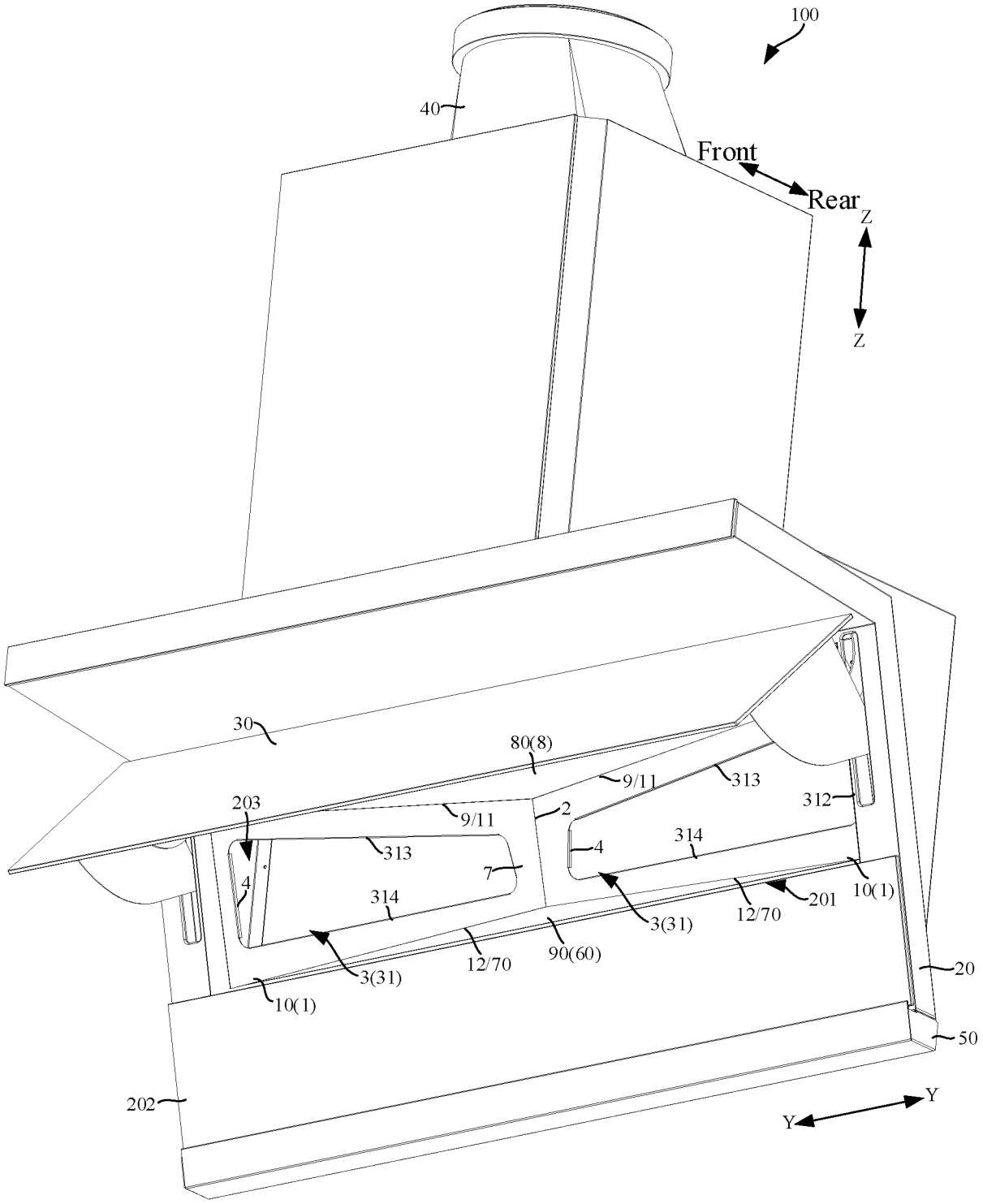


FIG. 2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Rear
Z
Z
30
80(8)
9/11
313
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203
9/11
2
4
314
313
7
4
314
201
10(1)
12/70
3(31)
3(31)
12/70
90(60)
10(1)
20
50
202
Y
Y

FIG. 3

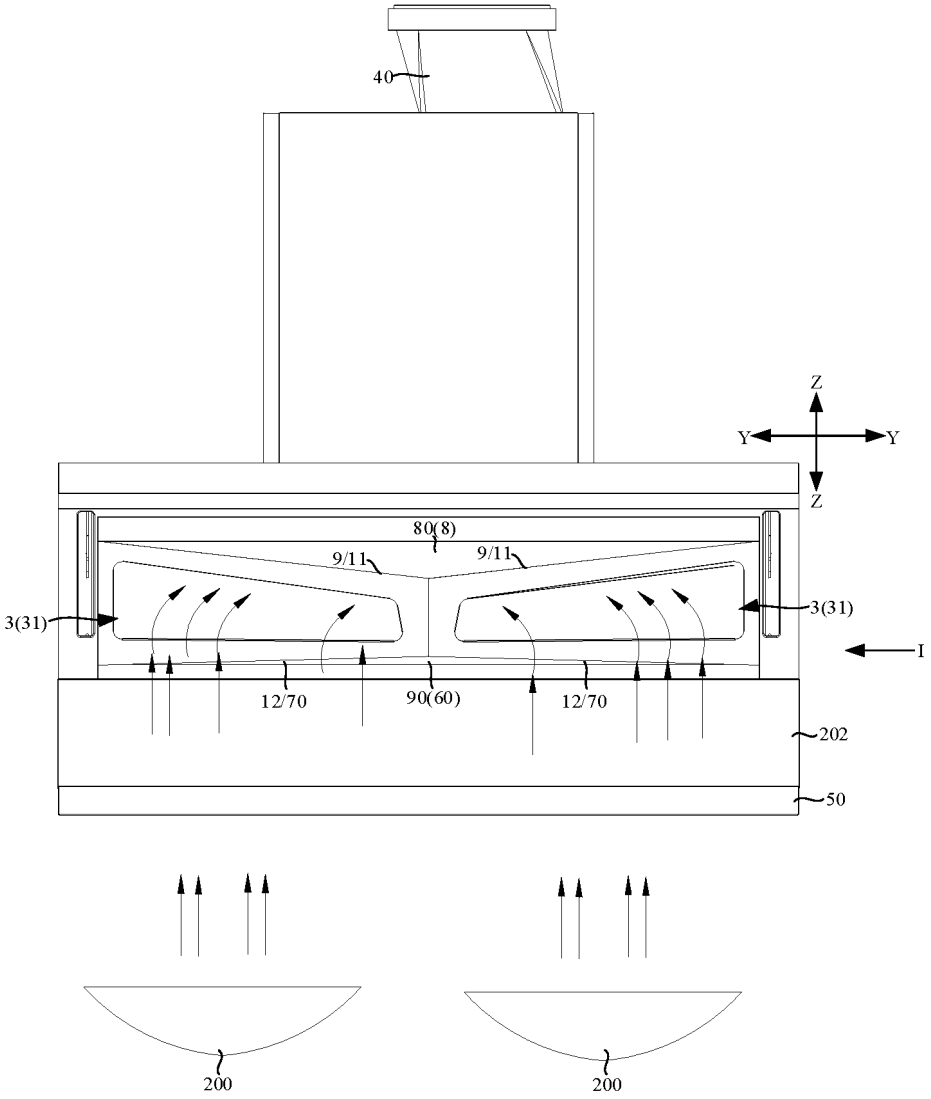


FIG. 4

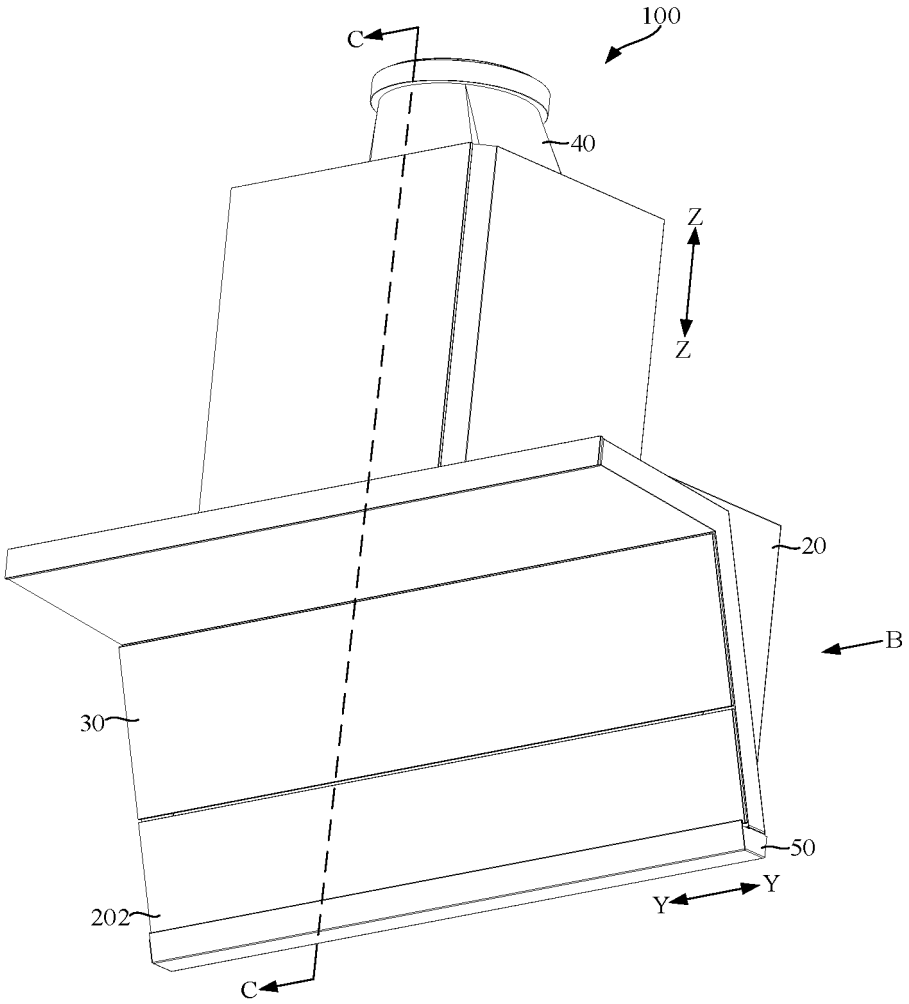


FIG. 5

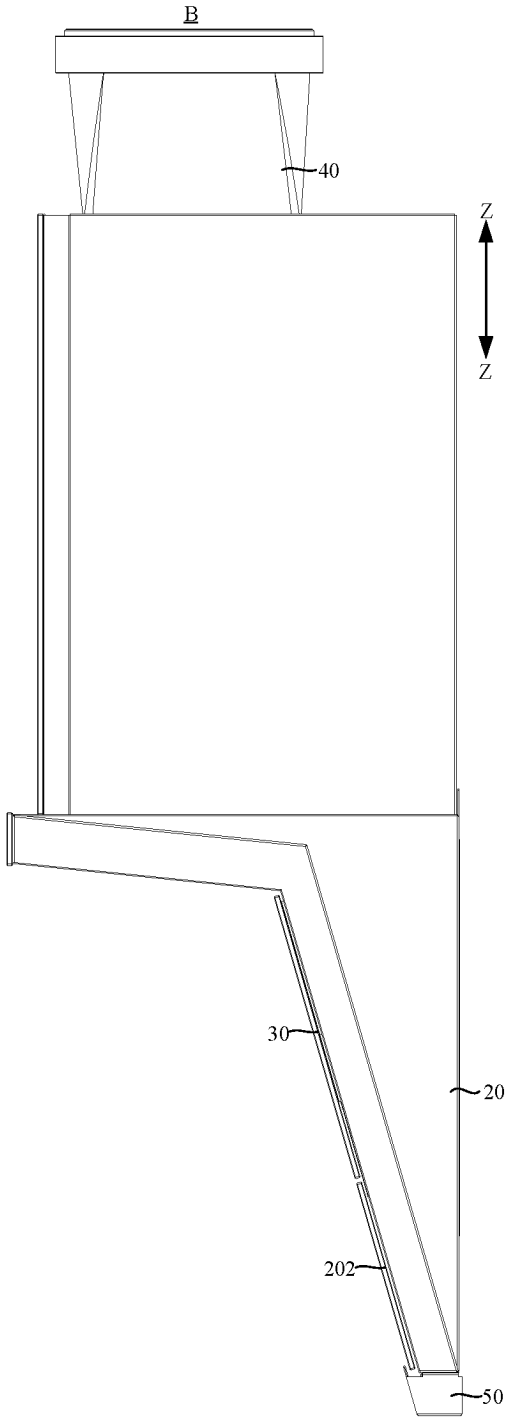


FIG. 6

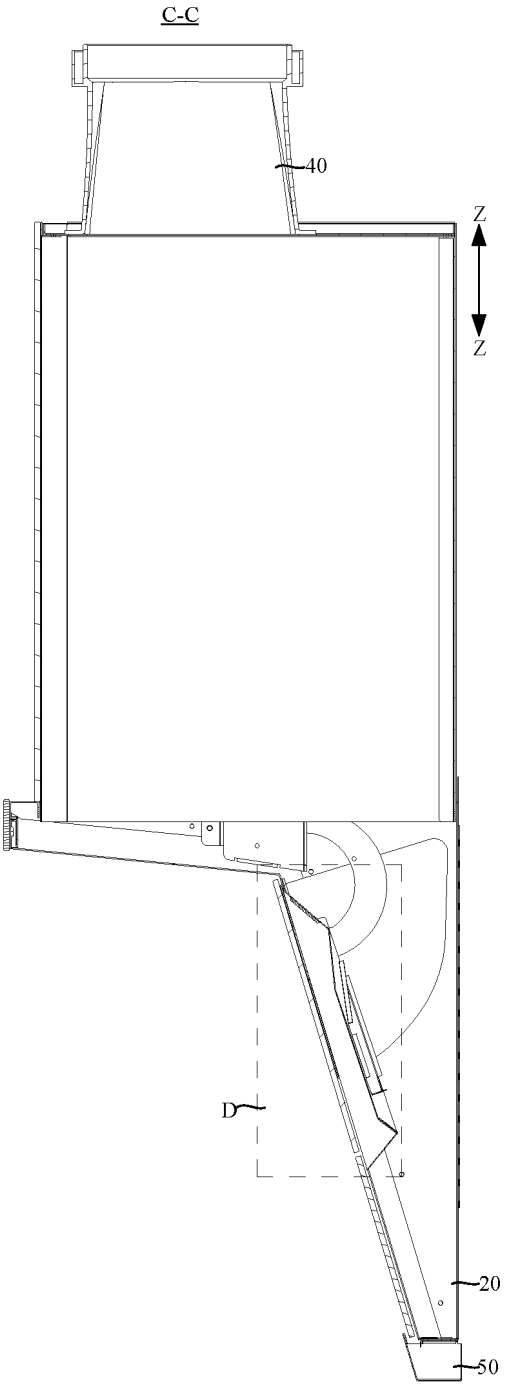
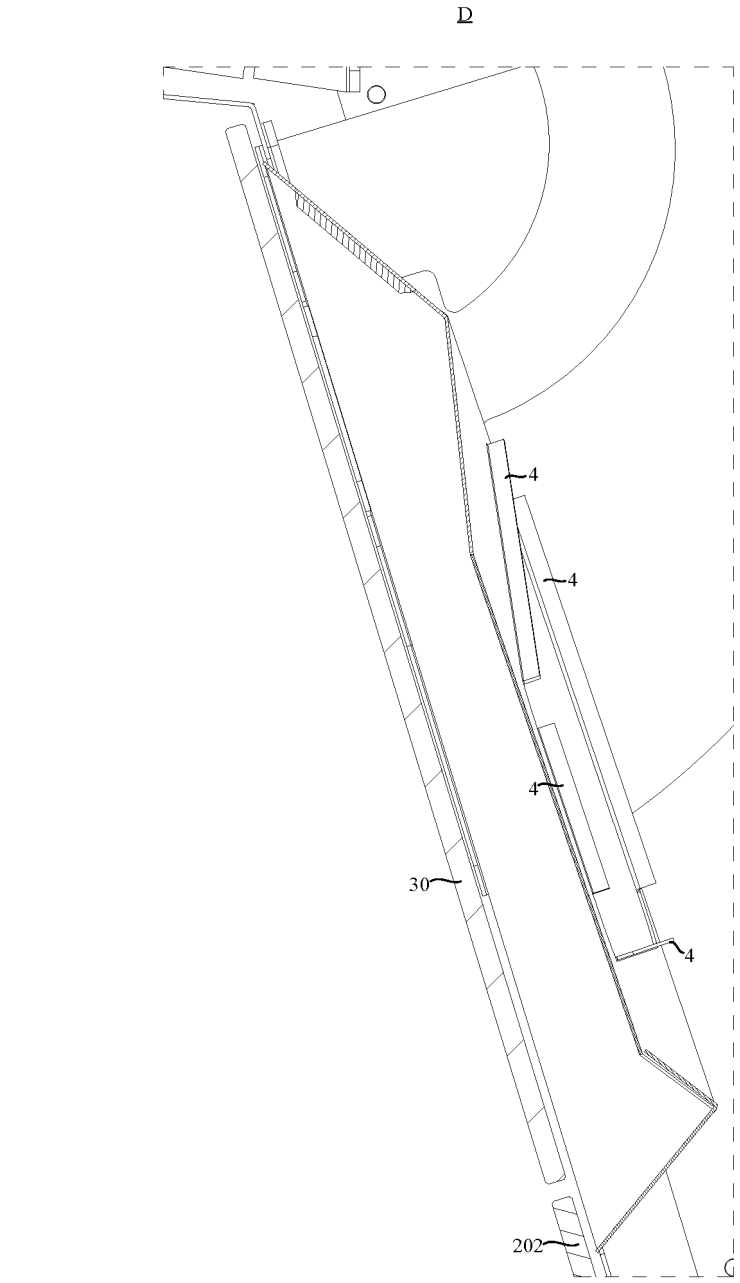


FIG. 7


D
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4
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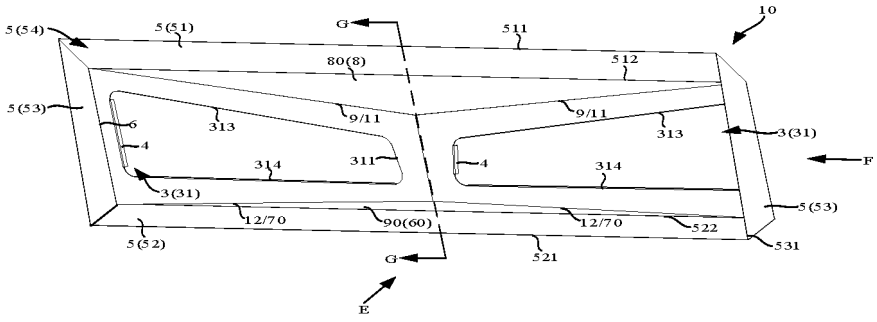
FIG. 8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5(51)
G
511
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5(53)
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9/11
9/11
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3(31)
F
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314
311
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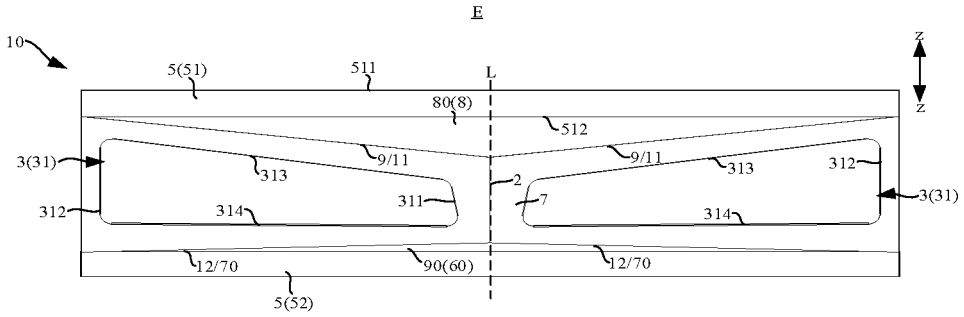
3(31)
5(53)
12/70
90(60)
12/70
522
5(52)
521
531
G
E

FIG. 9


E
10
5(51)
511
L
80(8)
512
z
z
3(31)
313
9/11
9/11
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3(31)
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12/70
90(60)
12/70
5(52)

FIG. 10

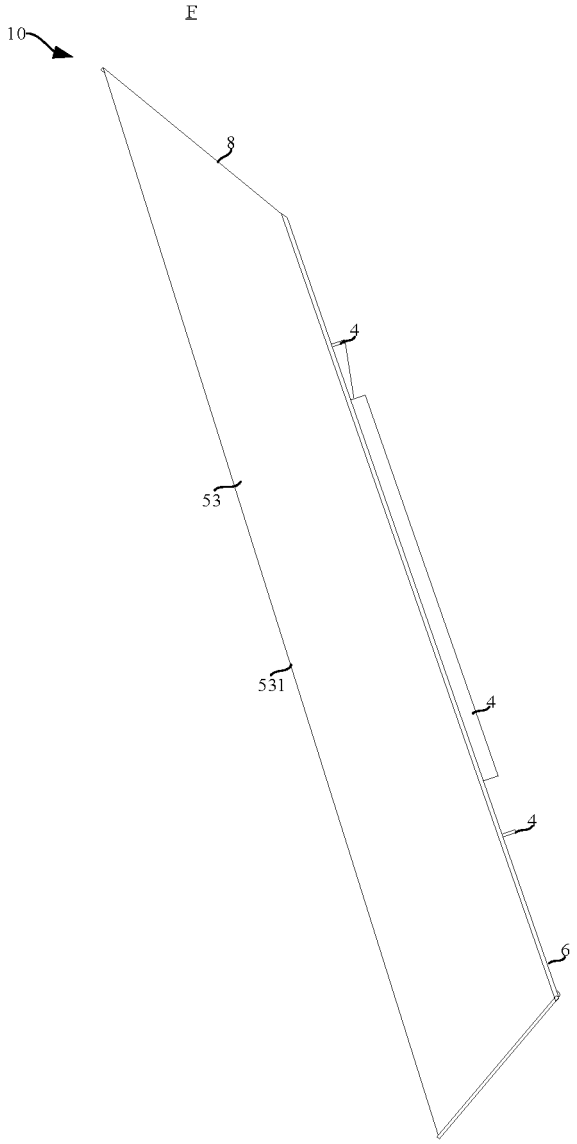
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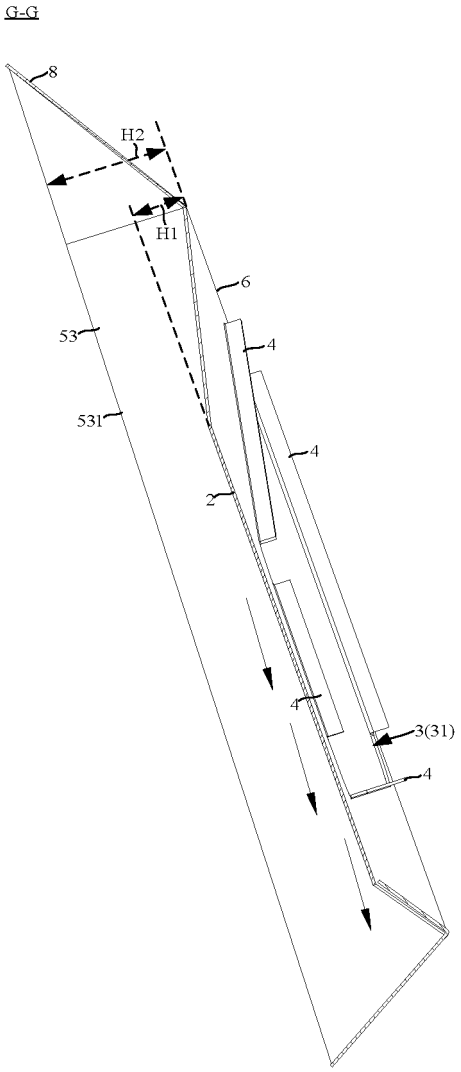
FIG. 11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H2
H1
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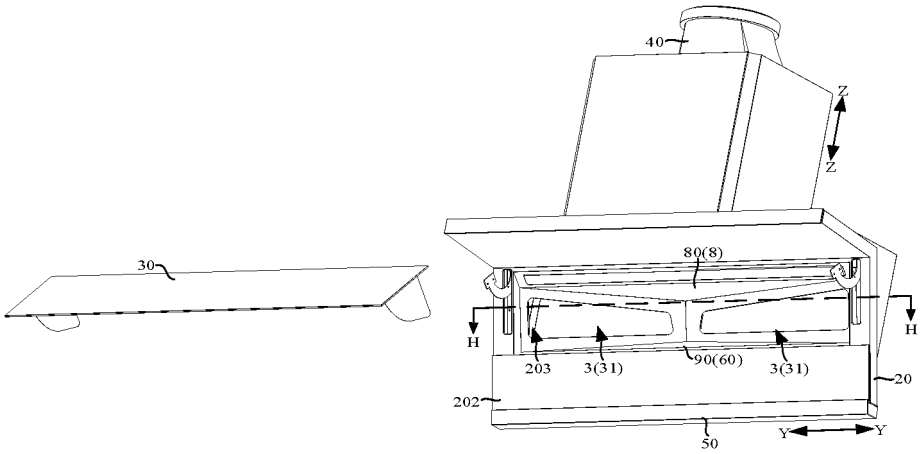
3(31)
4

FIG. 12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80(8)
H
H
203
3(31)
90(60)
3(31)
20
202
50
Y
Y

FIG. 13

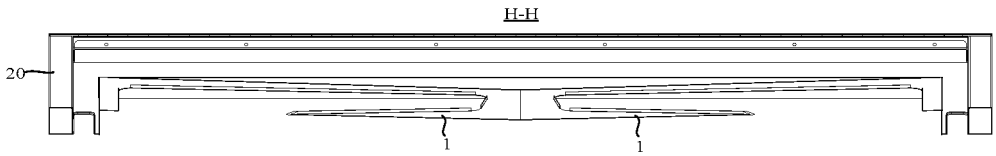

FIG. 14

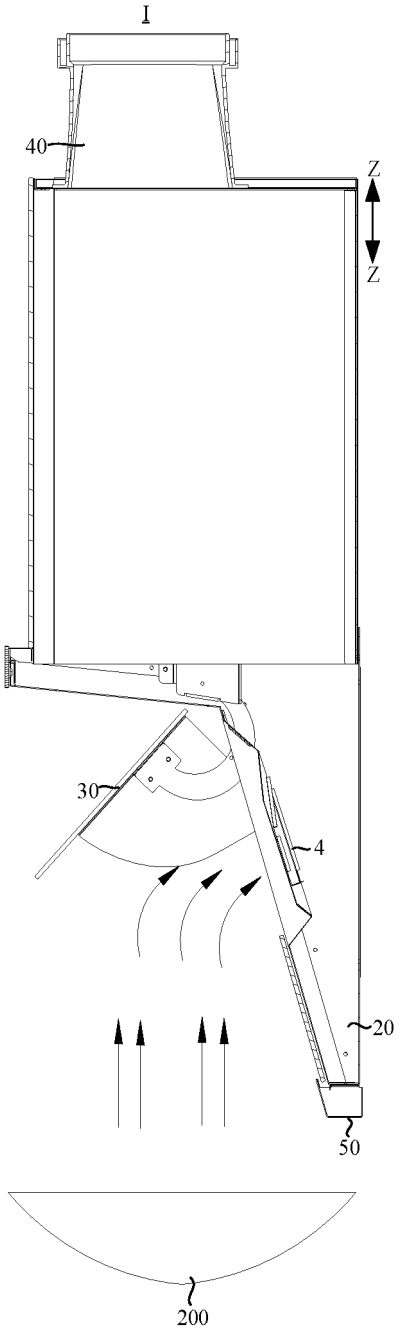

FIG. 15

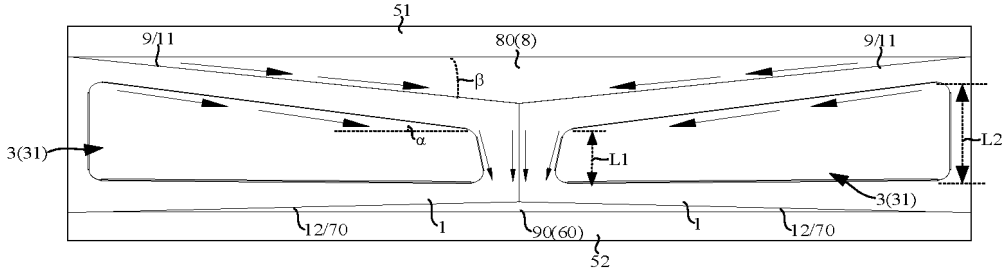

FIG. 16

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2023/131989

A. CLASSIFICATION OF SUBJECT MATTER

F24C15/20(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: F24C, F24F, A47J, B01D, E04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

VEN, CNTXT, CNKI: 油烟机, 风口, 壳, 凸, 竖, 左右, 前后, 两个, 单板, 围板, 侧, 一体, 导流, 流动, range hood, smoke, inlet, intake, shell, housing, flow, guide, second, two, airflow, cavity, side, collecting, protruding, board, wall, panel, face, plate

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CN 108105813 A (NINGBO FOTILE KITCHENWARE CO., LTD.) 01 June 2018 (2018-06-01) description, paragraphs [0018]-[0022], and figures 1-2	1-3, 11-12, 14, 26-29, 37-38, 40
Y	CN 215863593 U (NINGBO FOTILE KITCHENWARE CO., LTD.) 18 February 2022 (2022-02-18) description, paragraphs [0026]-[0036], and figures 1-6	1-3, 11-12, 14, 26-29, 37-38, 40
A	CN 106439973 A (YU YONGFU) 22 February 2017 (2017-02-22) entire document	1-51
A	CN 113531607 A (QINGDAO HAIER WISDOM KITCHEN APPLIANCE CO., LTD. et al.) 22 October 2021 (2021-10-22) entire document	1-51
A	CN 115031278 A (HANGZHOU ROBAM APPLIANCES CO., LTD.) 09 September 2022 (2022-09-09) entire document	1-51
A	CN 212108549 U (VATTI CORP., LTD.) 08 December 2020 (2020-12-08) entire document	1-51

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

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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
23 January 2024	**27 January 2024**
Name and mailing address of the ISA/CN **China National Intellectual Property Administration (ISA/CN)** **China No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088**	Authorized officer Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2023/131989

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	JP 6085659 B1 (HEIAN GROUP CO.) 22 February 2017 (2017-02-22) entire document	1-51
A	JP H09273789 A (TOTO LTD.) 21 October 1997 (1997-10-21) entire document	1-51
A	WO 2014142767 A2 (PROVENT D. O. O.) 18 September 2014 (2014-09-18) entire document	1-51

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2023/131989

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN 108105813 A	01 June 2018	None	
CN 215863593 U	18 February 2022	None	
CN 106439973 A	22 February 2017	None	
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WO 2014142767 A2	18 September 2014	EP 2971979 A2	20 January 2016
		EP 2971979 B1	25 November 2020
		SI 24329 A	30 September 2014
		SI 24329 B	31 May 2022
		WO 2014142767 A3	08 January 2015

Form PCT/ISA/210 (patent family annex) (July 2022)

REFERENCES CITED IN THE DESCRIPTION

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- US 202320921829X A **[0001]**
- US 202320921847 A **[0001]**