

# A CABINET

## FIELD

[0001] The present disclosure relates to the field of cabinets, and particular, relates to a cabinet.

## 5 BACKGROUND

[0002] Currently, for existing cabinets, users usually use cooking equipment such as an electric kettle and an electric rice cooker, the steam generated from heating water or braising rice will wet wood cabinets and make them mildew, and even damage panels, and then has adverse effect on the service life of the cabinets.

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## SUMMARY

[0003] The present disclosure aims to solve at least one of the problems existing in the prior art or relate art.

[0004] In view of this, the embodiments of the present disclosure propose a cabinet.

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[0005] In order to achieve the above purpose, the embodiment of the first aspect of the present disclosure proposes a cabinet, including: a cabinet body, and a bearing plate is provided below the cabinet body, and the bearing plate and the cabinet body are provided at an interval and are connected through a side plate; a laminated structure including a plate housing connected to the side plate through a connecting mechanism, and the plate housing is hollow, and the plate housing comprises an air inlet plate and an air outlet plate located on different side walls, the air inlet plate is provided with an air inlet, and the air outlet plate is provided with an air outlet; an air duct structure, provided within the plate housing and provided with a fan therein; and the connecting mechanism is located at a first workstation, the plate housing is attached to the side plate; the connecting mechanism is located at a second workstation, the relative position relationship between the plate housing and the side plate changes, the fan operates and the air flowing into the air duct structure via the air inlet is discharged through the air outlet.

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[0006] The cabinet proposed according to the embodiment of the present disclosure mainly comprises the cabinet body and the laminated structure, and the laminated structure comprises

the plate housing and the air duct structure provided in the plate housing, the bearing plate is provided below the cabinet body to place cooking equipment, and meanwhile, the bearing plate and the cabinet body are provided at an interval and are connected through the side plate, and thus space is provided for arranging the cooking equipment; when the cooking equipment operates, lampblack or steam may generate, on general occasions, a range hood will not be provided on top of the position where the cooking equipment is placed, and the present disclosure can adjust the relative position relationship between the plate housing and the side plate at will under the effect of the connecting mechanism through providing the plate housing provided with the fan therein on the side plate moveably, and then improves the absorbing effect of the plate housing. For the plate housing, under the effect of the built-in fan, the steam or lampblack that may generate at the air inlet plate side will be absorbed into the plate housing, and this alleviates the influence of the moisture or greasy dirt on upper panels of the cabinet body, and then is more convenient for users' use. In an embodiment, the plate housing is the main body structure of the cabinet, and accommodates the air duct structure therein, and the two side walls of the plate housing are provided with the air inlet plate and the air outlet plate, and the air inlet is provided in the air inlet plate and the air outlet is provided in the air outlet plate and the fan in the air duct structure can absorb the air at the air inlet plate side when the fan operates, and the air will be discharged through the air outlet after flowing through the air duct structure of the overall cabinet, wind power is increased to change the moving path of the steam or greasy dirt, and this can greatly alleviate the influence on the upper part of the cabinet and enhances the service life.

**[0007]** It needs to be added that the plate housing and the side plate are connected through the connecting mechanism, the posture of the connecting mechanism can change, and when the connecting mechanism is located at a first workstation, the plate housing is in a side absorbing state, at the moment the plate housing is attached to the side plate, when the connecting mechanism is located at the second workstation, the plate housing can move, and the relative position relationship between the plate housing and the side plate changes.

**[0008]** For the laminated structure, it is a portion of the cabinet, and can be directly disposed on the side wall of the cabinet, or disposed on the bottom of a top cabinet.

**[0009]** In the above embodiment, the connecting mechanism comprises: a fixed rod, provided on the side plate, and a sliding groove is provided on the fixed rod; a first connecting rod, one end of which is connected to the fixed rod, and the other end is connected to the plate housing; a second connecting rod, and one end of which is located within the sliding groove and slides cooperatively with the sliding groove, and the other end is connected to the plate housing, and the second connecting rod is parallel to the first connecting rod; two third connecting rods arranged in parallel to each other, and one of the third connecting rods is provided on the plate housing, and one end of the first connecting rod and one end of the second connecting rod are rotatably connected to the plate housing through the third connecting rod, and the two ends of the other third connecting rod are respectively connected to the first connecting rod and the end of the second connecting rod which slides cooperatively with the sliding groove.

**[0010]** In the embodiment, the connecting mechanism comprises multiple connecting rod structures, the fixed rod is provided on the side plate, the fixed rod is opened with the sliding groove, and under the effect of the first connecting rod and the second connecting rod which are in parallel and the third connecting rods which are in parallel, a connecting rod structure of a parallelogram is formed, which can adjust the position of the plate housing. In an embodiment, one end of the first connecting rod is connected to the fixed rod, one end of the second connecting rod is located within the sliding groove and slides cooperatively with the sliding groove, the other end of the first connecting rod and the other end of the second connecting rod are both rotatably connected to the plate housing through one of the third connecting rods, and thus, under the effect of the connecting mechanism, the position of the plate housing can be adjusted, to facilitate the absorption of the steam or greasy dirt that may generate by the cooking equipment on the bearing plate in the operating process.

**[0011]** In the above embodiment, it further comprises a filter assembly provided at the air inlet, and the filter assembly is configured to filter the air entering the air duct structure.

**[0012]** In the embodiment, through disposing the filter assembly at the air inlet, the absorbing effect of the steam or greasy dirt can be enhanced, i.e., before flowing into the air duct structure, the air can be filtered through the filter assembly, and then the greasy dirt or steam flowing into the air duct structure is reduced, the possibility of contamination to the internal wall of the air duct structure is lowered, and the possibility of generating bacteria is lowered.

**[0013]** The filter assembly can be disposed at the outer side of the air inlet, and can further be disposed at the inner side of the air inlet.

**[0014]** In the above embodiment, the filter assembly comprises: a support member, provided at the air inlet and connected to the edge of the air inlet; and a filter material structure, provided at the inner side of the support member.

**[0015]** In the embodiment, the filter assembly mainly comprises the support member and the filter material structure; the support member is mainly configured to support and fix the filter material structure and prevent its moving; the filter material structure is the main structure for filtering, and under the effect of the filter material structure, substances such as fine particles and greasy dirt in the air will be absorbed, and this alleviates the influence to the internal wall of the internal air duct structure and the operation of the fan, and ensures the normal operation of the whole cabinet.

**[0016]** Furthermore, the support member can be a network, as long as it can ensure the support and air intake, and air can smoothly reach the filter material structure, and flow into the air duct structure after being filtered.

**[0017]** In the above embodiment, it further comprises an electric control structure provided in the plate housing, and the electric control structure is electrically connected to the fan, and configured to control the operation of the fan.

**[0018]** In the embodiment, through disposing the electric control structure inside the plate housing, the operation of the fan can be controlled. It can be understood that the fan of the cabinet is not open full time, but is controlled according to actual use needs, and through disposing the electric control structure, the fan can be controlled to operate in a manual or automatic way after the steam or greasy dirt is produced, and thus the steam or greasy dirt flowing to the bottom of the upper cabinet is reduced.

**[0019]** In the above embodiment, the electric control structure comprises: a circuit board, provided in the plate housing, and a plurality of function buttons are provided on the circuit board, and the plurality of function buttons protrude out of the air outlet plate; and the cabinet further comprises a steam sensor provided on the cabinet body or the side plate, and the steam sensor is electrically connected to the circuit board; and a lampblack sensor, provided on the

cabinet body or the side plate, and the lampblack sensor is electrically connected to the circuit board.

**[0020]** In the embodiment, the electric control structure mainly comprises the circuit board provided in the plate housing, through disposing a plurality of function buttons which protrude out of the air outlet plate on the circuit board, the operation of the whole cabinet can be controlled. In an embodiment, the start and stop of one fan or multiple fans can be controlled separately, the rotation speed, the air discharge direction and the like of the fan can further be adjusted, and even the power supply and the like of additionally provided sensing components can be controlled.

**[0021]** In addition, through disposing the steam sensor and/or the lampblack sensor on the cabinet body or the side plate of the cabinet, the amount of the steam and the lampblack generated by the cooking equipment can be detected, and through the electrical connection with the circuit board, the operation of the fan is controlled subsequently according to detected parameters.

**[0022]** In the above embodiment, the fan is a centrifugal fan, there are multiple fans, and the multiple fans are arranged at intervals along the length direction of the plate housing.

**[0023]** In the embodiment, through selecting the centrifugal fan as the fan and arranging the multiple fans at intervals along the length direction, the characteristic of the centrifugal fan can be configured to increase the wind speed on the basis that the air intake volume is ensured, and meanwhile, blades are not easily contaminated by greasy dirt or steam under the effect of the centrifugal fan.

**[0024]** Or, a cross flow fan can be adopted, and thus the wind speed distribution of the air discharge is more even.

**[0025]** In the above embodiment, the size of the projections of the multiple fans on the air outlet plate in the length direction is greater than the size of the air outlet in the length direction; the air duct structure comprises a flow guide plate provided in a space between the fan and the air outlet, and the extending direction of the flow guide plate is not parallel to the direction which is perpendicular to the air outlet plate.

**[0026]** In the embodiment, on the basis that multiple centrifugal fans are adopted, the internal space of the plate housing can be sufficiently used, but due to the influence of the space of the function buttons and the electric control structure, the size of air outlet is smaller than the size that the centrifugal fan occupies, i.e., the size of the projections of the multiple fans on the air outlet plate in the length direction is greater than the size of the air outlet in the length direction, and then, through disposing the flow guide plate in the space between the fan and the air outlet, the air discharged from the centrifugal fan is guided to the air outlet under the effect of the flow guide plate, and then the air discharge is achieved.

**[0027]** It needs to be emphasized that in the present embodiment, the extending direction of the flow guide plate is not parallel to the air discharge direction, i.e., it is not parallel to the direction which is perpendicular to the air outlet plate.

**[0028]** In the above embodiment, it further comprises: a movable plate, movably connected to the air inlet plate; a drive member, in transmission connection with the movable plate, and the drive member is configured to drive the movable plate to move to adjust the size of the gap between the movable plate and the air inlet plate.

**[0029]** In the embodiment, through disposing the movable plate which can move at the air inlet plate, the size of the gap between the movable plate and the air inlet plate will be adjusted under the effect of the drive member; when the movable plate stretches out, and a gap exists between the movable plate and the air inlet plate, the number of the air inlet surfaces will be increased, i.e., the air inlet position is changed from the previous position of the air inlet surface into four directions surrounding the air inlet surface, in an embodiment, when the air inlet surface is the front side, when the movable plate stretches out, the air inlet positions are the upper, the lower, the left and the right directions, meanwhile, the area of the air inlet surface is decreased, and this can effectively improve the wind speed, and in other words, under the effect of the movable plate, the negative pressure generated by the fan expands outwards, the moisture and lampblack generated by small appliances and the like can be absorbed better, and the effect of moisture absorption can be enhanced.

**[0030]** In the above embodiment, the drive member comprises a sliding rail and a sliding block, one of the sliding rail and the sliding block is provided in the plate housing and fixedly

connected to the plate housing, the other one is provided on the movable plate; and the extending direction of the sliding rail is perpendicular to the plane where the air inlet is located.

**[0031]** In the embodiment, the drive member mainly comprises the sliding rail and the sliding block, and under their effect, the movable plate is driven to translate along the direction of the sliding rail, and the extending direction of the sliding rail is perpendicular to plane where the air inlet is located, i.e., the movable plate translates in the direction perpendicular to the plane where the air inlet is located, and this helps achieve multi-angle high speed air intake.

**[0032]** In the above embodiment, the plate housing is cuboid-shaped, the plate housing comprises two first side walls provided at the two sides along the length direction, two second side walls provided at the two sides along the width direction, and two third side walls provided at the two sides along the height direction; and the air outlet plate is one of the second side walls, and the air inlet plate is one of the third side walls.

**[0033]** In the embodiment, through limiting the shape of the plate housing, and limiting it to be a rectangular shape, the plate housing is more suitable for the shape of existing cabinet panels, and the plate housing comprises the first side walls, the second side walls and the third side walls, the first side walls are arranged along the length direction, the second side walls are arranged along the width direction, the third side walls are arranged along the height direction, and through disposing the air outlet plate on one side wall in the width direction and disposing the air inlet plate on one side wall of the height direction, the steam and greasy dirt below can be discharged to the front side or the rear side through the second side wall after filtration and absorption.

**[0034]** The additional aspects and advantages of the present disclosure will be obvious in the following description, or can be understood through the implementation of the present disclosure.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

**[0035]** Fig. 1 shows a schematic view of the structure of a connecting mechanism at a first workstation in a cabinet according to an embodiment of the present disclosure;

**[0036]** Fig. 2 shows a schematic view of the structure of a connecting mechanism at a second workstation in a cabinet according to an embodiment of the present disclosure;

**[0037]** Fig. 3 shows a schematic view of the enlarged structure of part A in Fig. 2;

**[0038]** Fig. 4 shows a schematic view of the structure of a connecting mechanism according to an embodiment of the present disclosure;

**[0039]** Fig. 5 shows a schematic view of the structure of a laminated structure according to an embodiment of the present disclosure;

5 **[0040]** Fig. 6 shows a schematic view of an exploded structure of a laminated structure according to an embodiment of the present disclosure;

**[0041]** Fig. 7 shows a schematic view of the structure of a laminated structure according to an embodiment of the present disclosure;

10 **[0042]** Fig. 8 shows a schematic view of the structure of a laminated structure according to an embodiment of the present disclosure;

**[0043]** Fig. 9 shows a schematic view of the structure of a laminated structure according to an embodiment of the present disclosure; and

**[0044]** Fig. 10 shows a schematic view of the structure of a laminated structure according to an embodiment of the present disclosure.

15 **[0045]** The corresponding relationships between the reference signs and the component names in Fig. 1 to Fig. 10 are as follows:

**[0046]** 100: laminated structure, 102: plate housing, 1022: air inlet plate, 1024: air outlet plate, 104: air duct structure, 1042: fan, 106: filter assembly, 1062: support member, 1064: filter material structure, 108: electric control structure, 1082: circuit board, 1084: function button, 110: flow guide plate, 112: movable plate, 114: drive member, 200: cabinet, 202: cabinet body, 204: bearing plate, 206: side plate, 208: connecting mechanism, 2082: fixed rod, 2083: sliding groove, 2084: first connecting rod, 2086: second connecting rod, 2088: third connecting rod, 2102: steam sensor, and 2104: lampblack sensor.

## 25 **DETAILED DESCRIPTION OF THE DISCLOSURE**

**[0047]** In order to understand the above-mentioned objectives, features and advantages of the embodiments of the present disclosure more clearly, a further detailed description of the embodiments of the present disclosure will be given below in combination with the

accompanying drawings and examples. It should be noted that the embodiments of the present disclosure and the features in the embodiments can be combined with each other if there is no conflict.

**[0048]** In the following description, numerous details are set forth in order to provide a thorough understanding of the present disclosure. However, the embodiments of present disclosure can further be implemented in other manners than those described herein. Therefore, the protection scope of the embodiments of the present disclosure is not limited to the embodiments disclosed below.

**[0049]** Some embodiments of the present disclosure are described below with reference to Fig. 1 to Fig. 10.

**[0050]** As shown in Fig. 1, a cabinet 200 proposed by the present embodiment mainly comprises a cabinet body 202 and a laminated structure 100, and the laminated structure 100 comprises a plate housing 102 and an air duct structure 104 provided in the plate housing 102, a bearing plate 204 is provided below the cabinet body 202 to place cooking equipment, and meanwhile, the bearing plate 204 and the cabinet body 202 are provided at an interval and are connected through a side plate 206, and thus space is provided for arranging the cooking equipment; when the cooking equipment operates, lampblack or steam may generate, on general occasions, a range hood will not be provided on top of the position where the cooking equipment is placed, and the present disclosure can adjust the relative position relationship between the plate housing and the side plate 206 at will under the effect of a connecting mechanism 208 through providing the plate housing provided with the fan therein on the side plate 206 moveably, and then improves the absorbing effect of the plate housing. For the plate housing, under the effect of a built-in fan 1042, the steam or lampblack that may generate at the side of an air inlet plate 1022 will be absorbed into the plate housing 102, and this alleviates the influence of the moisture or greasy dirt on upper panels of the cabinet 200, and then is more convenient for users' use. In an embodiment, as shown in Fig. 6, the plate housing 102 is the main body structure of the laminated structure 100, and accommodates the air duct structure 104 therein, and the two side walls of the plate housing 102 are provided with the air inlet plate 1022 and an air outlet plate 1024, and an air inlet is provided in the air inlet plate 1022 and an air outlet is provided in the air outlet plate 1024 and the fan 1042 in the air duct structure 104 can absorb the air at the

side of the air inlet plate 1022 when the fan 1042 operates, and the air will be discharged through the air outlet after flowing through the overall air duct structure 104, wind power is increased to change the moving path of the steam or greasy dirt, and this can greatly alleviate the influence on the upper part of the cabinet 200 and enhances the service life.

5    **[0051]**    It needs to be added that the plate housing and the side plate 206 are connected through the connecting mechanism 208, the posture of the connecting mechanism 208 can change, and when the connecting mechanism 208 is located at a first workstation as shown in Fig. 1, the plate housing is in a side absorbing state, at the moment the plate housing is attached to the side plate 206, when the connecting mechanism 208 is located at a second workstation as shown in Fig. 2,  
10    the plate housing can move, and the relative position relationship between the plate housing and the side plate 206 changes.

**[0052]**    For the laminated structure 100, it is a portion of the cabinet 200, and can be directly disposed on the side wall of the cabinet 200.

**[0053]**    For the connecting mechanism 208, as shown in Fig. 3 and Fig. 4, it comprises multiple  
15    connecting rod structures, in an embodiment, a fixed rod 2082 is provided on the side plate 206, the fixed rod 2082 is opened with a sliding groove 2083, and under the effect of a first connecting rod 2084 and a second connecting rod 2086 which are in parallel and third connecting rods 2088 which are in parallel, a connecting rod structure of a parallelogram is formed, which can adjust the position of the plate housing 102. In an embodiment, one end of the  
20    first connecting rod 2084 is connected to the fixed rod 2082, one end of the second connecting rod 2086 is located within the sliding groove 2083 and slides cooperatively with the sliding groove 2083, the other end of the first connecting rod 2084 and the other end of the second connecting rod 2086 are both rotatably connected to the plate housing 102 through one of the third connecting rods 2088, and thus, under the effect of the connecting mechanism 208, the  
25    position of the plate housing 102 can be adjusted, to facilitate the absorption of the steam or greasy dirt that may generate by the cooking equipment on the bearing plate 204 in the operating process.

**[0054]**    As shown in Fig. 5, an electric control structure 108 mainly comprises a circuit board 1082 provided in the plate housing, through disposing a plurality of function buttons 1084 which  
30    protrude out of the air outlet plate on the circuit board 1082, the operation of the whole cabinet

can be controlled. In an embodiment, the start and stop of one fan or multiple fans can be controlled separately, the rotation speed, the air discharge direction and the like of the fan can further be adjusted, and even the power supply and the like of additionally provided sensing components can be controlled.

5   **[0055]**   In addition, through disposing a steam sensor and/or a lampblack sensor on the cabinet body or the side plate of the cabinet, the amount of the steam and the lampblack generated by the cooking equipment can be detected, and through the electrical connection with the circuit board, the operation of the fan is controlled subsequently according to detected parameters.

10   **[0056]**   In an embodiment, the fan 1042 is a centrifugal fan, through arranging multiple centrifugal fans at intervals along the length direction, the characteristic of the centrifugal fan can be configured to increase the wind speed on the basis that an air intake volume is ensured, and meanwhile, blades are not easily contaminated by greasy dirt or steam under the effect of the centrifugal fans.

15   **[0057]**   Furthermore, on the basis that multiple centrifugal fans are adopted, the internal space of the plate housing 102 can be sufficiently used, but due to the influence of the space of the function buttons 1084 and the electric control structure 108, the size of the air outlet is smaller than the size that the centrifugal fan 1042 occupies, i.e., the size of the projections of the multiple fans 1042 on the air outlet plate 1024 in the length direction is greater than the size of the air outlet in the length direction, and then, as shown in Fig. 9, through disposing a flow guide plate 20   110 in the space between the fan 1042 and the air outlet, the air discharged from the centrifugal fan 1042 is guided to the air outlet under the effect of the flow guide plate 110, and then the air discharge is achieved.

25   **[0058]**   It needs to be emphasized that in the present embodiment, the extending direction of the flow guide plate 110 is not parallel to an air discharge direction, i.e., it is not parallel to the direction which is perpendicular to the air outlet plate 1024.

**[0059]**   In another embodiment, a cross flow fan can be adopted, and thus the wind speed distribution of air discharge is more even.

**[0060]**   When the movable plate is not adopted, the air flowing direction is shown in Fig. 7.

**[0061]** As shown in Fig. 1, a cabinet 200 proposed by the present embodiment mainly comprises a cabinet body 202 and a laminated structure 100, and the laminated structure 100 comprises a plate housing 102 and an air duct structure 104 provided in the plate housing 102, a bearing plate 204 is provided below the cabinet body 202 to place cooking equipment, and meanwhile, the bearing plate 204 and the cabinet body 202 are provided at an interval and are connected through side plate 206, and thus space is provided for arranging the cooking equipment; when the cooking equipment operates, lampblack or steam may generate, on general occasions, a range hood will not be provided on top of the position where the cooking equipment is placed, and the present disclosure can adjust the relative position relationship between the plate housing and the side plate 206 at will under the effect of a connecting mechanism 208 through providing the plate housing provided with the fan therein on the side plate 206 moveably, and then improves the absorbing effect of the plate housing. For the plate housing, under the effect of the built-in fan 1042, the steam or lampblack that may generate at the side of an air inlet plate 1022 will be absorbed into the plate housing 102, and this alleviates the influence of the moisture or greasy dirt on upper panels of the cabinet 200, and then is more convenient for users' use. In an embodiment, the plate housing 102 is the main body structure of the laminated structure 100, and accommodates the air duct structure 104 therein, and the two side walls of the plate housing 102 are provided with the air inlet plate 1022 and an air outlet plate 1024, and an air inlet is provided in the air inlet plate 1022 and an air outlet is provided in the air outlet plate 1024 and the fan 1042 in the air duct structure 104 can absorb the air at the side of the air inlet plate 1022 when the fan 1042 operates, and the air will be discharged through the air outlet after flowing through the air duct structure 104 of the overall laminated structure 100, wind power is increased to change the moving path of the steam or greasy dirt, and this can greatly alleviate the influence on the upper part of the cabinet 200 and enhances the service life.

**[0062]** It needs to be added that the plate housing and the side plate 206 are connected through the connecting mechanism 208, the posture of the connecting mechanism 208 can change, and when the connecting mechanism 208 is located at a first workstation, the plate housing is in a side absorbing state, at the moment the plate housing is attached to the side plate 206, when the connecting mechanism 208 is located at a second workstation, the plate housing can move, and the relative position relationship between the plate housing and the side plate 206 changes.

**[0063]** For the laminated structure 100, it is a portion of the cabinet 200, and can be directly disposed on the side wall of the cabinet 200, or disposed on the bottom of a top cabinet.

**[0064]** Through disposing a filter assembly 106 at the air inlet, the absorbing effect of the steam or greasy dirt can be enhanced, i.e., before flowing into the air duct structure 104, the air can be filtered through the filter assembly 106, and then the greasy dirt or steam flowing into the air duct structure 104 is reduced, the possibility of contamination to the internal wall of the air duct structure is lowered, and the possibility of generating bacteria is lowered.

**[0065]** The filter assembly 106 can be disposed at the outer side of the air inlet, and can further be disposed at the inner side of the air inlet.

**[0066]** For the filter assembly 106, it mainly comprises a support member 1062 and a filter material structure 1064; the support member 1062 is mainly configured to support and fix the filter material structure 1064 and prevent its moving; the filter material structure 1064 is the main structure for filtering, and under the effect of the filter material structure 1064, substances such as fine particles and greasy dirt in the air will be absorbed, and this alleviates the influence to the internal wall of the internal air duct structure 104 and the operation of the fan 1042, and ensures the normal operation of the whole laminated structure 100.

**[0067]** Furthermore, the support member 1062 can be a network, as long as it can ensure the support and air intake, and air can smoothly reach the filter material structure 1064, and flow into the air duct structure 104 after being filtered.

**[0068]** As shown in Fig. 1, a cabinet 200 proposed by the present embodiment mainly comprises a cabinet body 202 and a laminated structure 100, and the laminated structure 100 comprises a plate housing 102 and an air duct structure 104 provided in the plate housing 102, a bearing plate 204 is provided below the cabinet body 202 to place cooking equipment, and meanwhile, the bearing plate 204 and the cabinet body 202 are provided at an interval and are connected through side plate 206, and thus space is provided for arranging the cooking equipment; when the cooking equipment operates, lampblack or steam may generate, on general occasions, a range hood will not be provided on top of the position where the cooking equipment is placed, and the present disclosure can adjust the relative position relationship between the plate housing and the side plate 206 at will under the effect of a connecting mechanism 208

through providing the plate housing provided with the fan therein on the side plate 206 moveably, and then improves the absorbing effect of the plate housing. For the plate housing, under the effect of a built-in fan 1042, the steam or lampblack that may generate at the side of an air inlet plate 1022 will be absorbed into the plate housing 102, and this alleviates the influence of the moisture or greasy dirt on upper panels of the cabinet 200, and then is more convenient for users' use. In an embodiment, the plate housing 102 is the main body structure of the laminated structure 100, and accommodates the air duct structure 104 therein, and the two side walls of the plate housing 102 are provided with the air inlet plate 1022 and an air outlet plate 1024, and an air inlet is provided in the air inlet plate 1022 and an air outlet is provided in the air outlet plate 1024 and the fan 1042 in the air duct structure 104 can absorb the air at the side of the air inlet plate 1022 when the fan 1042 operates, and the air will be discharged through the air outlet after flowing through the air duct structure 104 of the overall laminated structure 100, wind power is increased to change the moving path of the steam or greasy dirt, and this can greatly alleviate the influence on the upper part of the cabinet 200 and enhances the service life.

**[0069]** It needs to be added that the plate housing and the side plate 206 are connected through the connecting mechanism 208, the posture of the connecting mechanism 208 can change, and when the connecting mechanism 208 is located at a first workstation, the plate housing is in a side absorbing state, at the moment the plate housing is attached to the side plate 206, when the connecting mechanism 208 is located at a second workstation, the plate housing can move, and the relative position relationship between the plate housing and the side plate 206 changes.

**[0070]** For the laminated structure 100, it is a portion of the cabinet 200, and can be directly disposed on the side wall of the cabinet 200, or disposed on the bottom of a top cabinet.

**[0071]** Through disposing a movable plate 112 which can move at the air inlet plate 1022, the size of the gap between the movable plate 112 and the air inlet plate 1022 will be adjusted under the effect of a drive member 114; when the movable plate 112 stretches out, and a gap exists between the movable plate and the air inlet plate 1022, the number of air inlet surfaces will be increased, i.e., an air inlet position is changed from the previous position of the air inlet surface into four directions surrounding the air inlet surface, in an embodiment, when the air inlet surface is a front side, when the movable plate 112 stretches out, the air inlet positions are the upper, the lower, the left and the right directions, meanwhile, the area of the air inlet surface is

decreased, and this can effectively improve the wind speed, and in other words, under the effect of the movable plate 112, the negative pressure generated by the fan 1042 expands outwards, the moisture and lampblack generated by small appliances and the like can be absorbed better, and the effect of moisture absorption can be enhanced.

5   **[0072]**   When the movable plate 112 is added, the air flowing direction is shown in Fig. 8 and Fig. 10.

**[0073]**   For the movable plate 112, its moving direction can be translation, or it can further rotate.

10   **[0074]**   In an embodiment, the drive member 114 mainly comprises a sliding rail and a sliding block, and under their effect, the movable plate 112 is driven to translate along the direction of the sliding rail, and the extending direction of the sliding rail is perpendicular to plane where the air inlet is located, i.e., the movable plate 112 translates in the direction perpendicular to the plane where the air inlet is located, and this helps achieve multi-angle high speed air intake.

15   **[0075]**   Furthermore, the operation of the fan 1042 can further be controlled through disposing the electric control structure 108. It can be understood that the fan 1042 of the laminated structure 100 is not open full time, but is controlled according to actual use needs, and through disposing the electric control structure 108, the fan 1042 can be controlled to operate in a manual or automatic way after the steam or greasy dirt is produced, and thus the steam or greasy dirt flowing to the bottom of the upper cabinet 200 is reduced.

20   **[0076]**   Furthermore, as shown in Fig. 2, through disposing the steam sensor 2102 and/or the lampblack sensor 2104 on the cabinet body or the side plate of the cabinet, the amount of the steam and the lampblack generated by the cooking equipment can be detected, and through the electrical connection with the circuit board 1082, the operation of the fan is controlled subsequently according to detected parameters.

25   **[0077]**   In an embodiment, the steam sensor 2102 and the lampblack sensor 2104 can be provided; the steam sensor and the lampblack sensor are placed on the external side wall of the laminated structure 100, meanwhile the two sensors are electrically connected to the circuit board 1082, and thus the control over the operation of the fan 1042 can be conducted according to the obtained parameters.

**[0078]** Furthermore, the electric control structure 108 can be electrically connected to the drive member 114, and thus can further control the moving of the movable plate 112.

**[0079]** On the basis of any of the above embodiments, through limiting the shape of the plate housing 102, and limiting it to be a rectangular shape, the plate housing is more suitable for the shape of existing panels of the cabinet 200, and the plate housing 102 comprises first side walls, second side walls and third side walls, the first side walls are arranged along a length direction, the second side walls are arranged along a width direction, the third side walls are arranged along a height direction, and through disposing the air outlet plate 1024 on one side wall in the width direction and disposing the air inlet plate 1022 on one side wall in the height direction, the steam and greasy dirt below can be discharged to the front side or the rear side through the second side wall after filtration and absorption.

**[0080]** According to the cabinet provided by the present disclosure, the plate housing with the air duct structure is provided on the side wall of the cabinet, and under the effect of the built-in fan, the steam or lampblack that may generate by the cooking equipment on the bearing plate will be absorbed into the plate housing, and this alleviates the influence of the moisture or greasy dirt on upper panels of the cabinet body, and then is more convenient for users' use.

**[0081]** In the present disclosure, the terms of "first", "second" and "third" are used only for the purpose of description and shall not be understood to indicate or imply any relative importance; the term of "a plurality of" indicates two or more, unless otherwise explicitly specified or defined. The terms of "assembling", "connected to", "connected to", "fixing" and the like should be understood in a broad sense, for example, the term "connected to" may be a fixed connection, and may further be a removable connection, or an integral connection; and the term of "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 disclosure according to specific situations.

**[0082]** In the description of the present disclosure, it needs to be understood that the orientation or position relations indicated by the terms of "upper", "lower", "left", "right", "front", "rear" 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 disclosure and simplify the description, and are not intended to indicate or imply that the devices

or units as indicated should have specific orientations or should be configured or operated in specific orientations, and then should not be construed as limitations to the present disclosure.

**[0083]** In the description 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 disclosure. In the specification, the schematic representation of the above phrases does not necessarily refer to the same embodiment or example. Moreover, the particular features, structures, materials or characteristics described may be combined in a suitable manner in any one or more of the embodiments or examples.

**[0084]** The descriptions above are only some embodiments of the present disclosure, and are not used to limit the present disclosure. For a person skilled in the art, the present disclosure may have various changes and variations. Any modifications, equivalent substitutions, improvements, etc. made within the spirit and principle of the present disclosure shall all be included in the protection scope of the present disclosure.

WHAT IS CLAIMED IS:

1. A cabinet, comprising:

a cabinet body, wherein a bearing plate is provided below the cabinet body, and the bearing plate and the cabinet body are provided at an interval and are connected through a side plate;

a laminated structure, comprising: a plate housing connected to the side plate through a connecting mechanism, wherein the plate housing is hollow, and the plate housing comprises an air inlet plate and an air outlet plate located on different side walls, the air inlet plate is provided with an air inlet, and the air outlet plate is provided with an air outlet; and

an air duct structure, provided within the plate housing and provided with a fan therein;

wherein, the connecting mechanism is located at a first workstation, the plate housing is attached to the side plate; the connecting mechanism is located at a second workstation, the relative position relationship between the plate housing and the side plate changes, the fan operates and the air flowing into the air duct structure via the air inlet is discharged through the air outlet.

2. The cabinet according to claim 1, wherein, the connecting mechanism comprises:

a fixed rod, provided on the side plate, wherein a sliding groove is provided on the fixed rod;

a first connecting rod, one end of which is connected to the fixed rod, and the other end is connected to the plate housing;

a second connecting rod, one end of which is located within the sliding groove and slides cooperatively with the sliding groove, and the other end is connected to the plate housing, and the second connecting rod is parallel to the first connecting rod; and

two third connecting rods arranged in parallel to each other, wherein one of the third connecting rods is provided on the plate housing, and one end of the first connecting rod and one end of the second connecting rod are rotatably connected to the plate housing through the third connecting rod, and the two ends of the other third connecting rod are respectively

connected to the first connecting rod and the end of the second connecting rod that slides cooperatively with the sliding groove.

3. The cabinet according to claim 1, further comprising:

a filter assembly, provided at the air inlet, wherein the filter assembly is configured to filter the air entering the air duct structure.

4. The cabinet according to claim 3, wherein, the filter assembly comprises:

a support member, provided at the air inlet and connected to the edge of the air inlet; and

a filter material structure, provided at the inner side of the support member.

5. The cabinet according to claim 1, further comprising:

an electric control structure, provided in the plate housing, wherein the electric control structure is electrically connected to the fan, and configured to control the operation of the fan.

6. The cabinet according to claim 5, wherein, the electric control structure comprises:

a circuit board, provided in the plate housing, wherein a plurality of function buttons are provided on the circuit board, and the plurality of function buttons protrude out of the air outlet plate; and

the cabinet further comprises:

a steam sensor provided on the cabinet body or the side plate, wherein the steam sensor is electrically connected to the circuit board; and

a lampblack sensor, provided on the cabinet body or the side plate, wherein the lampblack sensor is electrically connected to the circuit board.

7. The cabinet according to claim 1, wherein, the fan is a centrifugal fan, there are multiple fans, and the multiple fans are arranged at intervals along the length direction of the plate housing.

8. The cabinet according to claim 7, wherein, the size of the projections of the multiple fans on the air outlet plate in a length direction is greater than the size of the air outlet in the length direction; the air duct structure comprises:

a flow guide plate, provided in the space between the fan and the air outlet, and the extending direction of the flow guide plate is not parallel to the direction which is perpendicular to the air outlet plate.

9. The cabinet according to claim 1, further comprising:

a movable plate, movably connected to the air inlet plate; and

a drive member, in transmission connection with the movable plate, wherein the drive member is configured to drive the movable plate to move to adjust the size of the gap between the movable plate and the air inlet plate.

10. The cabinet according to claim 9, wherein, the drive member comprises:

a sliding rail and a sliding block, wherein one of the sliding rail and the sliding block is provided in the plate housing and fixedly connected to the plate housing, and the other one is provided on the movable plate;

wherein the extending direction of the sliding rail is perpendicular to the plane where the air inlet is located.

11. The cabinet according to any of claims 1 to 10, wherein, the plate housing is cuboid-shaped, the plate housing comprises two first side walls provided at the two sides along the length direction, two second side walls provided at the two sides along a width direction, and two third side walls provided at the two sides along a height direction;

wherein, the air outlet plate is one of the second side walls, and the air inlet plate is one of the third side walls.