

RANGE HOOD

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to Chinese patent application No. 202510049393.3, filed on January 13, 2025, and titled “RANGE HOOD”, No. 5 202510702609.1, filed on January 13, 2025, and titled “RANGE HOOD”, No. 202510702608.7, filed on January 13, 2025, and titled “RANGE HOOD”, No. 202510702610.4, filed on May 28, 2025, and titled “RANGE HOOD”, and No. 202510702569.0, filed on May 28, 2025, and titled “RANGE HOOD”. The contents of the above identified applications are hereby incorporated herein in their entirety by 10 reference.

TECHNICAL FIELD

[0002] The present application relates to the field of kitchen appliance technology, and in particular, to a range hood.

BACKGROUND

15 [0003] Chinese-style cooking may generate a large amount of cooking fumes. In order to maintain a clean kitchen environment and protect human health, a range hood has become one of indispensable appliances in modern household kitchens. However, as an utilization rate of the range hood continues to increase, greater attention has been paid to a fume extraction performance of the range hood. When a distance between an 20 air inlet of the range hood and a region where cooking fumes are generated is relatively large, a suction path of the cooking fumes becomes longer and a suction time increases,

such that a phenomenon of cooking fume escape is likely to occur during cooking.

When an installation height of the range hood is reduced, the air inlet is positioned as close as possible to a fume source and negative-pressure region extends downwardly, although a fume extraction performance can be improved, a cooking space becomes

5 smaller, and a user's head may accidentally collide with a smoke collecting hood. In addition, the reduced installation height adversely affects visibility and an overall appearance of the kitchen. To address the foregoing issues, a liftable range hood has been developed, i.e., the air inlet is movable in an elevating manner. When the range hood is powered on, the air inlet descends, and when the range hood is in the power-off

10 state, the air inlet ascends. However, the conventional range hood generally does not have a lighting lamp on a lower housing of the range hood. Therefore, a smoke baffle of the range hood is not required to consider obstruction of the lighting lamp during opening and closing processes. However, an increasing number of the range hood is provided with functional modules, such as lighting lamps disposed on the lower

15 housing. Therefore, a requirement for a range hood capable of preventing a smoke baffle from blocking a lighting lamp during a pivoting process of the smoke baffle should be satisfied.

SUMMARY

- [0004] Based on this, the present application provides a range hood.
- 20 [0005] The present application provides a range hood. The range hood includes an upper housing assembly, an air inlet body, a functional module and a smoke baffle. The

air inlet body is provided with an air inlet. The air inlet body is disposed at a bottom of the upper housing assembly and is pivotable relative to the upper housing assembly. The functional module is disposed at a front side of the bottom of the upper housing assembly. The smoke baffle is disposed at the bottom of the upper housing assembly and movable synchronously with the air inlet body. The air inlet body has a first state and a second state. When the air inlet body is in the first state, the air inlet body is pivoted upward to be at least partially located inside the upper housing assembly, and the smoke baffle is rotated rearward to a horizontal position to close the air inlet and entirely located behind the functional module. When the air inlet body is in the second state, the air inlet body is pivoted downward to be at least partially located below the bottom of the upper housing assembly, and the smoke baffle is rotated forward to open the air inlet and entirely located in front of the functional module.

[0006] In an embodiment, the functional module is configured as a lighting lamp.

[0007] In an embodiment, the front side of the bottom of the upper housing assembly is provided with a decorative plate. The decorative plate is in an elongated shape and horizontally arranged. The functional module is disposed on the decorative plate and horizontally arranged. When the air inlet body is in the first state, the smoke baffle is disposed behind the decorative plate and flush with the decorative plate. When the air inlet body is in the second state, a rear edge of the smoke baffle is disposed between a front edge of the functional module and a front edge of the decorative plate.

[0008] In an embodiment, when the air inlet body is switched from the first state to

the second state, an largest opening angle of the smoke baffle is defined as β , and the largest opening angle β of the smoke baffle is greater than or equal to 120 degrees and less than or equal to 150 degrees.

[0009] In an embodiment, a lower portion of the upper housing assembly is provided with a rear plate. A front side of the rear plate is provided with an oil guide plate. A portion of the rear plate is recessed to form a first receiving cavity. A second receiving cavity is formed below the oil guide plate. The air inlet body includes an air inlet body rear plate and an oil filter plate disposed on a front side of the air inlet body rear plate. When the air inlet body is in the second state, the air inlet body rear plate is rotated downward to extend out of the first receiving cavity, and the oil filter plate is rotated downward to extend out of the second receiving cavity. When the air inlet body is in the first state, the air inlet body rear plate is rotated upward into the first receiving cavity, and the oil filter plate is rotated upward into the second receiving cavity.

[0010] In an embodiment, the range hood further includes a fan disposed in the upper housing assembly. The oil guide plate is disposed below the fan. Alternatively, the air inlet body is driven by a driving mechanism, the driving mechanism is disposed on the upper housing assembly, and a driving output end of the driving mechanism extends downwardly into the first receiving cavity and is rotatably connected to a rear plate of the air inlet body.

[0011] In an embodiment, the air inlet body is directly or indirectly rotatably connected to the upper housing assembly. A center of the rotational connection is

defined as a first rotation connection point. The first rotation connection point is rotatable about a center point located within the upper housing assembly.

[0012] In an embodiment, the upper housing assembly is provided with a guide groove centered on the center point, and the first rotation connection point is slidable
5 along the guide groove.

[0013] In an embodiment, the range hood further includes a motion mechanism configured to drive the air inlet body and the smoke baffle to move in synchronization. The motion mechanism includes a driving mechanism and a transmission mechanism. The driving mechanism is configured to directly drive the air inlet body, or indirectly
10 drive the air inlet body via the transmission mechanism.

[0014] In an embodiment, the driving mechanism is configured as an electric push rod. A driving connection end disposed at an upper side of the driving mechanism is rotatably connected to the upper housing assembly, and a driving output end disposed at a lower side of the driving mechanism is rotatably connected to the air inlet body.
15 Alternatively, a driving connection end disposed at an upper side of the driving mechanism is fixed to the upper housing assembly, and a driving output end disposed at a lower side of the driving mechanism is provided with a sliding slot extending horizontally along a front-rear direction of the range hood. The air inlet body is in sliding fit with the sliding slot and is rotatable relative to the sliding slot.

20 [0015] In an embodiment, the transmission mechanism includes a rod member. An end of the rod member is rotatably connected to the upper housing assembly, and a

center of a rotational connection between the rod member and the upper housing assembly coincides with the center point, and the center point is defined as a second rotation connection point.

[0016] In an embodiment, the smoke baffle is directly or indirectly fixed to the rod member. Alternatively, the rod member is configured as a crank.

[0017] In an embodiment, the transmission mechanism further includes at least two connecting rods. The upper housing assembly is further provided with a third rotation connection point. The at least two connecting rods are connected end to end in a rotatable manner between the rod member and the third rotation connection point. One of the at least two connecting rods is movably connected to the air inlet body.

[0018] In an embodiment, the at least two connecting rods include a rocker and a first connecting rod. One end of the rocker is rotatably connected to the upper housing assembly via the third rotation connection point, an other end of the rocker is rotatably connected to the first connecting rod, and a center of a connection between the rocker and the first connecting rod is denoted as a fourth rotation connection point. The first connecting rod is rotatably connected to the rod member, and a center of a connection between the first connecting rod and the rod member is denoted as a fifth rotation connection point. The first rotation connection point is located between the fifth rotation connection point and the second rotation connection point.

[0019] In an embodiment, when the air inlet body is in the second state, the fifth rotation connection point is located behind the second rotation connection point.

[0020] In an embodiment, a line connecting the fifth rotation connection point and the second rotation connection point is defined as a third straight line. An angle between the third straight line and a horizontal direction is defined as α . When the air inlet body switches between the first state and the second state, the angle α between the
5 third straight line and the horizontal direction satisfies: $20 \text{ degrees} < \alpha \leq 180 \text{ degrees}$.

[0021] In an embodiment, a line connecting the third rotation connection point and the fourth rotation connection point is defined as a first straight line. A line connecting the fourth rotation connection point and the fifth rotation connection point is defined as a second straight line. A line connecting the fifth rotation connection point and the
10 second rotation connection point is defined as a third straight line. Lengths among the first straight line, the second straight line and the third straight line satisfy a following formula: the first straight line > the second straight line > the third straight line.

[0022] In an embodiment, a line connecting the fifth rotation connection point and the first rotation connection point is defined as a fourth straight line. A line connecting
15 the first rotation connection point and the second rotation connection point is defined as a fifth straight line. Lengths between the first rotation connection point and the second rotation point satisfy a following formula : a length of the fourth straight line > a length of the fifth straight line.

[0023] In an embodiment, a sixth rotation connection point is provided at a
20 rear-side end portion of the air inlet body. The air inlet body is rotatably connected to the rocker or the first connecting rod via the sixth rotation connection point.

[0024] In an embodiment, the at least two connecting rods further include a second connecting rod. The air inlet body is rotatably connected to the rocker via the second connecting rod. A center of a connection between the air inlet body and the rocker is denoted as a seventh rotation connection point.

5 [0025] In an embodiment, a line connecting the third rotation connection point and the seventh rotation connection point is defined as a sixth straight line. A line connecting the seventh rotation connection point and the fourth rotation connection point is defined as a seventh straight line. A line connecting the seventh rotation connection point and the sixth rotation connection point is defined as an eighth straight
10 line. Lengths among the sixth straight line, the seventh straight line and the eighth straight line satisfy a following formula: $2 \times \text{a length of the seventh straight line} < \text{a length of the sixth straight line} < 4 \times \text{a length of the seventh straight line}$, and $\text{a length of the seventh straight line} < \text{a length of the eighth straight line} < 3 \times \text{a length of the seventh straight line}$.

15 [0026] In an embodiment, the driving mechanism is connected to the air inlet body, and two groups of the transmission mechanism correspond to a left side of the air inlet body and a right side of the air inlet body, respectively.

[0027] In an embodiment, a linking rod extending along a front-rear direction of the range hood is fixed to the air inlet body, and a front end of the linking rod is
20 rotatably connected to the rod member via the first rotation connection point.

[0028] In an embodiment, each of a left side of the air inlet body and a right sides

of the air inlet body is provided with a side baffle. A front end portion of the side baffle is connected to the linking rod.

[0029] In an embodiment, the driving mechanism is an electric push rod or a motor configured to drive rotation of the rocker or the rod member.

5 [0030] In an embodiment, a gap is present between the center point and a front-side end portion of the upper housing assembly.

[0031] In an embodiment, the air inlet is formed on a front surface of the air inlet body. When the air inlet body is in the second state, at least a part of the air inlet is exposed from the upper housing assembly.

10 [0032] In an embodiment, when the air inlet body is in the second state, the smoke baffle is rotated to open the air inlet, such that a smoke collecting cavity is formed between the smoke baffle and the front surface of the air inlet body.

[0033] In an embodiment, each of connections is a hinge connection, and each of rotation connection points is a hinge point.

15 [0034] In an embodiment, the air inlet body is directly or indirectly rotatably connected to the upper housing assembly. A center of a connection between the air inlet body and the upper housing assembly is denoted as a first rotation connection point. When the air inlet body is in the first state, a position of the first rotation connection point corresponds to a first position point. When the air inlet body is in the
20 second state, the position of the first rotation connection point corresponds to a second position point. The second position point is located rearward of the first position point.

A distance between projections of the second position point and the first position point on a horizontal plane is defined as L . On a vertical cross-section extending along a front-rear direction of the range hood, a contour line of a rear-side end portion of the air inlet body includes a first endpoint and a second endpoint. When the air inlet body is in the first state, the first endpoint is located inside the upper housing assembly. When the air inlet body is in the second state, the first endpoint is flush with a bottom surface of the upper housing assembly, and the second endpoint is a lowest point of the contour line of the rear-side end of the air inlet body. A distance between the first endpoint and the first rotation connection point is defined as $L1$. A distance between the second endpoint and the first rotation connection point is defined as $L2$. The distance L between the projections of the second position point and the first position point on the horizontal plane, the distance $L1$ between the first endpoint and the first rotation connection point and the distance $L2$ between the second endpoint and the first rotation connection point satisfy a following relationship: $L < L2 - L1 < L + \Delta$, wherein Δ is a constant.

[0035] In an embodiment, the range hood further includes an oil cup disposed at a rear side bottom of the air inlet body. The transmission mechanism includes a transmission rod, one end of the transmission rod is fixed to the oil cup, an other end of the transmission rod is slidably connected to the upper housing assembly in a vertical direction, and the transmission rod is rotatably connected to the air inlet body, such that the oil cup is maintained in an upright orientation.

[0036] In an embodiment, when the air inlet body is in the second state, a rear side of the oil cup and the first intermediate point are located on a same vertical plane.

[0037] In an embodiment, a contour line formed by a line connecting the first intermediate point and the second endpoint is a straight line or a curved line.

5 [0038] In an embodiment, the first rotation connection point is rotatable about a center point located in the upper housing assembly.

[0039] In an embodiment, the first rotation connection point is located on a front side of the air inlet body. A line connecting the first endpoint and the first intermediate point is an arc. A radius of the arc is equal to a distance between the first rotation
10 connection point and the first intermediate point.

[0040] In an embodiment, a line connecting the first endpoint and the first intermediate point is a folded line segment, and a bending point of the folded line segment is a second intermediate point.

[0041] In an embodiment, the second intermediate point is an intersection point
15 between a perpendicular bisector of the first endpoint and the first intermediate point and an arc. A radius of the arc is equal to a distance between the first rotation connection point and the first intermediate point.

[0042] In an embodiment, the range hood further includes a first connecting rod. One end of the first connecting rod is rotatably connected to the upper housing
20 assembly. A center of a connection between the first connecting rod and the upper housing assembly is defined as a second rotation connection point. The second rotation

connection point coincides with the center point.

[0043] In an embodiment, a line connecting the first endpoint and the first intermediate point is a straight line. When the air inlet body is in the second state, the line connecting the first endpoint and the first intermediate point extends vertically.

5 [0044] In an embodiment, the range hood further includes an oil cup disposed at a rear side bottom portion of the air inlet body. The transmission mechanism includes a transmission rod. One end of the transmission rod is fixed to the oil cup, and an other end of the transmission rod is connected to the upper housing assembly in an up-and-down slidable manner. The transmission rod is further rotatably connected to
10 the air inlet body such that the oil cup is maintained in an upright orientation.

[0045] In an embodiment, the upper housing assembly includes a slide rail. An end portion of the transmission rod is provided with a slider. The slider is in sliding fit with the slide rail.

[0046] Details of one or more embodiments of this disclosure are presented in the
15 attached drawings and descriptions below. And other features, purposes and advantages of this disclosure will become apparent from the description, drawings and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0047] In order to better describe and illustrate the embodiments and/or examples of the disclosed disclosure herein, reference may be made to one or more
20 accompanying drawings. Additional details or examples used to describe the drawings should not be considered as limiting the scope of any of the disclosed disclosure, the

presently described embodiments and/or examples, or the best mode of the disclosure as currently understood.

[0048] FIG. 1 is a schematic diagram of a range hood in an embodiment of the present application.

5 [0049] FIG. 2 is a schematic diagram of the range hood in FIG. 1 from another angle.

[0050] FIG. 3 is a cross-sectional view of the range hood in FIG. 1.

[0051] FIG. 4 is a schematic diagram of an internal structure of the range hood in FIG. 1.

10 [0052] FIG. 5 is a schematic diagram of a connection structure between a transmission mechanism and a rod member of the range hood in FIG. 1.

[0053] FIG. 6 is a schematic diagram of an air inlet body in an embodiment of the present application.

[0054] FIG. 7 is a schematic diagram of a range hood in an embodiment of the present application.

[0055] FIG. 8 is a schematic diagram of the range hood in FIG. 7 from another angle.

[0056] FIG. 9 is a cross-sectional view of the range hood in FIG. 7.

[0057] FIG. 10 is another cross-sectional view of the range hood in FIG. 7.

20 [0058] FIG. 11 is a schematic diagram of an internal structure of the range hood in FIG. 7.

- [0059] FIG. 12 is a schematic diagram of a connection structure between a transmission mechanism and a rod member of the range hood in FIG. 7.
- [0060] FIG. 13 is a schematic diagram of a range hood in an embodiment of the present application when the range hood is in an open state.
- 5 [0061] FIG. 14 is a schematic diagram of a range hood in an embodiment of the present application when the range hood is in an open state.
- [0062] FIG. 15 is a cross-sectional view of a range hood in an embodiment of the present application when the range hood is in an open state.
- [0063] FIG. 16 is a cross-sectional view of a range hood in an embodiment of the present application when the range hood is in an open state.
- 10 [0064] FIG. 17 is a schematic diagram of a transmission mechanism of a motion mechanism of a range hood in an embodiment of the present application.
- [0065] FIG. 18 is a schematic diagram of a range hood in an embodiment of the present application when the range hood is in a closed state.
- 15 [0066] FIG. 19 is a cross-sectional view of a range hood in an embodiment of the present application when the range hood is in a closed state.
- [0067] FIG. 20 is a cross-sectional view of a range hood in an embodiment of the present application when the range hood is in an open state, in which a part of the range hood is hidden.
- 20 [0068] FIG. 21 is a cross-sectional view of a part of range hood in an embodiment of the present application when the range hood is in a closed state.

[0069] FIG. 22 is a schematic diagram of a transmission mechanism and a slide rail of a motion mechanism of a range hood in an embodiment of the present application.

[0070] FIG. 23 is a schematic diagram of a driving mechanism and an air inlet body of a range hood in an embodiment of the present application, when the driving
5 mechanism is in fit with the air inlet body.

[0071] FIG. 24 is a cross-sectional view of a range hood in an embodiment of the present application.

[0072] Reference signs are as follows: 100 represents a range hood; 1 represents an upper housing assembly; 11 represents an outer housing; 111 represents a rear plate; 12
10 represents a fan frame; 13 represents a side plate; 14 represents a decorative plate; 131 represents a slide rail; 15 represents a functional module; 151 represents a lighting lamp; 16 represents a guide groove; 17 represents an oil guide plate; 18 represents a first receiving cavity; 19 represents a second receiving cavity; 2 represents an air inlet body; 21 represents an air inlet; 22 represents an air inlet body rear plate; 23 represents
15 an oil filter plate; 24 represents a side baffle; 3 represents a smoke baffle; 4 represents an oil cup; 5 represents a motion mechanism; 51 represents a driving mechanism; 511 represents a sliding slot; 52 represents a transmission mechanism; 521 represents a first connecting rod; 522 represents a linking rod; 523 represents a second connecting rod; 524 represents a transmission rod; 525 represents a rod member; 526 represents a
20 rocker; 527 represents a slider; 6 represents a fan; G represents a first rotation connection point; D represents a second rotation connection point; A represents a third

rotation connection point; B represents a fourth rotation connection point; C represents a fifth rotation connection point; F represents a sixth rotation connection point; E represents a seventh rotation connection point; H represents a first endpoint; I represents a second endpoint; J represents a first intermediate point; K represents a second intermediate point; O' represents a first position point; O represents a second position point; and Q represents a smoke collecting cavity.

DETAILED DESCRIPTION

[0073] In order to make above objectives, features, and advantages of the present application more obvious and understandable, a detailed explanation of the specific implementation of the present application will be provided below in combination with drawings. Many specific details are elaborated in following description to facilitate a thorough understanding of the present application. However, the present application can be implemented in many other ways different from those described herein. Those skilled in the art can make similar improvements without departing from a spirit of the present application. Therefore, the present application is not limited by specific embodiments disclosed below.

[0074] It should be noted that, when a member is considered "fixed to" or "set on" another member, it can be directly fixed to another member or there may be a centered member present simultaneously. When a member is considered "connected to" another member, it can be directly connected to another member or there may be a centered member present simultaneously. The terms "vertical", "horizontal", "up", "down",

“left”, “right” and similar expressions used in the specification of the present application are for illustrative purposes only and do not represent the only implementation method.

[0075] In addition, the terms “first” and “second” are only used to describe the purpose and can not be understood as indicating or implying relative importance or implying the quantity of indicated technical features. Therefore, the features limited to “first” and “second” can explicitly or implicitly include at least one of these features. In the description of the present application, “multiple” means at least two, such as two, three, etc., unless there is an otherwise specific limitation.

10 [0076] In the present application, unless there is the otherwise specifications and limitations, the first feature is “above” or “below” the second feature which may be a direct contact between the first and second features, or the first features and the second features may be in indirect contact through an intermediate medium. Moreover, the first feature is “on”, “above”, and “over” the second feature can be that the first feature is directly or diagonally above the second feature, or only indicates that the first feature is horizontally higher than the second feature. The first feature is “beneath”, “below”, and “under” the second feature can be that the first feature is directly or diagonally below the second feature, or only indicate that the horizontal height of the first feature is less than that of the second feature.

20 [0077] Unless otherwise defined, all technical and scientific terms used in this article have the same meanings as those commonly understood by those skilled in the

art of the present application. The terms used in the specification of the present application are only for the purpose of describing specific embodiments and are not intended to limit the present application. The term “and/or” used in this article includes any and all combinations of one or more related listed items.

5 [0078] Chinese-style cooking may generate a large amount of cooking fumes. In order to maintain a clean kitchen environment and protect human health, a range hood has become one of indispensable appliances in modern household kitchens. However, as an utilization rate of the range hood continues to increase, greater attention has been paid to a fume extraction performance of the range hood. When a distance between an
10 air inlet of the range hood and a region where cooking fumes are generated is relatively large, a suction path of the cooking fumes becomes longer and the suction time increases, such that a phenomenon of cooking fume escape is likely to occur during cooking. When an installation height of the range hood is reduced, such that the air inlet is positioned as close as possible to a fume source and negative-pressure region
15 extends downwardly, although the fume extraction effect can be improved, a cooking space becomes smaller, and a user’s head may accidentally collide with a smoke collecting hood. In addition, the reduced installation height adversely affects visibility and an overall appearance of the kitchen. To address the above issues, a liftable range hood has been developed (for example, Chinese Patent No. CN 221403155 U), i.e., the
20 air inlet is movable in an elevating manner. When the range hood is turned on, the air inlet descends, and when the range hood is turned off, the air inlet ascends. However,

the conventional range hood generally does not have a lighting lamp disposed on a lower housing of the range hood. Therefore, a smoke baffle of the range hood is not required to consider obstruction of the lighting lamp during opening and closing processes. However, an increasing number of the range hood is provided with
5 functional modules, such as lighting lamps disposed on the lower housing. Therefore, a requirement for a range hood capable of preventing a smoke baffle from blocking a lighting lamp during a pivoting process of the smoke baffle should be satisfied.

[0079] Therefore, the present application provides a range hood 100. As shown in FIGs. 1 to 24, the range hood 100 includes an upper housing assembly 1 and an air
10 inlet body 2. The air inlet body 2 is disposed at a bottom of the upper housing assembly 1 and is provided with an air inlet 21. A fan 6 is disposed inside the upper housing assembly 1. During operation of the range hood 100, cooking fumes are drawn into the air inlet 21 and are subsequently discharged outward via the fan 6.

[0080] Referring to FIGs. 1 to 12, in an embodiment, a front side of the bottom of
15 the upper housing assembly 1 is provided with a lighting lamp 151. The front side of the bottom of the upper housing assembly 1 is provided with a decorative plate 14. The decorative plate is in an elongated shape and horizontally arranged. The lighting lamp 151 is disposed on the decorative plate 14 and is horizontally arranged. The bottom of the upper housing assembly 1 is provided with a smoke baffle 3. Under driven by a
20 driving mechanism 51, the smoke baffle 3 is movable synchronously with the air inlet body 2. When the range hood is powered off, the air inlet body 2 is pivoted upward

into the upper housing assembly 1, and the smoke baffle 3 is rotated rearward to a horizontal position to close the air inlet 21. When the smoke baffle 3 is in a closed state, the smoke baffle 3 is disposed behind the decorative plate 14 and flush with the decorative plate 14, i.e., the smoke baffle 3 is entirely located behind the lighting lamp
5 151 and therefore does not obstruct the lighting lamp 151. When the range hood 100 is in operation, the air inlet body 2 is pivoted downward to extend out of the upper housing assembly 1, and the smoke baffle 3 is rotated forward to open the air inlet 21. The smoke baffle 3 is in an open state, and a rear edge of the smoke baffle 3 is disposed between a front edge of the lighting lamp 151 and a front edge of the
10 decorative plate 14, i.e., the smoke baffle 3 is entirely located in front of the lighting lamp 151 and therefore does not obstruct the lighting lamp 151.

[0081] A maximum opening angle of the smoke baffle 3, when the air inlet 21 is switched from a closed state to an open state, is defined as β . The maximum opening angle β of the smoke baffle 3 satisfies a following relationship: $120 \text{ degrees} \leq \beta \leq 150$
15 degrees. When a width of the smoke baffle 3 is fixed, a width of the decorative plate 14 can increase, so as to provide a greater front-to-rear smoke collecting width.

[0082] Furthermore, a rear-to-front direction of the range hood 100 may correspond to a direction Y shown in FIG. 3.

[0083] The smoke baffle 3 has an open state and a closed state. When the air inlet
20 body 2 is in the second state, the smoke baffle 3 is in the open state, and a smoke collecting cavity Q is formed between the smoke baffle 3 and a front side of the air

inlet body 2, thereby lowering a position of the air inlet 21 and increasing a smoke collecting area, resulting in ensuring favorable fume extraction performance when the range hood is in operation.

[0084] In the present embodiment, a lower portion of the upper housing assembly 1 is provided with a rear plate 111. A front side of the rear plate 111 is provided with an oil guide plate 17. The oil guide plate 17 is located below the fan 6. A portion of the rear plate 111 is recessed to form a first receiving cavity 18, and a second receiving cavity 19 is formed below the oil guide plate 17. The air inlet body 2 includes an air inlet body rear plate 22 and an oil filter plate 23 disposed on a front side of the air inlet body rear plate 22. The oil filter plate 23 is located below the oil guide plate 17. When the range hood 100 is powered off, the air inlet body 2 is pivoted downward. The air inlet body rear plate 22 is rotated downward and extends out of the first receiving cavity 18, and the oil filter plate 23 is rotated downward and extends out of the second receiving cavity 19. Therefore, an angle of the oil filter plate 23 relative to a horizontal plane is greater than an angle of the oil guide plate 17 relative to the horizontal plane. The greater the angle of the oil filter plate 23, the larger the smoke collecting cavity Q, thereby improving a fume extraction performance. When the range hood 100 is in operation, the air inlet body 2 is pivoted upward. The air inlet body rear plate 22 is rotated upward into the first receiving cavity 18, and the oil filter plate 23 is rotated upward into the second receiving cavity 19. The oil filter plate 23 is positioned close to the oil guide plate 17, such that the range hood 100 occupies a smaller volume and has

a more compact and simplified structure.

[0085] Furthermore, the range hood 100 further includes an oil cup 4 disposed at a rear-side bottom of the air inlet body 2. The oil guide plate 17 is configured to guide grease into the oil cup 4.

5 [0086] Referring to FIG. 1 or FIG. 13, in some embodiments, the upper housing assembly 1 includes an outer housing 11 and a fan frame 12 connected to the outer housing 11. A part of a lower end portion of the fan frame 12 may be located within the outer housing 11. The fan frame 12 is configured to accommodate the fan 6.

[0087] The upper housing assembly 1 may be installed within a kitchen cabinet.

10 Since a width of the fan frame 12 is generally required to match a width of the fan 6, the fan frame 12 is not required to be relative large. In contrast, the air inlet body 2 requires a greater width to accommodate a conventional household dual-burner stove. For this reason, the upper housing assembly 1 is divided into the outer housing 11 and the fan frame 12. If optimization of air inlet efficiency is not considered, the upper
15 housing assembly 1 may be formed as an integral structure.

[0088] The air inlet body 2 is movable relative to the upper housing assembly 1, and the air inlet 21 is formed on a front side of the air inlet body 2. When the air inlet body 2 is in the second state, at least a part of the air inlet body 2 is located below the upper housing assembly 1 and exposed from the upper housing assembly 1, and the air
20 inlet 21 is positioned below a bottom of the upper housing assembly 1 and exposed from the upper housing assembly 1. A term “front side” of the air inlet body 2 refers to

a side of the air inlet body 2 towards a user when the air inlet body 2 is in the second state.

[0089] Alternatively, the air inlet body 2 may be configured as a plate member.

When the air inlet body 2 is in the second state, at least part of the air inlet body 2 is
5 located below the upper housing assembly 1, such that cooking fumes may rise around
a periphery of the air inlet body 2 and enter an interior of the upper housing assembly 1
via an opening formed at the bottom of the upper housing assembly 1 (the opening is
configured to accommodate the at least part of the air inlet body 2).

[0090] Referring to FIGs. 1 to 12 or FIGs. 13 to 19, in some embodiments, the
10 smoke baffle 3 is disposed at the bottom of the outer housing 11. The rear plate 111 is a
back plate of the outer housing 11. Referring to FIGs. 18 and 19, when the air inlet
body 2 is in the first state, the smoke baffle 3 is in the closed state, the smoke baffle 3
is disposed on the bottom of the outer housing 11, may extend substantially
horizontally, and may be flush with the bottom of the outer housing 11, thereby
15 achieving a flush appearance while closing the air inlet 21 of the air inlet body 2, such
that an overall dimension of the range hood 100 is minimized.

[0091] Referring to FIG. 2 or FIG. 14, the range hood 100 further includes a
motion mechanism 5. The motion mechanism 5 includes a driving mechanism 51 and a
transmission mechanism 52. The driving mechanism 51 is mounted on the upper
20 housing assembly 1, and a driving output end (i.e., a lower end portion) of the driving
mechanism 51 is connected to the air inlet body 2 in a transmission manner, such that

the driving mechanism 51 is capable of driving movement of the air inlet body 2. In the present embodiment, a driving connection end (i.e., an upper end portion) of the driving mechanism 51 is rotatably connected to the upper housing assembly 1, and the lower end portion of the driving mechanism 51 is directly rotatably connected to the air inlet body 2. Therefore, the driving mechanism 51 is capable of driving the air inlet body 2 to undergo non-fixed-axis rotation relative to the upper housing assembly 1, i.e., including movement in a front-rear direction of the range hood 100 and rotation about an axis extending in a left-right direction of the range hood 100. Furthermore, the output end of the driving mechanism 51 is rotatably connected to the rear-side bottom of the air inlet body 2.

[0092] The driving mechanism 51 may be configured as an electric push rod. An upper end portion of the driving mechanism 51 is disposed in the upper housing assembly 1, thereby facilitating the use of a push rod mechanism having a relatively short stroke. However, such an installation arrangement may cause a portion of the driving mechanism 51 to be located within a fume passage of the range hood 100. In order to reduce an influence of the driving mechanism 51 on a performance of the range hood 100, the driving mechanism 51 is not separately enclosed by additional components. In order to prevent the cooking fumes from adversely affecting reliability of the driving mechanism 51, a junction between a motor and a push rod assembly of the driving mechanism 51 is sealed by a potting process. In addition, the driving output end of the driving mechanism 51 may extend through a rear side of the upper housing

assembly 1 and be connected to the air inlet body 2 on a portion where a rear side of the air inlet body 2 is located, thereby minimizing an influence of the cooking fumes on the driving mechanism 51.

[0093] Referring to FIG. 9, in some embodiments, the driving output end of the driving mechanism 51 extends downwardly into the first receiving cavity 18 and is rotatably connected to the air inlet body rear plate 22.

[0094] Furthermore, the transmission mechanism 52 is configured to control a movement trajectory of the air inlet body 2 and to realize linkage between the air inlet body 2 and the smoke baffle 3, such that the air inlet body 2 and the smoke baffle 3 are linked and driven via a single power source (such as the driving mechanism 51). In order to ensure stable movement of a left side of the air inlet body 2 and a right side of the air inlet body 2 and the smoke baffle 3, two groups of the transmission mechanisms 52 are provided and disposed on the left side of the air inlet body 2 and the right side of the air inlet body 2, respectively, in the upper housing assembly 1 (when the air inlet body 2 is in the second state, a part of the two groups of the transmission mechanisms 52 is exposed). Each of the two groups of the transmission mechanisms 52 is connected to the air inlet body 2 and the smoke baffle 3. By such arrangement, synchronization between the left side of the smoke baffle 3 and the right side of the smoke baffle 3 is improved, differences in loading on the left side of the smoke baffle 3 and the right side of the smoke baffle 3 can be reduced, and synchronization of the rocker 526 and the rod member 525 on the left side of the smoke baffle 3 and the right

side of the smoke baffle 3 can be ensured.

[0095] Referring to FIGs. 1 to 12 or FIGs. 13 to 19, each of the two groups of the transmission mechanisms 52 includes a rod member 525. The smoke baffle 3 is directly or indirectly fixed to the rod member 525. One end of the rod member 525 is

5 rotatably connected to the upper housing assembly 1. A front-side end portion of the air inlet body 2 is rotatably connected to the rod member 525, and a center of a connection between the air inlet body 2 and the rod member 525 is denoted as a first rotation connection point G (a rotation connection point refers to any point on an axis of a rotational connection shaft configured for rotational connection, and the same

10 definition of the rotation connection point applies hereinafter). A center of a connection between the rod member 525 and the upper housing assembly 1 is denoted as a second rotation connection point D. The second rotation connection point D is configured as a center of rotation of the first rotation connection point G, i.e., the first rotation connection point G is rotatable about the second rotation connection point D. The rod

15 member 525 facilitates high-precision control, i.e., linkage between the air inlet body 2 and the smoke baffle 3 and high-precision control of their movement trajectories can be achieved merely via the rod member 525. Such arrangement is particularly suitable for applications in which the movement trajectory of the air inlet body 2 is irregular, while maintaining a simple structure and low cost of the upper housing assembly 1.

20 Moreover, the linkage between the air inlet body 2 and the smoke baffle 3 and high-precision control of their movement trajectories can be realized using only a

single power source (i.e., rod member). Such arrangement is particularly suitable for applications in which the movement trajectory of the air inlet body 2 is irregular, while maintaining the simple structure and the low cost of the upper housing assembly 1. In addition, since the smoke baffle 3 rotates relative to the upper housing assembly 1 (in a non-fixed-axis rotational manner), and an opening angle of the smoke baffle 3 is generally required to be greater than 90 degrees, a gap is provided between the center point (i.e., the second rotation connection point D) and a front-side end portion of the upper housing assembly 1. Therefore, when the smoke baffle 3 is opened, an upper end portion of the smoke baffle 3 can be positioned below the gap without extending beyond a front end of the bottom of the upper housing assembly 1, thereby preventing the cooking fumes from leaking between the upper end portion of the smoke baffle 3 and the upper housing assembly 1.

[0096] In order to control the movement trajectory of the air inlet body 2, the upper housing assembly 1 is provided with a third rotation connection point A. Each of the two groups of the transmission mechanisms 52 further includes at least two connecting rods disposed between the third rotation connection point A and the rod member 525. One of the at least two connecting rods is connected to the air inlet body 2, multiple connecting rods are connected end-to-end and are rotatably connected to each other.

[0097] The above-mentioned at least two connecting rods include a first connecting rod 521 and a rocker 526 (the rocker 526 is essentially a connecting rod). The upper housing assembly 1 is configured as a frame of the entire transmission

mechanism 52. One end of the rocker 526 is rotatably connected to a side plate 13 of the upper housing assembly 1. The side plate 13 extends in the front-rear direction of the range hood 100. A center of the rotational connection is the third rotation connection point A. The third rotation connection point A is located at a rear side of a top portion of the side plate 13. The side plate 13 is adapted to each of the two groups of the transmission mechanisms 52 and the number of the side plate 13 is two. Two side plates 13 may be separate components or may form as a part of the outer housing 11. The two side plates 13 are located inward a left side wall of the outer housing 11 and a right side wall of the outer housing 11.

10 [0098] Furthermore, the rod member 525 may be configured as a crank. One end of the rod member 525 is rotatably connected to a front side of the bottom of the upper housing assembly 1, and an other end of the rod member 525 is fixed to the smoke baffle 3. Configuring the rod member 525 as a crank facilitates movement of the smoke baffle 3 around fixed components (such as the decorative plate 14 and the functional module 15) when the smoke baffle 3 is in operation.

[0099] Each of the two transmission mechanisms 52 further includes at least one connecting rod connected between the rocker 526 and the second rotation connection point D. The at least one connecting rod is connected to the air inlet body 2.

[0100] Referring to FIGs. 13 to 19, in the present embodiment, only one of the at least one connecting rod is connected between the rocker 526 and the second rotation connection point D, i.e., the above-described first connecting rod 521. One end of the

first connecting rod 521 is rotatably connected to an end portion of the rocker 526 away from the third rotation connection point A, and a center of a connection between the first connecting rod 521 and the rocker 526 is denoted as a fourth rotation connection point B, and an other end of the first connecting rod 521 is rotatably
5 connected to the rod member 525, and a center of a connection between the first connecting rod 521 and the rod member 525 is denoted as a fifth rotation connection point C. A movement trajectory of the first connecting rod 521 is substantially similar to the movement trajectory of the air inlet body 2. Therefore, the first connecting rod 521 may be directly or indirectly connected to the air inlet body 2. The connection
10 between the first connecting rod 521 and the air inlet body 2 herein may include a fixed connection or a movable connection. For example, the first connecting rod 521 may be fixed to the air inlet body 2, or a connecting rod is provided between the first connecting rod 521 and the air inlet body 2, and the connecting rod is rotatably connected to the air inlet body 2 and slidably connected to the first connecting rod 521.

15 [0101] In the present embodiment, the first connecting rod 521 is connected to the air inlet body 2 via the rod member 525. The first rotation connection point G is located between the fifth rotation connection point C and the second rotation connection point D, and the first rotation connection point G, the fifth rotation connection point C and the second rotation connection point D do not coincide with
20 each other. Therefore, the air inlet body 2 and the smoke baffle 3 can rotate in the same direction, thereby realizing opening and closing movements in the same direction.

When only linkage between the air inlet body 2 and the smoke baffle 3 is required, the first rotation connection point G may coincide with the second rotation connection point D.

[0102] In order to facilitate the connection between the air inlet body 2 and the rod member 525, each of the two groups of the transmission mechanisms 52 in the present embodiment further includes a linking rod 522. The linking rod 522 is fixed to the air inlet body 2. The linking rod 522 extends in the front-rear direction of the range hood 100 and may be fixed to a bottom of the air inlet body 2. A front-side end portion of the linking rod 522 is rotatably connected to the rod member 525, a rear-side end portion of the linking rod 522 is located adjacent to a rear-side end portion of the air inlet body 2. Two linking rods 522 may extend in the air inlet body 2 along outer sides (a left side and a right side) of the air inlet 21 and extend beyond the air inlet body 2.

[0103] A front end of the linking rod 522 is pivotally connected to the rod member 525 via the first rotation connection point G. The two linking rods 522 are connected to side baffles 24 on a left side of the air inlet body 2 and a right side of the air inlet body 2, respectively.

[0104] Furthermore, in order to ensure that the air inlet body 2 has only one degree of freedom, a second connecting rod 523 is provided between the air inlet body 2 and the rocker 526. One end of the second connecting rod 523 is rotatably connected to the air inlet body 2, and a center of a connection between the second connecting rod 523 and the air inlet body 2 is denoted as a sixth rotation connection point F, and an other

end of the second connecting rod 523 is rotatably connected to the rocker 526, and a center of a connection between the second connecting rod 523 and the rocker 526 is denoted as a seventh rotation connection point E. The seventh rotation connection point E is located between the third rotation connection point A and the fourth rotation
5 connection point B. Alternatively, the air inlet body 2 may be connected to a connecting rod located between the rocker 526 and the second rotation connection point D of the rod member 525.

[0105] Each of the two groups of the transmission mechanisms 52 described above includes the first connecting rod 521, the linking rod 522, the second connecting rod
10 523, the rod member 525, and the rocker 526. Rotational axes at above-described connections all extend along the left-right direction of the range hood 100. Furthermore, each of above-described connections is hinge connections, and each of above-described rotation connection points is hinge points.

[0106] Furthermore, in the present application, the functional module 15 on the
15 decorative plate 14 may be a lighting lamp, a camera, a cooking fume sensor, and so on, which is not be limited herein. Furthermore, a form and an arrangement of the functional module 15 may be selected according to specific functions as required. Furthermore, the decorative plate 14 may be configured as a mounting base for the first rotation connection point G and may facilitate expansion of functions of the range
20 hood as an installation foundation.

[0107] Furthermore, the second rotation connection point D may be located above

the decorative plate 14, and a gap is provided between the second rotation connection point D and the front side of the bottom of the upper housing assembly 1, i.e., the second rotation connection point D is not located at a foremost side of the upper housing assembly 1. By such arrangement, a space in front of the center point may be utilized, such that when the first rotation connection point G moves to the space, the air inlet body 2 is in a stored state, thereby improving space utilization when the air inlet body 2 is in the stored state. In addition, when the smoke baffle 3 is provided, the second rotation connection point D can be in fit with the smoke baffle 3 and prevents the smoke baffle 3 from extending beyond the front-side end portion of the upper housing assembly 1, thereby preventing the cooking fumes from escaping.

[0108] When the air inlet body 2 is in the first state, the first rotation connection point G is located forward of the second rotation connection point D, a front-side end portion of the air inlet body 2 is located above the decorative plate 14, and at least part of a projection of the air inlet body 2 overlaps a projection of the functional module 15 on a horizontal plane. By such arrangement, the air inlet body 2 and the functional module 15 share a portion of the same space, thereby allowing the air inlet body 2 to further utilize the space within the upper housing assembly 1 for storage. A projection direction is indicated by an arrow Z in FIG. 15, and the smoke baffle 3 is located behind the decorative plate 14. When the air inlet body 2 is in the second state, the first rotation connection point G is located rearward of the second rotation connection point D, and the front-side end portion of the air inlet body 2 is located behind the decorative

plate 14, and an upper end portion of the smoke baffle 3 is located below the decorative plate 14 and in front of the functional module 15. The upper end portion of the smoke baffle 3 does not extend forward beyond the front edge of the decorative plate 14.

5 [0109] By such arrangement, when the smoke baffle 3 is opened, the smoke baffle 3 does not obstruct the functional module 15, thereby ensuring normal operation of the functional module 15. In addition, the smoke baffle 3 may provide a smoke-blocking function via the decorative plate 14 and prevent the cooking fumes from escaping via the decorative plate 14. Furthermore, opening and storage of the air inlet body 2 fully
10 utilize a region occupied by the decorative plate 14, thereby further reducing a space of the air inlet body 2 occupied in the upper housing assembly 1 when the upper housing assembly 1 is stored. In addition, due to a positional arrangement of the second rotation connection point D, when the smoke baffle 3 is opened, the upper end portion of the smoke baffle 3 can be positioned below the decorative plate 14 without extending
15 beyond the front side of the bottom of the upper housing assembly 1, thereby preventing the cooking fumes from leaking via a front-rear gap between the smoke baffle 3 and the front side of the bottom of the upper housing assembly 1.

[0110] In order to prevent the movement range of the air inlet body 2 from being excessively large, thereby reducing a storage space required for the air inlet body 2 and
20 preventing excessive occupation of a cooking space when the smoke baffle 3 is opened, a movement range of the smoke baffle 3 should be significantly greater than that of the

air inlet body 2, such that the smoke baffle 3 is capable of closing the bottom of the upper housing assembly 1, and forming a relatively large smoke collecting region when the smoke baffle 3 is opened. In the present embodiment, a swing angle of the air inlet body 2 is not greater than 40 degrees, while the smoke baffle 3 is required to

5 move from a horizontal position in which the smoke baffle 3 is in a powered off state to a state in which an angle between the smoke baffle 3 and a vertical direction is in a range of 30 degrees to 90 degrees. Therefore, a line connecting the third rotation connection point A and the fourth rotation connection point B is defined as a first straight line AB (the line is defined when the third rotation connection point A and the

10 fourth rotation connection point B are located in a same cross-sectional plane of the rocker 526 along a thickness direction of the rocker 526, and the same definition applies to lines described below). A line connecting the fourth rotation connection point B and the fifth rotation connection point C is defined as a second straight line BC. A line connecting the fifth rotation connection point C and the second rotation

15 connection point D is defined as a third straight line CD. Lengths among the first straight line AB, the second straight line BC and the third straight line CD satisfy a following formula: a length of the first straight line AB > a length of the second straight line BC > a length of the third straight line CD.

[0111] As described above, the line connecting the fifth rotation connection point

20 C and the second rotation connection point D is defined as the third straight line CD. An angle between the third straight line CD and a horizontal direction is denoted as α ,

and the angle α between the third straight line CD and the horizontal direction satisfies a following formula: $20 \text{ degrees} < \alpha \leq 180 \text{ degrees}$. When the rod member 525 moves in the range of 20 degrees to the 180 degrees, movement requirements of the air inlet body 2 can be satisfied. The line is defined such that the fifth rotation connection point C and the second rotation connection point D are located in a same cross-sectional plane of the rod member 525 along a thickness direction of the rod member 525. The same definition applies to the lines described below. As described above, the movement trajectory of the first connecting rod 521 is substantially similar to the movement trajectory of the air inlet body 2. When the angle α between the third straight line CD and a horizontal direction satisfies the above condition, the movement trajectory of the first connecting rod 521 is correspondingly similar to the movement trajectory of the air inlet body 2. For movement of the smoke baffle 3, the second rotation connection point D serves as a fixed-axis point, and the fifth rotation connection point C is configured as a driving point. In order to reduce loading on the fifth rotation connection point C while ensuring sufficient torque for movement of the smoke baffle 3, a length of the third straight line CD should be as great as possible, thereby satisfying structural strength requirements imposed by a relatively heavy weight of the smoke baffle 3. Therefore, a distance between the third rotation connection point A and the second rotation connection point D (i.e., a length of a straight line AD) should be as great as possible. Therefore, in the present embodiment, the third rotation connection point A is located at a rear side of a top portion of the side

plate 13, while the second rotation connection point D is located at the front side of the bottom of the upper housing assembly 1. A cross-section of the side plate 13 (the cross-section of the side plate 13 is a vertical plane extending along the front-rear direction) is rectangular, and a line connecting the third rotation connection point A and the second rotation connection point D substantially corresponds to a diagonal line of the cross-section of the side plate 13. Therefore, a cross-sectional area of the side plate 13 is fully utilized. The height direction and front-rear depth direction of the cross-section of the side plate 13 are substantially equal to those of the outer housing 11. On a basis that the outer housing 11 satisfies cabinet-depth requirements, a height dimension of the cross-section of the outer housing 11 can be minimized as much as possible.

[0112] Since the third straight line CD cannot be excessively short, i.e., the fifth rotation connection point C and the second rotation connection point D should be maintained at a sufficient distance from each other to ensure that the first connecting rod 521 has sufficient strength to drive the rod member 525, direct connection between the first connecting rod 521 and the air inlet body 2 would result in an excessively large movement amplitude of the air inlet body 2 and would fail to ensure that the air inlet body 2 abuts against a wall. Therefore, the above-described first rotation connection point G is provided. A line connecting the fifth rotation connection point C and the first rotation connection point G is defined as a fourth straight line CG. A line connecting the first rotation connection point G and the second rotation connection

point D is defined as a fifth straight line GD. The lengths of the fourth straight line CG and the fifth straight line GD satisfy a following relationship: a length of the fourth straight line CG > a length of the fifth straight line GD. A length of the fourth straight line CG is greater than a length of the fifth straight line GD, such that a sufficient
5 distance is maintained between the fifth rotation connection point C and the second rotation connection point D, so as to ensure that the first connecting rod 521 has sufficient strength to drive the rod member 525, while simultaneously controlling a movement amplitude of the air inlet body 2 in a relatively small range.

[0113] A line connecting the third rotation connection point A and the seventh
10 rotation connection point E is defined as a sixth straight line AE. A line connecting the seventh rotation connection point E and the fourth rotation connection point B is defined as a seventh straight line EB. A line connecting the seventh rotation connection point E and the sixth rotation connection point F is defined as an eighth straight line EF.
As described above, the movement amplitude of the first connecting rod 521
15 substantially corresponds to the movement amplitude of the air inlet body 2. In the present embodiment, the linking rod 522 is used in place of the first connecting rod 521 to reduce the movement amplitude. A parallelogram is formed by the second straight line BC, a line FG (a line connecting the first rotation connection point G and the sixth rotation connection point F), the third straight line CD, and the eighth straight
20 line EF. That is, the length of the eighth straight line EF should be as close as possible to the length of the third straight line CD, so as to ensure that the movement amplitude

of the first connecting rod 521 is substantially the same as the linking rod 522 (representing the air inlet body 2). In addition, the linking rod 522 is required to bear a weight of the air inlet body 2, a length of the linking rod 522 should be close to a front-rear depth of the air inlet body 2. Therefore, the seventh rotation connection point E is selected to be located on the rocker 526. In order to satisfy movement requirements of the linking rod 522, while the movement amplitude of the first rotation connection point G is limited, a sufficient vertical movement amplitude of the sixth rotation connection point F should be ensured. The lengths of the sixth straight line AE, the seventh straight line EB and the eighth straight line EF satisfy following relationships: $2 \times \text{a length of EB} < \text{a length of AE} < 4 \times \text{a length of EB}$, and a length of $\text{EB} < \text{a length of EF} < 3 \times \text{a length of EB}$. If the lengths of the sixth straight line AE, the seventh straight line EB and the eighth straight line EF does not satisfy the relationships: $2 \times \text{a length of EB} < \text{a length of AE} < 4 \times \text{a length of EB}$, and a length of $\text{EB} < \text{a length of EF} < 3 \times \text{a length of EB}$, the movement amplitude of the linking rod 522 will become excessively large or excessively small.

[0114] Through the above arrangement of the motion mechanism 5, the air inlet body 2 is capable of being rotatable relative to the upper housing assembly 1 in a non-fixed-axis rotation manner (pivoting). A center of rotation of the air inlet body 2 (i.e., the first rotation connection point G) is further rotatable about the second rotation connection point D. The rod member 525 is rotatable about the second rotation connection point D in a fixed-axis rotation manner. The smoke baffle 3 is capable of

being rotatable relative to the upper housing assembly 1 in a non-fixed-axis rotation manner (pivoting). When the smoke baffle 3 is in the open state, the fifth rotation connection point C and the first rotation connection point G are located rearward of the second rotation connection point D. When the smoke baffle 3 is in the closed state, the
5 fifth rotation connection point C and the first rotation connection point G are located forward of the second rotation connection point D.

[0115] When the smoke baffle 3 is opened, i.e., when the air inlet body 2 is in the second state, the fifth rotation connection point C is located rearward of the second rotation connection point D, and the first rotation connection point G is located
10 rearward of the second rotation connection point D. Compared with a configuration in which the first rotation connection point G coincides with the second rotation connection point D, when the first rotation connection point G is located rearward of the second rotation connection point D, the rotational point, i.e., the first rotation connection point G, is driven rearward together with the rod member 525 when the air
15 inlet body 2 is pivoted downward to a lowest position, such that a distance between the air inlet body rear plate 22 and the wall is reduced, thereby preventing problems such as the cooking fume escape and condensation on the wall surface.

[0116] During movement of the air inlet body 2, the smoke baffle 3, and the motion mechanism 5 described above, when the range hood 100 is switched from the
20 power-off state (as shown in FIG. 19) to the power-on state, the driving output end of the driving mechanism 51 extends downwardly, the air inlet body 2 is pivoted

downward, the rocker 526 rotates rearward. The first connecting rod 521 rotates rearward and downward, such that the air inlet body 2 moves rearward and pivots downward, therefore, during opening movement of the air inlet body 2, the air inlet body 2 remains closely adjacent to the wall where the range hood 100 is mounted. The
5 first connecting rod 521 further pulls the rod member 525 to rotate, thereby opening the smoke baffle 3. When the range hood 100 is switched from the power-on state to the power-off state, the above movements are reversed, which is not limited herein.

[0117] In the foregoing embodiments, the driving mechanism 51 is connected to the air inlet body 2. In other embodiments, the driving mechanism 51 may be
10 configured as a motor or an electric push rod for driving rotation of the rocker 526 or the rod member 525, thereby driving the air inlet body 2 and the smoke baffle 3.

[0118] Referring to FIGs. 20 and 21, in an embodiment, the rotational angle of the air inlet body 2 about the first rotation connection point G is approximately 30 degrees, and the rotational angle of the first rotation connection point G about the second
15 rotation connection point D is approximately 135 degrees, and a rotation radius of the first rotation connection point G about the second rotation connection point D is approximately 10 mm.

[0119] On a vertical cross-section view extending along the front-rear direction of the range hood 100, a contour line of a rear-side end portion of the air inlet body 2
20 includes a first endpoint H, a second endpoint I, and a first intermediate point J. When the air inlet body 2 moves relative to the upper housing assembly 1 to a highest

position (the air inlet body is in the first state), the first endpoint H is located in the upper housing assembly 1. When the air inlet body 2 moves relative to the upper housing assembly 1 to the lowest position (the air inlet body 2 is fully opened), the first endpoint H is flush with a bottom surface of the upper housing assembly 1, the first
5 endpoint H is higher than the second endpoint I, and the first intermediate point J is a rearmost point on the contour line of the rear-side end portion of the air inlet body 2. The first intermediate point J moves linearly in a vertical direction, such that the air inlet body 2 can maintain movement to abut against the wall. When the air inlet body 2 moves from the first state to the second state, a portion of the air inlet body 2 moves
10 downward out of the upper housing assembly 1, and the first endpoint H moves from inside the upper housing assembly 1 to a position flush with the bottom surface of the upper housing assembly 1.

[0120] A portion of the contour line of the rear-side end portion of the air inlet body 2 between the first endpoint H and the first intermediate point J is a line and
15 defined as a straight line HJ. By such arrangement, when the air inlet body 2 is fully opened, the straight line HJ can completely abut against the wall. However, because the air inlet body 2 rotates about the second rotation connection point D in a non-fixed-axis rotation manner (since a trajectory OG is much greater than a trajectory OD, “much greater” means at least three times greater, the movement trajectory of the
20 air inlet body 2 approximates a circular arc centered at the first rotation connection point G or the second rotation connection point D), in order to ensure a uniform gap

between the air inlet body 2 and the interior of the upper housing assembly 1 when the air inlet body rotates, such that sealing the gap may be achieved by a sealing strip, the portion between the first endpoint H and the first intermediate point J may be configured as a circular arc. A radius of the circular arc is equal to a distance between
5 the first rotation connection point G and the first intermediate point J. Therefore, a gap between the air inlet body 2 and the upper housing assembly 1 is uniform and controllable, thereby facilitating sealing treatment. Considering sheet-metal manufacturing processes, manufacturing difficulty, and reliability, the circular arc may be formed by two folded line segments. When a bending point of the folded line
10 segments (a second intermediate point K) is selected as an intersection point between a perpendicular bisector of the straight line HJ and the circular arc, the overall wall-fitting effect is optimized. Ultimately, a contour of the housing cross-section is formed by EKFGO as shown in FIG. 20.

[0121] A portion of the contour line connecting the second endpoint I with the first
15 intermediate point J may be configured as a circular arc or a straight line. Since the second endpoint I is located forward of the first intermediate point J, a safety clearance is ensured between the oil cup 4 and the wall, and oil on a rear side surface of the air inlet body 2 can be guided into the oil cup 4. When the air inlet body 2 is in the second state, a rear side wall of the oil cup 4 and the first intermediate point J are located on a
20 same vertical plane, thereby ensuring that oil on the rear-side end surface of the air inlet body 2 can flow into the oil cup 4.

[0122] When the air inlet body 2 is in the first state, a position of the first rotation connection point G corresponds to a first position point O' (since the first state and the second state of the air inlet body 2 cannot be illustrated in a single figure, the first position point O' is shown only in phantom lines in FIG. 20). When the air inlet body 2 is in the second state, the position of the first rotation connection point G corresponds to a second position point O. The second position point O is located rearward of the first position point O'. A distance between projections of the second position point O and the first position point O' on a horizontal plane is defined as L. A distance between the first endpoint H and the first rotation connection point G is defined as L1 (a cross-section of the air inlet body 2 is taken to measure via the first rotation connection point G). A distance between the second endpoint I and the first rotation connection point G is defined as L2 (a cross-section of the air inlet body 2 is taken to measure via the first rotation connection point G). In order to ensure engagement between the air inlet body 2 and the wall when the upper housing assembly 1 is in the power-on state or the power-off state, the distance L1 between the first endpoint H and the first rotation connection point G and the distance L2 between the second endpoint I and the first rotation connection point G satisfy following relationship: $L < L2 - L1 < L + \Delta$, Δ is defined as a clearance value (a constant) satisfying manufacturing and appearance requirements, and generally, the clearance value Δ is less than 5 mm. In the present embodiment, L is approximately 18 mm.

[0123] In the present embodiment, the first rotation connection point G rotates

about the center point (the second rotation connection point D). Alternatively, in other embodiments, the first rotation connection point G may move linearly.

[0124] The air inlet body 2 is connected to the upper housing assembly 1 via a rotational connection point. The rotational connection point is movable relative to the upper housing assembly 1 in the front-rear direction of the range hood 100. When the air inlet body 2 moves downward, a lowest point of the rear-side end surface of the air inlet body 2 may be away from the wall when the air inlet body 2 moves downward. By configuring the distance between the first endpoint (upper endpoint) and the rotation connection point to be L1, and the distance between the second endpoint (lower endpoint/lowest point) and the rotation connection point to be L2, a difference ($L2 - L1$) is close to the front-rear movement distance L of the rotation connection point, such that the air inlet body 2 can maintain a highest point of the rear-side end surface the air inlet body 2 abutting against the wall when the air inlet body 2 is in the second state, thereby preventing the cooking fumes from leaking through a gap between the air inlet body 2 and the wall and preventing grease accumulation on the rear-side end surface of the air inlet body 2.

[0125] In the present embodiment, in order to simplify the structure, a rotational center of the air inlet body 2 may be located directly on the rod member 525. Alternatively, additional connecting members such as connecting rods, cranks, and rockers may be separately disposed between the second rotation connection point D and the first rotation connection point G, as long as the connecting members may be

fixed to the rod member 525.

[0126] Referring to FIG. 22, in an embodiment, a slide rail 131 is provided within the upper housing assembly 1 (for example, the slide rail 131 is disposed on the side plate 13). An upper end portion of a transmission rod 524 may be provided with a slider 527. The slider 527 is in sliding fit with the slide rail 131 and is movable upward and downward along the slide rail 131. A sliding trajectory of the slide rail 131 may be obtained, after completion of the design of the transmission mechanism 52, by spline fitting based on a movement trajectory of the sixth rotation connection point F (i.e., motion of a multi-linkage node), such that the oil cup 4 is maintained in an upright orientation at all times.

[0127] By such arrangement, when the transmission rod 524 moves about the sixth rotation connection point F, the transmission rod 524 is in sliding fit with the slide rail 131, such that the oil cup 4 may move relative to the air inlet body 2, and ultimately, elevating movement of the oil cup 4 is achieved, resulting in that the oil cup 4 is maintained in an upright orientation at all times (i.e., an opening of the oil cup 4 remains upwardly facing), thereby ensuring an oil storage capacity of the oil cup 4 and reducing a risk of oil spillage.

[0128] Referring to FIG. 23, in an embodiment, the upper end portion of the driving mechanism 51 is disposed on the upper housing assembly 1 in a fixed connection manner. A driving output end (the lower end portion) of the driving mechanism 51 is provided with a sliding slot 511 extending horizontally along the

front-rear direction of the range hood 100. The air inlet body 2 may be in sliding fit with the sliding slot 511 via a slider and may further rotate relative to the sliding slot 511.

[0129] Referring to FIG. 24, in an embodiment, the upper housing assembly 1 is provided with a guide groove 16. The guide groove 16 is in an arc shape and is centered on the above-described second rotation connection point D (i.e., the center of the arc). A front-side end portion of the air inlet body 2 is rotatably connected to the upper housing assembly 1 via the first rotation connection point G, and the first rotation connection point G is slidable along the guide groove 16.

10 [0130] Furthermore, the above driving mechanism 51 is connected to the air inlet body 2. In other embodiments, the driving mechanism 51 may be configured as a motor or an electric push rod and is configured to drive rotation of the rocker 526 or the rod member 525, thereby driving the air inlet body 2 and the smoke baffle 3.

[0131] Compared with related technologies, the range hood 100 provided by the present application has at least the following advantages: in the range hood 100 provided by the present application, when the air inlet body 2 is pivoted upward into the upper housing assembly 1, the smoke baffle 3 is rotated rearward to a horizontal position to close the air inlet, and the smoke baffle 3 is entirely located behind the functional module 15; when the air inlet body 2 is pivoted downward and extends out of the upper housing assembly 1, the smoke baffle 3 is rotated forward to open the air inlet 21, and the smoke baffle 3 is entirely located in front of the functional module 15.

Therefore, whether the range hood 100 is in the power-on state or the power-off state, the smoke baffle 3 does not obstruct the functional module 15, thereby ensuring proper operation of the functional module 15 (for example, when the functional module 15 is configured as the lighting lamp 151, an optimal lighting effect of the lighting lamp 151
5 can be ensured).

[0132] The range hood 100 provided by the present application enables the air inlet body 2 and the smoke baffle 3 to be linked and driven by a single power source, while adapting different movement modes of the air inlet body 2.

[0133] In the range hood 100 provided by the present application, the air inlet body
10 2 is connected to the upper housing assembly 1 via the rotational connection point, and the rotational connection point is rotatable relative to the upper housing assembly 1 about a center point. The air inlet body 2 is capable of rotating relative to the upper housing assembly in a non-fixed-axis rotation manner, thereby providing a variety of movement trajectories, facilitating the air inlet body 2 abutting against the wall when
15 the air inlet body 2 rotates downward to be opened, thereby preventing the cooking fumes from leaking via a gap between the air inlet body 2 and the wall and preventing grease accumulation on a rear side of the air inlet body 2. Furthermore, when the air inlet body 2 is in a closing and storage state, an irregular movement trajectory of the non-fixed-axis rotation can reduce occupied space and more effectively utilize space of
20 the upper housing assembly for storage.

[0134] Furthermore, in the range hood 100 of the present application, stable

elevating movement of the oil cup 4 may be realized by cooperation among the transmission rod 524, the slide rail 131, and the slider 527, while simultaneously achieving a flush appearance in the power-off state and favorable cooking-fume extraction performance in the power-on state.

5 [0135] The technical features of the above-mentioned embodiments can be combined arbitrarily. In order to make the description concise, not all possible combinations of the technical features are described in the embodiments. However, as long as there is no contradiction in the combination of these technical features, the combinations should be considered as in the scope of the present application.

10 [0136] The above-described embodiments are only several implementations of the present application, and the descriptions are relatively specific and detailed, but they should not be construed as limiting the scope of the present application. It should be understood by those of ordinary skill in the art that various modifications and improvements can be made without departing from the concept of the present
15 application, and all fall within the protection scope of the present application. Therefore, the patent protection of the present application shall be defined by the appended claims.

CLAIMS

What is claimed is:

1. A range hood, characterized by comprising:
 - an upper housing assembly;
 - 5 an air inlet body, wherein the air inlet body is provided with an air inlet, and the air inlet body is disposed at a bottom of the upper housing assembly and is pivotable relative to the upper housing assembly;
 - a functional module disposed at a front side of the bottom of the upper housing assembly; and
 - 10 a smoke baffle disposed at the bottom of the upper housing assembly and movable synchronously with the air inlet body;
- wherein the air inlet body has a first state and a second state;
- when the air inlet body is in the first state, the air inlet body is pivoted upward to be at least partially located inside the upper housing assembly, and the smoke baffle is
- 15 rotated rearward to a horizontal position to close the air inlet and entirely located behind the functional module; and
- when the air inlet body is in the second state, the air inlet body is pivoted downward to be at least partially located below the bottom of the upper housing assembly, and the smoke baffle is rotated forward to open the air inlet and entirely located in front of the
- 20 functional module.

2. The range hood of claim 1, wherein the functional module is configured as a lighting lamp.

3. The range hood of claim 1, wherein the front side of the bottom of the upper housing assembly is provided with a decorative plate, the decorative plate is in an elongated shape and horizontally arranged, and the functional module is disposed on the decorative plate and horizontally arranged;

when the air inlet body is in the first state, the smoke baffle is disposed behind the decorative plate and flush with the decorative plate; and when the air inlet body is in the second state, a rear edge of the smoke baffle is disposed between a front edge of the functional module and a front edge of the decorative plate.

4. The range hood of claim 1, wherein a lower portion of the upper housing assembly is provided with a rear plate, a front side of the rear plate is provided with an oil guide plate, a portion of the rear plate is recessed to form a first receiving cavity, and a second receiving cavity is formed below the oil guide plate; the air inlet body comprises an air inlet body rear plate and an oil filter plate disposed on a front side of the air inlet body rear plate;

when the air inlet body is in the second state, the air inlet body rear plate is rotated downward to extend out of the first receiving cavity, and the oil filter plate is rotated downward to extend out of the second receiving cavity;

when the air inlet body is in the first state, the air inlet body rear plate is rotated upward into the first receiving cavity, and the oil filter plate is rotated upward into the second receiving cavity.

- 5 5. The range hood of claim 1, wherein the air inlet body is directly or indirectly rotatably connected to the upper housing assembly, and a center of a connection between the air inlet body and the upper housing assembly is denoted as a first rotation connection point, and the first rotation connection point is rotatable about a center point located inside the upper housing assembly.

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6. The range hood of claim 5, further comprising a motion mechanism configured to drive the air inlet body and the smoke baffle to move in synchronization, wherein the motion mechanism comprises a driving mechanism and a transmission mechanism, and the driving mechanism is configured to directly drive the air inlet body, or
15 indirectly drive the air inlet body via the transmission mechanism.

7. The range hood of claim 6, wherein the transmission mechanism comprises a rod member, an end of the rod member is rotatably connected to the upper housing assembly, and a center of a connection between the rod member and the upper housing
20 assembly coincides with the center point, and the center point is defined as a second rotation connection point.

8. The range hood of claim 7, wherein the smoke baffle is directly or indirectly fixed to the rod member; and/or
the rod member is configured as a crank.

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9. The range hood of claim 8, wherein the transmission mechanism further comprises at least two connecting rods, the upper housing assembly is further provided with a third rotation connection point, and the at least two connecting rods are connected end to end in a rotatable manner between the rod member and the third rotation connection
10 point, one of the at least two connecting rods is movably connected to the air inlet body.

10. The range hood of claim 9, wherein the at least two connecting rods comprise a rocker and a first connecting rod; one end of the rocker is rotatably connected to the
15 upper housing assembly via the third rotation connection point, an other end of the rocker is rotatably connected to the first connecting rod, and a center of a connection between the rocker and the first connecting rod is denoted as a fourth rotation connection point; the first connecting rod is rotatably connected to the rod member, and a center of a connection between the first connecting rod and the rod member is
20 denoted as a fifth rotation connection point; the first rotation connection point is located between the fifth rotation connection point and the second rotation connection

point.

11. The range hood of claim 10, wherein a rear side end of the air inlet body is provided with a sixth rotation connection point, and the air inlet body is rotatably
5 connected to the rocker or the first connecting rod via the sixth rotation connection point.

12. The range hood of claim 11, wherein the at least two connecting rods further comprise a second connecting rod, and the air inlet body is rotatably connected to the
10 rocker via the second connecting rod, a center of a connection between the air inlet body and the rocker is denoted as a seventh rotation connection point.

13. The range hood of claim 7, wherein a linking rod extending along a front-rear direction of the range hood is fixed on the air inlet body, and a front end of the linking
15 rod is rotatably connected to the rod member via the first rotation connection point.

14. The range hood of any one of claims 1, 6 and 7, wherein the air inlet body is directly or indirectly rotatably connected to the upper housing assembly, and a center of a connection between the air inlet body and the upper housing assembly is denoted
20 as a first rotation connection point; when the air inlet body is in the first state, a position of the first rotation connection point corresponds to a first position point;

when the air inlet body is in the second state, a position of the first rotation connection point corresponds to a second position point; the second position point is located rearward of the first position point, and a distance between projections of the second position point and the first position point on a horizontal plane is defined as L;

- 5 on a vertical cross-section extending along a front-rear direction of the range hood, a contour line of a rear-side end portion of the air inlet body comprises a first endpoint and a second endpoint; when the air inlet body is in the first state, the first endpoint is located inside the upper housing assembly; when the air inlet body is in the second state, the first endpoint is flush with a bottom surface of the upper housing assembly,
- 10 and the second endpoint is a lowest point of the contour line of the rear-side end of the air inlet body; a distance between the first endpoint and the first rotation connection point is defined as L1, a distance between the second endpoint and the first rotation connection point is defined as L2, and the distance L between the projections of the second position point and the first position point on the horizontal plane, the distance
- 15 L1 between the first endpoint and the first rotation connection point and the distance L2 between the second endpoint and the first rotation connection point satisfy following relationship: $L < L2 - L1 < L + \Delta$, wherein Δ is a constant.

15. The range hood of claims 6 or 7, further comprising an oil cup disposed at a rear
- 20 side bottom of the air inlet body;

wherein the transmission mechanism comprises a transmission rod, one end of the

transmission rod is fixed to the oil cup, an other end of the transmission rod is slidably connected to the upper housing assembly in a vertical direction, and the transmission rod is rotatably connected to the air inlet body, such that the oil cup is maintained in an upright orientation.