

[DESCRIPTION]

[Title of Invention]

RANGE HOOD

[Technical Field]

[0001]

The present invention relates to a range hood, and particularly to a side draft type range hood.

[Background Art]

[0002]

There has been proposed a side draft type range hood with a straightening plate which has a tilted air inlet. The side draft type range hood with a straightening plate is a type of range hood which has an inner face panel and an opposing straightening plate tilted so as to be high on one side (for example, the front side) and low on the other side (for example, the rear side) and is adapted to laterally aspirate rising oily smoke generated for example during cooking. Among range hoods of this type, some suck oily smoke generated from a cooker from the four sides of the straightening plate, and others have the lower side of the straightening plate blocked by an oil receiver and suck oily smoke from the other three sides.

[Summary of Invention]

[Technical Problem]

[0003]

However, in the former range hood which sucks air from the four sides of the straightening plate, suction force can be weak in a position far from an opening part such as the vicinity of a corner part of the straightening plate depending on the position of the opening part in communication with a blower provided at the inner face panel, and oily smoke may not be caught well. In the latter range hood which sucks air from the three sides of the straightening plate, the air inlet at the lower side of the straightening plate, which oily smoke rising from a cooker approaches first, is blocked, and the oily smoke cannot be sucked from the lower side. The smoke can be sucked from an air inlet on any of the other sides, but the sucking efficiency is low since the direction of the rising oily smoke and the sucking direction at the air inlet are different. Therefore, oily smoke which should be caught may escape.

Therefore, the present invention provides a side draft type range hood with a straightening plate which has improved suction performance to catch more oily smoke and collect caught oil to an oil receiver.

[Solution to Problem]

[0004]

In order to solve the above described problems, there is provided a range hood which includes: an inner face panel provided at an inner face of a hood and having an opening part through which air is sucked; and a straightening plate opposed to the inner face panel and attached to cover the opening part, and in which, in a mounted state, a first end of the inner face panel and a first end of the straightening plate corresponding to the first end of the inner face panel are respectively in higher positions than a second end of the inner face panel and a second end of the straightening plate corresponding to the second end of the inner face panel, the range hood further including: an air volume suppressing part which reduces a space between the straightening plate and the inner face panel partly on a second end side of the straightening plate or on a second end side of the inner face panel; and an oil receiving part provided on the second end side of the straightening plate or on the second end side of the inner face panel and having a greater width than that of the second end of the straightening plate.

In this way, the flowrate of air partly at the lower side which is the second end of the straightening plate is reduced, the force of sucking air is dispersed among other parts, the suction performance in positions other than in the swelling part improves, and the range hood can be provided which secures the force for sucking oily smoke at air inlets away from the opening part.

[0005]

Furthermore, the air volume suppressing part may be a swelling part formed by a part of the inner face panel swelling toward the straightening plate to a position corresponding to a center part on the second end side of the straightening plate.

In this way, the opposed ends of the lower side which is the second end of the straightening plate are provided in the vicinity of a cooker, the suction force concentrates in the vicinity of the opposed ends, oily smoke can efficiently be caught in a position near the cooker before being diffused, the suction performance can be improved without increasing the number of parts, and therefore the suction performance can be improved inexpensively. The swelling part is provided seamlessly with the inner face panel for example by press-working, which makes cleaning easy.

[0006]

Furthermore, the second end side of the inner face panel at the swelling part may have a smaller width than that of the oil receiving part.

In this way, oil adhering to the inner face panel or the like is allowed to flow to the oil receiving part along the swelling part.

[0007]

Furthermore, the swelling part may be covered with the straightening plate.

This suppresses oily smoke from contacting the swelling part and makes it easier to clean the swelling part, while the swelling part is hidden by the straightening plate and becomes invisible to the user, so that the range hood may provide a higher design quality.

[0008]

Furthermore, the air volume suppressing part may be a flange formed by a part of the straightening plate rising toward the inner face panel in a center part of the second end of the straightening plate.

In this way, the opposed ends of the lower side which is the second end of the straightening plate are provided in the vicinity of a cooker, the suction force concentrates in the vicinity of the opposed ends, oily smoke can efficiently be caught in a position near the cooker before being diffused, the suction performance can be improved without increasing the number of parts, and therefore the suction performance can be improved inexpensively.

[0009]

Furthermore, the oil receiving part is provided perpendicularly under the second end of the straightening plate.

In this way, when oil caught by the straightening plate drops, the oil receiving part can surely receive the oil.

[0010]

Furthermore, the second end of the inner face panel includes a leading flange part which leads oil adhering to a back side to the oil receiving part.

In this way, as oil drainage is improved by the leading flange part, oil is led toward the oil receiving part and surely drops onto the oil receiving part.

[0011]

Furthermore, the leading flange part may have a shorter width in a direction along the greater width of the oil receiving part than a width of the oil receiving part in the same direction.

In this way, oil led to the leading flange part can surely drop onto the oil receiving part when the range hood is mounted in a tilted manner.

[0012]

Furthermore, the inner face panel may have an attached part to which an attaching part of the straightening plate is attached, the attached part may be provided at the air volume suppressing part when the air volume suppressing part is provided at

the inner face panel, and the attaching part may be provided at the air volume suppressing part when the air volume suppressing part is provided at the straightening plate.

In this way, air is not easily passed near the air volume suppressing part and oil is less likely to adhere to the attaching part or the attached part, so that oil can be prevented from sticking to the attaching part or the attached part, which alleviates attachment/detachment of the straightening plate, and the oil adherence to the attaching part or the attached part which inevitably has a complex structure is reduced, which makes cleaning easier.

[0013]

The range hood may further include a blower box including a fan casing therein, the fan casing may have a fan casing oil drain hole which guides an oil content adhering to an inside of the fan casing in a downward direction, the blower box may have a blower box oil drain hole which guides oil dropping from the fan casing oil drain hole or an oil content adhering to the inside of the blower box further in the downward direction, a front side end part of the blower box oil drain hole may be positioned nearer to a rear side than a rear side end part of a filter fitted to the opening part, and a rear side end part of the blower box oil drain hole may be positioned nearer to a front side than a rear side end part of the oil receiving part.

In this way, when oil drops from the fan casing oil drain hole or the blower box oil drain hole, the oil can surely be guided to the oil receiving part.

[Advantageous Effects of Invention]

[0014]

As described above, according to the present invention, there is provided a side draft type range hood with a straightening plate which has improved suction performance and can catch more oily smoke and collect caught oil to an oil receiver.

[Brief Description of Drawings]

[0015]

[Fig. 1]

Fig. 1 shows a range hood according to a first embodiment of the present invention in six directions, showing a front view at (A), a plan view at (B), a bottom view at (C), a left side view at (D), and a right side view at (E).

[Fig. 2]

Fig. 2 illustrates the state of how the range hood according to the first embodiment of the present invention is used, showing a front view at (A), a right side view at (B), and a

sectional view taken in a front-back direction at (C).

[Fig. 3]

Fig. 3 shows the range hood according to the first embodiment of the present invention, showing a perspective view from the upper right at (A) and a perspective view from the lower right at (B).

[Fig. 4]

Fig. 4 shows the range hood according to the first embodiment of the present invention removed of a straightening plate, showing a front view at (A), a bottom view at (B), a perspective view from the lower right at (C), and an enlarged front view of the vicinity of an oil receiving part at (D).

[Fig. 5]

Fig. 5 shows the straightening plate of the range hood according to the first embodiment of the present invention, showing a front view at (A), a plan view at (B), a bottom view at (C), a left side view at (D), a right side view at (E), a rear view at (F), a perspective view from the upper right at (G), and a perspective view from the lower right at (H).

[Fig. 6]

Fig. 6 is a sectional view of the range hood according to the first embodiment of the present invention (taken along line A-A in Fig. 1(A)).

[Fig. 7]

Fig. 7 is an enlarged sectional view of the vicinity of the oil receiving part of the range hood according to the first embodiment of the present invention (taken along line A-A in Fig. 1(A)).

[Fig. 8]

Fig. 8 shows the range hood according to the first embodiment of the present invention, showing a rear view of the inner face panel at (A), a perspective view of the inner face panel at (B), an enlarged view of an end part of a leading flange part at (C) in which the dotted line part in (A) is enlarged, and an enlarged view of the end part of the leading flange part at (D) in which the dotted line part in (B) is enlarged.

[Fig. 9]

Fig. 9 shows the straightening plate of a range hood according to a second embodiment of the present invention, showing a front view at (A), a plan view at (B), a bottom view at (C), a left side view at (D), a right side view at (E), a rear view at (F), a perspective view from the upper right at (G), and a perspective view from the lower right at (H).

[Fig. 10]

Fig. 10 is an enlarged sectional view of the vicinity of the oil receiving part of the range hood according to the second embodiment of the present invention (taken along line A-A

in Fig. 1(A)).

[Fig. 11]

Fig. 11 show schematic side views of a range hood according to the present invention, in which the range hood according to the first embodiment is tilted at 45° at (A), 30° at (B), and 90° at (C).

[Description of Embodiments]

[0016]

Now, embodiments of the present invention will be described in conjunction with the accompanying drawings.

<First embodiment>

With reference to Figs. 1 to 7, a range hood 100 according to a first embodiment of the present invention will be described. The range hood 100 is a so-called side draft type range hood which is mounted above or laterally to a cooker used for cooking with a pot or frying pan thereon, catches oily smoke or steam generated during cooking, collects the oil content thereof, and discharges clean air removed of the oil content to the outdoor. The range hood 100 includes an inner face panel 20 provided at the inner face of a hood 10 to catch oily smoke or the like, a straightening plate 30 provided opposed to the inner face panel 20 to improve the catching efficiency, an oil receiving part 40 for collecting an oil content, and a blower 52 which aspirates and discharges air, and the inner face panel 20 and the straightening plate 30 are mounted so as to be high on the front side and low on the rear side.

[0017]

Here, with reference to Fig. 11, the side draft type range hood will be described. While in a normal range hood, an inner face panel and a straightening plate opposed to the panel are both mounted horizontally, in the side draft type range hood, an inner face panel and a straightening plate opposed to the panel are tilted to be higher on the front side (on the user's side) and lower on the rear side (mainly on the further side which faces a wall or the like). Fig. 11 at (A) is a schematic illustration of the range hood 100 according to the embodiment, and in the range hood 100, a flat main part of the inner face panel 20 and the straightening plate 30 are tilted at 45° with respect to the horizontal plane. More specifically, when the front side is a first end side and the rear side is a second end side, a first end 20U of the inner face panel 20 and a first end 30U of the straightening plate 30 corresponding to the first end 20U of the inner face panel 20 are respectively in higher positions than a second end 20D of the inner face panel 20 and a second end 30D of the straightening plate 30 corresponding to the second end 20D of the inner face panel 20.

[0018]

When the range hood 100 is used, oily smoke or the like on the rear side (on the further side of the cooker) generated during cooking is aspirated from the gap in a position which is low and relatively close to the frying pan between the second end 20D of the inner face panel 20 and the second end 30D of the straightening plate 30. Meanwhile, oily smoke or the like from the front side (the user's side of the cooker) is aspirated from the gap in a position which is high and relatively far from the frying pan between the first end 20U of the inner face panel 20 and the first end 30U of the straightening plate 30. Naturally, oily smoke or the like generated near the right or left side of the cooker is aspirated from the gap between the right edge of the inner face panel 20 and the right edge of the straightening plate 30 or from the gap between the left edge of the inner face panel 20 and the left edge of the straightening plate 30.

[0019]

Fig. 11 at (B) shows the range hood having the inner face panel 20' and the straightening plate 30' tilted at 30° with respect to the horizontal plane. Similarly, in the range hood, a first end 20U' of the inner face panel 20' and a first end 30U' of the straightening plate 30' corresponding to the first end 20U' of the inner face panel 20' are respectively in higher positions than a second end 20D' of the inner face panel 20' and a second end 30D' of the straightening plate 30' corresponding to the second end 20D' of the inner face panel 20'. Oily smoke or the like on the rear side is aspirated from the gap in a position which is low and relatively close to the frying pan between the second end 20D' of the inner face panel 20' and the second end 30D' of the straightening plate 30'. Meanwhile, oily smoke or the like from the front side is aspirated from the gap in a position which is high and relatively far from the frying pan between the first end 20U' of the inner face panel 20' and the first end 30U' of the straightening plate 30'.

[0020]

Fig. 11 at (C) shows the range hood having an inner face panel 20'' and a straightening plate 30'' tilted at 90° with respect to the horizontal plane. Similarly, in the range hood, a first end 20U'' of the inner face panel 20'' and a first end 30U'' of the straightening plate 30'' corresponding to the first end 20U'' of the inner face panel 20'' are respectively in higher positions than a second end 20D'' of the inner face panel 20'' and a second end 30D'' of the straightening plate 30'' corresponding to the second end 20D'' of the inner face panel 20''. Oily smoke or the like on the rear side is aspirated from the gap in a position which is low and relatively close to the frying pan between the second end 20D'' of the inner face panel 20'' and the second end 30D'' of the straightening plate 30''. Meanwhile, oily smoke or the like on the front side is

aspirated from the gap in a position which is high and relatively far from the frying pan between the first end 20U" of the inner face panel 20" and the first end 30U" of the straightening plate 30".

[0021]

In this way, the side draft type range hood is adapted to aspirate oily smoke or the like literally laterally (from a side) and has the inner face panel 20' and the straightening plate 30' tilted approximately at 30° to 90° with respect to the horizontal plane. In the side draft type range hood, oily smoke or the like on the rear side is aspirated in a position which is low and close to the cooker before being diffused, and the catching efficiency tends to be high, while oily smoke or the like on the front side is aspirated in a position which is high and far from the cooker, the catching efficiency tends to be low. Therefore, a problem to be solved for the side draft type range hood is to improve the catching efficiency as a whole by distributing the suction force for aspirating air by the blower in a well-balanced manner over the gaps (air inlets) between the straightening plate and the inner face panel. In the side draft type range hood, since the inner face panel and the straightening plate are tilted, an adhering oil content moves to the lower side, and it is also a problem to be solved to appropriately collect the oil content.

[0022]

The range hood 100 is a side draft type range hood as described above and includes a hood 10 having a blower box 50 therein, an inner face panel 20 provided at the inner face of the hood 10 and having an opening part 22 through which air is sucked, a straightening plate 30 opposed to the inner face panel 20 and attached to cover the opening part 22, a swelling part 21 formed by a part of the inner face panel 20 which swells toward the straightening plate 30 to a position corresponding to the center part (in a front view) in the right-left direction on the side of the second end 30D of the straightening plate 30 partly on the side of the second end 20D of the inner face panel 20 or on the side of the second end 30D of the straightening plate 30 in the lower position, and an oil receiving part 40 provided on the side of the second end 20D of the inner face panel 20 or on the side of the second end 30D of the straightening plate 30 in the lower position and having a greater width than the width of the second end 30D of the straightening plate 30. Note that the range hood 100 further includes an operation part 70 provided at the foremost part of the inner face panel 20 and used by the user to turn on/off the range hood 100 and an illuminating part 71 used to light up during cooking.

[0023]

As shown in Fig. 6, the hood 10 has the blower box 50 therein on the rear side, air is sucked through the opening part 22 of the inner face panel 20 and discharged into a duct (not shown) covered by a duct cover 80 and connected to a duct attaching part 81. Note that the blower box 50 has a fan casing 51 therein, and the fan casing 51 has a blower 52 which generates an air flow inside. For example, as shown in Figs. 3 at (B), 4, and 6, the inner face panel 20 has a recessed shape toward the blower box 50 from the edge to the center part so that the straightening plate 30 can be stored in the recess and a flat shape opposed and parallel to the straightening plate 30 around the opening part 22. As described above, the flat main part of the inner face panel 20 around the opening part 22 is tilted at 45° with respect to the horizontal plane and lowered from the front side to the rear side, and therefore the straightening plate 30 is also tilted at 45° with respect to the horizontal plane and lowered from the front side to the rear side. The opening part 22 is provided with a filter 60 for removing an oil content from oily smoke, and the oil content removed here is collected to the oil receiving part 40 by a method which will be described.

[0024]

The straightening plate 30 basically allows a gap to be formed between the edge part of the inner face panel 20 and itself, so that the flowrate of air in that part is increased and air can be sucked easily. In this way, the catching efficiency by the range hood 100 is improved. As shown in Figs. 4 and 5, the straightening plate 30 is connected to the inner face panel 20 when an engaged part 24 provided at the inner face panel 20 is engaged with the an engaging part 31 at the first end 30U of the straightening plate 30 and an attaching part 32 is attached to an attached part 25 provided at the inner face panel 20 at the second end 30D of the straightening plate 30. Note that the attached part 25 provided at the swelling part 21 includes a magnet and has the straightening plate 30 made of a metal attached thereto by the magnetic force.

[0025]

The swelling part 21 is formed integrally with the inner face panel 20 and as a part of the inner face panel 20 which swells to the straightening plate 30. The swelling part 21 is formed in a position on the side of the second end 30D of the straightening plate 30. As the inner face panel 20 swells to the straightening plate 30 to the vicinity of the lower side which is the second end 30D of the straightening plate 30, the space between the straightening plate 30 and the inner face panel 20 is reduced partly on the side of the second end 30D of the straightening plate 30, so that the flow of air therethrough is restricted and the flowrate thereof is reduced. In this way, as the flowrate of air partly at the lower side which is the second end 30D of the straightening

plate 30 is reduced, the force of sucking air is dispersed among other parts, the suction performance in positions other than in the swelling part 21 improves, and the range hood 100 having necessary force for sucking oily smoke at air inlets away from the opening part 22 can be provided. While the swelling part 21 may be attached to the inner face panel 20 as a discrete member, the part may preferably be formed seamlessly with the inner face panel 20 by press-working, which makes cleaning easier.

[0026]

In the range hood 100 according to the embodiment, the swelling part 21 is formed in a position corresponding to the center part of the straightening plate 30 on the side of the second end 30D in the right-left direction (in the vicinity of the lower side of the opening part 22 positioned approximately in the center of the inner face panel 20). In this way, as shown in Fig. 2 at (A), the opposed ends of the straightening plate 30 on the side of the second end 30D are normally positioned immediately above the stoves of the cooker. In this way, the opposed ends of the second end 30D of the straightening plate 30 which is the lower side are positioned in the vicinity of the cooker, and the suction force concentrates in the vicinity of the opposed ends, so that oily smoke can be sucked before being diffused, or oily smoke can be caught more efficiently near the cooker. The part is formed to swell by press-working, and the suction performance can be improved without increasing the number of parts, so that the suction performance can be improved inexpensively.

[0027]

As can be understood from comparison between Fig. 1 at (A) and Fig. 4 at (A) and between Fig. 3 at (B) and Fig. 4 at (C), the swelling part 21 is covered with the straightening plate 30. This suppresses oily smoke from contacting the swelling part 21 and makes it easier to clean the swelling part 21, while the swelling part 21 is hidden by the straightening plate 30 and becomes invisible to the user, so that the range hood 100 may have a higher design quality.

[0028]

The oil receiving part 40 is provided on the side of the second end 20D of the inner face panel 20 or the second end 30D of the straightening plate 30 in the lower position and has a greater width than the width of the second end 30D of the straightening plate 30. Oily smoke or the like generated during cooking is sucked as shown in Fig. 2 at (A), and the oil content mostly adheres to a part such as an oil content adhering area OZ of the inner face panel 20 as shown in Fig. 4 at (A). More oil adheres around the edge of the straightening plate 30 in the oil content adhering area OZ. The oil content adhering to the part is allowed to flow toward the second end 20D of the

inner face panel 20 since the inner face panel 20 is tilted. The oil receiving part 40 is provided on the side of the second end 20D of the inner face panel 20 and has a greater width than the width of the second end 30D of the straightening plate 30, so that the adhering oil content let to flow to the lower side can appropriately be collected. Note that the oil receiving part 40 includes a monitoring window 41 in the center part on the front side, and the user can monitor the degree of how much oil is collected through the window.

[0029]

The lateral width of the inner face panel 20 at the swelling part 21 on the side of the second end 20D (in a front view), or the lowermost width of the swelling part 21 is smaller than the lateral width of the oil receiving part 40. The oil content adhering to the filter 60 is let to flow to lower part of the filter 60 itself, passes by the swelling part 21, and reaches the oil receiving part 40 as indicated by an oil content flow OL shown in Fig. 4 at (D). In this way, the oil content adhering to the inner face panel 20 is allowed to flow along the swelling part 21 to the oil receiving part 40.

[0030]

With reference to Fig. 7, the vicinity of the second end 20D of the inner face panel 20 and the second end 30D of the straightening plate 30 as the lower part of the range hood 100 will be described. The inner face panel 20 has the swelling part 21 which is integrally formed from the same surface as the opening part 22, to which the filter 60 is fitted, to the straightening plate 30 and swells to reduce the space between the straightening plate 30 and the inner face panel 20. According to the embodiment, the swelling part 21 is formed in a position corresponding to the center part of the straightening plate 30 on the side of the second end 30D. The second end 30D of the straightening plate 30 is curved in a U-shape and its end part is formed as the attaching part 32. The attaching part 32 is attached to the attached part 25 of the magnet by the magnetic force.

[0031]

The straightening plate 30 has a flange 33 having a lower height than the attaching part 32. The flange 33 is present in the same height around the entire straightening plate 30. As shown, there is only a small gap between the flange 33 as a part of the straightening plate 30 positioned most closely to the inner face panel 20 except for the attaching part 32 and the swelling part 21. Meanwhile, the swelling part 21 does not exist in the part other than the center part in the right-left direction in the figure, and therefore a gap is secured for the absence of the swelling part. The swelling part 21 serves as a part which reduces the space between the straightening

plate 30 and the inner face panel 20 in the center part and restricts the air volume at the second end 30D of the straightening plate 30 and the second end 20D of the inner face panel 20. In this way, as the flowrate partly at the lower side which is the second end 30D of the straightening plate 30 is reduced, the air suction force is dispersed among other parts, which improves the suction performance in positions other than in the swelling part 21, and the range hood 100 may have necessary force for sucking oily smoke for example at the air inlet of the gap between the first end 20U of the inner face panel 20 and the first end 30U of the straightening plate 30 in a position away from the opening part 22.

[0032]

The oil content adhering to the straightening plate 30 comes to the second end 30D of the straightening plate 30 as the lowermost end and oil drops down from there. Therefore, it is preferable that the front end part 42 of the oil receiving part 40 is positioned closer to the front side (on the left side in the figure) than the second end 30D of the straightening plate 30, and the rear end part of the oil receiving part 40 is positioned closer to the rear side (on the right side in the figure) than the second end 30D of the straightening plate 30, or it is preferable that the oil receiving part 40 is provided perpendicularly under the second end 30D of the straightening plate 30. In this way, when oil caught by the straightening plate 30 drops, the oil receiving part 40 can surely receive the oil.

[0033]

The fan casing 51 has a fan casing oil drain hole 53 that guides an oil content adhering to the blower 52 or the inside of the fan casing 51 in the downward direction. The blower box 50 has a blower box oil drain hole 54 that guides oil dropping from the fan casing oil drain hole 53 or an oil content adhering to the inside of the blower box 50 further in the downward direction. The front side end part of the blower box oil drain hole 54 is positioned closer to the rear side than the rear side end part of the filter 60 fitted to the opening part 22, and the rear side end part of the blower box oil drain hole 54 is positioned closer to the front side than the rear side end part of the oil receiving part 40. Oil dropping from the blower box oil drain hole 54 adheres to the back side of the inner face panel 20 and is let to flow further downward. The second end 20D of the inner face panel 20 includes a generally horizontal leading flange part 23 which leads the oil thus coming to adhere to the back side of the inner face panel 20 to the oil receiving part 40. The leading flange part 23 provides better oil drainage. In this way, as oil drainage is improved by the leading flange part 23, oil is guided toward the oil receiving part 40 and surely drops onto the oil receiving part 40.

[0034]

As shown in Fig. 8, a side end part 26 of the leading flange part positioned at end parts in the right-left direction of the leading flange part 23 in a front view is provided closer to the center side than a side end part 28 of an oil receiving part fitting part positioned at end parts of the oil receiving part fitting part 27 in the right-left direction in the front view formed in the inner face panel 20 to have the oil receiving part 40 fitted thereto. More specifically, the width of the leading flange part 23 in the right-left direction in the front view is shorter than the width of the oil receiving part 40 in the right-left direction in the front view. Note that the width of the oil receiving part 40 in the right-left direction in the front view is the width of the oil receiving part 40 which is greater than the width of the second end 30D of the straightening plate 30. Stated differently, the width of the leading flange part 23 along the greater width of the oil receiving part 40 is shorter than the width of the oil receiving part 40 in the same direction. In this way, when the range hood 100 is mounted in a tilted manner, oil led by the leading flange part 23 is surely allowed to drop onto the oil receiving part 40.

[0035]

<Second embodiment>

With reference to Figs. 9 and 10, a range hood 100A according to a second embodiment of the present invention will be described. Note that in order to avoid repetition, the same elements as those of the above described embodiment are designated by the same reference characters, and the following description will be centered on different features. The range hood 100A includes an inner face panel 20A provided at the inner face of a hood 10 and a straightening plate 30A attached opposed to the inner face panel 20A. The straightening plate 30A has a flange 33A which is positioned higher than the other part of the flange 33 at a second end 30D as the lowermost end of the straightening plate 30A and rises toward the inner face panel 20A in the center part.

[0036]

Meanwhile, the inner face panel 20A does not have the swelling part 21 of the inner face panel 20 according the first embodiment described above. More specifically, the inner face panel 20A has a recessed shape from all the four surrounding edges including the side of a second end 20D of the inner face panel 20A toward the center part to a blower box 50 so that the straightening plate 30 can be stored in the recess. More specifically, according to the previous first embodiment, the inner face panel 20 having the swelling part 21 serves as an air volume suppressing part which reduces the space between the straightening plate 30 and the inner face panel 20, while according to

this second embodiment, the straightening plate 30A having the flange 33A serves as an air volume suppressing part which reduces the space between the straightening plate 30A and the inner face panel 20A. In this way, the opposed ends of the lower side which is the second end 30D of the straightening plate 30A are positioned in the vicinity of the cooker, and the suction force concentrates around the opposed ends, so that oily smoke can be sucked before being diffused and caught more efficiently in a position near the cooker. While a discrete member may be provided on a second end side of the straightening plate in order to provide the air volume suppressing part which reduces the space between the straightening plate 30A and the inner face panel 20A, it is preferable that the flange 33A in a higher position than the other part is formed at the second end 30D of the straightening plate 30A, so that the suction performance can be improved without increasing the number of parts, and the suction performance can be improved inexpensively. Note that the flange 33A is formed to have a greater height than the other part of the flange 33 but this does not limit the embodiment, and a second end of the straightening plate may be curved toward the inner face panel by press-working and formed into an air volume control part. The straightening plate 30A has an attaching part 32A provided in a bent form from the tip end of the flange 33A to oppose the attached part 25A provided at the inner face panel 20A.

[0037]

As described in the first embodiment, the inner face panel 20 may have the attached part 25 to which the attaching part 32 of the straightening plate 30 is attached, and when the swelling part 21 (air volume suppressing part) is provided at the inner face panel 20, the attached part 25 may be provided at the swelling part 21 (air volume suppressing part), while according to this embodiment, the inner face panel 20A may have the attached part 25A to which the attaching part 32A of the straightening plate 30A is attached, and when the flange 33A (air volume suppressing part) is provided at the straightening plate 30A, the attaching part 32A may be provided at the flange 33A (air volume suppressing part). In this way, air is not easily passed near the air volume suppressing part, and oil is less likely to adhere to the attaching part or the attached part, so that oil can be prevented from sticking to the attaching part or the attached part, which alleviates attachment/detachment of the straightening plate, and the oil adherence to the attaching part or the attached part which inevitably has a complex structure is reduced, which makes cleaning easier.

[0038]

Note that the present invention is not limited to the illustrated embodiments and may be carried out without departing the contents recited in the scope of claims.

More specifically, while the present invention has been particularly illustrated in the drawings and described in connection with the specific embodiments, various modifications to the described embodiments in quantities, applications, and other detailed configurations will be apparent to a person skilled in the art without departing the technical ideas and objects of the present invention.

[0039]

For example, the air volume suppressing part is provided at the inner face panel 20 according to the first embodiment and at the straightening plate 30A according to the second embodiment, while the air volume suppressing part may be provided at each of the inner face panel and the straightening plate for example by providing a flange in a higher position than the other part at the second end of the straightening plate and a swelling part in a position corresponding to the high positioned flange at the inner face panel.

[Reference Signs List]

[0040]

100	Range hood
10	Hood
20	Inner face panel
20U	First end of inner face panel
20D	Second end of inner face panel
21	Swelling part (air volume suppressing part)
22	Opening part
23	Leading flange part
24	Engaged part
25	Attached part
26	Side end part of leading flange part
27	Oil receiving part fitting part
28	Side end part of oil receiving part fitting part
30	Straightening plate
30U	First end of straightening plate
30D	Second end of straightening plate
31	Engaging part
32	Attaching part
33	Flange
33A	Flange (air volume suppressing part)
40	Oil receiving part

41	Monitoring window
42	Front end part
50	Blower box
51	Fan casing
52	Blower
53	Fan casing oil drain hole
54	Blower box oil drain hole
60	Filter
70	Operation part
71	Illuminating part
80	Duct cover
81	Duct attaching part
OZ	Oil content adhering area
OL	Oil content flow

[CLAIMS]

[Claim 1]

A range hood comprising:

an inner face panel provided at an inner face of a hood and having an opening part through which air is sucked; and

a straightening plate opposed to the inner face panel and attached to cover the opening part,

wherein, in a mounted state, a first end of the inner face panel and a first end of the straightening plate corresponding to the first end of the inner face panel are respectively in higher positions than a second end of the inner face panel and a second end of the straightening plate corresponding to the second end of the inner face panel,

the range hood further comprising:

an air volume suppressing part which reduces a space between the straightening plate and the inner face panel partly on a second end side of the straightening plate or on a second end side of the inner face panel; and

an oil receiving part provided on the second end side of the straightening plate or on the second end side of the inner face panel and having a greater width than that of the second end of the straightening plate.

[Claim 2]

The range hood of claim 1, wherein the air volume suppressing part is a swelling part formed by a part of the inner face panel swelling toward the straightening plate to a position corresponding to a center part on the second end side of the straightening plate.

[Claim 3]

The range hood according to claim 2, wherein the second end side of the inner face panel at the swelling part has a smaller width than that of the oil receiving part.

[Claim 4]

The range hood according to claim 2 or 3, wherein the swelling part is covered with the straightening plate.

[Claim 5]

The range hood according to claim 1, wherein the air volume suppressing part is a flange formed by a part of the straightening plate rising toward the inner face panel in a center part of the second end of the straightening plate.

[Claim 6]

The range hood of any one of claims 1 to 5, wherein the oil receiving part is provided perpendicularly under the second end of the straightening plate.

[Claim 7]

The range hood according to any one of claims 1 to 6, wherein the second end of the inner face panel comprises a leading flange part which leads oil adhering to a back side to the oil receiving part.

[Claim 8]

The range hood according to claim 7, wherein the leading flange part has a shorter width in a direction along the greater width of the oil receiving part than a width of the oil receiving part in the same direction.

[Claim 9]

The range hood according to any one of claims 1 to 8, wherein the inner face panel has an attached part to which an attaching part of the straightening plate is attached,

the attached part is provided at the air volume suppressing part when the air volume suppressing part is provided at the inner face panel, and

the attaching part is provided at the air volume suppressing part when the air volume suppressing part is provided at the straightening plate.

[Claim 10]

The range hood according to any one of claims 1 to 9, further comprising a blower box including a fan casing therein, wherein

the fan casing has a fan casing oil drain hole which guides an oil content adhering to an inside of the fan casing in a downward direction,

the blower box has a blower box oil drain hole which guides oil dropping from the fan casing oil drain hole or an oil content adhering to an inside of the blower box further in the downward direction,

a front side end part of the blower box oil drain hole is positioned nearer to a rear side than a rear side end part of a filter fitted to the opening part, and

a rear side end part of the blower box oil drain hole is positioned nearer to a front side than a rear side end part of the oil receiving part.