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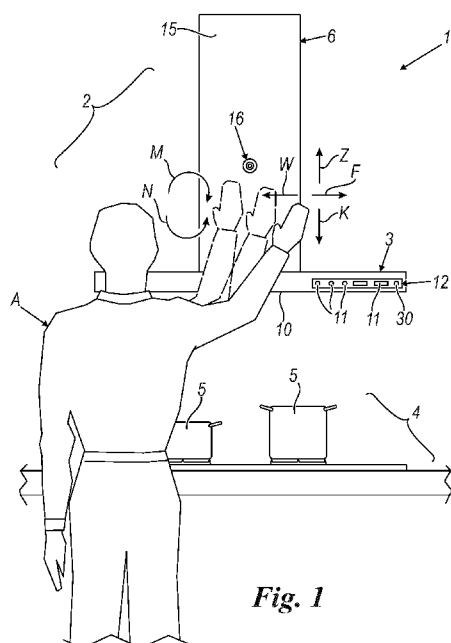
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(54) **Title:** GESTURALLY CONTROLLED EXTRACTOR HOOD AND CONTROL METHOD THEREOF

(57) **Abstract:** An extractor hood (1) for a cooktop (4) comprises a body containing usual suction means located above said cooktop (4), said body (2) being secured to a wall (100) in correspondence with which said cooktop is located or being secured to a piece of furniture which said cooktop is constrained to. Such body (2) comprises sensor means (16) capable of sensing the movement of a part of the body of a user (A) and control means (20) controlling the operating functions of said hood (1) connected to said sensor means (16), said control means (20) activating at least one of said functions upon sensing a predetermined movement of the user.

**Fig. 1**

GESTURALLY CONTROLLED EXTRACTOR HOOD AND CONTROL METHOD THEREOF

5

Description

The object of the present invention is a hood for cooktops according to the preamble of the main claim. A further object of the present invention is a method
10 for controlling the functions of said hood.

It is known that a usual hood for a cooktop is located above the latter, supported by a wall close to which said cooktop is located or supported by a piece of furniture of a fitted kitchen on which said cooktop is located. Said hood
15 comprises a body (secured to said wall or piece of furniture) having a first part or suction part located directly above the cooktop and a second part or transfer part which transfers the sucked air toward an air vent which is either external to the environment where the hood is located or internal thereto. Such second part is covered by a panel or features a box-like structure which begins from the
20 suction part and ends where there is provided an exhaust pipe toward the outside of said environment or a hole to vent the air inside said environment.

On the body of the hood, usually close to the suction part there are provided control members, for instance pushbuttons or lever switches, to control the
25 individual functions of the hood (selection of the suction speed and switch on/off of the lighting elements associated with the hood). In order to activate the hood at a desired suction speed, a user shall consequently operate one or more of said control members.

30 However, the problem could arise whereby, while preparing a food, the user possibly has his/her hands wet or dirty of an ingredient used for its preparation (for instance, flour). This means that operating a control member of the hood possibly results in the latter becoming dirty or in the control member being covered by such ingredient, which might even cause a malfunction thereof.

35

Also, in the case of handicapped persons, the use of the hood might be very difficult to perform or even impossible if such persons are unable to reach its control members.

- 5 A purpose of the present invention is to offer an extractor hood whose operation can also be remotely controlled, i.e. without requiring any direct physical interaction between a user and its control members.

Another purpose of the invention is to offer an extractor hood of the mentioned
10 type whose remote control is feasible with modes that are reliable and do not entail any impact onto the appearance of the hood itself.

A further purpose of the invention is to offer an extractor hood of the mentioned type whose remote control does not affect the regular operation of the hood or
15 other electric or electronic equipment located close to the hood or inside the environment where it is located. Finally, a purpose of the invention is also to offer a method for remotely controlling an extractor hood of the mentioned type.

These purposes and others which will be apparent to those skilled in this sector
20 are achieved by an extractor hood and by a method for controlling it according to the attached claims.

For a better understanding of the present invention the following drawings are attached for purely explanatory, not limitative, purposes, in which:

25

Figure 1 shows a front view of a hood according to the invention;
Figure 2 shows a side view of the hood depicted in figure 1; and
Figure 3 shows a schematic view of component parts of the hood according to
the invention.

30

With reference to the mentioned figures, they show an extractor hood 1 of a type featuring an overturned-T shape. However such arrangement is not limitative for the invention under consideration.

- 35 The hood 1 comprises a body 2, secured to a wall 100, having a first part or suction part 3 located directly above a cooktop 4 (on which, for purely

explanatory purposes, pots 5 are located) and a second part or sucked air transfer part 6 capable of guiding such air toward a vent which is either external to the environment where the hood is located or in the same environment where the latter is located.

5

It is known that in the second part 6 a usual suction fan is located usually featuring several operating speeds, whereas the first part features a face 10 (facing the cooktop 4) having a number of openings for sucking the vapor of the liquid emanating from the cooktop 4. On such apertures there are provided, in a
10 known manner, one or several filtering elements (not shown in the figures).

The face 10 also comprises usual lighting elements (lamps) for generating light toward the cooktop 4.

15 All of such electrically powered elements or members, i.e. the fan and the lamps, can be activated via a number of pushbuttons 11 located on a user interface 12 provided on the first part 3 of the body 2 of the hood.

According to the invention, on a face 15 of the body 2 of the hood 1 facing a
20 user A (this face is, in the case of the example depicted in the figures, that of the second part 6 of said body, but alternatively it can be a face of the first part 3) at least one movement sensor 16 is present suitable for sensing, without getting in contact with anything (i.e. remotely) a movement or a gesture made by a part of the user's body, for instance his/her hand or head. Such movement
25 sensor 16 can be a camera, an electromagnetic device generating a magnetic field which is perturbed by the movement of the user's body, a proximity sensor device generating an electric field (like that known with the trade name GestIC® manufactured by Microchip Technology Inc.) which is perturbed by said movement, an infrared device or one generating a WI-FI signal, whose field is
30 perturbed by said movement (which is consequently sensed), or a similar device. The latter is connected to a control unit 20, for instance a microprocessor one, connected to the electric devices of the hood 1 and cooperates with a memory 21 storing data corresponding to the various movements of the user's hand: to every movement a control to be given to said
35 members corresponds. For instance, a rightwards movement of the hand (arrow

F in figure 1) leads to activating the fan, a further upwards movement of the hand (arrow Z) leads to an increase of the speed of the fan, a downwards movement (arrow K in figure 1) leads to a decrease of said speed, and a leftwards movement (arrow W) leads to the fan being switched off. A clockwise
5 circular movement (arrow M in figure 1) results in switching the lighting members on, whereas a counterclockwise circular movement (arrow N) results in switching them off.

Such movements, identified by the control unit 20 (for instance because of the
10 electric field of the device 16 having been perturbed) and compared to what stored in the memory 21, make the control unit 20 operates the fan or the lighting members (globally referred to by the reference numeral 27 in figure 3) so as to modify their operating status, by either activating or deactivating them.

15 Simultaneously, on the user interface 12 a visual and/or audible indicator 30 is activated to inform the user that a control signal has been received from the movement device or sensor 16 and its corresponding electrically powered member has been activated by the control unit 20.

20 Thanks to the invention, a user whose hands are wet or dirty can activate the desired member without touching the user interface 12, thus avoiding to dirty or wet it. All of this via a movement, for instance of the hand, which possibly takes place at a short distance from the hood or even at a greater distance (for instance 1 meter) depending on the device 16 used. Furthermore, the feature of
25 the extractor hood I here described is very useful for handicapped persons who, for instance, are unable to reach the user interface 12.

Finally, the invention makes it possible to embody a hood that is not provided with any pushbuttons or equivalent control elements on the user interface 12.
30 This because the controls of the individual members of the hood can be remotely generated without operating onto physical elements suitable for generating them, including pushbuttons and the like.

Special embodiments of the invention have been described and mentioned.
35 However, others are also possible: for instance, the device or sensor 16 can also be associated with extractor hoods whose body 2 is tilted with respect to

the cooktop 4 underneath or several proximity sensors 16 can be located on the face 15 of the body 2 of the hood 1 and positioning a user's hand on one or more of them or the movement of such hand in one or several directions above them can lead to a special control of the electrically powered members of the hood. These embodiments too and others that one skilled in the sector can deduce from the previous description are to be considered to fall into the object of the following claims.

Claims

1. An extractor hood (1) for a cooktop (4) comprising a body containing usual
5 suction means located above said cooktop (4), said body (2) for instance
being secured to a wall (100) in correspondence with which said cooktop is
located or being secured to a piece of furniture which said cooktop is
constrained to, characterized in that such body (2) comprises sensor
means (16) capable of sensing the movement of a part of the body of a
10 user (A) and control means (20) controlling the operating functions of said
hood (1) connected to said sensor means (16), said control means (20)
activating at least one of said functions upon sensing a predetermined
movement of the user.
- 15 2. A hood according to claim 1, characterized in that said sensor means are
at least one movement sensor (16).
3. A hood according to claim 2, characterized in that said sensor (16) is a
camera.
- 20 4. A hood according to claim 2, characterized in that said sensor (16) is a
device generating an electric or electromagnetic field perturbable by the
movement of a part of the user's body.
- 25 5. A hood according to claim 2, characterized in that said sensor means (16)
are means generating a WI-FI signal whose perturbation caused by the
movement of a part of the user's body entails the identification of said
movement.
- 30 6. A hood according to claim 1, characterized in that said sensor means (16)
are a plurality of proximity sensors.
7. A hood according to claim 1, characterized in that the control means (20)
control the operation of a usual fan and of lighting members electrically
35 powered by the hood (1).

8. A hood according to claim 1, characterized in that said control means are a microprocessor unit (20), the latter co-operating with a memory (21) where correlations are present between the movements of the user and the actions of the control means (20) onto the operation of the hood (1).

5

9. A hood according to claim 1, characterized in that audible and/or visual indicator means are provided suitable for informing the user that a control signal has been received from the sensor means (16) and actions have been taken by the control means to activate a function of the hood (1).

10

10. A hood according to claim 1, characterized in that it is not provided with any control elements associated with its own body and suitable for making it possible to control its operating functions, such control being remotely made only.

15

11. A method for controlling an extractor hood (1) located in correspondence with a cooktop (4), said hood comprising a body (2) containing usual suction means located above said cooktop (4), said body (2) being for instance secured to a wall in correspondence with which said cooktop is located being it secured to a piece of furniture which said cooktop is constrained to, characterized in that there is provided a remote sensing of a movement of a user using the hood and the automatic activation of an operating function of the latter by recognizing such movement and making a correlation of its own to a specific previously preset operating function.

25

12. A method according to claim 11, characterized in that said remote sensing is carried out alternatively on the basis of one of the following operations:

- sensing an image,
- sensing the perturbation of an electric or electromagnetic field.

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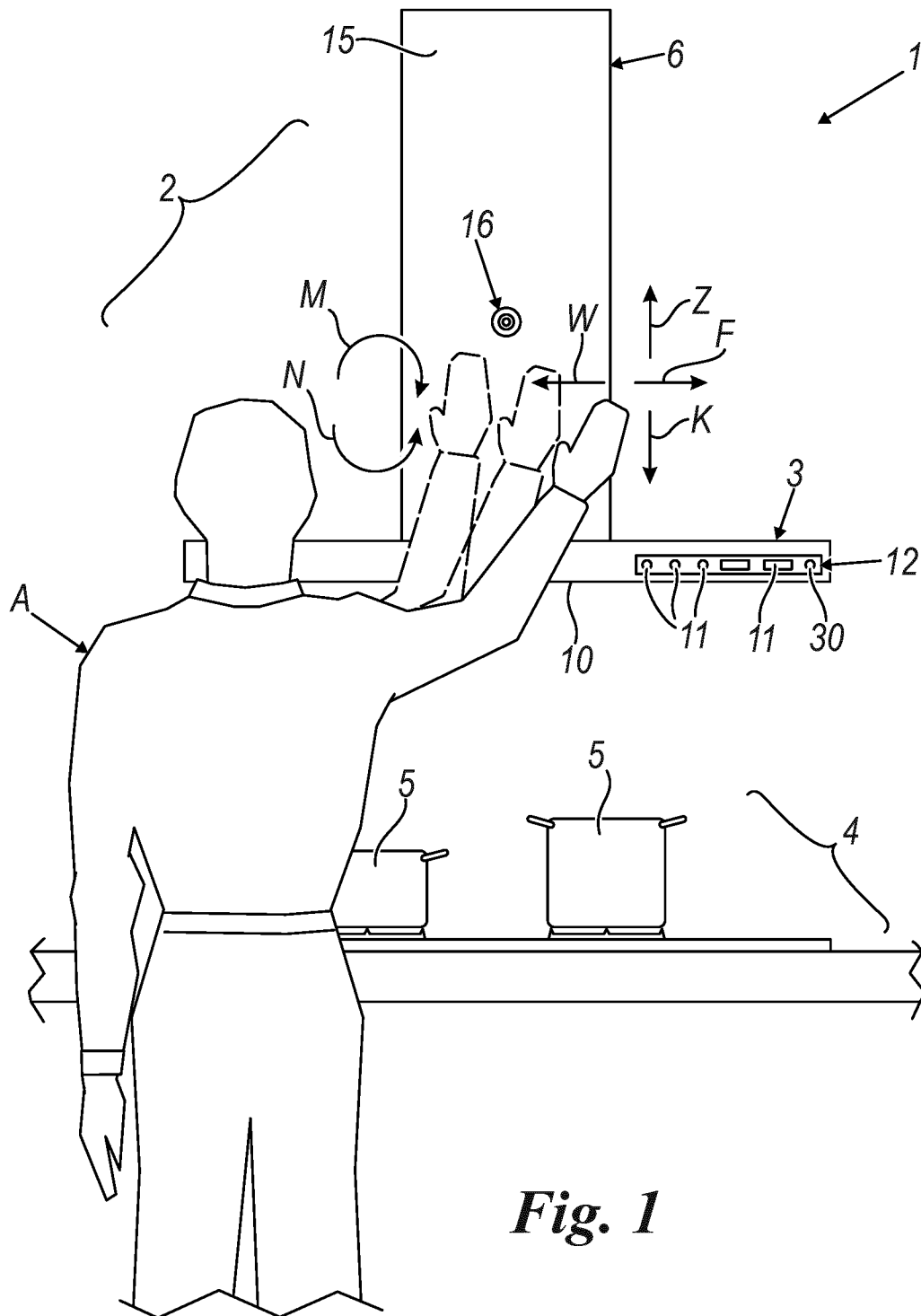
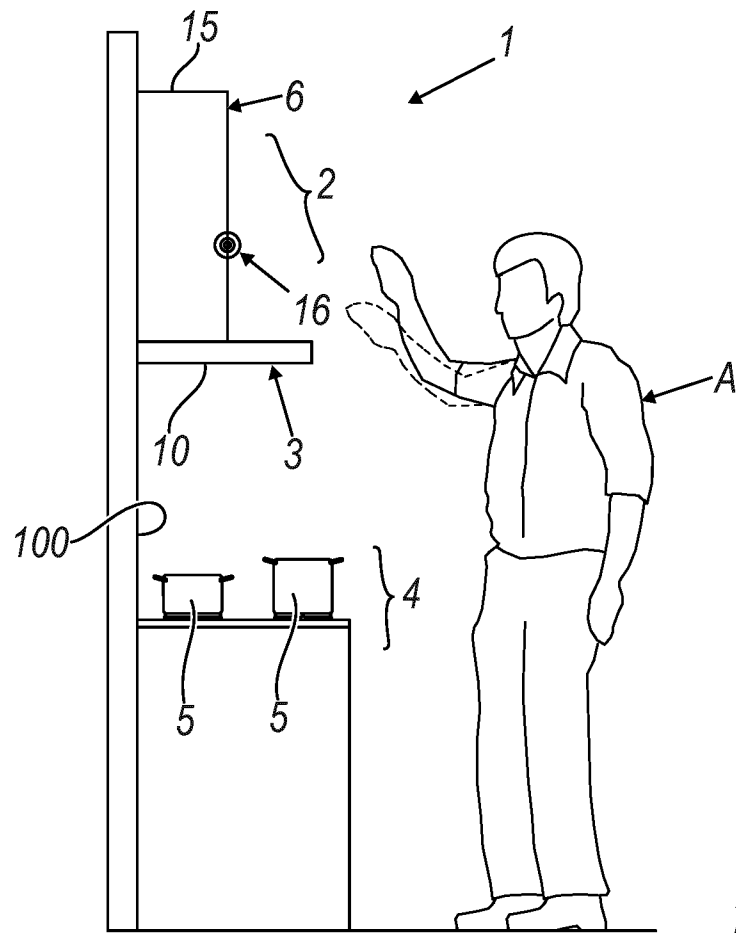
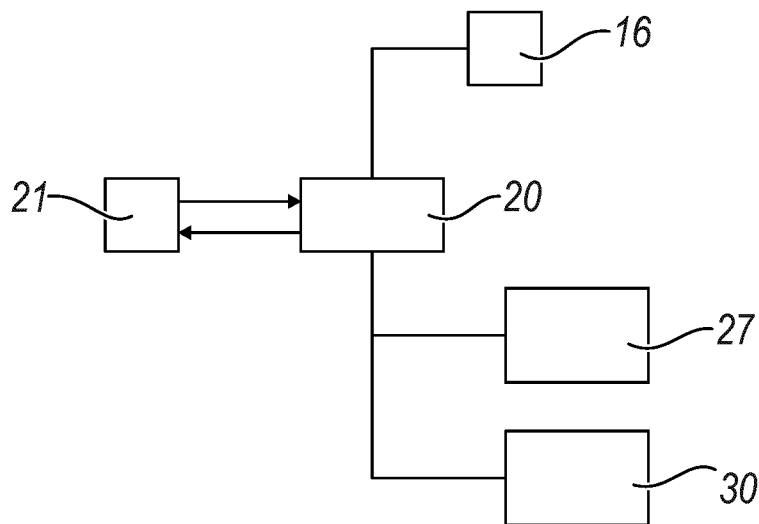


Fig. 1

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**Fig. 2****Fig. 3**

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2015/056052

A. CLASSIFICATION OF SUBJECT MATTER
INV. F24C15/20 B08B15/02
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)
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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

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INTERNATIONAL SEARCH REPORT

International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
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