



(11) **EP 4 495 487 A1**

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
22.01.2025 Bulletin 2025/04

(21) Application number: **23803034.0**

(22) Date of filing: **12.05.2023**

(51) International Patent Classification (IPC):
F24C 15/20 ^(2006.01) **F24C 15/10** ^(2006.01)
B01D 46/10 ^(2006.01) **B01D 46/88** ^(2022.01)

(52) Cooperative Patent Classification (CPC):
F24C 15/2042; B01D 46/10; B01D 46/88;
F24C 15/10; F24C 15/20; F24C 15/2035

(86) International application number:
PCT/CN2023/093834

(87) International publication number:
WO 2023/217266 (16.11.2023 Gazette 2023/46)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL
NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA
Designated Validation States:
KH MA MD TN

(30) Priority: **13.05.2022 CN 202221148978 U**
13.05.2022 CN 202221148984 U

(71) Applicant: **Foshan Shunde Midea Electrical**
Heating Appliances
Manufacturing Co., Ltd.
Foshan, Guangdong 528311 (CN)

(72) Inventors:
• **WU, Huimin**
Foshan, Guangdong 528311 (CN)
• **PENG, Zhiwei**
Foshan, Guangdong 528311 (CN)

- **LEI, Guomao**
Foshan, Guangdong 528311 (CN)
- **LIU, Xiaokai**
Foshan, Guangdong 528311 (CN)
- **MO, Yehui**
Foshan, Guangdong 528311 (CN)
- **XIONG, Wenhan**
Foshan, Guangdong 528311 (CN)
- **JIANG, Taiyang**
Foshan, Guangdong 528311 (CN)
- **YANG, Qiangqiang**
Foshan, Guangdong 528311 (CN)
- **ZHANG, Yifan**
Foshan, Guangdong 528311 (CN)
- **DENG, Xingwen**
Foshan, Guangdong 528311 (CN)

(74) Representative: **RGTH**
Patentanwälte PartGmbH
Neuer Wall 10
20354 Hamburg (DE)

(54) **INTEGRATED STOVE**

(57) The present application provides an integrated stove. The integrated stove comprises: a heating assembly used for supporting and heating a container and comprising an air duct; a range hood assembly being connected to the heating assembly and in communication with the air duct, and being used for extracting oil smoke by means of the air duct; a positioning assembly being arranged in the range hood assembly; and a filtering member, being detachably connected to the positioning assembly, being capable of penetrating through the air duct, and being used for filtering the oil smoke. According to the integrated stove defined in the present application, the filtering member can be disassembled and assembled directly above the stove, making it unnecessary to disassemble the drawer on the cabinet, and

avoiding the complicated operation of disassembling the smoke exhaust pipe. Thus, the following technical effect is achieved: the layout of the integrated stove structure is optimized, the maintenance difficulty of the filtering member is lowered, and user experience is improved.

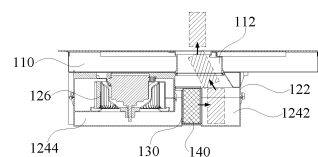


FIG. 7

Description

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to Chinese Patent Application No. 202221148978.9 filed with China National Intellectual Property Administration on May 13, 2022 and entitled "INTEGRATED STOVE", which is incorporated herein by reference in its entirety.

[0002] This application claims priority to Chinese Patent Application No. 202221148984.4 filed with China National Intellectual Property Administration on May 13, 2022 and entitled "SEPARATING ASSEMBLY AND INTEGRATED COOKER", which is incorporated herein by reference in its entirety.

FIELD

[0003] The present application relates to the technical field of kitchen wares, and particularly relates to an integrated stove.

BACKGROUND

[0004] In related technologies, in order to simplify the structure of a product, a filtering member is often mounted in a smoke exhaust pipe in a cabinet; however, when the filtering member needs to be cleaned or replaced, a user needs to disassemble drawers on the cabinet and disassemble the smoke exhaust pipe to complete cleaning and replacing operations, as a result, the integrated stove has the technical problems that the disassembling and assembling of the filtering member are difficult and the maintenance operation for a user is complex.

[0005] Therefore, how to design an integrated stove that can overcome the above technical defects has become an urgent technical problem to be solved.

SUMMARY

[0006] The present application aims to solve at least one of the technical problems in the prior art.

[0007] Thus, the first aspect of the present application provides an integrated stove.

[0008] In view of this, the present application provides an integrated stove, and the integrated stove comprises: a heating assembly for supporting and heating a container and comprising an air duct; a range hood assembly, connected to the heating assembly and being in communication with the air duct, wherein the range hood assembly extracts oil smoke by the air duct; a positioning assembly, arranged inside the range hood assembly; and a filtering member, detachably connected to the positioning assembly, being capable of penetrating through the air duct, wherein the filtering member filters the oil smoke.

[0009] The present application provides an integrated stove, and the integrated stove can concentrate the oil

smoke generated during cooking and extract it into the interior of the integrated stove, and the oil smoke are discharged back to the indoor environment of the user after they are subjected to oil filtration and odor filtration inside the integrated stove, to achieve the internal circulation of the oil smoke, and it is unnecessary to design a complex external air discharge structure.

[0010] The integrated stove comprises the heating assembly and the range hood assembly. The heating assembly is a main structure of the integrated stove and configured to position and support other structures on the integrated stove. The top part of the heating assembly can provide a cooking operation table for a user, and the container is placed above the heating assembly to support and heat the container through the heating assembly, and the container is configured to hold ingredients, and finished food that meets user needs can be cooked on the heating assembly.

[0011] The air duct is formed in the heating assembly; the first end of the air duct communicates with the space above the heating assembly; during the process of cooking the ingredients, the oil smoke are concentrated above the heating assembly, and the air duct can allow the oil smoke above the heating assembly to flow into the integrated stove. The range hood assembly is a sucking power structure of the integrated stove; the range hood assembly is connected to the heating assembly, and the range hood assembly is formed with a cavity therein, and the second end of the air duct communicates with the cavity. The range hood assembly can extract the oil smoke above the heating assembly through the cavity and the air duct. Exemplarily, after a fan is turned on, the range hood assembly extracts the gas in the air duct into the fan through the cavity, to form a negative pressure environment in the air duct area, and under the action of the negative pressure environment, the oil smoke above the heating assembly is pressed into the air duct, to complete the suction of the oil smoke and prevent the oil smoke from diffusing into the indoor environment.

[0012] The integrated stove further comprises the filtering member, and the filtering member filters the oil smoke extracted into the integrated stove, to filter impurities and substances that emit odors contained in the oil smoke, and thus ensure that the gas ultimately discharged back into the indoor environment will not pollute the indoor environment.

[0013] In related technologies, in order to simplify the structure of a product, the filtering member is often mounted in a smoke exhaust pipe in a cabinet; however, when the filtering member needs to be cleaned or replaced, a user needs to disassemble drawers on the cabinet and disassemble the smoke exhaust pipe to accomplish cleaning and replacing operations, as a result, the integrated stove has the technical problems that the disassembling and assembling of the filtering member are difficult and the maintenance operation for a user is complex. Meanwhile, since the sizes of the filtering members manufactured by different manufacturers are

inconsistent, there are differences in the sizes of corresponding smoke exhaust pipes, and as a result, products of different brands and models cannot form a unified standard for the smoke exhaust pipes, and this renders that a user can only purchase a smoke exhaust pipe of the corresponding brand and model when assembling or replacing the smoke exhaust pipe, and thus, the user's cost of maintaining the smoke exhaust pipe increases, and this is not conducive to product promotion.

[0014] Thus, the present application provides the positioning assembly; the positioning assembly is mounted inside the range hood assembly, the filtering member is detachably connected to the positioning assembly, and the filtering member is set on the upwind side of a wind turbine inside the range hood assembly, i.e., the filtering member is located between the air duct and the wind turbine; the oil smoke that enters the cavity through the air duct needs to firstly pass through the filtering member and then is sucked into the wind turbine. Through providing the filtering member inside the cavity, the limitation of the filtering member to the size of the smoke exhaust pipe can be removed, and the fan can match smoke exhaust pipes of different models made by different manufacturers, to reduce the user's maintenance cost of the integrated stove, and this is conducive to form a unified standard for the smoke exhaust pipes among different brands. Meanwhile, setting the filtering member inside the cavity can make reasonable use of the lateral space inside the cavity to complete the internal arrangement of the filtering member without increasing the thickness of the integrated stove. Thus, it can be seen that arranging the filtering member in the cavity solves the technical problems of high maintenance cost and poor product promotion performance of the integrated stove in related technologies. The technical effects of optimizing the layout of the structure of the integrated stove, enhancing the practicality of the integrated stove and improving user experience are achieved.

[0015] Meanwhile, setting the filtering member at the upwind side of the fan can prevent the impurities mixed in the oil smoke from being sucked into the interior of the fan, and thus the rate of polluting the fan by the impurities is reduced to extend the maintenance cycle and the service life of the fan. Furthermore, the working stability of the integrated stove is improved and the technical effect of lowering the failure rate of the integrated stove is achieved.

[0016] The filtering member provided in the cavity is detachably connected to the positioning assembly, and the size of the filtering member is smaller than the size of the air duct, and the filtering member can pass through the air duct. Through setting the detachable filtering member, when the user needs to clean or replace the filtering member, the filtering member is disassembled from the positioning assembly, and then the cleaned filtering member or a new filtering member is mounted, to rapidly accomplish the maintenance of the filtering member. On the above basis, through limiting that the

filtering member can pass through the air duct, a user can accomplish the disassembling and the assembling of the filtering member through the air duct. Exemplarily, a grille at the top end of the air duct is disassembled first, then hands are extended into the cavity through the air duct, and the filtering member is taken out from the air duct by manual operations. Based on the same reasons, the mounting process is opposite to the disassembling process, and is not repeated here.

[0017] Thus, it can be seen that the maintenance of the filtering member of the integrated stove defined by the embodiment can be accomplished directly on a kitchen sink, and thus, it is unnecessary to disassemble the drawer on the cabinet, and the complicated operations of disassembling the smoke exhaust pipe is avoided. Furthermore, the technical effects of optimizing the layout of the structure of the integrated stove, lowering the maintenance difficulty of the filtering member, and improving user experience are achieved.

[0018] In addition, the above integrated stove provided by the present application can further comprise the following additional technical features.

[0019] In the above embodiment, the range hood assembly comprises a housing which is connected to the heating assembly and comprises a cavity; the air duct communicates with the cavity, the positioning assembly is provided in the cavity, and the positioning assembly is arranged opposite to the air duct.

[0020] In the embodiment, the structure of the range hood assembly is illustrated. Exemplarily, the range hood assembly comprises the housing. The housing is a frame structure of the range hood assembly, the housing is connected to the heating assembly; in addition, the cavity is formed in the housing, and the second end of the air duct communicates with the cavity. On the above basis, the positioning assembly provided in the cavity is connected to the housing, and the positioning assembly is arranged opposite to the air duct, i.e., the positioning assembly is aligned with an air inlet in the housing. Through arranging the positioning assembly opposite to the air duct, the user can extend a hand into the air duct and then touch the positioning assembly, and thus the operation difficulty for the user to disassemble and assemble the filtering member is lowered, and then the technical effects are achieved that the maintenance difficulty of the integrated stove is reduced and user experience is improved.

[0021] In any of the above embodiments, the positioning assembly comprises: a frame, connected to the housing, and the frame is in an annular shape, the filtering member is provided in the frame, and the circumferential side of the frame is arranged opposite to the air duct; and a first grid plate, connected to the frame, located at a first opening end of the frame, wherein the first grid plate blocks the filtering member.

[0022] In the embodiment, the structure of the positioning assembly is illustrated. Exemplarily, the positioning assembly comprises the frame, the frame is in an annular

shape, and the filtering member is embedded at the inner side of the annular frame, to position the filtering member in a radial direction of the annular frame and prevent the dislocation or disengagement of the filtering member. The positioning assembly further comprises the first grid plate, the first grid plate is connected to a first port in the frame and covers and closes the first port, and the first grid plate can block the filtering member on the basis of ensuring that an airflow passes through the positioning assembly. Specifically, the first grid plate faces a downwind side, a second port of the frame faces the upwind side, and thus the first grid plate is configured to prevent the filtering member from being pushed out of the frame. On the above basis, the circumferential side of the frame is arranged opposite to the air duct, and this arrangement can prevent the impurities falling into the air duct through the circumferential side of the frame, and prevent the impurities from directly falling into the filtering member and blocking the filtering member, and thereby, the reliability of the filtering member is improved, and the service life of the filtering member is prolonged.

[0023] During the mounting process, the mounting can be accomplished as long as the filtering member is pushed into the frame through the second port in the frame, until the filtering member abuts on the first grid plate. On the contrary, when the filtering member needs to be disassembled, the filtering member can be pulled out from the second port by grasping it, and then the filtering member can be disassembled from the frame and taken out through the air duct. Thus, it can be seen that the structure provided by the embodiment can protect the filtering member on the basis that the filtering member is effectively positioned, and at the same time, the structure has the advantages of a low structural complexity and a low processing difficulty, and this is conducive to reducing the cost of the positioning component.

[0024] In any of the above embodiments, an avoidance port is provided in the circumferential side of the frame facing the air duct, the avoidance port is connected to a second opening end of the frame; and the positioning assembly further comprises a cover plate which is connected to the frame and covers and closes the avoidance port.

[0025] In the embodiment, the avoidance port is provided in the circumferential side of the frame facing the air duct, and the avoidance port is connected to the second opening end of the frame. After the filtering member is mounted, part of the filtering member is exposed in the avoidance port. Through arranging the avoidance port in the frame, a user can disassemble the filtering member from the frame by pushing the filtering member exposed in the avoidance port, which provides the user with an area of force application, and thus the difficulty of disassembling the filtering member is lowered.

[0026] On the above basis, the positioning assembly further comprises the cover plate, and the cover plate is provided openable and closable at the avoidance port.

When the cover plate is in a closed state, the cover plate covers and closes the avoidance port, to prevent contaminants from directly contacting the filtering member in the avoidance port. When the cover plate is in an open state, the filtering member in the avoidance port is exposed, a user can directly touch and operate the filtering member. Specifically, during the disassembling process, the cover plate is opened firstly, and then the filtering member is disassembled. Through setting the cover plate, the probability of contaminating the filtering member by contaminants can be reduced on the basis of lowering the difficulty of disassembling the filtering member, and then the service life of the filtering member is extended.

[0027] In any of the above embodiments, the cover plate and the frame are in hinged connection.

[0028] In the embodiment, in order to cooperate with the cover plate, a pair of hinging parts are set on the frame; the cover plate has a flat plate shape and has a pair of rotating shaft parts on one side, and the rotating shaft parts cooperate with the hinging parts, and the cover plate can rotate around the rotating shaft parts, and thereby, the open state and the closed state of the cover plate are switched through rotating actions. The hinging structure has the advantages of low structural complexity and strong reliability, and can reduce lower the production cost and the failure rate of the positioning assembly on the basis of meeting the needs of opening and closing the cover plate. Meanwhile, compared with the embodiment of setting a split-type cover plate, hinging the cover plate on the frame can prevent the cover plate from falling into the depths of the cavity, and thus provide a convenient condition for a user to disassemble and assemble the filtering member.

[0029] In any of the above embodiments, the positioning assembly further comprises a convex rib which is provided on the cover plate; in the case that the cover plate covers and closes the avoidance port, the convex rib blocks the filtering member at the second opening end.

[0030] In the embodiment, the positioning assembly further comprises the convex rib, and the convex rib is provided on a covering and closing surface of the cover plate; when the cover plate is in a closed state, the convex rib is located at the second opening end of the frame, and the filtering member is located between the convex rib and the first grid plate, and thereby, the filtering member is blocked through the convex rib at the second opening end. Through setting the convex rib on the cover plate, the cover plate can lock the filtering member by the convex rib, and thus this prevents the filtering member from dislocating or disengaging from the frame due to the factors such as vibration during the working process. Furthermore, the technical effects are achieved that reliability and stability of positioning the filtering member by the positioning member are improved and the failure rate of the filtering member is reduced.

[0031] In any of the above embodiments, the avoid-

ance port is configured to allow the filtering member to pass through, and the positioning assembly further comprises a second grid plate, which is connected to the frame, located at the second opening end of the frame, wherein the second grid plate blocks the filtering member.

[0032] In the embodiment, the size of the filtering member is smaller than the size of the avoidance port, and the filtering member can be mounted in the frame through the avoidance port. On the above basis, the positioning assembly further comprises the second grid plate, the second grid plate is mounted at the second opening end of the frame and covers and closes the second port, and the second grid plate can block the filtering member while ensuring that the airflow passes through the positioning assembly.

[0033] In the structure, the filtering member can complete disassembling and assembling actions in the longitudinal direction, which is different from the lateral disassembling and assembling in the above embodiment. During the assembling process of the filtering member, the filtering member is inserted into the avoidance port from top to bottom, and on the contrary, during the disassembling process of the filtering member, the filtering member is pulled out of the frame through the avoidance port. After the assembling of the filtering member is accomplished, the frame, the first grid plate and the second grid plate work together to position the filtering member to ensure that the filtering member can be parked at a predetermined working position. The structure which is disassembled and assembled from top to bottom allows users to directly perform the disassembling and assembling operations through the air duct, and helps a user observe whether the filtering member is mounted in place, i.e., the disassembling and assembling structure can further reduce the difficulty of disassembling and assembling the filtering member, and achieve the technical effects of optimizing the structure of the positioning assembly and providing a convenient condition for users.

[0034] In any of the above embodiment, the cavity is divided into a first cavity and a second cavity by the first grid plate; the first cavity communicates with the air duct and the second cavity, and the second opening end of the frame is away from the second cavity.

[0035] In the embodiment, the positioning assembly is laterally provided in the cavity, and the cavity is divided into the first cavity and the second cavity by the first grid plate on the positioning assembly. And the top end of the first cavity communicates with the air duct, both the frame and the filtering member are provided in the first cavity, the oil smoke flows into the filtering member through the air duct and the first cavity, and penetrates the first grid plate and flows into the second cavity after filtered by the filtering member, and finally is discharged out of the range hood assembly through an air outlet in the housing under the effect of the internal power structure of the range hood assembly.

[0036] In any of the above embodiments, the range hood assembly further comprises a fan which is provided inside the second cavity.

[0037] In the embodiment, the range hood assembly comprises the fan, the fan is provided inside the second cavity, and the fan can extract the oil smoke above the heating assembly through the cavity and the air duct. Exemplarily, after the fan is turned on, the fan extracts the gas in the air duct into the interior of the fan through the cavity, to form a negative pressure environment in the air duct area; under the effect of the negative pressure environment, the oil smoke above the heating assembly is pressed into the air duct, to complete extracting and sucking the oil smoke and prevent the oil smoke from diffusing into the indoor environment.

[0038] The fan is a centrifugal fan, and the air inlet end of the fan is located inside the second cavity and communicates with the cavity, and the air outlet end of the fan is formed on the housing to discharge the oil smoke out of the housing. The centrifugal fan can pressurize and accelerate the oil smoke extracted into the interior, and this firstly can discharge the oil smoke quickly into the smoke exhaust duct connected to the housing, and secondly helps improve the extraction and suction effect for the oil smoke, and thus the fan can meet the need of extracting and sucking a large amount of the oil smoke. At the same time, the centrifugal fan has the characteristics of extracting air from upper and lower ends and discharging air through the circumferential side; a centrifugal fan which is placed flatly can make reasonable use of the lateral space in the cavity; compared with fan types such as an axial flow fan, choosing a centrifugal fan helps reduce the thickness of the housing, to reduce the space occupied by the integrated stove in the kitchen sink.

[0039] In any of the above embodiments, the range hood assembly is located below the heating assembly; and the second cavity is located at the circumferential side of the first cavity.

[0040] In the embodiment, the position relationship between the heating assembly and the range hood assembly is illustrated. Exemplarily, the housing is provided below the heating assembly. During the assembling process of the integrated stove, the heating assembly is embedded into a mounting port reserved in the kitchen sink to use the upper surface of the heating assembly as a working table; the housing below the heating assembly is blocked by the heating assembly and thus is hidden in the inside of the kitchen sink, when the structure below the heating assembly needs to be cleaned and maintained, the cleaning operation and maintaining operation can be conducted as long as the door body of the kitchen sink is opened.

[0041] The air duct inside the heating assembly extends in the height direction of the integrated stove. By setting the air duct extending in a longitudinal direction, firstly, it helps reduce the air inlet resistance of the air duct and guide the oil smoke into the cavity below, and secondly, setting the air duct extending in a longitudinal

direction can reduce the occupation of the internal space of the heating assembly by the air duct, and thus this provides a convenient condition for arranging the internal working structure of the heating assembly and helps reduce the thickness of the heating assembly, and further achieves the technical effect of optimizing the layout of the structure of the integrated stove.

[0042] On the above basis, the first cavity is located right under the air duct, the second cavity is located at the circumferential side of the first cavity, and arranging the first cavity right under the air duct can provide a convenient condition for a user to disassemble and assemble the filtering member. By arranging the second cavity at the circumferential side of the first cavity, the lateral space inside the housing can be used reasonably, to expand the size of an oil smoke passage on the basis that the thickness of the range hood assembly is not increased, and reduce the resistance to the extraction and suction of the oil smoke, and thus improve the effect of the integrated stove in extracting and sucking the oil smoke.

[0043] In any of the above embodiments, there are multiple filtering members, and the multiple filtering members are arranged side by side in a length direction of the frame.

[0044] In the embodiment, there are multiple filtering members, and the multiple filtering members are arranged side by side in the length direction of the frame. During the mounting of the filtering members, the multiple filtering members are placed sequentially, until the internal space of the frame is filled by the multiple filtering members. On the contrary, during the disassembling of the filtering members, the filtering members at the central part of the frame are firstly disassembled, and then the filtering members at the two ends of the frame are disassembled. Through arranging multiple filtering members, the total length of the filtering structure is increased by splicing multiple filtering members together on the basis of ensuring that the filtering members can pass through the air duct, and thus the area of the filtering surface is increased, then the air inlet area of the integrated stove is increased, and furthermore, the extraction and suction ability of the integrated stove for the oil smoke is improved.

[0045] A baffle plate is provided in the positioning assembly, the baffle plate is connected to the inner ring surface of the frame and extends longitudinally to divide the internal space of the frame into multiple sub cavities arranged side by side. During the mounting process, the multiple filtering members are mounted in multiple sub cavities in a one-to-one correspondence manner. By setting the baffle plate, the positioning accuracy of the multiple filtering members can be improved, gaps between the multiple filtering members that allow the oil smoke to pass through are avoided. Furthermore, the effectiveness of the filtering member in filtering the oil smoke is improved, and the practicality of the integrated stove is further promoted.

[0046] In any of the above embodiments, the inte-

grated stove further comprises a separating assembly which is provided in the air duct, wherein the separating assembly separates the oil from the oil smoke.

[0047] In the embodiment, the integrated stove is further provided with the separating member, and the separating member is provided in the air duct. During the working process, the oil smoke flowing into the air duct firstly flows into the separating member, the separating member separates the oil in the oil smoke from the air to prevent the oil from continuing to flow into the range hood with the air. By setting the separating member, it is possible to prevent the oil in the oil smoke from adhering to the internal structure of the integrated stove, and this prevents the oil from blocking the air duct and filtering member and prevents the oil extracted into the fan from damaging the fan. In addition, the frequency of cleaning the internal oil in the integrated stove is reduced, and thus the technical problems are solved that the fan is easily damaged by oil stains and the cleaning burden inside the integrated stove is heavy.

[0048] In any of the above embodiments, the separating assembly comprises: a support, and the support comprises an air inlet and an air outlet; a filter, provided inside the support, wherein the filter separates the oil from the oil smoke; and the filter is arranged opposite to the air inlet, and the filter is recessed in a direction away from the air inlet.

[0049] In the embodiment, the separating assembly is applied to range hood equipment and performs oil smoke separation to the oil smoke extracted into the equipment, to reduce the oil content in the oil smoke finally discharged out of the range hood equipment. Thus, the pollution to the environment by the discharged oil smoke is reduced, and meanwhile, the accumulation of a large amount of oil inside the equipment is avoided, and the probability is lowered that the oil damages the internal electrical structure of the equipment and even causes fire. In addition, the cleaning cycle of the interior of the range hood equipment can be extended.

[0050] Exemplarily, the separating assembly comprises the support and the filter. The support fixes the filter, and the air inlet and the air outlet are formed in the support, the oil smoke carrying oil particles flows into the interior of the support through the air inlet, and after being separated by the filter, the gaseous oil smoke is discharged out of the support through the air outlet. When the oil smoke passes through the separating assembly, the oil particles contained in the oil smoke will be stuck by the micropores of the filter, and then remain on the filter, and thus the effect of separating the oil from the air is achieved.

[0051] The material of the filter can form multiple micropores, i.e., the filter can capture the oil and further allow the air to pass through at the same time. The commonly used materials comprise a multi-layer stacked metal flat mesh, a metal wire mesh, etc., and a non-metallic mesh can further be configured to prepare the filter.

[0052] In related technologies, the oil filtering assembly inside the range hood equipment has a low efficiency in filtering the oil in the sucked oil smoke, and this renders that there is still a relatively large amount of oil when the oil smoke is discharged out of a smoke pipe, which will cause pollution to the surrounding air and the use environment, and affect the use experience of the product. In addition, the oil that has not been filtered out by the oil filtering assembly will adhere to the internal structure of the range hood equipment, and then, the accumulation of a large amount of oil will cause the phenomenon of short circuit, current leakage and even combustion of internal electrical components, and result in technical problems of poor safety and reliability and high failure rate of the range hood equipment. In addition, the rapid accumulation of the oil inside the range hood equipment will shorten the cleaning cycle of the equipment, and causes a user to frequently clean the oil stains inside the range hood equipment, and will damage the user experience.

[0053] Thus, the filter provided in the present application is arranged opposite to the air inlet, and the filter is recessed in the direction away from the air inlet. By setting the filter recessed towards the inner side of the air inlet, it helps increase the contact area between the oil smoke and the filter, and by increasing the probability of collision between the oil in the oil smoke and the filter, the probability of capturing the oil by the filter is improved, and thus the separation effect of the separating assembly on the oil is enhanced.

[0054] Thus, by setting the filter recessed towards the inside, the oil content in the oil smoke passing through the filter can be reduced, and thus, the content of the oil stain mixed in the finally discharged airflow will be reduced and the ability of the airflow to pollute the indoor environment will be weakened. In addition, the accumulation speed of oil stains inside the range hood equipment can be reduced, and thus the possibility of short circuit, current leakage, or fires in the internal electrical components of the equipment due to the erosion of oil stain is reduced, and at the same time, the cleaning cycle for the interior of the range hood equipment is extended, and the cleaning frequency by a user is reduced. Thus, the technical problems existing in the related technologies are solved, i.e., serious environmental pollution caused by the discharged airflow, poor safety and reliability, high failure rate, high cleaning frequency, and poor user experience. Furthermore, the technical effects of optimizing the structure of the separating assembly, improving the oil separation performance of the separating assembly, enhancing the safety and reliability of the range hood equipment, and providing a convenient condition for users can be achieved.

[0055] In addition, the above separating assembly provided by the present application can further comprise the following additional technical features.

[0056] In the above embodiment, the filter is sectioned by a surface perpendicular to the length direction of the support, and on the obtained cross section, the filter is

distributed symmetrically.

[0057] In the embodiment, the shape of the filtering member is defined. Exemplarily, the filter is sectioned by a surface perpendicular to the length direction of the support, and on the obtained cross section, the left end and the right end of the filter are close to the air inlet, the central part is recessed toward a direction away from the air inlet, and the filter is distributed symmetrically at the two sides of the central line of the support. By setting the symmetrically distributed filter, the flow field characteristics of the internal space of the separating assembly can be optimized, and thus the resistance of the filter to the oil smoke is reduced to improve the air volume inside the separating assembly and then enhance the ability of the range hood equipment to extract the oil smoke. Meanwhile, the symmetrically distributed filter can further reduce the possibility of turbulence or eddies appearing around the filter, and thus reduce aerodynamic noise and improve user experience. Furthermore, the following technical effects are achieved, i.e. optimizing the shape of the filter, reducing the air resistance of the filter, increasing the separating air volume, and enhancing the extraction and suction performance of the range hood equipment to the oil smoke.

[0058] In any of the above embodiments, in the cross section, the filter comprises: a first section extending in a straight line direction; a second section, being symmetrical with the first section and extending in a straight line direction; and a third section, and one end of the third section is connected to the first section and the other end is connected to the second section.

[0059] In the embodiment, based on the aforementioned embodiment, a detailed description of the shape of the filter is provided. Exemplarily, on the obtained cross section, the first section, the second section and the third section are divided on the filter according to the shape. And the first section and the second section are located at the left side and the right side of the third section, and both the first section and the second section extend along a straight line direction, and one ends of the first section and the second section are close to the air inlet, and the other ends of the first section and the second section are connected to the third section. Through setting the first section and the second section extending in the straight line direction at the left area and the right area of the filter, the matching degree between the filter and the flowing direction of the oil smoke can be further improved to increase the contact area between the oil smoke and the filter, and enhance the ability of the filter to capture the oil particles. Furthermore, the technical effects of optimizing the shape of the filter, improving the oil stain separation effect of the separating assembly, and enhancing the safety and reliability of the range hood equipment are achieved.

[0060] In any of the above embodiments, the range of the included angle between the first section and the second section is greater than or equal to 30 ° and less than or equal to 100°.

[0061] In the embodiment, based on the above embodiment, the position relationship between the first section and the second section is defined. Exemplarily, the included angle between the first section and the second section which are set symmetrically and extend along the straight line direction needs to be greater than or equal to 30°, and less than or equal to 100°. Through limiting the included angle α between the first section and the second section to be between 30° to 100°, this helps enhance the ability of the filter to capture the oil particles, and then improve the oil stain separation effect of the separating assembly and enhance the safety and reliability of associated products.

[0062] In any of the above embodiments, in the cross section, the filter is arc-shaped.

[0063] In the embodiment, a filter of a second shape is provided. Exemplarily, on the obtained cross section, the filter is integrally arc-shaped. The surface of the filter in contact with the oil smoke is a smooth transition curved surface, and thus, by setting the filter with the cross section in arc-shaped, the friction between the oil smoke and the filter can be reduced on the basis of increasing the contact area between the oil smoke and the filter. Thus, the aerodynamic resistance of the separating assembly is reduced to increase the air volume circulating inside the separating assembly. Furthermore, it achieves the technical effect of optimizing the shape of the filter and improving the ability of extracting the oil smoke.

[0064] In any of the above embodiments, in the cross section, the filter is V-shaped.

[0065] In the embodiment, a filter of a third shape is provided. Exemplarily, on the obtained cross section, the filter is integrally V-shaped. And the filter with the cross section in V-shaped has a good guiding effect to the separated oil, and the oil stain particles attached to the filter can quickly gather at the bottom of the filter under the effect of the slope of the V-shaped filter and eventually drip through the bottom end of the filter. Thus, it can be seen that by setting the filter with the cross section in V-shaped, the efficiency of guiding the oil can be accelerated on the basis of increasing the contact area between the oil smoke and the filter, and this prevents the accumulation of a large amount of the oil on the filter from affecting the permeability of the filter. Furthermore, the technical effects of optimizing the shape of the filter, improving the practicality and reliability of the filter, and enhancing the oil separation performance of the separating assembly are achieved.

[0066] In any of the above embodiments, the support comprises: a box body, and the air inlet is located in the top part of the box body; a groove, provided in the box body, and part of the filter is located in the groove and attached to the groove, and the groove shapes the filter.

[0067] In the embodiment, the structure of the support is illustrated. Exemplarily, the support comprises the box body, the box body is a main supporting structure on the support and positions and supports other structures such as the filter. The opening in the top part of the box body

forms the air inlet above the support, and the oil smoke passes downwards through the filter from the top part of the box body. By setting the box body with the opening in the top part, the separating assembly can be assembled in an air duct circulating in a longitudinal direction, to help arrange the separating assembly inside the main unit of the range hood equipment.

[0068] On the above basis, the groove is provided in the box body, the opening of the groove faces the air inlet, and the shape of the groove is further recessed in the direction away from the air inlet, and the shape is the same with the shape of the cross section of the pre-designed filter. During the process of assembling the separating assembly, the filter is mounted in the groove and the lower surface of the filter inserted into the groove can be tightly adhered to the inner wall of the groove, and thus, the filter is positioned through the groove. Specifically, the filter can be stuck to the groove with a glue to prevent the filter from being deformed under an external factor such as vibration. Thus, it can be seen that by setting the groove, the filter can maintain an effective separation shape for a long time, and thus the stability of the filter in separating the oil is improved. Furthermore, the technical effects of optimizing the positioning structure of the filter and improving the reliability of the separating assembly in separating the oil can be achieved.

[0069] In any of the above embodiments, the box body comprises an inserting slot, and the end of the filter close to the air outlet is inserted into the inserting slot.

[0070] In the embodiment, a second positioning structure of the filter is provided. Exemplarily, the inserting slot is set in the box body, the opening of the inserting slot is arranged opposite to the opening of the groove, and the inserting slot is close to the edge of the air inlet. During assembling, the left end and the right end of the filter are inserted into the inserting slot, the middle section of the filter is snapped into the groove, and thereby, the filter is limited to a predetermined shape through the inserting slot and the groove, to avoid the deformation of the filter and ensure the effectiveness of the filter in separating the oil.

[0071] In the case of setting the inserting slot, the box body itself can complete the shaping of the filter, and this avoids setting a covering and closing structure in other embodiments. Therefore, the positioning manner helps reduce the complexity of the structure of the support, and thus reduce the processing difficulty of the support and reduce the manufacturing cost of the support.

[0072] In any of the above embodiments, the support further comprises: a cover for covering and closing the air inlet and comprising a through hole; and a pressing and closing part, provided at the bottom of the cover and pressing and closing the surface of the filter away from the groove, and cooperating with the groove to position the filter.

[0073] In the embodiment, a third positioning structure of the filter is provided. Exemplarily, the support further comprises the cover and the pressing and closing part.

The pressing and closing part is mounted on the snapping surface of the cover. After covering and closing the cover on the air inlet area at the top part of the box body, there is a gap between the pressing and closing part and a groove, and the filter is tightly pressed in the gap, and thereby the filter is positioned jointly through the lower surface of the pressing and closing part and the inner wall of the groove. Under the structure, the filter is positioned by the pressing and closing part and the groove, the positioning effect is relatively good, and it is ensured that the filter is kept in a designed predetermined separating shape. At the same time, the structure is convenient for disassembling and assembling the filter, and when it is necessary to disassemble the filter, the filter can be taken out as long as the cover is opened. During mounting the filter, after the filter is mounted in the groove, the assembling is completed as long as the cover is snapped. Furthermore, the technical effects of improving the positioning accuracy of the filter, reducing the difficulty of disassembling and assembling the filter, enhancing the reliability of the oil separation and improving the user experience are achieved.

[0074] The cover is provided with the through hole, and the through hole is opposite to the air inlet in the top part of the box body, to ensure that the oil smoke can pass through the through hole and flow into the air inlet.

[0075] In any of the above embodiments, the separating assembly further comprises a crossbeam, which is provided inside the through hole.

[0076] In the embodiment, the separating assembly further comprises the crossbeam. The crossbeam is provided inside the through hole, and specifically, multiple crossbeams can be provided side by side in the length direction of the through hole. Setting the crossbeams can play a role of blocking large-sized objects, to prevent the large-sized objects falling into the air duct from blocking the internal space of the separating assembly, and thus, the failure rate of separating assembly is reduced.

[0077] Meanwhile, the crossbeam can further provide users with a point of force application during the process of disassembling and assembling the cover. Specifically, during the process of disassembling and assembling the cover, a user can pull the cover out of the box body by holding the crossbeam, and can further move the cover by holding the crossbeam, and thus, the difficulty of disassembling and assembling the cover is reduced and a convenient condition for a user is provided.

[0078] In any of the above embodiments, the separating assembly further comprises screws, and the screws penetrate the box body and are connected to the pressing and closing part, and the screws are recessed into the box body; and the cover and the box body are in snapping connection.

[0079] In the embodiment, the cover and the box body are fastened and connected through the screws. Exemplarily, screw holes are provided in the circumferential side of the box body. Studs are provided on the surface of the pressing and closing part facing the box body. During

the assembling process, the stud is aligned with the screw hole, then the screw penetrates the screw hole and is threaded into the stud to complete the connection between the cover and the box body. The connection structure has the advantage of being detachable, and provides a convenient condition for a user to clean or replace the filter.

[0080] After the screws are assembled, the screws are recessed into the box body, and specifically, the range of the recessed depth c is greater than 0mm, and less than or equal to 1mm. Through the arrangement that the screws are recessed into the box body, it can prevent the metal screws exposed out of the box body from scratching a user, and can further prevent the screws from scratching and damaging the internal structure of the range hood equipment during disassembling and assembling of the separating assembly. Furthermore, the technical effect of improving the security and reliability of separating assembly is achieved.

[0081] On the above basis, one of the cover and the box body is provided with a buckling slot, and the other one is provided with a buckle, and during the process of mounting the cover, the buckle is firstly buckled into the buckling slot to accomplish the initial positioning of the cover and the box body, and then, the cover and the box body are fastened through the screws. Through setting the buckling structure, a user does not need the step of manually aligning the screw hole with the stud, and thus the difficulty of mounting the cover is reduced. Meanwhile, the buckling structure has the advantages of low structural complexity and convenient operation, and this can improve the user experience on the basis of decreasing the cost of the separating assembly.

[0082] In any of the above embodiments, the air outlet is located in the circumferential side of the box body; and the box body further comprises an oil storage groove, and the oil storage groove is located below the filter and collects the oil.

[0083] In the embodiment, the air outlet is provided in the circumferential side of the box body, and the bottom part of the box body is provided with the oil storage groove. The air outlet is opened in the side part of the support, and this can prevent the separated oil from directly flowing out of the air outlet under the action of the gravity. When the amount of the oil adhering to the filter increases, the oil will flow along the surface of the filter to the lower end of the filter and drip into the oil storage groove, and thus, the oil can be stored in the separating assembly. Before the oil storage groove is fully filled with the oil, a user can pour or clean the oil inside the oil storage groove by disassembling the separating assembly, and the separating assembly can be recycled, and specifically, a liquid level sensor can be provided in the oil storage groove to detect the height of the oil level, and an alarm device connected to the liquid level sensor can prompt a user to clean the oil storage groove timely. By setting the oil storage groove, the separating assembly has the ability to collect and store

the oil, then the possibility that the oil pollutes the indoor environment and damages the internal electrical components of range hood equipment is reduced, and thus, the cleaning and maintenance cycle of the separating assembly is extended. Furthermore, it achieves the technical effects of optimizing the structure of the separating assembly, reducing the difficulty of maintaining the separating assembly, and improving the user experience.

[0084] In any of the above embodiments, the separating assembly further comprises a protruding part, located inside the oil storage groove and extending in the length direction of the box body.

[0085] In the embodiment, the separating assembly is further provided with the protruding part. The protruding part is provided in the oil storage groove, and the protruding part extends in the length direction of the box body. Through setting the protruding part, the structural strength of the box body can be strengthened to avoid deformation of the box body during operation and prevent the box body from being warped and deformed. Furthermore, it achieves the technical effects of improving the stability of the support and extending the service life of the separating assembly.

[0086] Exemplarily, part of the area of the bottom wall of the box body is bent upwards to form the protruding part protruding upwards in an oil storage groove, and the structure can be directly formed by a stamping process, and this helps reduce the process complexity of the box body and decrease the manufacturing cost of the box body. Meanwhile, the space formed by protruding upwards can cooperate with positioning ribs on the range hood equipment to play the role of accurately positioning the separating assembly, and thus, the practicality of the separating assembly is improved.

[0087] In any of the above embodiments, the separating assembly further comprises guide ribs, arranged on the circumferential side of the support, extending in the height direction of the support, and used for guiding the support to be inserted downward into the integrated stove; the guide rib comprises a guide slope, and the range of the included angle between the guide slope and the plane in the height direction of the support is greater than or equal to 5° and less than or equal to 35° .

[0088] In the embodiment, the guide ribs are provided on the separating assembly. The guide ribs are provided at the circumferential side of the support. In addition, the guide ribs extend in the height direction of the support. The guide ribs cooperate with a positioning structure on the integrated stove, to guide the separating assembly to the predetermined assembling position, and thus the assembling accuracy and the positioning accuracy of the separating assembly are improved. Exemplarily, a guide slope is provided on the guide rib, and the included angle α between the guide slope and the plane in the height direction of the support is greater than or equal to 5° and less than or equal to 35° , and the limitation of the angle can ensure the reliability and the effectiveness of the guiding, and thus the separating assembly can auto-

matically slide into the air duct.

[0089] Meanwhile, the guide ribs can further play the role of enhancing the strength of the support structure, to lower the possibility of the warpage and deformation of the support and then improve the structural stability of the support.

[0090] In any of the above embodiments, the integrated stove further comprises a flue assembly, connected to the range hood assembly.

[0091] In the embodiment, the integrated stove further comprises the flue assembly. The flue assembly comprises one flue joint and at least one smoke exhaust pipe. When there are multiple smoke exhaust pipes, the multiple smoke exhaust pipes are connected in series, the first end of the flue joint is connected to the air outlet in the housing, and the second end of the flue joint is connected to the mouth of the smoke exhaust pipe. By setting the flue assembly, the oil smoke that has been subjected to oil separation and odor filtration can be discharged to a designated area through the flue assembly. Specifically, a flue assembly extending in a longitudinal direction can be provided, and the filtered air is discharged close to the ground, to lower the possibility that the discharged gas interferes with a user. Furthermore, the practicality and reliability of the integrated stove is enhanced, and the user experience is optimized.

[0092] The additional aspects and advantages of the present application will be obvious in the following description, or can be understood through the implementation of the present application.

BRIEF DESCRIPTION OF THE DRAWINGS

[0093] The above and/or additional aspects and advantages of the present application will be obvious and understood easily from the following description of the embodiments in combination with the accompanying drawings.

FIG. 1 is a schematic view of the structure of an integrated stove provided in an embodiment of the present application;

FIG. 2 is a schematic view of the structure of an integrated stove provided in an embodiment of the present application;

FIG. 3 is a schematic view of the structure of a heating assembly provided in an embodiment of the present application;

FIG. 4 is a schematic view of the structure of a positioning assembly provided in an embodiment of the present application;

FIG. 5 is a schematic view of the structure of a positioning assembly provided in an embodiment of the present application;

FIG. 6 is a schematic view of the structure of an integrated stove provided in an embodiment of the present application;

FIG. 7 is a schematic view of the structure of an integrated stove provided in an embodiment of the present application; 5

FIG. 8 is a schematic view of the structure of an integrated stove provided in an embodiment of the present application; 10

FIG. 9 is a schematic view of the structure of an integrated stove provided in an embodiment of the present application; 15

FIG. 10 is a schematic view of the structure of a positioning assembly provided in an embodiment of the present application; 20

FIG. 11 is a schematic view of the structure of a cover plate provided in an embodiment of the present application;

FIG. 12 is a schematic view of the structure of a positioning assembly provided in an embodiment of the present application; 25

FIG. 13 is a schematic view of the structure of a positioning assembly provided in an embodiment of the present application; 30

FIG. 14 is a schematic view of the structure of an integrated stove provided in an embodiment of the present application; 35

FIG. 15 is a schematic view of the structure of a positioning assembly provided in an embodiment of the present application; 40

FIG. 16 is a schematic view of the structure of a positioning assembly provided in an embodiment of the present application;

FIG. 17 is a schematic view of the structure of an integrated stove provided in an embodiment of the present application; 45

FIG. 18 is a schematic view of the structure of a range hood assembly provided in an embodiment of the present application; 50

FIG. 19 is a schematic view of the structure of a separating assembly provided in an embodiment of the present application; 55

FIG. 20 is a schematic view of the structure of a separating assembly provided in an embodiment of

the present application;

FIG. 21 is an exploded view of a separating assembly provided in an embodiment of the present application;

FIG. 22 is a partial enlarged view of the separating assembly at site A as shown in FIG. 21;

FIG. 23 is a partial enlarged view of the separating assembly at site B as shown in FIG. 21;

FIG. 24 is a schematic view of the structure of a separating assembly provided in an embodiment of the present application;

FIG. 25 is a section view of the separating assembly in direction C-C as shown in FIG. 24;

FIG. 26 is a partial enlarged view of the separating assembly at site D as shown in FIG. 25;

FIG. 27 is a schematic view of the structure of a separating assembly provided in an embodiment of the present application;

FIG. 28 is a schematic view of the structure of a separating assembly provided in an embodiment of the present application;

FIG. 29 is a schematic view of the structure of a separating assembly provided in an embodiment of the present application;

FIG. 30 is a section view of the separating assembly in direction C-C as shown in FIG. 29;

FIG. 31 is a partial enlarged view of the separating assembly at site F as shown in FIG. 30;

FIG. 32 is a schematic view of the structure of a separating assembly provided in an embodiment of the present application;

FIG. 33 is an exploded view of a separating assembly provided in an embodiment of the present application;

FIG. 34 is a schematic view of the structure of a separating assembly provided in an embodiment of the present application;

FIG. 35 is a schematic view of the structure of an integrated stove provided in an embodiment of the present application;

FIG. 36 is a schematic view of the structure of an integrated stove provided in an embodiment of the

present application; and

FIG. 37 is a schematic view of the structure of an integrated stove provided in an embodiment of the present application

[0094] The corresponding relationships between the reference signs and the component names in FIG. 1 to FIG. 37 are as follows:

100: integrated stove, 110: heating assembly, 112: air duct, 120: range hood assembly, 122: housing, 124: cavity, 1242: first cavity, 1244: second cavity, 126: fan, 130: positioning assembly, 131: frame, 132: first grid plate, 133: avoidance port, 134: cover plate, 135: convex rib, 136: second grid plate, 140: filtering member, 150: separating assembly, 1501: crossbeam, 1502: screw, 1504: buckle, 1506: buckling slot, 1508: protruding part, 1509: guide rib, 152: support, 1522: air outlet, 1524: air inlet, 154: filter, 1542: first section, 1544: second section, 1546: third section, 156: box body, 1562: groove, 1564: inserting slot, 1566: oil storage groove, 158: cover, 1582: through hole 159: pressing and closing part.

DETAILED DESCRIPTION OF THE APPLICATION

[0095] To more clearly understand the above purposes, features and advantages of the present application, the present application will be further detailed hereinafter in combination with the accompanying drawings and embodiments. It should be indicated that in the case of no conflict, the embodiments and the features in the embodiments of the present application can be combined with each other.

[0096] Many details are illustrated in the following description for the convenience of a thorough understanding to the present application, but the present application can further be implemented using other embodiments other than these described herein. Therefore, the protection scope of the present application is not limited to the specific embodiments disclosed in the following text.

[0097] An integrated stove provided according to some embodiments of the present application are described hereinafter by referring to FIG. 1 to FIG. 37.

[0098] As shown in FIG. 1, FIG. 2, FIG. 3, FIG. 7, FIG. 35, FIG. 36 and FIG. 37, an embodiment of the present application provides an integrated stove 100, and the integrated stove 100 comprises: a heating assembly 110 for supporting and heating a container and comprising an air duct 112; a range hood assembly 120, connected to the heating assembly 110 and being in communication with the air duct 112, and used for extracting oil smoke by the air duct 112; a positioning assembly 130, arranged inside the range hood assembly 120; and a filtering member 140, detachably connected to the positioning assembly 130, being capable of penetrating through the air duct 112 and used for filtering the oil smoke.

[0099] The arrow in FIG. 37 shows the flowing direction of the oil smoke.

[0100] The present application provides an integrated stove 100, and the integrated stove 100 can concentrate the oil smoke generated during cooking and extract it into the interior of the integrated stove 100, and the oil smoke are discharged back to the indoor environment of the user after they are subjected to oil filtration and odor filtration inside the integrated stove 100, to achieve the internal circulation of the oil smoke, and it is unnecessary to design a complex external air discharge structure.

[0101] The integrated stove 100 comprises the heating assembly 110 and the range hood assembly 120. The heating assembly 110 is a main structure of the integrated stove 100 and configured to position and support other structures on the integrated stove 100. The top part of the heating assembly 110 can provide a cooking operation table for a user, and the container is placed above the heating assembly 110 to support and heat the container through the heating assembly 110, and the container is configured to hold ingredients, and finished food that meets user needs can be cooked on the heating assembly 110.

[0102] The air duct 112 is formed in the heating assembly 110; the first end of the air duct 112 communicates with the space above the heating assembly 110; during the process of cooking the ingredients, the oil smoke are concentrated above the heating assembly 110, and the air duct 112 can allow the oil smoke above the heating assembly 110 to flow into the integrated stove 100. The range hood assembly 120 is a sucking power structure of the integrated stove 100; the range hood assembly 120 is connected to the heating assembly 110, and the range hood assembly 120 is formed with a cavity 124 therein, and the second end of the air duct 112 communicates with the cavity 124. The range hood assembly 120 can extract the oil smoke above the heating assembly 110 through the cavity 124 and the air duct 112. Exemplarily, after a fan 126 is turned on, the range hood assembly 120 extracts the gas in the air duct 112 into the fan through the cavity 124, to form a negative pressure environment in area of the air duct 112, and under the action of the negative pressure environment, the oil smoke above the heating assembly 110 is pressed into the air duct 112, to complete the suction of the oil smoke and prevent the oil smoke from diffusing into the indoor environment.

[0103] The integrated stove 100 further comprises the filtering member 140, and the filtering member 140 is used for filtering the oil smoke extracted into the integrated stove 100, to filter impurities and substances that emit odors contained in the oil smoke, and thus ensure that the gas ultimately discharged back into the indoor environment will not pollute the indoor environment.

[0104] In related technologies, in order to simplify the structure of a product, the filtering member is often mounted in a smoke exhaust pipe in a cabinet; however, when the filtering member needs to be cleaned or replaced, a user needs to disassemble drawers on the cabinet and disassemble the smoke exhaust pipe to accomplish cleaning and replacing operations, as a re-

sult, the integrated stove has the technical problems that the disassembling and assembling of the filtering member are difficult and the maintenance operation for a user is complex. Meanwhile, since the sizes of the filtering members manufactured by different manufacturers are inconsistent, there are differences in the sizes of corresponding smoke exhaust pipes, and as a result, products of different brands and models cannot form a unified standard for the smoke exhaust pipes, and this renders that a user can only purchase a smoke exhaust pipe of the corresponding brand and model when assembling or replacing the smoke exhaust pipe, and thus, the user's cost of maintaining the smoke exhaust pipe increases, and this is not conducive to product promotion.

[0105] Thus, the present application provides the positioning assembly 130; the positioning assembly 130 is mounted in the range hood assembly 120, the filtering member 140 is detachably connected to the positioning assembly 130, and the filtering member 140 is set on the upwind side of a wind turbine inside the range hood assembly 120, i.e., the filtering member 140 is located between the air duct 112 and the wind turbine; the oil smoke that enters the cavity 124 through the air duct 112 needs to firstly pass through the filtering member 140 and then is sucked into the wind turbine. Through providing the filtering member 140 inside the cavity 124, the limitation of the filtering member 140 to the size of the smoke exhaust pipe can be removed, and the fan 126 can match smoke exhaust pipes of different models made by different manufacturers, to reduce the user's maintenance cost of the integrated stove 100, and this is conducive to form a unified standard for the smoke exhaust pipes among different brands. Meanwhile, setting the filtering member 140 inside the cavity 124 can make reasonable use of the lateral space inside the cavity 124 to complete the internal arrangement of the filtering member 140 without increasing the thickness of the integrated stove 100. Thus, it can be seen that arranging the filtering member 140 in the cavity 124 solves the technical problems of high maintenance cost and poor product promotion performance of the integrated stove in related technologies. The technical effects of optimizing the layout of the structure of the integrated stove 100, enhancing the practicality of the integrated stove 100 and improving user experience are achieved.

[0106] Meanwhile, setting the filtering member 140 at the upwind side of the fan 126 can prevent the impurities mixed in the oil smoke from being sucked into the interior of the fan 126, and thus the rate of polluting the fan 126 by the impurities is reduced to extend the maintenance cycle and the service life of the fan 126. Furthermore, the working stability of the integrated stove 100 is improved and the technical effect of lowering the failure rate of the integrated stove 100 is achieved.

[0107] The filtering member 140 provided in the cavity 124 is detachably connected to the positioning assembly 130, and the size of the filtering member 140 is smaller than the size of the air duct 112, and the filtering member

140 can pass through the air duct 112. Through setting the detachable filtering member 140, when the user needs to clean or replace the filtering member 140, the filtering member 140 is disassembled from the positioning assembly 130, and then the cleaned filtering member 140 or a new filtering member 140 is mounted, to rapidly accomplish the maintenance of the filtering member 140. On the above basis, through limiting that the filtering member 140 can pass through the air duct 112, a user can accomplish the disassembling and the assembling of the filtering member 140 through the air duct 112. Exemplarily, a grille at the top end of the air duct 112 is disassembled first, then hands are extended into the cavity 124 through the air duct 112, and the filtering member 140 is taken out from the air duct 112 by manual operations. Based on the same reasons, the mounting process is opposite to the disassembling process, and is not repeated here.

[0108] Thus, it can be seen that the maintenance of the filtering member 140 of the integrated stove 100 defined by the embodiment can be accomplished directly on a kitchen sink, and thus, it is unnecessary to disassemble the drawer on the cabinet, and the complicated operations of disassembling the smoke exhaust pipe is avoided. Furthermore, the technical effects of optimizing the layout of the structure of the integrated stove 100, lowering the maintenance difficulty of the filtering member 140, and improving user experience are achieved.

[0109] As shown in FIG. 2 and FIG. 7, the range hood assembly 120 comprises a housing 122 which is connected to the heating assembly 110 and comprises a cavity 124; the air duct 112 communicates with the cavity 124, the positioning assembly 130 is provided in the cavity 124, and the positioning assembly 130 is arranged opposite to the air duct 112. And the arrow in FIG. 7 shows the disassembling direction of the filtering member 140.

[0110] In the embodiment, the structure of the range hood assembly 120 is illustrated. Exemplarily, the range hood assembly 120 comprises the housing 122. The housing 122 is the structure of a frame 131 of the range hood assembly 120, the housing 122 is connected to the heating assembly 110; in addition, the cavity 124 is formed in the housing 122, and the second end of the air duct 112 communicates with the cavity 124. On the above basis, the positioning assembly 130 provided in the cavity 124 is connected to the housing 122, and the positioning assembly 130 is arranged opposite to the air duct 112, i.e., the positioning assembly 130 is aligned with an air inlet in the housing 122. Through arranging the positioning assembly 130 opposite to the air duct 112, the user can extend a hand into the air duct 112 and then touch the positioning assembly 130, and thus the operation difficulty for the user to disassemble and assemble the filtering member 140 is lowered, and then the technical effects are achieved that the maintenance difficulty of the integrated stove 100 is reduced and user experience is improved.

[0111] As shown in FIG. 4, FIG. 5, FIG. 6, FIG. 7 and

FIG. 8, in an embodiment of the present application, the positioning assembly 130 comprises: a frame 131, connected to the housing 122, and the frame 131 is in an annular shape, the filtering member 140 is provided in the frame 131, and the circumferential side of the frame 131 is arranged opposite to the air duct 112; and a first grid plate 132, connected to the frame 131, located at a first opening end of the frame 131 and used for blocking the filtering member 140. And the arrow in FIG. 6 shows the assembling direction of the filtering member 140.

[0112] In the embodiment, the structure of the positioning assembly 130 is illustrated. Exemplarily, the positioning assembly 130 comprises the frame 131, the frame 131 is in an annular shape, and the filtering member 140 is embedded at the inner side of the annular frame 131, to position the filtering member 140 in a radial direction of the annular frame 131 and prevent the dislocation or disengagement of the filtering member 140. The positioning assembly 130 further comprises the first grid plate 132, the first grid plate 132 is connected to a first port in the frame 131 and covers and closes the first port, and the first grid plate 132 can block the filtering member 140 on the basis of ensuring that an airflow passes through the positioning assembly 130. Specifically, the first grid plate 132 faces a downwind side, a second port of the frame 131 faces the upwind side, and thus the first grid plate 132 is configured to prevent the filtering member 140 from being pushed out of the frame 131. On the above basis, the circumferential side of the frame 131 is arranged opposite to the air duct 112, and this arrangement can prevent the impurities falling into the air duct 112 through the circumferential side of the frame 131, and prevent the impurities from directly falling into the filtering member 140 and blocking the filtering member 140, and thereby, the reliability of the filtering member 140 is improved, and the service life of the filtering member 140 is prolonged.

[0113] During the mounting process, the mounting can be accomplished as long as the filtering member 140 is pushed into the frame 131 through the second port in the frame 131, until the filtering member 140 abuts on the first grid plate 132. On the contrary, when the filtering member 140 needs to be disassembled, the filtering member 140 can be pulled out from the second port by grasping it, and then the filtering member 140 can be disassembled from the frame 131 and taken out through the air duct 112. Thus, it can be seen that the structure provided by the embodiment can protect the filtering member 140 on the basis that the filtering member 140 is effectively positioned, and at the same time, the structure has the advantages of a low structural complexity and a low processing difficulty, and this is conducive to reducing the cost of the positioning component 130.

[0114] As shown in FIG. 10, FIG. 11, FIG. 12 and FIG. 14, in an embodiment of the present application, an avoidance port 133 is provided in the circumferential side of the frame 131 facing the air duct 112, the avoidance port 133 is connected to a second opening end of the frame 131; and the positioning assembly 130 further

comprises a cover plate 134 which is connected to the frame 131 and covers and closes the avoidance port 133. And the arrow in FIG. 14 shows the disassembling direction of the filtering member 140.

[0115] In the embodiment, the avoidance port 133 is provided in the circumferential side of the frame 131 facing the air duct 112, and the avoidance port 133 is connected to the second opening end of the frame 131. After the filtering member 140 is mounted, part of the filtering member 140 is exposed in the avoidance port 133. Through arranging the avoidance port 133 in the frame 131, a user can disassemble the filtering member 140 from the frame 131 by pushing the filtering member 140 exposed in the avoidance port 133, which provides the user with an area of force application, and thus the difficulty of disassembling the filtering member 140 is lowered.

[0116] On the above basis, the positioning assembly 130 further comprises the cover plate 134, and the cover plate 134 is provided openable and closable at the avoidance port 133. When the cover plate 134 is in a closed state, the cover plate 134 covers and closes the avoidance port 133, to prevent contaminants from directly contacting the filtering member 140 in the avoidance port 133. When the cover plate 134 is in an open state, the filtering member 140 in the avoidance port 133 is exposed, a user can directly touch and operate the filtering member 140. Specifically, during the disassembling process, the cover plate 134 is opened firstly, and then the filtering member 140 is disassembled. Through setting the cover plate 134, the probability of contaminating the filtering member 140 by contaminants can be reduced on the basis of lowering the difficulty of disassembling the filtering member 140, and then the service life of the filtering member 140 is extended.

[0117] As shown in FIG. 12 and FIG. 13, in any of the above embodiments, the cover plate 134 and the frame 131 are in hinged connection. And in FIG. 13, the direction of the arrow is the direction along which the cover plate 134 starts movement.

[0118] In the embodiment, in order to cooperate with the cover plate 134, a pair of hinging parts are set on the frame 131; the cover plate 134 has a flat plate shape and has a pair of rotating shaft parts on one side, and the rotating shaft parts cooperate with the hinging parts, and the cover plate 134 can rotate around the rotating shaft parts, and thereby, the open state and the closed state of the cover plate 134 are switched through rotating actions. The hinging structure has the advantages of low structural complexity and strong reliability, and can reduce lower the production cost and the failure rate of the positioning assembly 130 on the basis of meeting the needs of opening and closing the cover plate 134. Meanwhile, compared with the embodiment of setting a split-type cover plate 134, hinging the cover plate 134 on the frame 131 can prevent the cover plate 134 from falling into the depths of the cavity 124, and thus provide a convenient condition for a user to disassemble and as-

semble the filtering member 140.

[0119] As shown in FIG. 13, in any of the above embodiments, the positioning assembly 130 further comprises a convex rib 135 which is provided on the cover plate 134; in the case that the cover plate 134 covers and closes the avoidance port 133, the convex rib 135 blocks the filtering member 140 at the second opening end.

[0120] In the embodiment, the positioning assembly 130 further comprises the convex rib 135, and the convex rib 135 is provided on a covering and closing surface of the cover plate 134; when the cover plate 134 is in a closed state, the convex rib 135 is located at the second opening end of the frame 131, and the filtering member 140 is located between the convex rib 135 and the first grid plate 132, and thereby, the filtering member 140 is blocked through the convex rib 135 at the second opening end. Through setting the convex rib 135 on the cover plate 134, the cover plate 134 can lock the filtering member 140 by the convex rib 135, and thus this prevents the filtering member 140 from dislocating or disengaging from the frame 131 due to the factors such as vibration during the working process. Furthermore, the technical effects are achieved that reliability and stability of positioning the filtering member 140 by the positioning member 130 are improved and the failure rate of the filtering member 140 is reduced.

[0121] As shown in FIG. 15, FIG. 16 and FIG. 17, in an embodiment of the present application, the avoidance port 133 is configured to allow the filtering member 140 to pass through, and the positioning assembly 130 further comprises a second grid plate 136, which is connected to the frame 131, located at the second opening end of the frame 131 and used for blocking the filtering member 140. And in FIG. 16, the direction of the arrow led out from the cover plate 134 is the direction along which the cover plate 134 starts movement, and the direction of the arrow led out from the filtering member 140 is the disassembling direction of the filtering member 140. The direction of the arrow in FIG. 17 is the disassembling direction of the filtering member 140.

[0122] In the embodiment, the size of the filtering member 140 is smaller than the size of the avoidance port 133, and the filtering member 140 can be mounted in the frame 131 through the avoidance port 133. On the above basis, the positioning assembly 130 further comprises the second grid plate 136, the second grid plate 136 is mounted at the second opening end of the frame 131 and covers and closes the second port, and the second grid plate 136 can block the filtering member 140 while ensuring that the airflow passes through the positioning assembly 130.

[0123] In the structure, the filtering member 140 can complete disassembling and assembling actions in the longitudinal direction, which is different from the lateral disassembling and assembling in the above embodiments. During the assembling process of the filtering member 140, the filtering member 140 is inserted into the avoidance port 133 from top to bottom, and on the

contrary, during the disassembling process of the filtering member 140, the filtering member 140 is pulled out of the frame 131 through the avoidance port 133. After the assembling of the filtering member 140 is accomplished, the frame 131, the first grid plate 132 and the second grid plate 136 work together to position the filtering member 140 to ensure that the filtering member 140 can be parked at a predetermined working position. The structure which is disassembled and assembled from top to bottom allows users to directly perform the disassembling and assembling operations through the air duct 112, and helps a user observe whether the filtering member 140 is mounted in place, i.e., the disassembling and assembling structure can further reduce the difficulty of disassembling and assembling the filtering member 140, and achieve the technical effects of optimizing the structure of the positioning assembly 130 and providing a convenient condition for users.

[0124] As shown in FIG. 8, FIG. 9, FIG. 14 and FIG. 17, in an embodiment of the present application, the cavity 124 is divided into a first cavity 1242 and a second cavity 1244 by the first grid plate 132; the first cavity 1242 communicates with the air duct 112 and the second cavity 1244, and the second opening end of the frame 131 is away from the second cavity 1244. And the arrow in FIG. 9 shows the flowing direction of the oil smoke.

[0125] In the embodiment, the positioning assembly 130 is laterally provided in the cavity 124, and the cavity 124 is divided into the first cavity 1242 and the second cavity 1244 by the first grid plate 132 on the positioning assembly 130. And the top end of the first cavity 1242 communicates with the air duct 112, both the frame 131 and the filtering member 140 are provided in the first cavity 1242, the oil smoke flows into the filtering member 140 through the air duct 112 and the first cavity 1242, and penetrates the first grid plate 132 and flows into the second cavity 1244 after filtered by the filtering member 140, and finally is discharged out of the range hood assembly 120 through an air outlet in the housing 122 under the effect of the internal power structure of the range hood assembly 120.

[0126] As shown in FIG. 17 and FIG. 18, in an embodiment of the present application, the range hood assembly 120 further comprises a fan 126 which is provided inside the second cavity 1244. And the arrow in FIG. 18 is the flowing direction of the oil smoke inside the range hood assembly 120.

[0127] In the embodiment, the range hood assembly 120 comprises the fan 126, the fan 126 is provided inside the second cavity 1244, and the fan 126 can extract the oil smoke above the heating assembly 110 through the cavity 124 and the air duct 112. Exemplarily, after the fan 126 is turned on, the fan 126 extracts the gas in the air duct 112 into the interior of the fan 126 through the cavity 124, to form a negative pressure environment in the area of the air duct 112; under the effect of the negative pressure environment, the oil smoke above the heating assembly 110 is pressed into the air duct 112, to complete

extracting and sucking the oil smoke and prevent the oil smoke from diffusing into the indoor environment.

[0128] The fan 126 is a centrifugal fan, and the air inlet end of the fan 126 is located inside the second cavity 1244 and communicates with the cavity 124, and the air outlet end of the fan 126 is formed on the housing 122 to discharge the oil smoke out of the housing 122. The centrifugal fan can pressurize and accelerate the oil smoke extracted into the interior, and this firstly can discharge the oil smoke quickly into the smoke exhaust duct connected to the housing 122, and secondly helps improve the extraction and suction effect for the oil smoke, and thus the fan 126 can meet the need of extracting and sucking a large amount of the oil smoke. At the same time, the centrifugal fan has the characteristics of extracting air from upper and lower ends and discharging air through the circumferential side; a centrifugal fan which is placed flatly can make reasonable use of the lateral space in the cavity 124; compared with fan types such as an axial flow fan, choosing a centrifugal fan helps reduce the thickness of the housing 122, to reduce the space occupied by the integrated stove 100 in the kitchen sink.

[0129] In any of the above embodiments, the range hood assembly 120 is located below the heating assembly 110; and the second cavity 1244 is located at the circumferential side of the first cavity 1242.

[0130] In the embodiment, the position relationship between the heating assembly 110 and the range hood assembly 120 is illustrated. Exemplarily, the housing 122 is provided below the heating assembly 110. During the assembling process of the integrated stove 100, the heating assembly 100 is embedded into a mounting port reserved in the kitchen sink to use the upper surface of the heating assembly 110 as a working table; the housing below the heating assembly 110 is blocked by the heating assembly 110 and thus is hidden in the inside of the kitchen sink, when the structure below the heating assembly 110 needs to be cleaned and maintained, the cleaning operation and maintaining operation can be conducted as long as the door body of the kitchen sink is opened.

[0131] The air duct 112 inside the heating assembly 110 extends in the height direction of the integrated stove 100. By setting the air duct 112 extending in a longitudinal direction, firstly, it helps reduce the air inlet resistance of the air duct 112 and guide the oil smoke into the cavity 124 below, and secondly, setting the air duct 112 extending in a longitudinal direction can reduce the occupation of the internal space of the heating assembly 110 by the air duct 112, and thus this provides a convenient condition for arranging the internal working structure of the heating assembly 110 and helps reduce the thickness of the heating assembly 110, and further achieves the technical effect of optimizing the layout of the structure of the integrated stove 100.

[0132] On the above basis, the first cavity 1242 is located right under the air duct 112, the second cavity

1244 is located at the circumferential side of the first cavity 1242, and arranging the first cavity 1242 right under the air duct 112 can provide a convenient condition for a user to disassemble and assemble the filtering member 140. By arranging the second cavity 1244 at the circumferential side of the first cavity 1242, the lateral space inside the housing 122 can be used reasonably, to expand the size of an oil smoke passage on the basis that the thickness of the range hood assembly 120 is not increased, and reduce the resistance to the extraction and suction of the oil smoke, and thus improve the effect of the integrated stove 100 in extracting and sucking the oil smoke.

[0133] As shown in FIG. 6 and FIG. 16, in an embodiment of the present application, there are multiple filtering members 140, and the multiple filtering members 140 are arranged side by side in a length direction (shown by arrow a in FIG. 4) of the frame 131.

[0134] In the embodiment, there are multiple filtering members 140, and the multiple filtering members 140 are arranged side by side in the length direction of the frame 131. During the mounting of the filtering members 140, the multiple filtering members 140 are placed sequentially, until the internal space of the frame 131 is filled by the multiple filtering members 140. On the contrary, during the disassembling of the filtering members 140, the filtering members 140 at the central part of the frame 131 are firstly disassembled, and then the filtering members 140 at the two ends of the frame 131 are disassembled. Through arranging multiple filtering members 140, the total length of the filtering structure is increased by splicing multiple filtering members 140 together on the basis of ensuring that the filtering members 140 can pass through the air duct 112, and thus the area of the filtering surface is increased, then the air inlet area of the integrated stove 100 is increased, and furthermore, the extraction and suction ability of the integrated stove 100 for the oil smoke is improved.

[0135] A baffle plate is provided in the positioning assembly 130, the baffle plate is connected to the inner ring surface of the frame 131 and extends longitudinally to divide the internal space of the frame 131 into multiple sub cavities arranged side by side. During the mounting process, the multiple filtering members 140 are mounted in multiple sub cavities in a one-to-one correspondence manner. By setting the baffle plate, the positioning accuracy of the multiple filtering members 140 can be improved, gaps between the multiple filtering members 140 that allow the oil smoke to pass through are avoided. Furthermore, the effectiveness of the filtering member 140 in filtering the oil smoke is improved, and the practicality of the integrated stove 100 is further promoted.

[0136] As shown in FIG. 2 and FIG. 19, in an embodiment of the present application, the integrated stove 100 further comprises a separating assembly 150 which is provided in the air duct 112 and used for separating the oil in the oil smoke. And the arrow in FIG. 19 is the flowing direction of the oil smoke in the separating assembly 150.

[0137] In the embodiment, the integrated stove 100 is further provided with the separating member, and the separating member is provided in the air duct 112. During the working process, the oil smoke flowing into the air duct 112 firstly flows into the separating member, the separating member separates the oil in the oil smoke from the air to prevent the oil from continuing to flow into the range hood with the air. By setting the separating member, it is possible to prevent the oil in the oil smoke from adhering to the internal structure of the integrated stove 100, and this prevents the oil from blocking the air duct 112 and filtering member 140 and prevents the oil extracted into the fan 126 from damaging the fan 126. In addition, the frequency of cleaning the internal oil in the integrated stove 100 is reduced, and thus the technical problems are solved that the fan 126 is easily damaged by oil stains and the cleaning burden inside the integrated stove 100 is heavy.

[0138] As shown in FIG. 20, FIG. 21, FIG. 32 and FIG. 33, in the embodiment, the separating assembly 150 comprises: a support 152, and the support 152 comprises an air inlet 1524 and an air outlet 1522; a filter 154, provided inside the support 152, and used for separating the oil from the oil smoke; and the filter 154 is arranged opposite to the air inlet 1524, and the filter 154 is recessed in a direction distal from the air inlet 1524.

[0139] The present application provides a separating assembly 150, and the separating assembly 150 is applied to range hood equipment and used for performing oil smoke separation to the oil smoke extracted into the equipment, to reduce the oil content in the oil smoke finally discharged out of the range hood equipment. Thus, the pollution to the environment by the discharged oil smoke is reduced, and meanwhile, the accumulation of a large amount of oil inside the equipment is avoided, and the probability is lowered that the oil damages the internal electrical structure of the equipment and even causes fire. In addition, the cleaning cycle of the interior of the range hood equipment can be extended.

[0140] Exemplarily, the separating assembly 150 comprises the support 152 and the filter 154. The support 152 is used for fixing the filter 154, and the air inlet 1524 and the air outlet 1522 are formed in the support 152, the oil smoke carrying oil particles flows into the interior of the support 152 through the air inlet 1524, and after being separated by the filter 154, the gaseous oil smoke is discharged out of the support 152 through the air outlet 1522. When the oil smoke passes through the separating assembly 150, the oil particles contained in the oil smoke will be stuck by the micropores of the filter 154, and then remain on the filter 154, and thus the effect of separating the oil from the air is achieved.

[0141] The material of the filter 154 can form multiple micropores, i.e., the filter 154 can capture the oil and further allow the air to pass through at the same time. The commonly used materials comprise a multi-layer stacked metal flat mesh, a metal wire mesh, etc., and a material such as a non-metallic mesh can further be used.

[0142] In related technologies, the oil filtering assembly inside the range hood equipment has a low efficiency in filtering the oil in the sucked oil smoke, and this renders that there is still a relatively large amount of oil when the oil smoke is discharged out of a smoke pipe, which will cause pollution to the surrounding air and the use environment, and affect the use experience of the product. In addition, the oil that has not been filtered out by the oil filtering assembly will adhere to the internal structure of the range hood equipment, and then, the accumulation of a large amount of oil will cause the phenomenon of short circuit, current leakage and even combustion of internal electrical components, and result in technical problems of poor safety and reliability and high failure rate of the range hood equipment. In addition, the rapid accumulation of the oil inside the range hood equipment will shorten the cleaning cycle of the equipment, and causes a user to frequently clean the oil stains inside the range hood equipment, and will damage the user experience.

[0143] Thus, the filter 154 provided in the present application is arranged opposite to the air inlet 1524, and the filter 154 is recessed in the direction distal from the air inlet 1524. By setting the filter 154 recessed towards the inner side of the air inlet 1524, it helps increase the contact area between the oil smoke and the filter 154, and by increasing the probability of collision between the oil in the oil smoke and the filter 154, the probability of capturing the oil by the filter 154 is improved, and thus the separation effect of the separating assembly 150 on the oil is enhanced.

[0144] Thus, by setting the filter 154 recessed towards the inside, the oil content in the oil smoke passing through the filter 154 can be reduced, and thus, the content of the oil stain mixed in the finally discharged airflow will be reduced and the ability of the airflow to pollute the indoor environment will be weakened. In addition, the accumulation speed of oil stains inside the range hood equipment can be reduced, and thus the possibility of short circuit, current leakage, or fires in the internal electrical components of the equipment due to the erosion of oil stain is reduced, and at the same time, the cleaning cycle for the interior of the range hood equipment is extended, and the cleaning frequency by a user is reduced. Thus, the technical problems existing in the related technologies are solved, i.e., serious environmental pollution caused by the discharged airflow, poor safety and reliability, high failure rate, high cleaning frequency, and poor user experience. Furthermore, the technical effects of optimizing the structure of the separating assembly 150, improving the oil separation performance of the separating assembly 150, enhancing the safety and reliability of the range hood equipment, and providing a convenient condition for users can be achieved.

[0145] As shown in FIG. 25, FIG. 26 and FIG. 28, in an embodiment of the present application, the filter 154 is sectioned by a surface perpendicular to the length direction of the support 152, and on the obtained cross section, the filter 154 is distributed symmetrically. And the arrow in

FIG. 25 shows the flowing direction of the oil smoke.

[0146] In the embodiment, the shape of the filtering member is defined. Exemplarily, the filter 154 is sectioned by a surface perpendicular to the length direction of the support 152, and on the obtained cross section, the left end and the right end of the filter 154 are close to the air inlet 1524, the central part is recessed toward a direction distal from the air inlet 1524, and the filter 154 is distributed symmetrically at the two sides of the central line of the support 152. By setting the symmetrically distributed filter 154, the flow field characteristics of the internal space of the separating assembly 150 can be optimized, and thus the resistance of the filter 154 to the oil smoke is reduced to improve the air volume inside the separating assembly 150 and then enhance the ability of the range hood equipment to extract the oil smoke. Meanwhile, the symmetrically distributed filter 154 can further reduce the possibility of turbulence or eddies appearing around the filter 154, and thus reduce aerodynamic noise and improve user experience. Furthermore, the following technical effects are achieved, i.e. optimizing the shape of the filter 154, reducing the air resistance of the filter 154, increasing the separating air volume, and enhancing the extraction and suction performance of the range hood equipment to the oil smoke.

[0147] As shown in FIG. 24 and FIG. 25, in any of the above embodiments, in the cross section, the filter 154 comprises: a first section 1542 extending in a straight line direction; a second section 1544, being symmetrical with the first section 1542 and extending in a straight line direction; and a third section 1546, and one end of the third section 1546 is connected to the first section 1542 and the other end is connected to the second section 1544.

[0148] In the embodiment, based on the aforementioned embodiment, a detailed description of the shape of the filter 154 is provided. Exemplarily, on the obtained cross section, the first section 1542, the second section 1544 and the third section 1546 are divided on the filter 154 according to the shape. And the first section 1542 and the second section 1544 are located at the left side and the right side of the third section 1546, and both the first section 1542 and the second section 1544 extend along a straight line direction, and one ends of the first section 1542 and the second section 1544 are close to the air inlet 1524, and the other ends of the first section 1542 and the second section 1544 are connected to the third section 1546. Through setting the first section 1542 and the second section 1544 extending in the straight line direction at the left area and the right area of the filter 154, the matching degree between the filter 154 and the flowing direction of the oil smoke can be further improved to increase the contact area between the oil smoke and the filter 154, and enhance the ability of the filter 154 to capture the oil particles. Furthermore, the technical effects of optimizing the shape of the filter 154, improving the oil stain separation effect of the separating assembly 150, and enhancing the safety and reliability of the range

hood equipment are achieved.

[0149] In any of the above embodiments, the range of the included angle between the first section 1542 and the second section 1546 is greater than or equal to 30° and less than or equal to 100° .

[0150] In the embodiment, based on the above embodiment, the position relationship between the first section 1542 and the second section 1544 is defined. Exemplarily, the included angle between the first section 1542 and the second section 1544 which are set symmetrically and extend along the straight line direction needs to be greater than or equal to 30° , and less than or equal to 100° . Through limiting the included angle α between the first section 1542 and the second section 1544 to be between 30° to 100° , this helps enhance the ability of the filter 154 to capture the oil particles, and then improve the oil stain separation effect of the separating assembly 100 and enhance the safety and reliability of associated products.

[0151] As shown in FIG. 27, in any of the above embodiments, in the cross section, the filter 154 is arc-shaped. And in FIG. 27, d indicates the radius of filter with the circular arc-shaped.

[0152] In the embodiment, a filter 154 of a second shape is provided. Exemplarily, on the obtained cross section, the filter 154 is integrally arc-shaped. The surface of the filter 154 in contact with the oil smoke is a smooth transition curved surface, and thus, by setting the filter 154 with the cross section in a circular arc-shaped, the friction between the oil smoke and the filter 154 can be reduced on the basis of increasing the contact area between the oil smoke and the filter 154. Thus, the aerodynamic resistance of the separating assembly 150 is reduced to increase the air volume circulating inside the separating assembly 150. Furthermore, it achieves the technical effect of optimizing the shape of the filter 154 and improving the ability of extracting the oil smoke.

[0153] As shown in FIG. 28, in any of the above embodiments, in the cross section, the filter 154 is V-shaped.

[0154] In the embodiment, a filter 154 of a third shape is provided. Exemplarily, on the obtained cross section, the filter 154 is integrally V-shaped. And the filter 154 with the cross section in V-shaped has a good guiding effect to the separated oil, and the oil stain particles attached to the filter 154 can quickly gather at the bottom of the filter 154 under the effect of the slope of the V-shaped filter 154 and eventually drip through the bottom end of the filter 154. Thus, it can be seen that by setting the filter 154 with the cross section in V-shaped, the efficiency of guiding the oil can be accelerated on the basis of increasing the contact area between the oil smoke and the filter 154, and this prevents the accumulation of a large amount of the oil on the filter 154 from affecting the permeability of the filter 154. Furthermore, the technical effects of optimizing the shape of the filter 154, improving the practicality and reliability of the filter 154, and enhancing the oil separation performance of the separating assembly 150 are achieved.

[0155] As shown in FIG. 21 and FIG. 23, in an embodiment of the present application, the support 152 comprises: a box body 156, and the air inlet 1524 is located in the top part of the box body 156; a groove 1562, provided in the box body 156, and part of the filter 154 is located in the groove 1562 and attached to the groove 1562, and the groove 1562 is used for positioning the filter 154.

[0156] In the embodiment, the structure of the support 152 is illustrated. Exemplarily, the support 152 comprises the box body 156, the box body 156 is a main supporting structure on the support 152 and used for positioning and supporting other structures such as the filter 154. The opening in the top part of the box body 156 forms the air inlet 1524 above the support 152, and the oil smoke passes downwards through the filter 154 from the top part of the box body 156. By setting the box body 156 with the opening in the top part, the separating assembly 150 can be assembled in an air duct 112 circulating in a longitudinal direction, to help arrange the separating assembly 150 inside the main unit of the range hood equipment.

[0157] On the above basis, the groove 1562 is provided in the box body 156, the opening of the groove 1562 faces the air inlet 1524, and the shape of the groove 1562 is further recessed in the direction distal from the air inlet 1524, and the shape is the same with the shape of the cross section of the pre-designed filter 154. During the process of assembling the separating assembly 150, the filter 154 is mounted in the groove 1562 and the lower surface of the filter 154 inserted into the groove 1562 can be tightly adhered to the inner wall of the groove 1562, and thus, the filter 154 is shaped through the groove 1562. Specifically, the filter 154 can be stuck to the groove 1562 with a glue to prevent the filter 154 from being deformed under an external factor such as vibration. Thus, it can be seen that by setting the groove 1562, the filter 154 can maintain an effective separation shape for a long time, and thus the stability of the filter 154 in separating the oil is improved. Furthermore, the technical effects of optimizing the positioning structure of the filter 154 and improving the reliability of the separating assembly 150 in separating the oil can be achieved.

[0158] As shown in FIG. 34, in any of the above embodiments, the box body 156 comprises an inserting slot 1564, and the end of the filter 154 close to the air outlet 1522 is inserted into the inserting slot 1564.

[0159] In the embodiment, a second positioning structure of the filter 154 is provided. Exemplarily, the inserting slot 1564 is set in the box body 156, the opening of the inserting slot 1564 is arranged opposite to the opening of the groove 1562, and the inserting slot 1564 is close to the edge of the air inlet. During assembling, the left end and the right end of the filter 154 are inserted into the inserting slot 1564, the middle section of the filter 154 is snapped into the groove 1562, and thereby, the filter 154 is limited to a predetermined shape through the inserting slot 1564 and the groove 1562, to avoid the deformation of the filter 154 and ensure the effectiveness of the filter 154 in

separating the oil.

[0160] In the case of setting the inserting slot 1564, the box body 156 itself can complete the shaping of the filter 154, and this avoids setting a covering and closing structure in other embodiments. Therefore, the positioning manner helps reduce the complexity of the structure of the support 152, and thus reduce the processing difficulty of the support 152 and reduce the manufacturing cost of the support 152.

[0161] As shown in FIG. 21 and FIG. 25, in any of the above embodiments, the support 152 further comprises: a cover 158 for covering and closing the air inlet 1524 and comprising a through hole 1582; and a pressing and closing part 159, provided at the bottom of the cover 158 and pressing and closing the surface of the filter 154 away from the groove 1562, and cooperating with the groove 1562 to position the filter 154.

[0162] In the embodiment, a third positioning structure of the filter 154 is provided. Exemplarily, the support 152 further comprises the cover 158 and the pressing and closing part 159. The pressing and closing part 159 is mounted on the snapping surface of the cover 158. After covering and closing the cover 158 on the air inlet area at the top part of the box body 156, there is a gap between the pressing and closing part 159 and the groove 1562, and the filter 154 is tightly pressed in the gap, and thereby the filter 154 is positioned jointly through the lower surface of the pressing and closing part 159 and the inner wall of the groove 1562. Under the structure, the filter 154 is positioned by both the pressing and closing part 159 and the groove 1562, the positioning effect is relatively good, and it is ensured that the filter 154 is kept in a designed predetermined separating shape. At the same time, the structure is convenient for disassembling and assembling the filter 154, and when it is necessary to disassemble the filter 154, the filter 154 can be taken out as long as the cover 158 is opened. During mounting the filter 154, after the filter 154 is mounted in the groove 1562, the assembling is completed as long as the cover 158 is snapped. Furthermore, the technical effects of improving the positioning accuracy of the filter 154, reducing the difficulty of disassembling and assembling the filter 154, enhancing the reliability of the oil separation and improving the user experience are achieved.

[0163] The cover 158 is provided with the through hole 1582, and the through hole 1582 is opposite to the air inlet 1524 in the top part of the box body 156, to ensure that the oil smoke can pass through the through hole 1582 and flow into the air inlet 1524.

[0164] As shown in FIG. 20 and FIG. 21, in any of the above embodiments, the separating assembly 150 further comprises a crossbeam 1501, which is provided inside the through hole 1582.

[0165] In the embodiment, the separating assembly 150 further comprises the crossbeam 1501. The crossbeam 1501 is provided inside the through hole 1582, and specifically, multiple crossbeams 1501 can be provided side by side in the length direction of the through hole

1582. Setting the crossbeams 1501 can play a role of blocking large-sized objects, to prevent the large-sized objects falling into the air duct 112 from blocking the internal space of the separating assembly 150, and thus, the failure rate of separating assembly 150 is reduced.

[0166] Meanwhile, the crossbeam 1501 can further provide users with a point of force application during the process of disassembling and assembling the cover 158. Specifically, during the process of disassembling and assembling the cover 158, a user can pull the cover 158 out of the box body 156 by holding the crossbeam 1501, and can further move the cover 158 by holding the crossbeam 1501, and thus, the difficulty of disassembling and assembling the cover 158 is reduced and a convenient condition for a user is provided.

[0167] As shown in FIG. 21, FIG. 22, FIG. 23 and FIG. 31, in any of the above embodiments, the separating assembly 150 further comprises screws 1502, and the screws 1502 penetrate the box body 156 and are connected to the pressing and closing part 159, and the screws 1502 are recessed into the box body 156; and the cover 158 and the box body 156 are in snapping connection.

[0168] In the embodiment, the cover 158 and the box body 156 are fastened and connected through the screws 1502. Exemplarily, screw holes are provided in the circumferential side of the box body 156. Studs are provided on the surface of the pressing and closing part 159 facing the box body 156. During the assembling process, the stud is aligned with the screw hole, then the screw 1502 penetrates the screw hole and is threaded into the stud to complete the connection between the cover 158 and the box body 156. The connection structure has the advantage of being detachable, and provides a convenient condition for a user to clean or replace the filter 154.

[0169] As shown in FIG. 29, FIG. 30 and FIG. 31, and after the screws 1502 are assembled, the screws 1502 are recessed into the box body 156, and specifically, the range of the recessed depth c is greater than 0mm and less than or equal to 1mm. Through the arrangement that the screws 1502 are recessed into the box body 156, it can prevent the metal screws 1502 exposed out of the box body 156 from scratching a user, and can further prevent the screws 1502 from scratching and damaging the internal structure of the range hood equipment during disassembling and assembling of the separating assembly 150. Furthermore, the technical effect of improving the security and reliability of separating assembly 150 is achieved.

[0170] On the above basis, one of the cover 158 and the box body 156 is provided with a buckling slot 1506, and the other one is provided with a buckle 1504, and during the process of mounting the cover 158, the buckle 1504 is firstly buckled into the buckling slot 1506 to accomplish the initial positioning of the cover 158 and the box body 156, and then, the cover 158 and the box body 156 are fastened through the screws 1502. Through

setting the buckling structure, a user does not need the step of manually aligning the screw hole with the stud, and thus the difficulty of mounting the cover 158 is reduced. Meanwhile, the buckling structure has the advantages of low structural complexity and convenient operation, and this can improve the user experience on the basis of decreasing the cost of the separating assembly 150.

[0171] As shown in FIG. 21, FIG. 25 and FIG. 34, in an embodiment of the present application, the air outlet 1522 is located in the circumferential side of the box body 156; and the box body 156 further comprises an oil storage groove 1566, the oil storage groove 1566 is located below the filter 154 and used for collecting the oil.

[0172] In the embodiment, the air outlet 1522 is provided in the circumferential side of the box body 156, and the bottom part of the box body 156 is provided with the oil storage groove 1566. The air outlet 1522 is opened in the side part of the support, and this can prevent the separated oil from directly flowing out of the air outlet 1522 under the action of the gravity. When the amount of the oil adhering to the filter 154 increases, the oil will flow along the surface of the filter 154 to the lower end of the filter 154 and drip into the oil storage groove 1566, and thus, the oil can be stored in the separating assembly 150. Before the oil storage groove 1566 is fully filled with the oil, a user can pour or clean the oil inside the oil storage groove 1566 by disassembling the separating assembly 150, and the separating assembly 150 can be recycled, and specifically, a liquid level sensor can be provided in the oil storage groove 1566 to detect the height of the oil level, and an alarm device connected to the liquid level sensor can prompt a user to clean the oil storage groove 1566 timely. By setting the oil storage groove 1566, the separating assembly 150 has the ability to collect and store the oil, then the possibility that the oil pollutes the indoor environment and damages the internal electrical components of range hood equipment is reduced, and thus, the cleaning and maintenance cycle of the separating assembly 150 is extended. Furthermore, it achieves the technical effects of optimizing the structure of the separating assembly 150, reducing the difficulty of maintaining the separating assembly 150, and improving the user experience.

[0173] In any of the above embodiments, the separating assembly 150 further comprises a protruding part 1508, located inside the oil storage groove 1566 and extending in the length direction of the box body 156.

[0174] In the embodiment, the separating assembly 150 is further provided with the protruding part 1508. The protruding part 1508 is provided in the oil storage groove 1566, and the protruding part 1508 extends in the length direction of the box body 156. Through setting the protruding part 1508, the structural strength of the box body 156 can be strengthened to avoid deformation of the box body 156 during operation and prevent the box body 156 from being warped and deformed. Furthermore, it achieves the technical effects of improving the stability of

the support 152 and extending the service life of the separating assembly 150.

[0175] Exemplarily, part of the area of the bottom wall of the box body 156 is bent upwards to form the protruding part 1508 protruding upwards in an oil storage groove, and the structure can be directly formed by a stamping process, and this helps reduce the process complexity of the box body 156 and decrease the manufacturing cost of the box body 156. Meanwhile, the space formed by protruding upwards can cooperate with positioning ribs on the range hood equipment to play the role of accurately positioning the separating assembly 150, and thus, the practicality of the separating assembly 150 is improved.

[0176] As shown in FIG. 25 and FIG. 26, in any of the above embodiments, the separating assembly 150 further comprises guide ribs 1509, arranged on the circumferential side of the support 152, extending in the height direction (shown by arrow b in FIG. 19) of the support 152, and used for guiding the support 152 to be inserted downward into the integrated stove 100; the guide rib 1509 comprises a guide slope, and the range of the included angle between the guide slope and the plane in the height direction of the support 152 is greater than or equal to 5° and less than or equal to 35°.

[0177] In the embodiment, the guide ribs 1509 are provided on the separating assembly 150. The guide ribs 1509 are provided at the circumferential side of the support 152. In addition, the guide ribs 1509 extend in the height direction of the support 152. The guide ribs cooperate with a positioning structure on the integrated stove 100, to guide the separating assembly 150 to the predetermined assembling position, and thus the assembling accuracy and the positioning accuracy of the separating assembly 150 are improved. Exemplarily, a guide slope is provided on the guide rib 1509, and the included angle *b* between the guide slope and the plane in the height direction of the support 152 is greater than or equal to 5° and less than or equal to 35°, and the limitation of the angle can ensure the reliability and the effectiveness of the guiding, and thus the separating assembly 150 can automatically slide into the air duct 112.

[0178] Meanwhile, the guide ribs 1509 can further play the role of enhancing the strength of the support structure 152, to lower the possibility of the warpage and deformation of the support 152 and then improve the structural stability of the support 152.

[0179] In any of the above embodiments, the integrated stove 100 further comprises a flue assembly, connected to the range hood assembly 120.

[0180] In the embodiment, the integrated stove 100 further comprises the flue assembly. The flue assembly comprises one flue joint and at least one smoke exhaust pipe. When there are multiple smoke exhaust pipes, the multiple smoke exhaust pipes are connected in series, the first end of the flue joint is connected to the air outlet in the housing 122, and the second end of the flue joint is connected to the mouth of the smoke exhaust pipe. By

setting the flue assembly, the oil smoke that has been subjected to oil separation and odor filtration can be discharged to a designated area through the flue assembly. Specifically, a flue assembly extending in a longitudinal direction can be provided, and the filtered air is discharged close to the ground, to lower the possibility that the discharged gas interferes with a user. Furthermore, the practicality and reliability of the integrated stove 100 is enhanced, and the user experience is optimized.

[0181] It needs to be indicated that in the claims, the description and the accompanying drawings of the present application, the term of "multiple" indicates two or more than two, unless otherwise explicitly specified or defined; the orientation or position relations indicated by the terms of "upper", "lower", and the like are based on the orientation or position relations shown in the accompanying drawings, and they are just intended to conveniently describe the present application and simplify the description, and are not intended to indicate or imply that the devices or units as indicated should have specific directions or should be configured or operated in specific orientations, and then should not be construed as limitations to the present application. The terms of "mounting", "connected to", "connected", "fixing" and the like should be understood in a broad sense, for example, "connected" may be a fixed connection, and may further be a removable connection, or an integral connection; and "connected to" may be a direct connection and may further be an indirect connection through an intermediate medium. A person of ordinary skills in the art could understand the specific meanings of the terms in the present application according to specific situations.

[0182] In the claims, the description and the accompanying drawings of the present specification, the descriptions of the phrases "one embodiment", "some embodiments" and "specific embodiments" and the like mean that the specific features, structures, materials or characteristics described in combination with the embodiment(s) or example(s) are included in at least one embodiment or example of the present application. In the specification, the schematic representation of the above phrases does not necessarily refer to the same embodiment or example. Moreover, the described particular features, structures, materials or characteristics may be combined in a suitable manner in any one or more of the embodiments or examples.

[0183] The descriptions above are only some embodiments of the present application, and are not configured to limit the present application. For a person skilled in the art, the present application may have various changes and variations. Any modifications, equivalent substitutions, improvements, etc. made within the spirit and principle of the present application shall all be included in the protection scope of the present application.

Claims**1.** An integrated stove, comprising:

a heating assembly for supporting and heating a container and comprising an air duct;
 a range hood assembly, connected to the heating assembly and being in communication with the air duct, wherein the range hood assembly extracts oil smoke by the air duct;
 a positioning assembly, arranged inside the range hood assembly; and
 a filtering member, detachably connected to the positioning assembly, being capable of penetrating through the air duct, wherein the filtering member filters the oil smoke.

2. The integrated stove according to claim 1, wherein, the range hood assembly comprises:

a housing, connected to the heating assembly, and comprising a cavity;
 wherein, the air duct communicates with the cavity, the positioning assembly is provided in the cavity, and the positioning assembly is arranged opposite to the air duct.

3. The integrated stove according to claim 2, wherein, the positioning assembly comprises:

a frame, connected to the housing, wherein the frame is in an annular shape, the filtering member is provided in the frame, and a circumferential side of the frame is arranged opposite to the air duct; and
 a first grid plate, connected to the frame, located at a first opening end of the frame (131), wherein the first grid plate blocks the filtering member.

4. The integrated stove according to claim 3, wherein, an avoidance port is provided in the circumferential side of the frame facing the air duct, the avoidance port is connected to a second opening end of the frame; and the positioning assembly further comprises:

a cover plate, connected to the frame, and covering and closing the avoidance port

5. The integrated stove according to claim 4, wherein, the cover plate and the frame are in hinged connection.**6.** The integrated stove according to claim 4, wherein, the positioning assembly further comprises:
 a convex rib, provided on the cover plate; wherein, in the case that the cover plate covers and closes the avoidance port, the convex rib blocks the filtering member at the second opening end.**7.** The integrated stove according to claim 4, wherein, the avoidance port allows the filtering member to pass through, and the positioning assembly further comprises:

a second grid plate, connected to the frame, located at the second opening end of the frame, wherein the second grid plate (136) blocks the filtering member.

8. The integrated stove according to claim 3, wherein,

the cavity is divided into a first cavity and a second cavity by the first grid plate; and
 the first cavity communicates with the air duct and the second cavity, and the second opening end of the frame is away from the second cavity.

9. The integrated stove according to claim 8, wherein, the range hood assembly further comprises:
 a fan, provided inside the second cavity.**10.** The integrated stove according to claim 8, wherein,

the range hood assembly is located below the heating assembly; and
 the second cavity is located at a circumferential side of the first cavity.

11. The integrated stove according to claim 3, wherein, there are multiple filtering members, and the multiple filtering members are arranged side by side in a length direction of the frame.**12.** The integrated stove according to any one of claims 1 to 11, further comprising:

a separating assembly, provided in the air duct, wherein the separating assembly (150) separates oil from the oil smoke.

13. The integrated stove according to claim 12, comprising:

a support, comprising an air inlet and an air outlet; and
 a filter, provided inside the support, wherein the filter separates the oil from the oil smoke;
 wherein, the filter is arranged opposite to the air inlet, and the filter is recessed in a direction away from the air inlet.

14. The integrated stove according to claim 13, wherein, the filter is sectioned by a surface perpendicular to a length direction of the support, and on an obtained cross section, the filter is distributed symmetrically.**15.** The integrated stove according to claim 14, wherein, in the cross section, the filter comprises:

a first section, extending in a straight line direc-

- tion;
a second section, being symmetrical with the first section and extending in the straight line direction; and
- a third section, wherein one end of the third section is connected to the first section and the other end is connected to the second section.
- 16.** The integrated stove according to claim 15, wherein, a range of an included angle between the first section and the second section is greater than or equal to 30° and less than or equal to 100°.
- 17.** The integrated stove according to claim 14, wherein, the filter in the cross section is arc-shaped.
- 18.** The integrated stove according to claim 14, wherein, the filter in the cross section is V-shaped.
- 19.** The integrated stove according to claim 13, wherein, the support comprises:
- a box body, wherein the air inlet is located in a top part of the box body; and
- a groove, provided in the box body, wherein part of the filter is located in the groove and attached to the groove, and the groove shapes the filter.
- 20.** The integrated stove according to claim 19, wherein, the box body comprises an inserting slot, and an end of the filter close to the air outlet is inserted into the inserting slot.
- 21.** The integrated stove according to claim 19, wherein, the support further comprises:
- a cover for covering and closing the air inlet, comprising a through hole; and
- a pressing and closing part, provided at bottom of the cover, and pressing and closing a surface of the filter away from the groove, and cooperating with the groove to position the filter.
- 22.** the integrated stove according to claim 21, further comprising:
- a crossbeam, provided inside the through hole.
- 23.** The integrated stove according to claim 21, further comprising:
- screws, wherein the screws penetrate the box body and are connected to the pressing and closing part, and the screws are recessed into the box body; and
- the cover and the box body are in snapping connection.
- 24.** The integrated stove according to claim 19, wherein, the air outlet is located in a circumferential side of the box body; and
- the box body further comprises an oil storage groove, and the oil storage groove is located below the filter and collects the oil.
- 25.** The integrated stove according to claim 24, further comprising:
- a protruding part, located inside the oil storage groove and extending in a length direction of the box body.
- 26.** The integrated stove according to any one of claims 13 to 25, further comprising:
- guide ribs, arranged on a circumferential side of the support, extending in a height direction of the support, and guiding the support to be inserted downward into the integrated stove;
- wherein, the guide rib comprises a guide slope, and a range of an included angle between the guide slope and a plane in the height direction of the support is greater than or equal to 5° and less than or equal to 35°.
- 27.** The integrated stove according to any one of claims 1 to 11, further comprising:
- a flue assembly, connected to the range hood assembly.

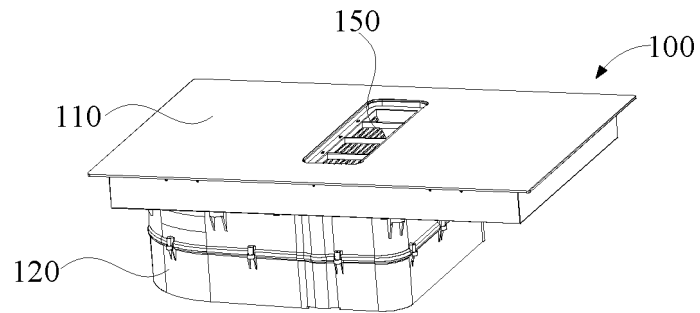


FIG. 1

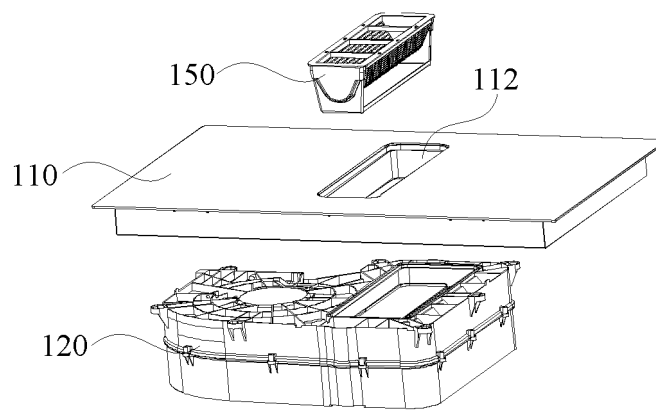


FIG. 2

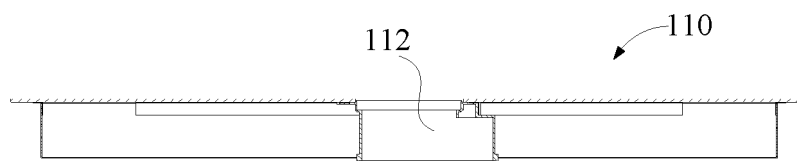


FIG. 3

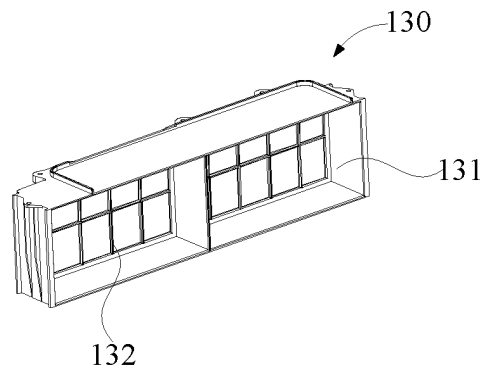


FIG. 4

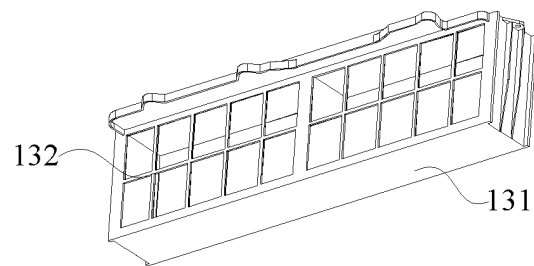


FIG. 5

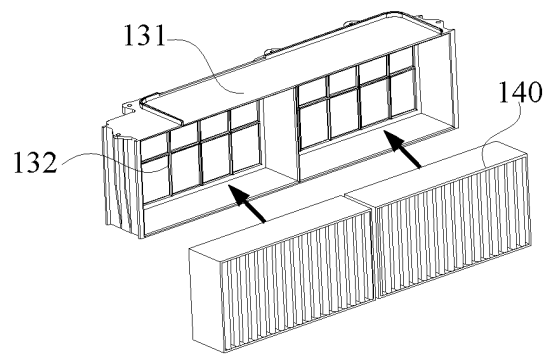


FIG. 6

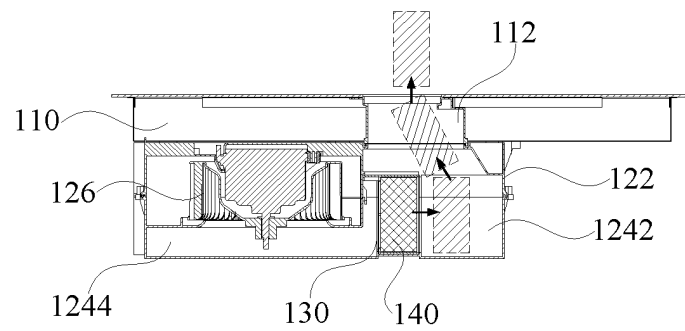


FIG. 7

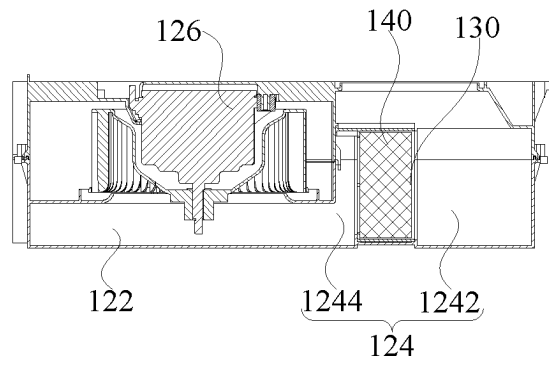


FIG. 8

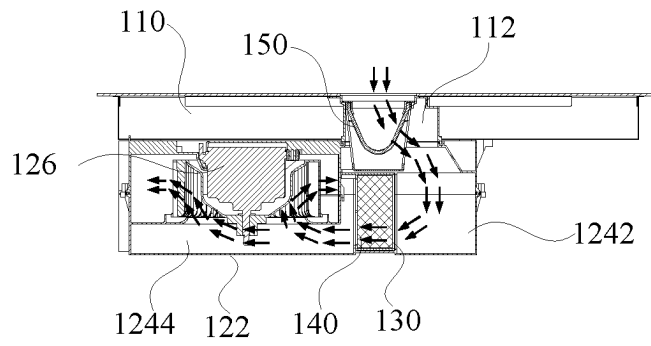


FIG. 9

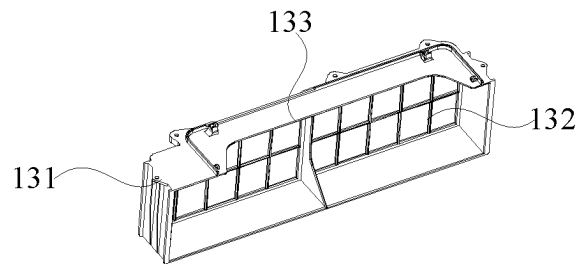


FIG. 10

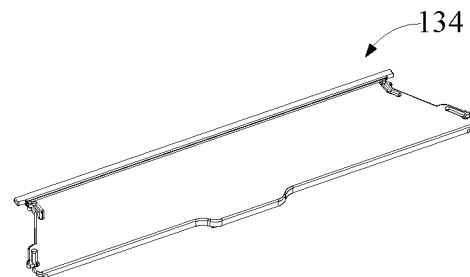


FIG. 11

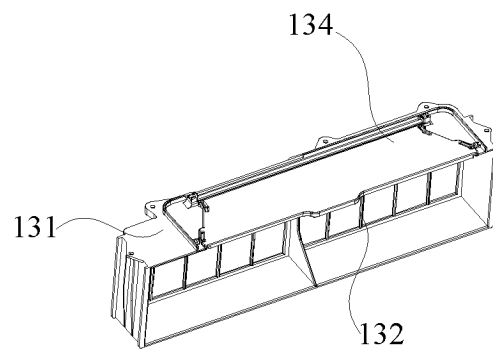


FIG. 12

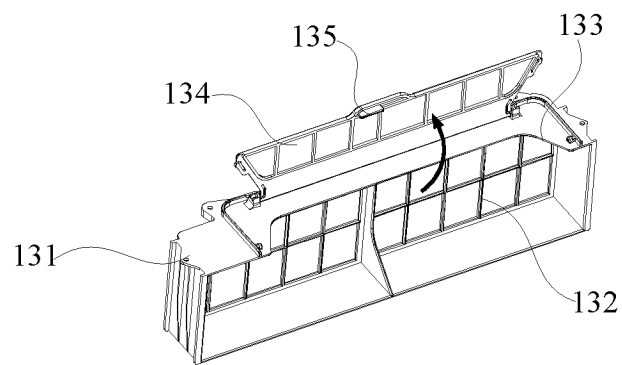


FIG. 13

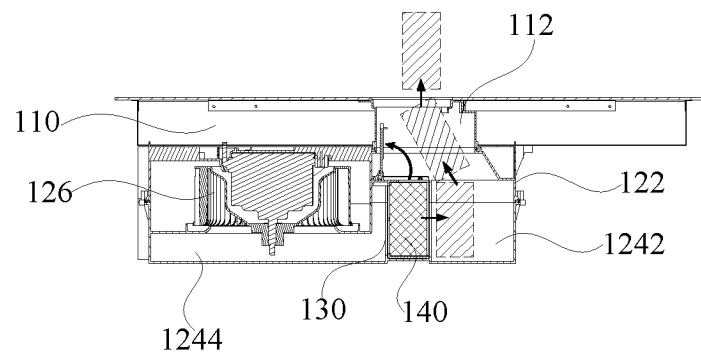


FIG. 14

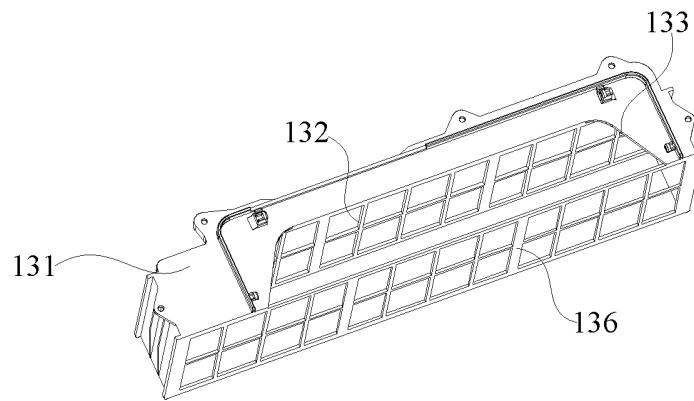


FIG. 15

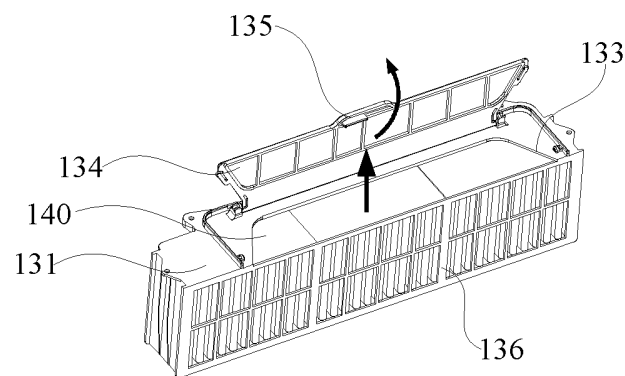


FIG. 16

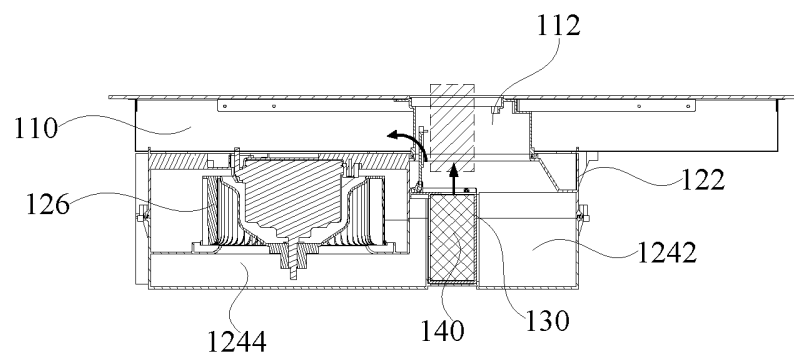


FIG. 17

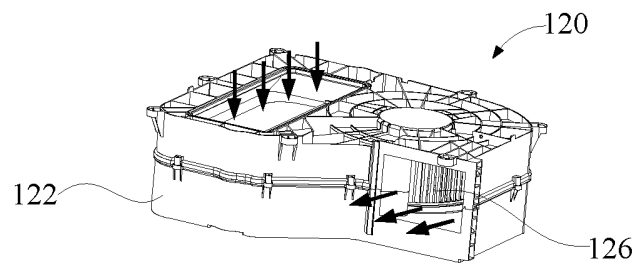


FIG. 18

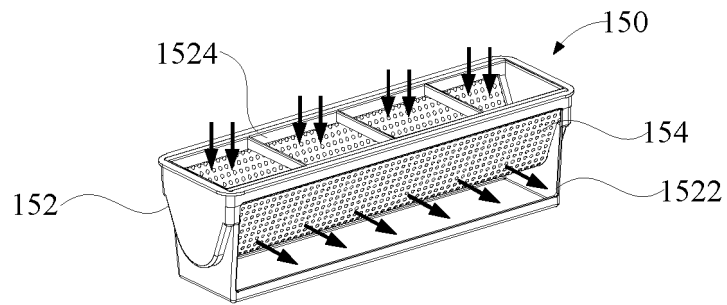


FIG. 19

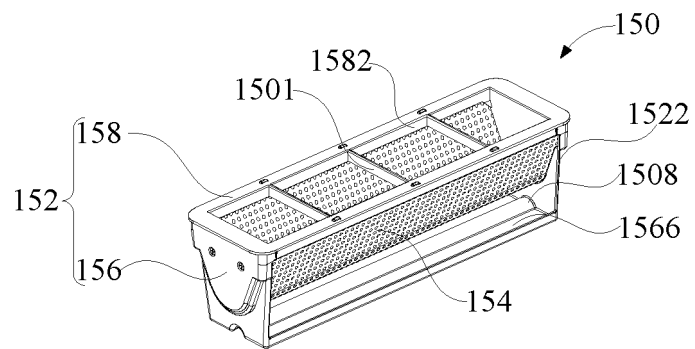


FIG. 20

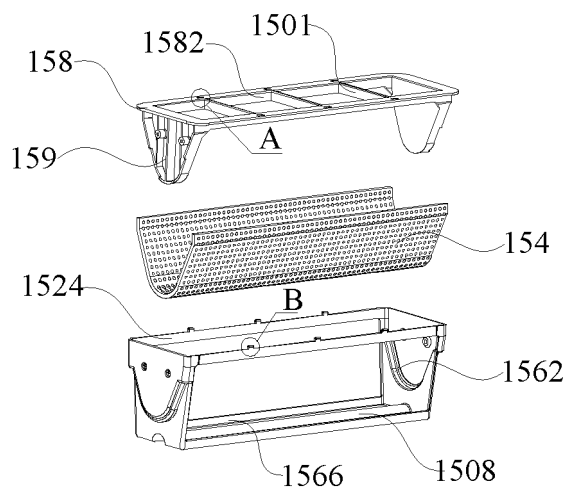


FIG. 21

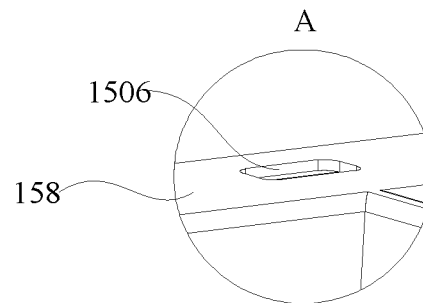


FIG. 22

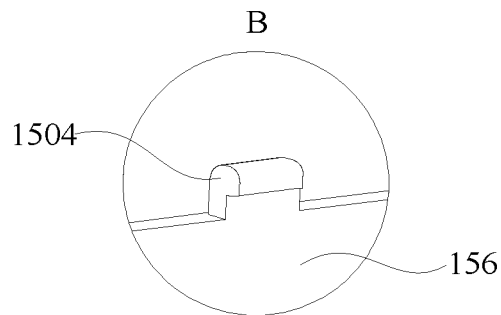


FIG. 23

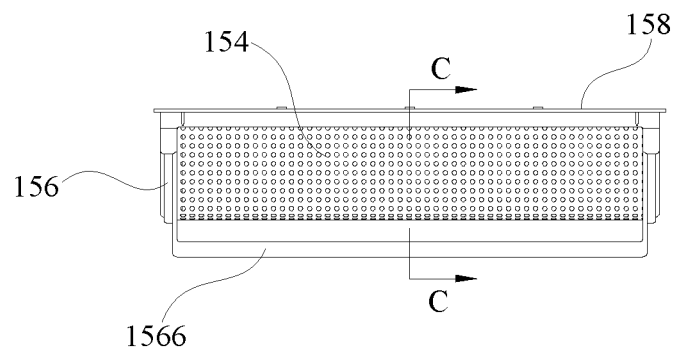


FIG. 24

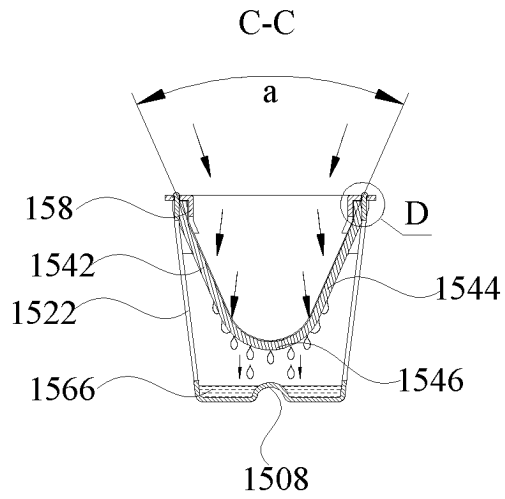


FIG. 25

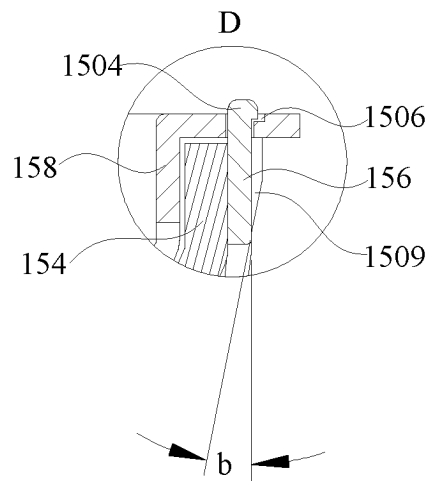


FIG. 26

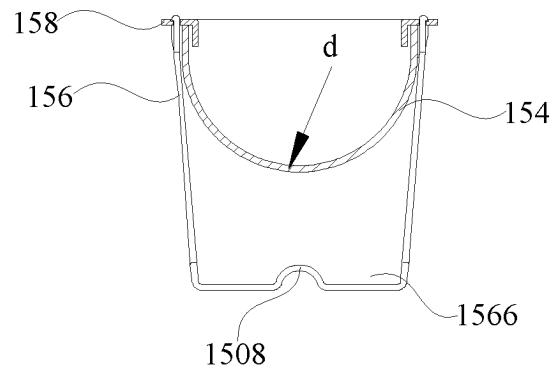


FIG. 27

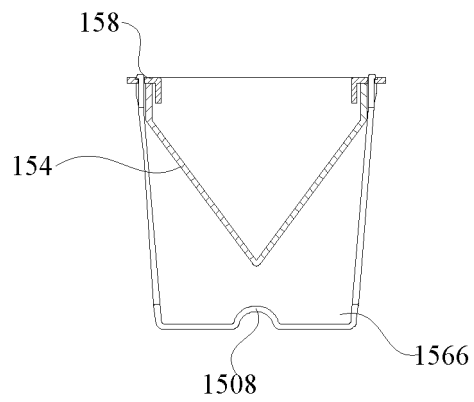


FIG. 28

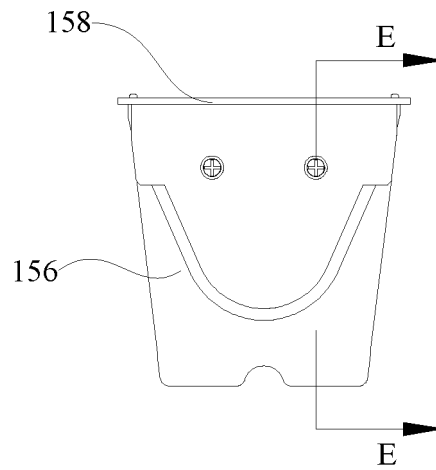


FIG. 29

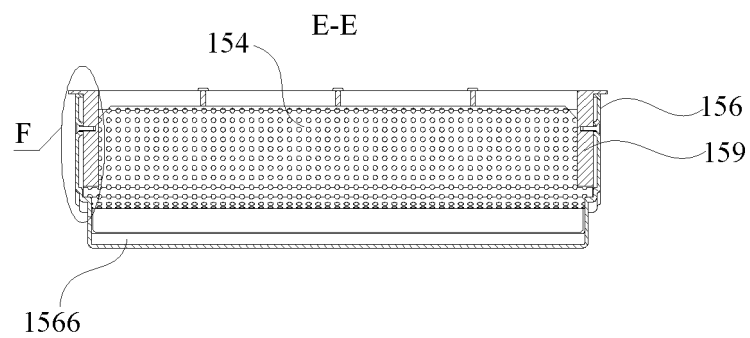


FIG. 30

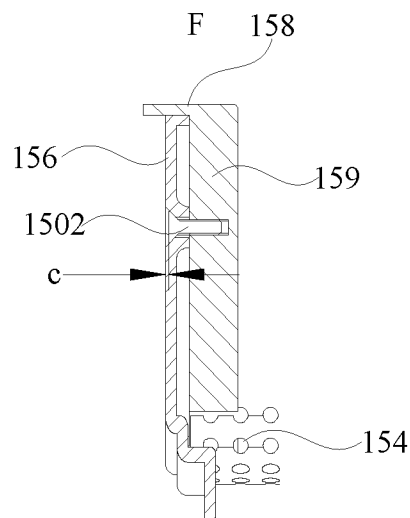


FIG. 31

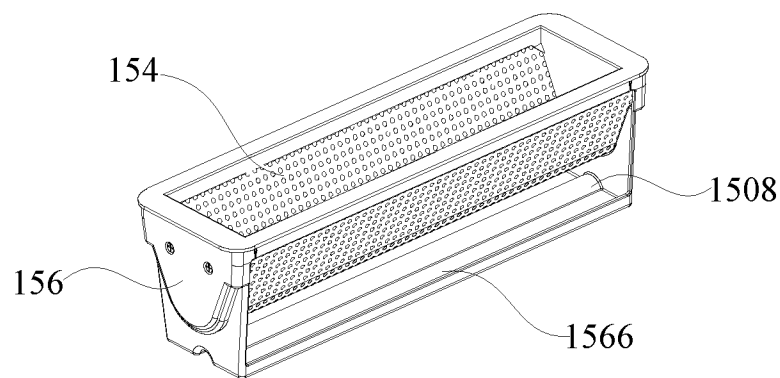


FIG. 32

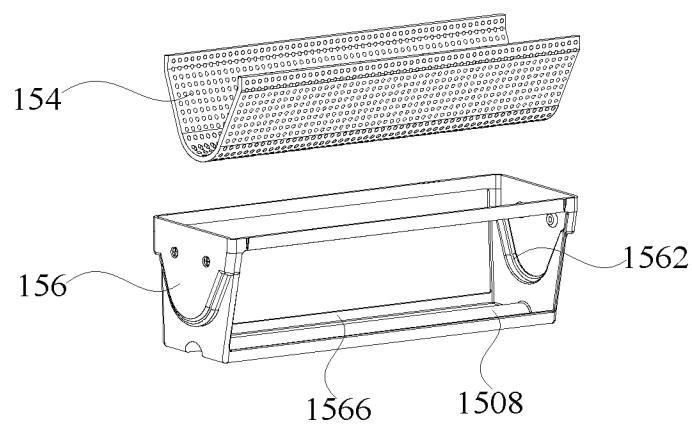


FIG. 33

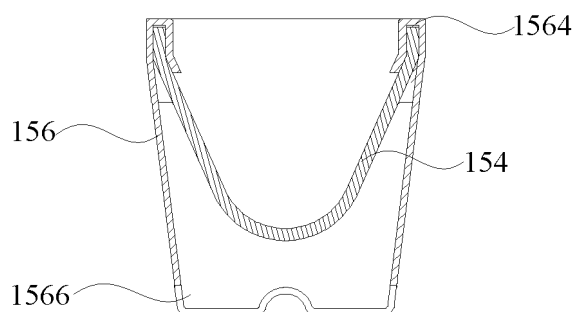


FIG. 34

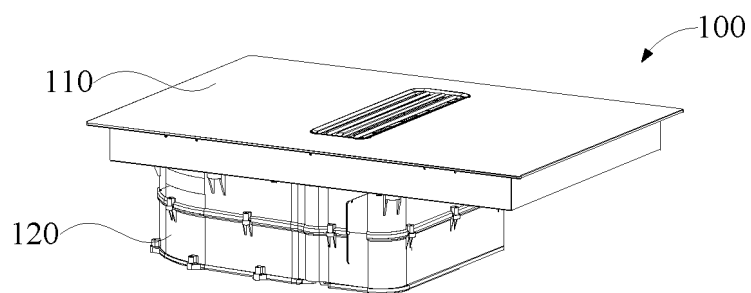


FIG. 35

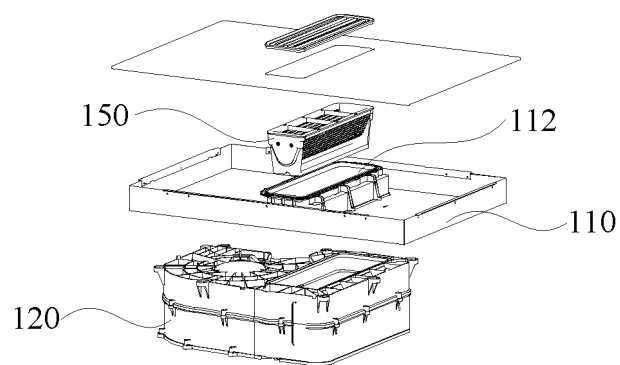


FIG. 36

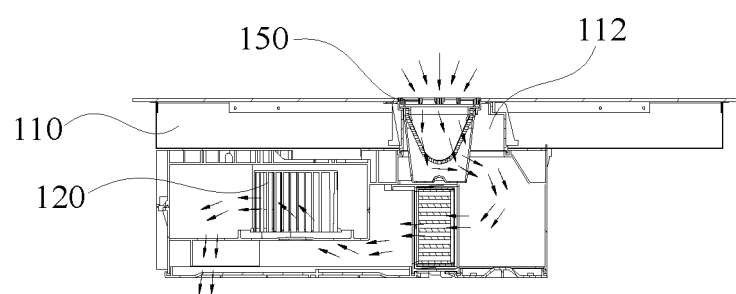


FIG. 37

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2023/093834

A. CLASSIFICATION OF SUBJECT MATTER F24C15/20(2006.01)i; F24C15/10(2006.01)i; B01D46/10(2006.01)i; B01D46/88(2022.01)i According to International Patent Classification (IPC) or to both national classification and IPC	B. FIELDS SEARCHED																					
Minimum documentation searched (classification system followed by classification symbols) IPC: F24C 15, B01D 46	Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched																					
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) CNTXT, VEN, CNKI: 烟机, 拆卸, 盖, 过滤, 网, 盒, 替换, cooking, extractor, range, hood, fume, oil, smoke, vapor?, fan, detach +, disassembl+, cover, filter+, screen, replac+	C. DOCUMENTS CONSIDERED TO BE RELEVANT																					
<table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>PX</td> <td>CN 217423376 U (FOSHAN SHUNDE MIDEA ELECTRICAL HEATING APPLIANCES MANUFACTURING CO., LTD.) 13 September 2022 (2022-09-13) description, paragraphs [0080]-[0132], and figures 1-13</td> <td>1-18, 26-27</td> </tr> <tr> <td>PX</td> <td>CN 217472962 U (FOSHAN SHUNDE MIDEA ELECTRICAL HEATING APPLIANCES MANUFACTURING CO., LTD.) 23 September 2022 (2022-09-23) description, paragraphs [0080]-[0131], and figures 1-18</td> <td>1-2, 12-27</td> </tr> <tr> <td>X</td> <td>EP 3916308 A1 (ESISTYLE S.R.L.) 01 December 2021 (2021-12-01) description, paragraphs [0031]-[0090], and figures 1-13</td> <td>1-3, 8-12, 27</td> </tr> <tr> <td>Y</td> <td>EP 3916308 A1 (ESISTYLE S.R.L.) 01 December 2021 (2021-12-01) description, paragraphs [0031]-[0090], and figures 1-13</td> <td>4-7, 13-26</td> </tr> <tr> <td>X</td> <td>DE 102017127229 A1 (MIELE & CIE. KG. et al.) 23 May 2019 (2019-05-23) description, paragraphs [0137]-[0178], and figures 1-7</td> <td>1-2, 27</td> </tr> <tr> <td>X</td> <td>DE 102020125817 A1 (MIELE & CIE. KG. et al.) 07 April 2022 (2022-04-07) description, paragraphs [0027]-[0041], and figures 1-5</td> <td>1-2, 12-18, 26-27</td> </tr> </tbody> </table>	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	PX	CN 217423376 U (FOSHAN SHUNDE MIDEA ELECTRICAL HEATING APPLIANCES MANUFACTURING CO., LTD.) 13 September 2022 (2022-09-13) description, paragraphs [0080]-[0132], and figures 1-13	1-18, 26-27	PX	CN 217472962 U (FOSHAN SHUNDE MIDEA ELECTRICAL HEATING APPLIANCES MANUFACTURING CO., LTD.) 23 September 2022 (2022-09-23) description, paragraphs [0080]-[0131], and figures 1-18	1-2, 12-27	X	EP 3916308 A1 (ESISTYLE S.R.L.) 01 December 2021 (2021-12-01) description, paragraphs [0031]-[0090], and figures 1-13	1-3, 8-12, 27	Y	EP 3916308 A1 (ESISTYLE S.R.L.) 01 December 2021 (2021-12-01) description, paragraphs [0031]-[0090], and figures 1-13	4-7, 13-26	X	DE 102017127229 A1 (MIELE & CIE. KG. et al.) 23 May 2019 (2019-05-23) description, paragraphs [0137]-[0178], and figures 1-7	1-2, 27	X	DE 102020125817 A1 (MIELE & CIE. KG. et al.) 07 April 2022 (2022-04-07) description, paragraphs [0027]-[0041], and figures 1-5	1-2, 12-18, 26-27	☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.																				
PX	CN 217423376 U (FOSHAN SHUNDE MIDEA ELECTRICAL HEATING APPLIANCES MANUFACTURING CO., LTD.) 13 September 2022 (2022-09-13) description, paragraphs [0080]-[0132], and figures 1-13	1-18, 26-27																				
PX	CN 217472962 U (FOSHAN SHUNDE MIDEA ELECTRICAL HEATING APPLIANCES MANUFACTURING CO., LTD.) 23 September 2022 (2022-09-23) description, paragraphs [0080]-[0131], and figures 1-18	1-2, 12-27																				
X	EP 3916308 A1 (ESISTYLE S.R.L.) 01 December 2021 (2021-12-01) description, paragraphs [0031]-[0090], and figures 1-13	1-3, 8-12, 27																				
Y	EP 3916308 A1 (ESISTYLE S.R.L.) 01 December 2021 (2021-12-01) description, paragraphs [0031]-[0090], and figures 1-13	4-7, 13-26																				
X	DE 102017127229 A1 (MIELE & CIE. KG. et al.) 23 May 2019 (2019-05-23) description, paragraphs [0137]-[0178], and figures 1-7	1-2, 27																				
X	DE 102020125817 A1 (MIELE & CIE. KG. et al.) 07 April 2022 (2022-04-07) description, paragraphs [0027]-[0041], and figures 1-5	1-2, 12-18, 26-27																				
* Special categories of cited documents: “A” document defining the general state of the art which is not considered to be of particular relevance “D” document cited by the applicant in the international application “E” earlier application or patent but published on or after the international filing date “L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) “O” document referring to an oral disclosure, use, exhibition or other means “P” document published prior to the international filing date but later than the priority date claimed	“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention “X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone “Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art “&” document member of the same patent family																					
Date of the actual completion of the international search 02 September 2023	Date of mailing of the international search report 07 September 2023																					
Name and mailing address of the ISA/CN China National Intellectual Property Administration (ISA/CN) China No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088	Authorized officer Telephone No.																					

Form PCT/ISA/210 (second sheet) (July 2022)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2023/093834

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 102020213310 A1 (BRUCKBAUER WILHELM) 24 June 2021 (2021-06-24) description, paragraphs [0137]-[0178], and figures 1-13	1-2, 27
Y	KR 20200120263 A (KIM HEE YOUNG et al.) 21 October 2020 (2020-10-21) description, paragraphs [0022]-[0101], and figures 1-10	4-7
Y	EP 3951270 A1 (ELECTROLUX APPLIANCES AB) 09 February 2022 (2022-02-09) description, paragraphs [0036]-[0061], and figures 1-13	13-26
Y	EP 3789682 A1 (BSH HAUSGERAETE GMBH) 10 March 2021 (2021-03-10) description, paragraphs [0033]-[0049], and figures 1-17	13-26
A	CN 110160102 A (QINGDAO XINGBANG ELECTRONIC APPLIANCES CO., LTD.) 23 August 2019 (2019-08-23) entire document	1-27
A	US 2014144115 A1 (ANOSZKO THOMAS J et al.) 29 May 2014 (2014-05-29) entire document	1-27
A	US 2021080109 A1 (STAR MANUFACTURING INTERNATIONAL, INC.) 18 March 2021 (2021-03-18) entire document	1-27

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2023/093834

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN 217423376 U	13 September 2022	None	
CN 217472962 U	23 September 2022	None	
EP 3916308 A1	01 December 2021	None	
DE 102017127229 A1	23 May 2019	EP 3511633 A2	17 July 2019
		EP 3511633 A3	20 November 2019
DE 102020125817 A1	07 April 2022	EP 3978811 A1	06 April 2022
DE 102020213310 A1	24 June 2021	None	
KR 20200120263 A	21 October 2020	None	
EP 3951270 A1	09 February 2022	WO 2022028725 A1	10 February 2022
		WO 2022028968 A1	10 February 2022
		BR 112023001346 A2	14 February 2023
		EP 4193093 A1	14 June 2023
		WO 2022028724 A1	10 February 2022
		AU 2020462732 A1	09 February 2023
		AU 2020461587 A1	09 February 2023
		US 2023213209 A1	06 July 2023
		BR 112023001345 A2	14 February 2023
		BR 112023001343 A2	14 February 2023
		EP 4193092 A1	14 June 2023
		AU 2021319779 A1	02 February 2023
EP 3789682 A1	10 March 2021	EP 3789680 A1	10 March 2021
CN 110160102 A	23 August 2019	None	
US 2014144115 A1	29 May 2014	US 8157881 B1	17 April 2012
		US 2012117931 A1	17 May 2012
		US 8414674 B2	09 April 2013
		US 2014237967 A1	28 August 2014
		US 8945267 B2	03 February 2015
		US 2013091818 A1	18 April 2013
		US 8623109 B2	07 January 2014
		US 2017320000 A1	09 November 2017
		US 2015107204 A1	23 April 2015
US 2021080109 A1	18 March 2021	None	

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

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- CN 202221148978 [0001]
- CN 202221148984 [0002]