



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
28.10.2020 Bulletin 2020/44

(51) Int Cl.:
F24C 15/20 (2006.01)

(21) Application number: **20169407.2**

(22) Date of filing: **14.04.2020**

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

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(30) Priority: **25.04.2019 CN 201910337652**

(54) **METHOD FOR ADJUSTING CONTROL SCHEME OF COOKER HOOD AND COOKER HOOD**

(57) A method for adjusting a control policy of a cooker hood and a cooker hood are provided, where an operation mode of the cooker hood includes a manual mode and an automatic mode, and in the automatic mode, the cooker hood automatically controls a rotational speed of a fan according to a sensor parameter. The method includes: when the cooker hood operates in the automatic mode, obtaining a quantity of times of up shifting and/or

a quantity of times of down shifting that a user manually adjusts a gear of the cooker hood; and adjusting a control parameter of the cooker hood in the automatic mode according to the quantity of times of gear shifting. In this way, an automatic control parameter of the fan is adjusted according to sensitivity levels of different users to the kitchen environment, thereby improving user experience.

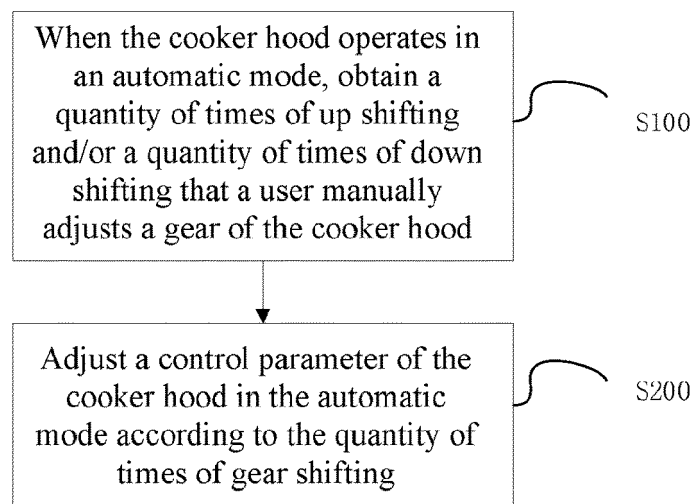


FIG. 3

Description

BACKGROUND

Technical Field

[0001] The present invention relates to the technical field of household appliances, and in particular, to a method for adjusting a control policy of a cooker hood and a cooker hood.

Related Art

[0002] With development of cooker hood technologies, more manufacturers focus on an automatic control technology of a fan of a cooker hood, that is, control a rotational speed of a fan of a cooker hood by using a detection value of a sensor. In this case, automatic control is generally implemented by presetting a correspondence between a sensor parameter and a rotational speed of a fan. However, users have different sensitivity levels to or have different requirements on cooking fumes and environments, the existing automatic control method cannot meet a personalized requirement of a user.

SUMMARY

[0003] An objective of embodiments of the present invention is a method for optimizing an automatic control policy of a cooker hood.

[0004] An objective of the embodiments of the present invention is to provide a user-based personalized cooker hood control method and a cooker hood.

[0005] A method for adjusting a control policy of a cooker hood is provided, where an operation mode of the cooker hood includes a manual mode and an automatic mode, and in the automatic mode, the cooker hood automatically controls a rotational speed of a fan according to a sensor parameter; and the method includes: when the cooker hood operates in the automatic mode, obtaining a quantity of times of up shifting and/or a quantity of times of down shifting that a user manually adjusts a gear of the cooker hood; and adjusting a control parameter of the cooker hood in the automatic mode according to the quantity of times of gear shifting. Therefore, based on user habits in the automatic mode of the cooker hood, the control policy of the cooker hood, especially the control policy of the fan, is automatically adjusted, to implement personalization.

[0006] In a possible embodiment, a sensitive parameter of the sensor is adjusted according to the quantity of times of up shifting and/or the quantity of times of down shifting, and the rotational speed of the fan corresponding to the sensor parameter is correspondingly adjusted.

[0007] In a possible embodiment, when the quantity of times of up shifting is greater than a first preset value and a value by which the quantity of times of up shifting is greater than the quantity of times of down shifting ex-

ceeds a second preset value, the sensitive parameter of the sensor is increased and the rotational speed of the fan of the cooker hood is correspondingly increased; and when the quantity of times of down shifting is greater than a third preset value and a value by which the quantity of times of down shifting is greater than the quantity of times of up shifting exceeds a fourth preset value, the sensitive parameter of the sensor is decreased and the rotational speed of the fan of the cooker hood is correspondingly decreased.

[0008] In a possible embodiment, a quantity of times that the user manually adjusts the gear of the cooker hood in a preset period is obtained.

[0009] In a possible embodiment, the sensor includes at least one of the following: an air quality sensor, a temperature sensor, and a moisture sensor.

[0010] A cooker hood is provided, including a fan, a sensor, and a controller, where an operation mode of the cooker hood includes a manual mode and an automatic mode, the controller is configured to control, in the automatic mode, a rotational speed of the fan according to a sensor parameter, and the controller is further configured to: when the cooker hood operates in the automatic mode, obtain a quantity of times of up shifting and/or a quantity of times of down shifting that a user manually adjusts a gear of the cooker hood; and an adjustment part is configured to adjust a control parameter of the cooker hood in the automatic mode according to the quantity of times of gear shifting.

[0011] In a possible embodiment, the controller is configured to adjust a sensitive parameter of the sensor according to the quantity of times of up shifting and/or the quantity of times of down shifting, and correspondingly adjust the rotational speed of the fan corresponding to the parameter of the sensor.

[0012] In a possible embodiment, the controller is configured to: when the quantity of times of up shifting is greater than a first preset value and a value by which the quantity of times of up shifting is greater than the quantity of times of down shifting exceeds a second preset value, increase the sensitive parameter of the sensor and correspondingly increase the rotational speed of the fan of the cooker hood; and when the quantity of times of down shifting is greater than a third preset value and a value by which the quantity of times of down shifting is greater than the quantity of times of up shifting exceeds a fourth preset value, decrease the sensitive parameter of the sensor and correspondingly decrease the rotational speed of the fan of the cooker hood.

[0013] In a possible embodiment, the controller is configured to obtain a quantity of times that the user manually adjusts the gear of the cooker hood in a preset period.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014]

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 a control structure of the cooker hood according to an embodiment of the present invention; and

FIG. 3 is a flowchart of a method according to an embodiment of the present invention.

DETAILED DESCRIPTION

[0015] To understand the solutions of the present invention more clearly, the following describes implementations in detail with reference to the accompanying drawings of the specification.

[0016] FIG. 1 and FIG. 2 are schematic diagrams of a cooker hood and a control structure of the cooker hood.

[0017] As shown in FIG. 1, a cooker hood 10 includes a housing 11 and an exhaust fume collecting hood 12 connected to the housing 11, where the housing 11 includes an air inlet, an air outlet, and an air duct 13 between the air inlet and the air outlet. The cooker hood 10 further includes a fan 14 disposed in the air duct 13.

[0018] In an embodiment, the cooker hood 10 further includes a sensor 16 disposed in the exhaust fume collecting hood 12, which may detect indoor environments such as a temperature, humidity, air pressure, and an oil fume concentration.

[0019] In an embodiment, the sensor 16 may be a temperature sensor, a moisture sensor, or an air quality sensor such as a VOC sensor, or may be an all-in-one sensor that separately detects a temperature, humidity, air pressure, and an oil fume concentration.

[0020] In an embodiment, the sensor 16 may be disposed on the cooker hood 10, or may be disposed independently, for example, disposed on a kitchen wall or near a hearth, and may communicate with the cooker hood 10.

[0021] FIG. 2 is a block diagram of a control structure of the cooker hood 10. The cooker hood 10 further includes a controller 15. The controller 15 is separately connected to the sensor 16 and the fan 14, and is configured to receive a detection parameter of the sensor 16 and control an operation of the fan 14 according to the detection parameter.

[0022] In an embodiment, the controller 15 may be disposed on the top of the housing 11 or on the exhaust fume collecting hood 12.

[0023] In an embodiment, an operation mode of the cooker hood 10 may include a manual mode and an automatic mode. In the manual mode, a user may autonomously adjust a gear of the fan of the cooker hood according to a status of the kitchen environment. In the automatic mode, the controller of the cooker hood controls a rotational speed of the fan of the cooker hood according to the detection parameter of the sensor.

[0024] In an embodiment, a button may be disposed

on the cooker hood 10, and is configured to start the automatic mode. The button may be a mechanical button or may be set as a touch button.

[0025] In the automatic mode, a correspondence between a parameter value of the sensor and a rotational speed of the fan may be preset, and then the controller 15 may control the rotational speed of the fan 14 based on the correspondence.

[0026] For example, correspondences between a VOC sensor and a rotational speed of a fan are respectively: in a first gear, a gas concentration is 1-10, and a rotational speed is 1500-2000; in a second gear, a gas concentration is 11-20, and a rotational speed is 2000-2500; in a third gear, a gas concentration is 21-30, and a rotational speed is 2500-3000, and so on.

[0027] In the automatic mode, the user may alternatively manually control the gear of the cooker hood, and may shift up or shift down the gear according to feelings. In an embodiment, the controller 15 may further obtain and automatically adjust the correspondence between the sensor and the rotational speed according to a status that the user manually controls the gear of the cooker hood, to control the fan. The rotational speed of the fan is automatically controlled according to habits of different users for adjusting the gear of the cooker hood, to meet requirements of different users on the kitchen environment. Specifically, the controller 15 may be configured to perform steps of the following method.

[0028] The method is described in detail below.

[0029] An embodiment of the present invention provides a method for adjusting a control policy of the cooker hood 10. As shown in FIG. 3, the method includes:

S100: When the cooker hood 10 operates in an automatic mode, obtain a quantity of times of up shifting and/or a quantity of times of down shifting that a user manually adjusts a gear of the cooker hood.

S200: Adjust a control parameter of the cooker hood in the automatic mode according to the quantity of times of gear shifting.

[0030] In an embodiment, when the cooker hood operates in the automatic mode and the user adjusts the gear according to a preference of the user, a habit of the user for adjusting the gear is recorded in a form such as a memory.

[0031] In an embodiment, a quantity of times that the user manually adjusts the gear of the cooker hood in a preset period, for example, a quantity of times of up shifting and a quantity of times of down shifting in a week or in a month, may be obtained.

[0032] In an embodiment, after the quantity of times of gear shifting is obtained, a sensitive parameter of the sensor is adjusted according to the quantity of times of up shifting and/or the quantity of times of down shifting, and the rotational speed of the fan corresponding to the parameter of the sensor is correspondingly adjusted.

[0033] Specifically, when the quantity of times of up shifting is greater than a first preset value and a value by which the quantity of times of up shifting is greater than the quantity of times of down shifting exceeds a second preset value, it indicates that sense sensitivity of the sensor is insufficient, and corresponding sensitivity of the sensor when the rotational speed of the fan is controlled needs to be increased. The first preset value and the second preset value may be obtained by using experimental data.

[0034] For example, a case of gear shifting by the user in the automatic mode is recorded in a week, in which a quantity of times of up shifting is 25 and a quantity of times of down shifting is 8, where the first preset value and the second preset value are respectively 10 and 5. In this case, $25 > 10$ and $25 - 8 > 5$, which indicate that sensitivity of the sensor is insufficient, and sensitivity needs to be improved to correspondingly adjust the rotational speed of the fan. When the sensor is a VOC sensor, a rotational speed of the fan of the cooker hood corresponding to the same gas concentration detected by the sensor may be increased. For example, a rotational speed corresponding to a first gear of the cooker hood is adjusted to 1500-2000, a rotational speed corresponding to a second gear is adjusted to 2500-3000, and so on.

[0035] Correspondingly, when the quantity of times of down shifting is greater than a third preset value and a value by which the quantity of times of down shifting is greater than the quantity of times of up shifting exceeds a fourth preset value, it indicates that sense sensitivity of the sensor is excessive, and corresponding sensitivity of the sensor when the rotational speed of the fan is controlled needs to be decreased. The third preset value and the fourth preset value may be obtained by using experimental data.

[0036] For example, when the sensor is a VOC sensor, a rotational speed of the fan of the cooker hood corresponding to the same smoke volume detected by the sensor may be decreased.

[0037] 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, or an optical disc.

[0038] Although the present invention is disclosed above, the present invention is not limited thereto. Any person skilled in the art can make various variations and modifications without departing from the spirit and scope of the present invention. Therefore, the protection scope of the present disclosure should be subject to the scope defined by the claims.

[0039] In addition, the term "and/or" in this specification describes only an association relationship for describing associated objects and represents that three relationships may exist. For example, A and/or B may represent the following three cases: Only A exists, both A and B

exist, and only B exists. In addition, the character "/" in this specification generally indicates an "or" relationship between the associated objects.

Claims

1. A method for adjusting a control policy of a cooker hood, wherein an operation mode of the cooker hood comprises a manual mode and an automatic mode, and in the automatic mode, the cooker hood automatically controls a rotational speed of a fan according to a sensor parameter; and **characterized in that** the method comprises: when the cooker hood operates in the automatic mode, obtaining a quantity of times of up shifting and/or a quantity of times of down shifting that a user manually adjusts a gear of the cooker hood; and adjusting a control parameter of the cooker hood in the automatic mode according to the quantity of times of gear shifting.
2. The method according to claim 1, **characterized by** comprising adjusting a sensitive parameter of the sensor according to the quantity of times of up shifting and/or the quantity of times of down shifting, and correspondingly adjusting the rotational speed of the fan corresponding to the sensor parameter.
3. The method according to claim 2, **characterized by** comprising when the quantity of times of up shifting is greater than a first preset value and a value by which the quantity of times of up shifting is greater than the quantity of times of down shifting exceeds a second preset value, increasing the sensitive parameter of the sensor and correspondingly increasing the rotational speed of the fan of the cooker hood; and when the quantity of times of down shifting is greater than a third preset value and a value by which the quantity of times of down shifting is greater than the quantity of times of up shifting exceeds a fourth preset value, reducing the sensitive parameter of the sensor and correspondingly reducing the rotational speed of the fan of the cooker hood.
4. The method according to claim 1, **characterized by** comprising obtaining a quantity of times that the user manually adjusts the gear of the cooker hood in a preset period.
5. The method according to any one of claims 1 to 3, **characterized in that** the sensor comprises at least one of the following: an air quality sensor, a temperature sensor, and a moisture sensor.
6. A cooker hood, comprising a fan, a sensor, and a controller, wherein an operation mode of the cooker hood comprises a manual mode and an automatic mode, the controller is configured to control, in the

automatic mode, a rotational speed of the fan according to a sensor parameter, and **characterized in that** the controller is further configured to: when the cooker hood operates in the automatic mode, obtain a quantity of times of up shifting and/or a quantity of times of down shifting that a user manually adjusts a gear of the cooker hood; and an adjustment part is configured to adjust a control parameter of the cooker hood in the automatic mode according to the quantity of times of gear shifting. 5 10

7. The cooker hood according to claim 6, **characterized in that** the controller is configured to adjust a sensitive parameter of the sensor according to the quantity of times of up shifting and/or the quantity of times of down shifting, and correspondingly adjust the rotational speed of the fan corresponding to the sensor parameter. 15
8. The cooker hood according to claim 7, **characterized in that** the controller is configured to: when the quantity of times of up shifting is greater than a first preset value and a value by which the quantity of times of up shifting is greater than the quantity of times of down shifting exceeds a second preset value, increase the sensitive parameter of the sensor and correspondingly increase the rotational speed of the fan of the cooker hood; and when the quantity of times of down shifting is greater than a third preset value and a value by which the quantity of times of down shifting is greater than the quantity of times of up shifting exceeds a fourth preset value, decrease the sensitive parameter of the sensor and correspondingly decrease the rotational speed of the fan of the cooker hood. 20 25 30 35
9. The cooker hood according to claim 6, **characterized in that** the controller is configured to obtain a quantity of times that the user manually adjusts the gear of the cooker hood in a preset period. 40
10. The cooker hood according to any one of claims 6 to 9, **characterized in that** the sensor comprises at least one of the following: an air quality sensor, a temperature sensor, and a moisture sensor. 45

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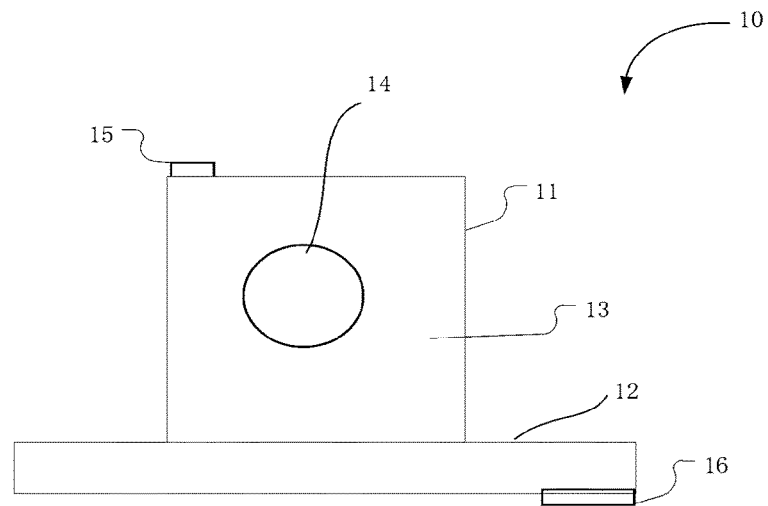


FIG. 1

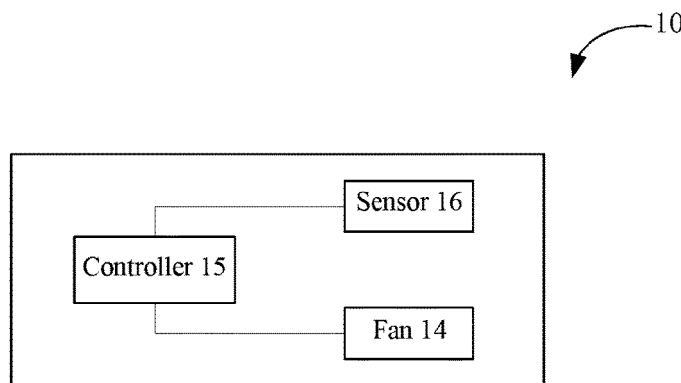


FIG. 2

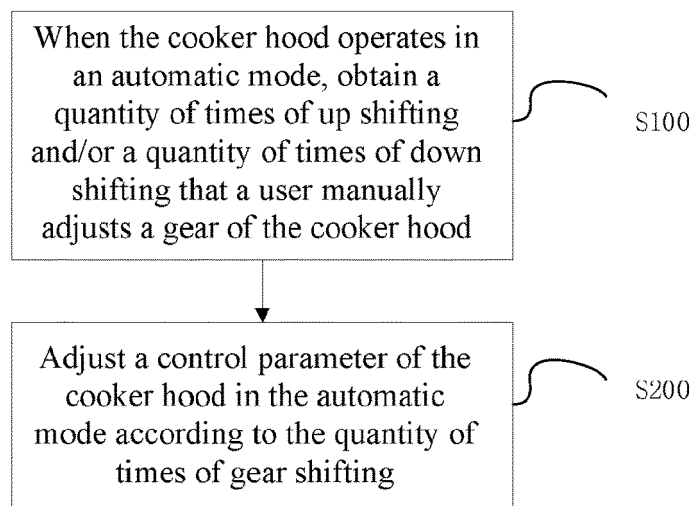


FIG. 3



EUROPEAN SEARCH REPORT

 Application Number
 EP 20 16 9407

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	US 6 920 874 B1 (SIEGEL ROBERT PAUL [US]) 26 July 2005 (2005-07-26) * column 5, line 36 - column 6, line 67 *	1-10	
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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 20 August 2020	Examiner Jalal, Rashwan
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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 EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 20 16 9407

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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