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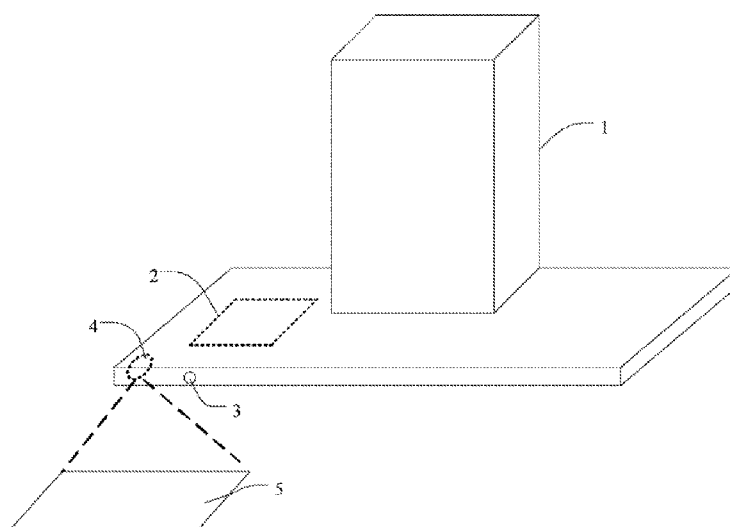


FIG. 2

(57) Abstract: A cooker hood and a method for controlling same, and a kitchenware system are disclosed. The cooker hood includes a cooker hood body, a controller disposed in the cooker hood body, and a first camera and a projector that are disposed on the cooker hood body, where the first camera is configured to collect a video picture in real time; the controller is separately coupled to the first camera and the projector, and configured to transmit the video picture collected by the first camera to a video chat object in real time by using a network, obtain, in real time, a video picture of the video chat object transmitted by using the network, and output the video picture of the video chat object to the projector; and the projector is configured to output the obtained video picture of the video chat object by means of projection. The foregoing solution can conveniently enable a user to perform multimedia interaction during cooking.



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# **COOKER HOOD AND METHOD FOR CONTROLLING SAME, AND KITCHENWARE SYSTEM**

## **BACKGROUND**

### **Technical Field**

The present invention relates to the field of household appliances, and in particular, to a cooker hood and a method for controlling same, and a kitchenware system.

### **Related Art**

With the continuous development of instant messaging technologies, instant messaging software such as QQ and WeChat is widely applied to the daily life. A user may exchange information such as voice, text, and video with a good friend by using the instant messaging software.

In a waiting process of cooking, if a user wants to perform video chat interaction with a good friend, the user usually takes a mobile terminal such as a smartphone to a kitchen. When cooking is continued, the user needs to temporarily stop the video chat interaction with the good friend. This brings much inconvenience to the user.

## **SUMMARY**

Embodiments of the present invention resolve a problem of how to conveniently enable a user to perform multimedia interaction during cooking.

To resolve the foregoing technical problem, the embodiments of the present invention provide a cooker hood. The cooker hood includes a cooker hood body, a controller disposed in the cooker hood body, and a first camera and a projector that are disposed on the cooker hood body, where the first camera is configured to collect a video picture in real time; the controller is separately coupled to the first camera and the projector, and configured to transmit the video picture collected by the first camera to a video chat object

in real time by using a network, obtain, in real time, a video picture of the video chat object transmitted by using the network, and output the video picture of the video chat object to the projector; and the projector is configured to output the obtained video picture of the video chat object by means of projection.

Optionally, the projector includes a projector body and a projection lens that is rotatably connected to the projector body.

Optionally, the controller is further configured to: when a rotation instruction input by a user is received, output a rotation control signal, to control the projection lens to rotate.

Optionally, the cooker hood further includes a manipulation information obtaining apparatus, where the controller is further configured to output an application control interface to the projector; and the projector is further configured to output the application control interface by means of projection; the manipulation information obtaining apparatus is disposed on the cooker hood body, is coupled to the controller, and is configured to collect operation information of the user in a projection of the application control interface, and output the operation information to the controller; and the controller is further configured to correspondingly adjust, according to the operation information of the user, the application control interface output by the projector by means of projection.

Optionally, the manipulation information obtaining apparatus is further configured to correspondingly rotate when the projection lens rotates, so as to keep a same rotation angle as that of the projection lens.

Optionally, the manipulation information obtaining apparatus is an infrared camera.

Optionally, the first camera (3) is disposed at a front end of the cooker hood.

The embodiments of the present invention further provide a kitchenware system, including a cooktop, and any one of the foregoing the cooker hoods.

The embodiments of the present invention further provide a method for controlling a cooker hood, where the cooker hood includes a cooker hood body, and a first camera and

a projector that are disposed on the cooker hood body, and the control method includes: when a video chat triggering instruction is received, sending an enabling instruction to the first camera, so as to control the first camera to collect a video picture in real time; transmitting the video picture collected by the first camera to a video chat object in real time by using a network; and obtaining, in real time, a video picture of the video chat object transmitted by using the network, and outputting the video picture of the video chat object to the projector; and controlling the projector to output the obtained video picture of the video chat object by means of projection.

Optionally, the control method further includes: receiving a rotation instruction input by a user; and generating a rotation control signal corresponding to the rotation instruction and outputting the rotation control signal to the projector, so as to control a projection lens of the projector to rotate.

Optionally, the control method further includes: controlling the projector to output a control interface by means of projection.

Optionally, a manipulation information obtaining apparatus is further disposed on the cooker hood body, and configured to collect operation information of the user in a projection of an application control interface; and after the controlling the projector to output a control interface by means of projection, the control method further includes: obtaining the operation information of the user in the projection of the application control interface, adjusting the application control interface, and controlling the projector to output an adjusted application control interface by means of projection.

Optionally, at the time of generating a rotation control signal corresponding to the rotation instruction and outputting the rotation control signal to the projector, the method further includes: controlling the manipulation information obtaining apparatus to correspondingly rotate, so that a rotation angle of the manipulation information obtaining apparatus is the same as a rotation angle of the projection lens.

Optionally, the manipulation information obtaining apparatus is an infrared camera.

Compared with the prior art, a technical solution of the embodiments of the present invention have the following beneficial effects:

The first camera and the projector are disposed on a cooker hood body, and a video picture is collected in real time by using the first camera. When a user is cooking, the first camera can collect a video picture of the user in real time. The controller transmits the video picture of the user to a video chat object in real time by using a network, obtains, in real time, a video picture of the video chat object transmitted by using the network, and outputs, by means of projection, the video picture of the video chat object by using the projector, so as to enable the user to perform multimedia interaction during cooking.

Further, the projection lens that is rotatably connected to the projector body is disposed on the projector body. When a projection lane has a poor projection effect due to light, the projection lane is adjusted by rotating the projection lens, so that the projection effect of the projection lane may be improved.

Further, the projector outputs an application control interface by means of projection, and the manipulation information obtaining apparatus collects operation information of the user in a projection of the application control interface. The controller correspondingly adjusts, according to the operation information of the user, the application control interface output by the projector by means of projection. When cooking, the user may directly perform an operation in the projection of the application control interface without using a touch device such as a touchscreen. When costs are saved, no oil stain pollution is caused on a surface of the touch device such as the touchscreen.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a schematic structural diagram of a cooker hood according to an embodiment of the present invention;

FIG. 2 is a schematic diagram of an application scenario of a cooker hood according to an embodiment of the present invention;

FIG. 3 is a schematic diagram of an application scenario of another cooker hood

according to an embodiment of the present invention;

FIG. 4 is a schematic structural diagram of another cooker hood according to an embodiment of the present invention; and

FIG. 5 is a flowchart of a method for controlling a cooker hood according to an embodiment of the present invention.

### DETAILED DESCRIPTION

Currently, in daily life, people are keen on sharing surrounding things with good friends by using an intelligent terminal. For example, when cooking in a kitchen, a user performs video chat interaction with a good friend by using a smartphone, so as to share a cooking process. However, when the user is cooking, both hands of the user may be busy with cooking. Consequently, the user cannot perform video chat interaction with the good friend by holding the smartphone in hand, and the user has to turn off the smartphone and puts the smartphone in the kitchen. During a break of cooking, the user turns on the smartphone to perform video chat interaction with the good friend. That is, in the prior art, in a process of cooking, a user cannot implement video chat interaction with a good friend.

In embodiments of the present invention, a first camera and a projector are disposed on the cooker hood body, and a video picture is collected in real time by using the first camera. When a user is cooking, the first camera can collect a video picture of the user in real time. The controller transmits the video picture of the user to a video chat object in real time by using a network, obtains, in real time, a video picture of the video chat object transmitted by using the network, and outputs, by means of projection, the video picture of the video chat object by using the projector, so as to enable the user to perform multimedia interaction during cooking.

To make the objectives, features, and beneficial effects of the present invention more comprehensible, the following describes in detail the specific embodiments of the present invention with reference to the accompanying drawings.

Referring to FIG. 1, the embodiments of the present invention provide a cooker hood, including a cooker hood body 1, a controller 2 disposed in the cooker hood body 1, and a first camera 3 and a projector 4 that are disposed on the cooker hood body 1.

In a specific implementation, a structure of the cooker hood body 1 may be the same as or similar to a structure of an existing cooker hood body, and may refer to the existing cooker hood body. The embodiments of the present invention do not describe the specific structure and components of the cooker hood body 1 in detail.

In a specific implementation, the first camera 3 may be an ordinary daily camera, which is configured to collect a video picture. When in a working state, the first camera 3 may collect the video picture in a lens in real time.

It can be learned from actual application that in a process of cooking, a user usually stands right in front of or at a lateral forward position of a cooker hood. To enable the first camera 3 to collect a video picture of a user during working, the first camera 3 may be disposed on a front end surface of the cooker hood body 1, that is, disposed on an end surface facing a position where the user stands. In this embodiment of the present invention, the first camera 3 may be disposed at a left side of the front end surface of the cooker hood body 1, or may be disposed at a right side of the front end surface of the cooker hood body 1, or may further be disposed at the middle of the front end surface of the cooker hood body 1.

It can be understood that, the first camera 3 may further be disposed at another position of the cooker hood body 1 as long as the first camera 3 can collect the video picture of the user during working.

In a specific implementation, the controller 2 may be disposed inside the cooker hood body 1. In an actual application, the controller 2 may be installed on a control circuit board. To avoid that the control circuit board is polluted by oil and smoke from being exposed to the air, the control circuit board may be disposed inside the cooker hood body 1.

The controller 2 is separately coupled to the first camera 3 and the projector 4, transmits the video picture collected by the first camera 3 to a video chat object in real time by using a network, obtains, in real time, a video picture of the video chat object transmitted by using the network, and outputs the video picture of the video chat object to the projector 4. The projector 4 may be coupled to the controller 2, and outputs the obtained video picture of the video chat object by means of projection, so as to enable the user to perform video chat interaction with the video chat object.

In a specific implementation, the cooker hood may further include a radio communications unit (not shown in FIG. 1), and the radio communications unit may also be disposed inside the cooker hood body 1. The controller 2 may transmit, by using the radio communications unit, the video picture collected by the first camera 3 to the video chat object in real time by using a wireless network. The controller 2 may also obtain, by using the radio communications unit in real time, a video picture of the video chat object transmitted by using the wireless network.

The radio communications unit may be a WiFi communications unit, or a mobile communications unit, for example, a 3G mobile communications unit and a 4G mobile communications unit.

It can be understood that, the controller 2 may alternatively transmit the video picture collected by the first camera 3 to the video chat object in real time by using a cable network, and obtain, in real time, the video picture of the video chat object transmitted by using the cable network. For example, the controller 2 is connected to a cable network port in a room by using a cable network interface, so that the video picture may be transmitted to the video chat object in real time by using the cable network.

In a specific implementation, the projector 4 may be disposed on the bottom surface of a left end or a right end of the cooker hood body 1. The projector 4 may include a projector body and a projection lens. The projection lens may face a surface of a cooktop or may face a wall.

In an actual application, the projection lens may be disposed to face the surface of the cooktop, and in this case, the projector projects the video picture of the video chat

object on the surface of the cooktop. When performing video chat interaction with a good friend, the user can watch a projection of the video picture of the video chat object on the surface of the cooktop.

Referring to FIG. 2, FIG. 2 is a schematic diagram of an application scenario of a cooker hood corresponding to FIG. 1, and a projection lane 5 is the surface of the cooktop.

In daily life, a cooktop installed in the kitchen of a user may be of the material having a characteristic of light reflection, for example, stainless steel. When the light in the kitchen is strong, a light reflection phenomenon occurs on the surface of the cooktop. If the projection lens still faces the surface of the cooktop, the surface of the cooktop reflects the light, so that a projected video picture has a poor effect and low definition.

Therefore, to avoid the foregoing case, in this embodiment of the present invention, the projection lens is disposed on the projector body in a rotatable connection manner. That is, the projection lens is rotatable. When a case that the projected video picture has a poor effect and low definition due to light reflection of the surface of the cooktop occurs, the user may adjust a projection orientation of the projection lens.

In an actual application, the projection lens may face a wall of the kitchen. Generally, the wall of the kitchen is not directly irradiated by the light, so that the light of the wall of the kitchen is dim. Therefore, the projected video picture of the projector 4 has a good effect and high definition.

Referring to FIG. 3, FIG. 3 is a schematic diagram of an application scenario of another cooker hood according to an embodiment of the present invention. In this case, the projection lane 5 is on a surface of a wall 7.

In a specific implementation, the user may manually adjust the projection orientation of the projection lens. For example, the user manually adjusts the projection orientation of the projection lens from the surface of the cooktop to the wall. The user may alternatively input a rotation instruction to the controller 2, and when receiving the rotation instruction,

the controller 2 generates a corresponding rotation control signal, so as to control the projection lens to rotate.

In the prior art, when cooking in the kitchen, a user may perform video chat interaction with a good friend by using a smartphone, so as to share a cooking process. However, when the user is cooking, both hands of the user may be busy with cooking. Consequently, the user cannot perform video chat interaction with the good friend by holding the smartphone in hand, and the user has to turn off the smartphone and puts the smartphone in the kitchen. During a break of cooking, the user turns on the smartphone to perform video chat interaction with the good friend.

However, an environment of heavy oil and smoke in the kitchen affects a service life of a display screen of the smartphone, and the oil and smoke attaches to a surface of the display screen, thereby affecting the definition of a video picture. In addition, hands of the user may be stained with an oil stain in a process of cooking, and the smartphone may be stained when the user uses the smartphone.

In this embodiment of the present invention, a first camera 3 and a projector 4 are disposed on the cooker hood body 1, and a video picture is collected in real time by using the first camera 3. When a user is cooking, the first camera 3 can collect a video picture of the user in real time. The controller 2 transmits the video picture of the user to a video chat object in real time by using a network, obtains, in real time, a video picture of the video chat object transmitted by using the network, and outputs, by means of projection, the video picture of the video chat object by using the projector 4, so as to enable the user to perform multimedia interaction during cooking.

That is, by using the cooker hood provided in the embodiments of the present invention, when cooking, a user may perform video chat interaction with a good friend without depending on a smartphone. Therefore, the smartphone does not need to be taken to the kitchen, so that impact on the service life of the display screen of the smartphone caused by the environment of heavy oil and smoke may be avoided. In a process of video chat interaction with the good friend, because a video picture of the good friend is output on the surface of the cooktop or on the wall by using the projector 4 by

means of projection, a case that the video picture is not clear due to an oil stain attached to the display screen of the smartphone cannot occur.

In addition, a complex and expensive display screen does not need to be disposed on the cooker hood; therefore, video chat interaction with a good friend may be implemented at the same time of avoiding excessively increasing costs of the cooker hood.

In a specific implementation, when powered on, the controller 2 may run an intelligent operating system. Many types of application software may be installed in the intelligent operating system, and icons of the many types of application software may be displayed on an application control interface corresponding to the intelligent operating system. The controller 2 may output the application control interface to the projector 4, and the projector 4 outputs the application control interface by means of projection.

Referring to FIG. 4, FIG. 4 is a schematic structural diagram of another cooker hood according to an embodiment of the present invention. Compared with FIG. 1, a manipulation information obtaining apparatus 6 is added to the cooker hood provided in FIG. 4.

In a specific implementation, the manipulation information obtaining apparatus 6 may be disposed on the cooker hood body 1. After the projector 4 outputs the application control interface by means of projection, a user may perform an operation in a projection of the application control interface. The manipulation information obtaining apparatus 6 may obtain operation information of the user in a projection of the application control interface and output the operation information to the controller 2. The controller 2 correspondingly adjusts, according to the operation information of the user, the application control interface output by the projector 4 by means of projection.

For example, application software such as a music player, WeChat, QQ, and a video player are installed in the intelligent operating system. Icons of the music player, QQ, WeChat, and the video player are displayed on an application control interface corresponding to the intelligent operating system. A projection of the application control interface includes projections of the icons of the music player, QQ, WeChat, and the video player. When detecting that the user clicks on the projection of the icon of WeChat in the

projection of the application control interface, the manipulation information obtaining apparatus 6 outputs operation information of clicking on the icon of WeChat to the controller 2. The controller 2 updates, according to the operation information of clicking on the icon of WeChat, the application control interface as a main interface of WeChat, and controls the projector 4 to output the main interface of WeChat by means of projection.

In a specific implementation, the manipulation information obtaining apparatus 6 collects the operation information of the user in the application control interface, therefore, when the user adjusts the projection lens of the projector 4 to rotate, the manipulation information obtaining apparatus 6 may correspondingly rotate, so as to keep a same rotation angle as that of the projection lens. In this way, it is ensured that after rotation, the projection lens can still normally collect the operation information of the user in the projection of the application control interface.

In an actual application, the projection lens and the manipulation information obtaining apparatus 6 may be fixedly installed on a same rotating shaft. When the controller 2 controls the projection lens to rotate, the rotating shaft correspondingly rotates, so as to drive the manipulation information obtaining apparatus 6 to rotate with a same angle.

In a specific implementation, the manipulation information obtaining apparatus 6 may be an infrared camera and the operation information of the user in the projection of the application control interface is collected by using the infrared camera. It can be understood that, the manipulation information obtaining apparatus 6 may alternatively be another type of apparatus as long as the apparatus can collect the operation information of the user in the projection of the application control interface.

In a specific implementation, the manipulation information obtaining apparatus 6 may be disposed near the projector 4. When the projector 4 is disposed on the bottom surface of the left end of the cooker hood body 1, the manipulation information obtaining apparatus 6 may also be disposed on the bottom surface of the left end of the cooker hood body 1. Correspondingly, when the projector 4 is disposed on the bottom surface of the right end of the cooker hood body 1, the manipulation information obtaining apparatus 6 may also be disposed on the bottom surface of the right end of the cooker hood body 1.

By disposing the manipulation information obtaining apparatus 6 on the cooker hood body 1 to collect the operation information of the user in the projection of the application control interface, manipulation on the application control interface is implemented without disposing a touch apparatus such as an expensive touchscreen. Therefore, when the costs are saved, no oil stain pollution is caused on a surface of a touch device due to an oil stain on the hands when touching the touch device such as the touchscreen.

The following describes a working flow of the cooker hood provided in the foregoing embodiments of the present invention by way of example.

Before cooking, a user A connects the cooker hood to a power supply. After the cooker hood is connected to the power supply, the controller 2 is automatically powered on. In a process of cooking, if the user wants to perform video interaction with a good friend B by using WeChat, the user A may control the projector 4 to be enabled to work. After enabled, the projector 4 projects the application control interface on the surface of the cooktop. The user A clicks on the icon of "WeChat" in a projection of the application control interface, and the projection of the application control interface on the surface of the cooktop is updated as the main interface of WeChat. The user enters a chat interface with the good friend B from the main interface of WeChat, and clicks on an option of "video chat" in the chat interface.

After the good friend B accepts a video chat request, the first camera 3 collects a video interface of the user A. The controller 2 transmits, by using the WiFi communications unit, the video interface of the user A to a terminal used by the good friend B by using a WiFi network, receives, by using the WiFi communications unit, a video picture of the good friend B transmitted by using the WiFi network, and outputs the video picture of the good friend B to the projector 4. The projector 4 outputs the video picture of the good friend B on the surface of the cooktop by means of projection, so as to implement video chat interaction with the good friend B in the process of cooking.

Referring to FIG. 5, the embodiments of the present invention further provide a method for controlling a cooker hood. The following describes the method for controlling a

cooker hood provided in the embodiments of the present invention in detail by using specific steps with reference to FIG. 1 to FIG. 4.

Step S501: When a video chat triggering instruction is received, send an enabling instruction to the first camera.

It can be learned from the foregoing embodiments of the present invention, the first camera 3 is coupled to the controller 2. When the first camera 3 receives the enabling instruction sent by the controller 2, the first camera 3 switches from a power-off state to a power-on state, so as to collect a video picture in real time.

In an actual application, when using the cooker hood, a user may first enables the cooker hood to power on the cooker hood. After the cooker hood is powered on, the built-in controller 2 is powered on. After powered on, the controller 2 automatically runs the intelligent operating system.

After powered on, the controller 2 may also send an enabling instruction to the projector 4, so as to enable the projector 4. A projector switch may also be disposed on the cooker hood body 1 to enable or disable the projector 4 by closing or opening the projector switch.

After enabled, the projector 4 outputs the application control interface by means of projection. A user clicks on a projection of an icon corresponding to chat software in a projection of the application control interface. The manipulation information obtaining apparatus 6 collects operation information of a click on the projection of the icon corresponding to the chat software of the user. The controller 2 updates the application control interface as a main interface of the chat software. The projector 4 outputs the main interface of the chat software. The user clicks on a dialog box of an object requesting a video chat on a projection of the main interface of the chat software and enters a chat interface with the video chat object. The user clicks on a projection of "video chat" image in the projection of the chat interface. The manipulation information obtaining apparatus 6 collects a video chat action sent by the user, generates a video chat triggering instruction, and sends the video chat triggering instruction to the controller 2. When receiving the video chat triggering instruction, the controller 2 generates an enabling instruction

corresponding to the video chat triggering instruction and outputs the enabling instruction to the first camera 3. When receiving the enabling instruction, the first camera 3 switches from a disabling state to an enabling state, to collect a video picture in real time.

In a specific implementation, after powered on, the controller 2 may send the enabling instruction to the first camera 3 to enable the first camera 3. It can be understood that, the user may alternatively enable the first camera 3 manually. For example, a camera switch corresponding to the first camera 3 may be disposed on the cooker hood body 1. The first camera 3 is enabled or disabled by closing or opening the camera switch by the user.

Step S502: Transmit a video picture collected by a first camera to a video chat object in real time by using a network.

In a specific implementation, the controller 2 may transmit the video picture collected by the first camera 3 to the video chat object in real time by using a wireless network. The wireless network may be a WiFi network or a mobile communications network. For example, the wireless network is a 3G network, a 4G network, or a 5G network.

Step S503: Obtain, in real time, a video picture of the video chat object transmitted by using the network, and output the video picture of the video chat object to the projector.

In a specific implementation, after receiving the video picture of the video chat object, the projector 4 may output the video picture of the video chat object by means of projection. A position of the video picture of the video chat object output by the projector 4 by means of projection is relevant to a projection orientation of the projection lens. When the projection of the projection lens faces toward the surface of the cooktop, the video picture of the video chat object is projected to the surface of the cooktop. When the projection of the projection lens faces toward a wall, the video picture of the video chat object is projected to the wall.

In a specific implementation, when the user has a requirement for adjusting the projection lens of the projector 4, the user may input a rotation instruction to the controller 2. The controller 2 generates a corresponding rotation control signal when receiving the rotation instruction, so as to control the projection lens to rotate. It can be understood that,

the user may alternatively adjust the projection orientation of the projection lens manually. For example, the user manually adjusts the projection orientation of the projection lens from the surface of the cooktop to the wall.

In a specific implementation, when a user adjusts the projection lens of the projector 4 to rotate, the manipulation information obtaining apparatus 6 may correspondingly rotate, so as to keep a same rotation angle as that of the projection lens. In this way, it is ensured that after rotation, the projection lens can still normally collect the operation information of the user in the projection of the application control interface.

In a specific implementation, a specific performing process and principle of step S501 to step S503 may refer to the cooker hood provided in the foregoing embodiments of the present invention, which is not further described herein.

As can be learned, the first camera 3 and the projector 4 are disposed on the cooker hood body 1, and a video picture is collected in real time by using the first camera 3. When a user is cooking, the first camera 3 can collect a video picture of the user in real time. The controller 2 transmits the video picture of the user to a video chat object in real time by using a network, obtains, in real time, a video picture of the video chat object transmitted by using the network, and outputs, by means of projection, the video picture of the video chat object by using the projector 4, so as to enable the user to perform multimedia interaction during cooking.

In a specific implementation, the embodiments of the present invention further provide a kitchenware system. The kitchenware system includes a cooktop and the cooker hood in the foregoing embodiments of the present invention. The cooktop may be disposed in a split structure with the cooker hood.

A person of ordinary skill in the art may understand that all or some of the steps of the methods in the embodiments may be implemented by a program instructing relevant hardware. The program may be stored in a computer-readable storage medium. The storage medium may include a ROM, a RAM, a magnetic disk, an optical disc, or the like.

Although disclosed as above, the present invention is not limited thereto. Various changes and modifications may be made by any person skilled in the art without departing from the spirit and scope of the present invention. The protection scope of the present invention is subject to the appended claims.

## CLAIMS

### What is claimed is:

1. A cooker hood, characterized by comprising a cooker hood body (1), a controller (2) disposed in the cooker hood body (1), and a first camera (3) and a projector (4) that are disposed on the cooker hood body (1), wherein

the first camera (3) is configured to collect a video picture in real time;

the controller (2) is separately coupled to the first camera (3) and the projector (4), and configured to transmit the video picture collected by the first camera (3) to a video chat object in real time by using a network, obtain, in real time, a video picture of the video chat object transmitted by using the network, and output the video picture of the video chat object to the projector (4); and

the projector (4) is configured to output the obtained video picture of the video chat object by means of projection.

2. The cooker hood according to claim 1, characterized in that, the projector (4) comprises a projector (4) body and a projection lens that is rotatably connected to the projector (4) body.

3. The cooker hood according to claim 2, characterized in that, the controller (2) is further configured to: when a rotation instruction input by a user is received, output a rotation control signal, to control the projection lens to rotate.

4. The cooker hood according to claim 3, characterized by further comprising a manipulation information obtaining apparatus (6), wherein

the controller (2) is further configured to output an application control interface to the projector (4); and the projector (4) is further configured to output the application control

interface by means of projection;

the manipulation information obtaining apparatus (6) is disposed on the cooker hood body (1), is coupled to the controller (2), and is configured to collect operation information of the user in a projection of the application control interface, and output the operation information to the controller (2); and

the controller (2) is further configured to correspondingly adjust, according to the operation information of the user, the application control interface output by the projector (4) by means of projection.

5. The cooker hood according to claim 4, characterized in that, the manipulation information obtaining apparatus (6) is further configured to correspondingly rotate when the projection lens rotates, so as to keep a same rotation angle as that of the projection lens.

6. The cooker hood according to claim 5, characterized in that, the manipulation information obtaining apparatus (6) is an infrared camera.

7. The cooker hood according to claim 1, characterized in that, the first camera (3) is disposed at a front end of the cooker hood.

8. A kitchenware system, characterized by comprising a cooktop, and the cooker hood according to any one of claims 1 to 7.

9. A method for controlling a cooker hood, characterized in that, the cooker hood comprises a cooker hood body (1), and a first camera (3) and a projector (4) that are disposed on the cooker hood body (1), and the control method comprises:

when a video chat triggering instruction is received, sending an enabling instruction to the first camera (3), so as to control the first camera (3) to collect a video picture in real time;

transmitting the video picture collected by the first camera (3) to a video chat object in real time by using a network; and

obtaining, in real time, a video picture of the video chat object transmitted by using the network, and outputting the video picture of the video chat object to the projector (4); and controlling the projector (4) to output the obtained video picture of the video chat object by means of projection.

10. The method for controlling a cooker hood according to claim 9, characterized by further comprising:

receiving a rotation instruction input by a user; and

generating a rotation control signal corresponding to the rotation instruction and outputting the rotation control signal to the projector (4), so as to control a projection lens of the projector (4) to rotate.

11. The method for controlling a cooker hood according to claim 10, characterized by further comprising: controlling the projector (4) to output a control interface by means of projection.

12. The method for controlling a cooker hood according to claim 11, characterized in that, a manipulation information obtaining apparatus (6) is further disposed on the cooker hood body (1), and configured to collect operation information of the user in a projection of an application control interface; and after the controlling the projector (4) to output a control interface by means of projection, the control method further comprises:

obtaining the operation information of the user in the projection of the application control interface, adjusting the application control interface, and controlling the projector (4) to output an adjusted application control interface by means of projection.

13. The method for controlling a cooker hood according to claim 12, characterized in that, at the time of generating a rotation control signal corresponding to the rotation instruction and outputting the rotation control signal to the projector (4), the method further comprises:

controlling the manipulation information obtaining apparatus (6) to correspondingly

rotate, so that a rotation angle of the manipulation information obtaining apparatus (6) is the same as a rotation angle of the projection lens.

14. The method for controlling a cooker hood according to claim 13, characterized in that, the manipulation information obtaining apparatus (6) is an infrared camera.

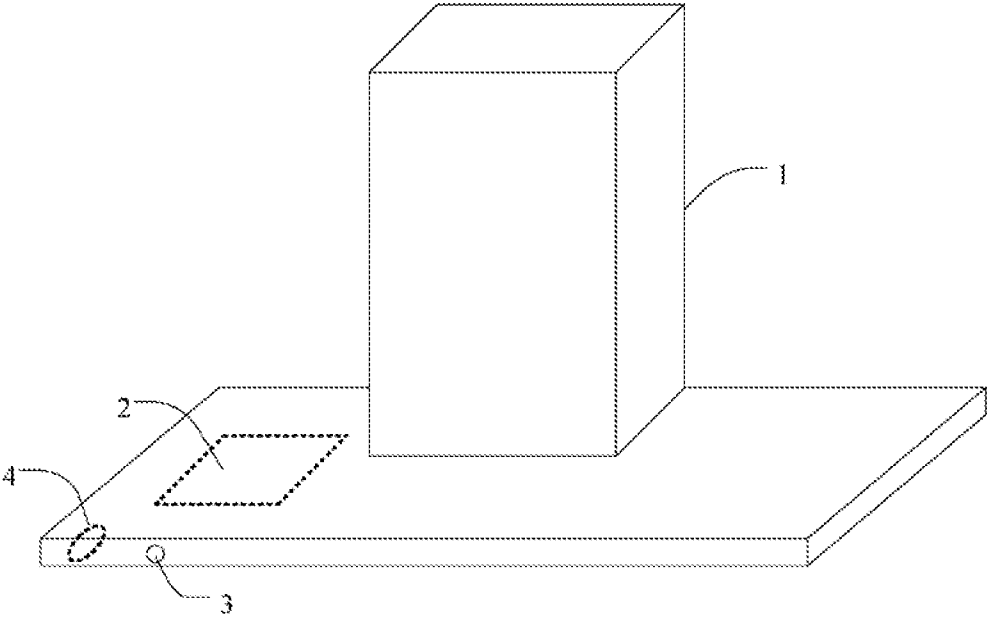


FIG. 1

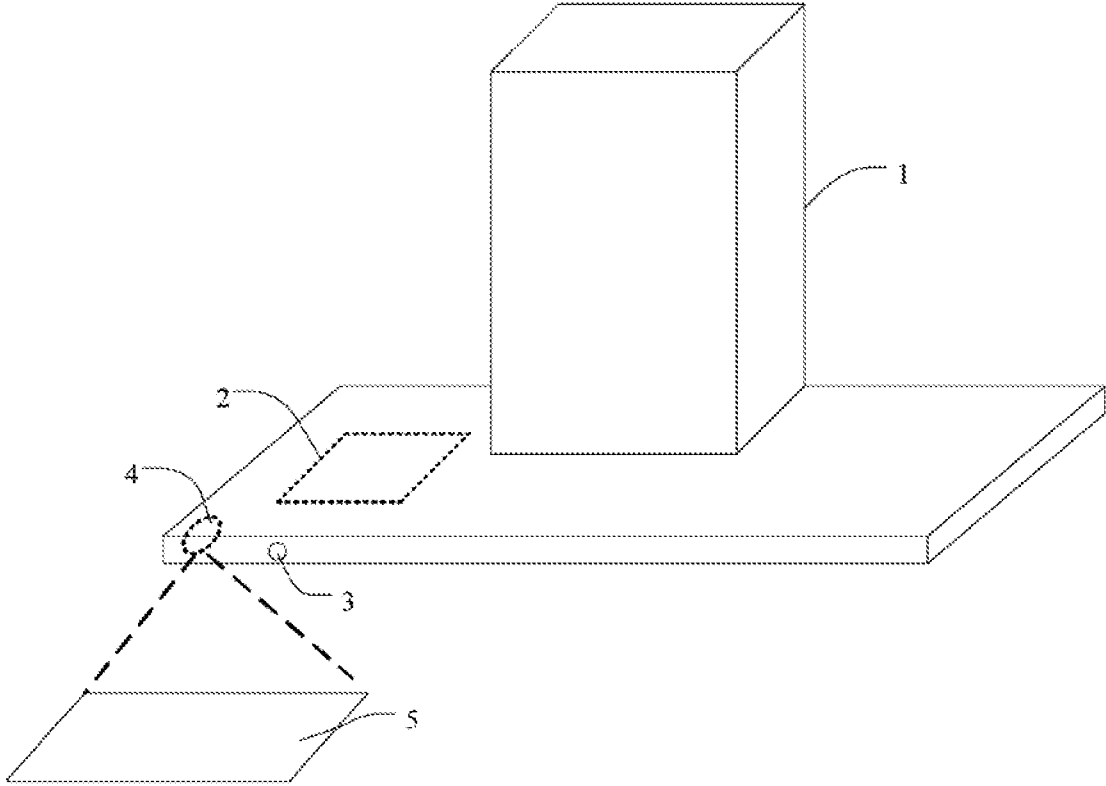


FIG. 2

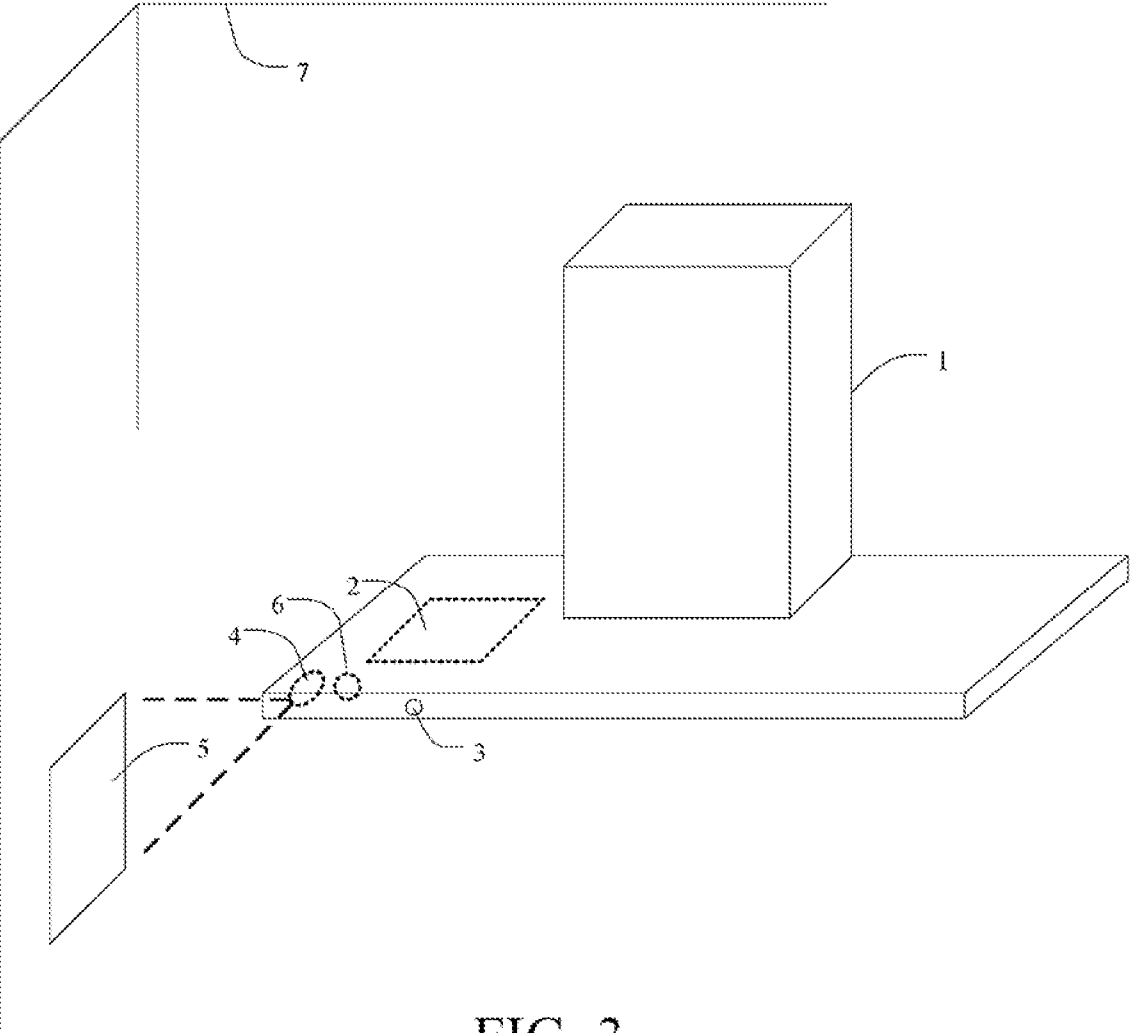


FIG. 3

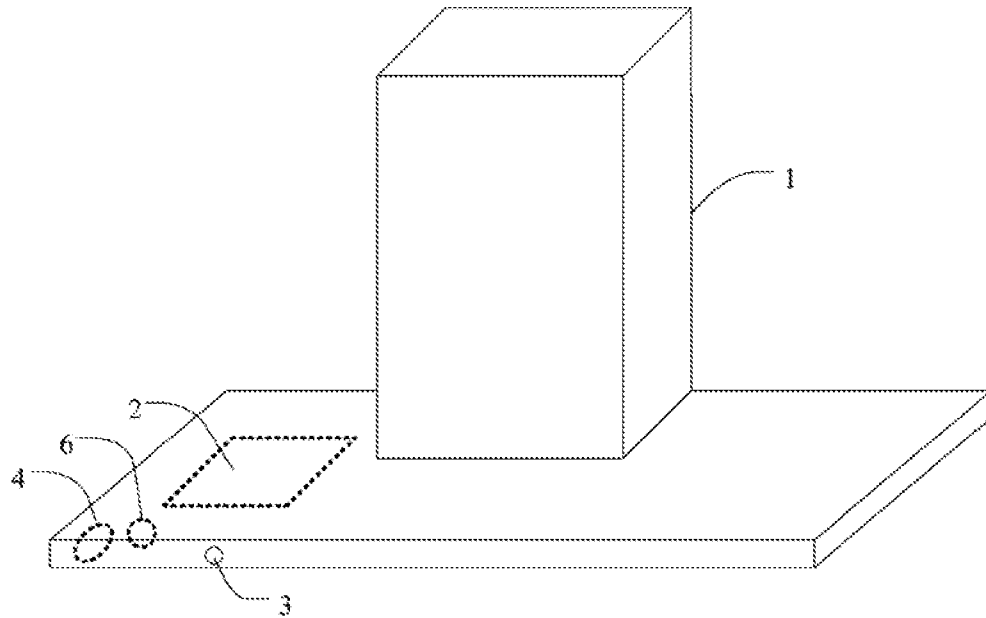


FIG. 4

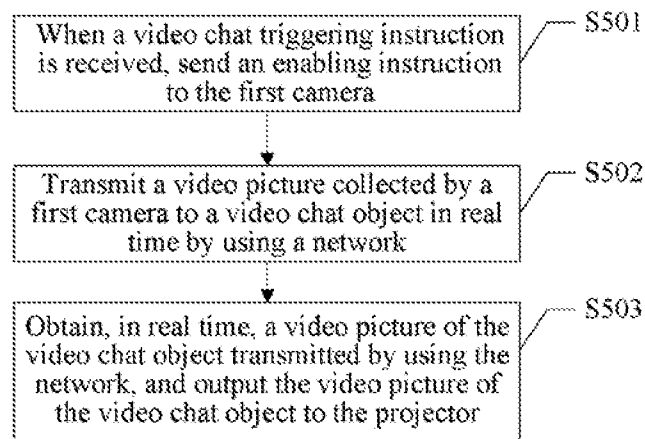


FIG. 5

## INTERNATIONAL SEARCH REPORT

International application No  
PCT/IB2018/051265

A. CLASSIFICATION OF SUBJECT MATTER  
INV. F24C15/20 H04N7/14 H04N7/18  
ADD.

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)  
F24C H04N

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)

EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                                                                     | Relevant to claim No. |
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Further documents are listed in the continuation of Box C.



See patent family annex.

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Date of the actual completion of the international search

31 May 2018

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2018/051265

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