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(54) **AIR CONDITIONER AND CONTROL METHOD THEREOF**

(57) The present invention belongs to the technical field of air conditioners, and in particular relates to an air conditioner and a control method therefor. The present invention aims to solve the problem that it is difficult for the ways of adjusting parameters in existing air conditioners to fit the user's requirements well. To this end, the control method of the present invention includes the following steps: acquiring set parameter information; and setting an operation template for the air conditioner according to the parameter information. In the present invention, parameter information stored in a cloud may be acquired as the set parameter information, or parameter information input by a control terminal may be acquired as the set parameter information. Then, the operation

template may be set according to the parameter information, that is, the user may select the parameter information stored in the cloud to set the operation template, so that the user does not need to set various parameter information by himself/herself, thereby effectively simplifying the user's operation; or, the user may also set the operation template by selecting the parameter information input by the control terminal itself, so that each parameter information can better fit the user's requirements on use, thereby maximally improving the user experience.

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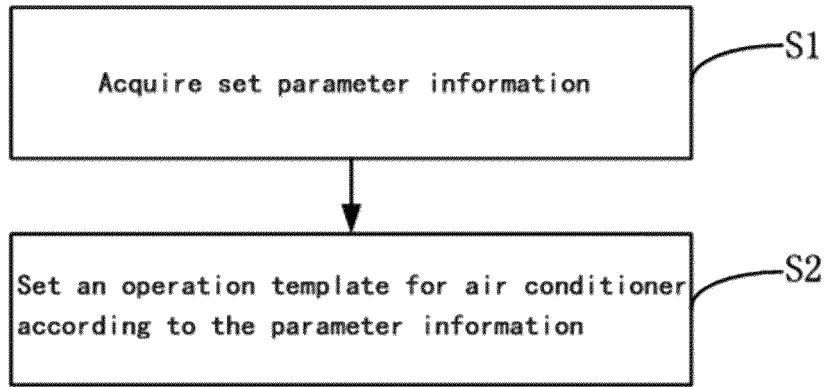


Fig.1

Description

FIELD OF THE INVENTION

[0001] The present invention belongs to the technical field of air conditioners, and in particular relates to an air conditioner and a control method therefor.

BACKGROUND OF THE INVENTION

[0002] With the continuous improvement of people's living standards, people have also raised higher and higher requirements on the living environment. In order to maintain a comfortable ambient temperature, an air conditioner has become an indispensable device in people's lives. In recent years, although the technology of air conditioner has developed to a level that is very mature, there are still some aspects that need improvements in existing air conditioners. For example, for an existing air conditioner, it is required to reset operating parameters of the air conditioner each time it is turned on, or for some air conditioners, the operation may also be continued according to the last-time operating parameters; however, if it is required to operate the air conditioner according to new operating parameters, the operating parameters of the air conditioner have to be manually adjusted, and this way of manually adjusting the operating parameters is often very inconvenient; or some existing air conditioners may also adjust their operating states based on the current operating parameters. However, this way of adjusting the operating parameters by the air conditioner itself often does not fit the user's requirements well. Especially for commercial air conditioners, since the specific conditions in their application scenes vary greatly throughout a day, users often need to adjust the operating parameters of the air conditioner for multiple times according to the actual situation, and this will inevitably lead to a problem of sharp deterioration in the user experience.

[0003] Accordingly, there is a need in the art for a new air conditioner and a control method therefor to solve the above problems.

SUMMARY OF THE INVENTION

[0004] In order to solve the above problem in the related art, that is, in order to solve the problem that it is often difficult for the ways of adjusting parameters in existing air conditioners to fit the user's requirements well, the present invention provides a control method for an air conditioner, wherein the control method includes the following steps: acquiring set parameter information; and setting an operation template for the air conditioner according to the parameter information.

[0005] In a preferred technical solution of the above control method for the air conditioner, the air conditioner includes a control terminal, and the step of "acquiring set parameter information" specifically includes: acquiring

time period information and operating parameter information corresponding to the time period information, input by the control terminal or from a cloud server.

[0006] In a preferred technical solution of the above control method for the air conditioner, the operating parameter information includes one or more of an on/off state, an operating mode, a set temperature, a set wind speed, and an air supplying mode of the air conditioner.

[0007] In a preferred technical solution of the above control method for the air conditioner, the step of "setting the operation template for the air conditioner according to the parameter information" specifically includes: setting a daily operation template for the air conditioner according to the parameter information.

[0008] In a preferred technical solution of the above control method for the air conditioner, the step of "setting the daily operation template for the air conditioner according to the parameter information" specifically includes: setting a workday operation template for the air conditioner according to the parameter information, and/or setting a holiday operation template for the air conditioner according to the parameter information, and/or setting a specific-day operation template for the air conditioner according to the parameter information.

[0009] In a preferred technical solution of the above control method for the air conditioner, after the step of "setting the daily operation template for the air conditioner according to the parameter information", the control method further includes: setting a weekly operation template for the air conditioner according to a plurality of daily operation templates.

[0010] In a preferred technical solution of the above control method for the air conditioner, after the step of "setting the weekly operation template for the air conditioner according to the plurality of daily operation templates", the control method further includes: setting a monthly operation template for the air conditioner according to the plurality of daily operation templates and/or the at least one weekly operation template.

[0011] In a preferred technical solution of the above control method for the air conditioner, after the step of "setting the monthly operation template for the air conditioner according to the plurality of daily operation templates and/or the at least one weekly operation template", the control method further includes: setting a yearly operation template according to the plurality of daily operation templates and/or the at least one weekly operation template and/or the at least one monthly operation template.

[0012] The present invention also provides an air conditioner which includes a controller, wherein the controller is capable of performing the control method described in any one of the above described preferred technical solutions.

[0013] In a preferred technical solution of the above air conditioner, the air conditioner further includes a control terminal, wherein the control terminal is provided with a daily operation template input area, a weekly operation

template input area, a monthly operation template input area, and a yearly operation template input area, and wherein the daily operation template input area is configured to input parameter information, the weekly operation template input area is configured to input a daily operation template, the monthly operation template input area is configured to input the daily operation template and a weekly operation template, and the yearly operation template input area is configured to input the daily operation template, the weekly operation template, and a monthly operation template.

[0014] It will be appreciated by those skilled in the art that, in the technical solutions of the present invention, the control method of the present invention includes the following steps: acquiring set parameter information; and setting an operation template for the air conditioner according to the parameter information. Specifically, in the control method of the present invention, parameter information stored in a cloud server may be acquired as the set parameter information, or parameter information input by a control terminal may be acquired as the set parameter information. Then, the control method may set the operation template according to the parameter information, that is, the user may select the parameter information stored in the cloud server to set the operation template, so that the user does not need to set various parameter information by himself/herself, thereby enabling the user to set the operation template by directly using the set parameter information and simplifying the user's operation; or, the user may also set the operation template by selecting the parameter information input by the control terminal itself, so that each parameter information can better fit the user's requirements on use, thereby maximally improving the user experience.

[0015] Further, in a preferred technical solution of the present invention, in the control method of the present invention, time period information and operating parameter information corresponding to the time period information input by the control terminal are acquired as the set parameter information; that is, after the air conditioner enters each set time period, the air conditioner is capable of changing an operating state of at least a part of itself according to the parameter information set by the user, so that the operating condition of the air conditioner can fit the user's requirements on use at all times; at the same time, it can be understood that the user can use the operation template for unlimited times by only setting the operation template once, that is, on the basis that the user does not need to manually adjust the operating parameters of the air conditioner, the air conditioner can be automatically adjusted to the operating state required by the user, thereby effectively avoiding the problem in existing air conditioners that the operating parameters have to be manually adjusted by the user if the operating state of the air conditioner needs to be changed, thereby effectively facilitating the use by the user. Preferably, the operating parameter information includes one or more of an on/off state, an operating mode, a set temperature, a

set wind speed, and an air supplying mode of the air conditioner.

[0016] Further, in a preferred technical solution of the present invention, the control method of the present invention can set the daily operation template according to the parameter information, and when the air conditioner operates according to the daily operation template, the user no longer needs to manually adjust the operating parameters of the air conditioner on that day, and the air conditioner can automatically adjust its operating parameters according to the parameter information recorded in the daily operation template, thereby changing the operating state of the air conditioner so that the air conditioner described above can effectively meet user's different requirements on use in different time periods. Preferably, the daily operation template includes three types, i.e., a workday operation template, a holiday operation template, and a specific-day operation template, so that the air conditioner can run different daily operation templates on different days, thereby effectively fitting the user's requirements on use.

[0017] Further, in a preferred technical solution of the present invention, the control method of the present invention can set a weekly operation template based on a plurality of daily operation templates. It can be understood that in an example in which the air conditioner is used in a shopping mall, since passenger flows of the shopping mall are different on workdays and on weekends, the operating parameters of the air conditioner on workdays and weekends have also to be set separately. In this case, the control method can combine a plurality of different daily operation templates into a weekly operation template, so that the operations of the air conditioner are not completely the same on different days in a week, or even the air conditioner operates according to completely different daily operation templates. As such, the air conditioner can operate according to different operating parameters based on different requirements on use, thereby enabling the air conditioner to more closely fit user's requirements on use; when the air conditioner operates according to the weekly operation template, the user no longer needs to manually adjust the operating parameters of the air conditioner within that week, and the air conditioner can automatically adjust its operating parameters according to the parameter information recorded in the weekly operation template, thereby changing the operating state of the air conditioner so that the air conditioner can effectively meet user's different requirements on use on different days.

[0018] Further, in a preferred technical solution of the present invention, the control method of the present invention can set the monthly operation template according to a plurality of daily operation templates and/or at least one weekly operation template. When the air conditioner operates according to the monthly operation template, the user no longer needs to manually adjust the operating parameters of the air conditioner within a month, and the air conditioner can automatically adjust its operating pa-

rameters according to the parameter information recorded in the monthly operation template, thereby changing the operating state of the air conditioner so that the air conditioner can effectively meet user's different requirements on use on different days.

[0019] Further, in a preferred technical solution of the present invention, the control method of the present invention can set the yearly operation template according to a plurality of daily operation templates and/or at least one weekly operation template and/or at least one monthly operation template. When the air conditioner operates according to the yearly operation template, the user no longer needs to manually adjust the operating parameters of the air conditioner within a year, and the air conditioner can automatically adjust its operating parameters according to the parameter information recorded in the yearly operation template, thereby changing the operating state of the air conditioner so that the air conditioner can effectively meet user's different requirements on use on different days throughout the four seasons of the year.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020]

FIG. 1 is a flow chart of main steps of a control method of the present invention;

FIG. 2 is a schematic view of a first operation interface of a control terminal of the present invention;

FIG. 3 is a schematic view of a second operation interface of a control terminal of the present invention; and

FIG. 4 is a schematic view of a third operation interface of a control terminal of the present invention.

DETAILED DESCRIPTION OF THE EMBODIMENT(S) OF THE INVENTION

[0021] Preferred embodiments of the present invention will be described below with reference to the accompanying drawings. It should be appreciated by those skilled in the art that these embodiments are merely used to explain the technical principles of the present invention, and are not intended to limit the scope of protection of the present invention. For example, although the steps of the method of the present invention are described in specific orders in this application, these orders are not limiting, and those skilled in the art may execute the steps according to other orders under the premise of not departing from the basic principles of the present invention. It should be noted that the terms "first", "second", and "third" are only used for descriptive purposes, and should not be understood as indicating or implying relative importance.

[0022] In the present preferred embodiment, a description will be given by taking the case where the air conditioner is a commercial air conditioner used in a shopping mall as an example. However, the control method of the present invention can obviously also be applied to other air conditioners, such as household air conditioners, or commercial air conditioners used in office buildings. Such changes in the object of application do not depart from the basic principles of the present invention, and therefore will all fall within the scope of protection of the present invention. In the present preferred embodiment, the air conditioner includes a control terminal and a controller, wherein a user may implement an operation of inputting information through the control terminal, the controller can acquire information input through the control terminal, and the controller can also control an operating condition of the air conditioner. Those skilled in the art can understand that the control terminal described in the present preferred embodiment may be an operation terminal carried by the air conditioner itself, such as a display control screen or a remote controller and the like disposed on an indoor unit, or may also be a mobile terminal such as a mobile phone, a tablet and the like connected to the controller; at the same time, the user may input information either by pressing a button or by handwriting, that is, a specific structure of the control terminal and the way of inputting information by the user are not limited at all in the present invention, as long as data transmission can be implemented between the control terminal and the air conditioner. In addition, a specific structure and a model of the controller are not limited at all in the present invention, and the controller may be an original controller of the air conditioner, or a controller separately provided for performing the control method of the present invention.

[0023] Specifically, in the present preferred embodiment, the control terminal is provided with a daily operation template input area, a weekly operation template input area, a monthly operation template input area, and a yearly operation template input area. The daily operation template input area is configured to input parameter information, the weekly operation template input area is configured to input the daily operation template, the monthly operation template input area is configured to input the daily operation template and the weekly operation template, and the yearly operation template input area is configured to input the daily operation template, the weekly operation template and the monthly operation template. In addition, those skilled in the art can understand that the daily operation template input area, the weekly operation template input area, the monthly operation template input area, and the yearly operation template input area may either be operation interfaces directly disposed on a homepage of the control terminal, or secondary operation interfaces, i.e., secondary operation interfaces that will appear only after the user clicks on corresponding icons or presses corresponding buttons.

[0024] First, reference is made to FIG. 1, which is a flow chart of main steps of the control method of the present invention. As shown in FIG. 1, based on the air conditioner described in the above embodiment, the control method of the present invention mainly includes the following steps:

S 1: acquiring set parameter information; and

S2: setting an operation template for the air conditioner according to the parameter information.

[0025] Further, in step S1, the controller of the air conditioner is capable of acquiring time period information and operating parameter information corresponding to the time period information input by the user through the control terminal; wherein the time period information may be set by the user himself/herself according to the user's requirements on use, and the operating parameter information includes an on/off state, an operating mode, a set temperature, a set wind speed, and an air supplying mode of the air conditioner. Of course, although the operating parameter information described in the present preferred embodiment only includes the on/off state, the operating mode, the set temperature, the set wind speed, and the air supplying mode of the air conditioner, it is obvious that a technician may also set specific types of the operating parameter information by himself/herself according to actual requirements on use and the actual condition of the air conditioner. In addition, those skilled in the art can understand that the way in which the controller acquires the parameter information is not limited at all by the present invention, and a technician may set the way in which the controller acquires parameter information according to actual requirements on use; for example, the controller may also acquire parameter information stored in a cloud server as the set parameter information.

[0026] Furthermore, in step S2, the controller is capable of setting a corresponding operation template according to the parameter information. Specifically, the controller is capable of setting the operation template through the time period information and the operating parameter information corresponding to the time period information input by the user; it can be seen that the time length required to run the operation template depends on the time period information input by the user. For example, if operating parameter information input by the user is operating parameter information of the air conditioner within 24 hours, then the time required for the air conditioner to run the operation template is 24 hours. That is to say, the user may input by himself/herself the time period information and the operation parameter information corresponding to the time period information according to actual requirements on use, so that the operation template required by the user is set. In addition, it should also be noted that the operation template may be either generated by the controller of the air conditioner itself, or

may be generated by another external controller and then sent to the controller of the air conditioner.

[0027] Reference is made to FIG. 2 below, which is a schematic view of a first operation interface of a control terminal of the present invention. As shown in FIG. 2, since the shopping malls have different requirements on the use of the air conditioner on workdays and on holidays, the daily operation template input area described in the present preferred embodiment includes a workday operation template input area and a holiday operation template input area, wherein the parameter information required to be input in the workday operation template input area and the parameter information to be input in the holiday operation template input area are the same; the first vertical column is configured for the user to input the time period information, and the second vertical column to the sixth vertical column are configured for the user to input operating parameter information corresponding to the time period information. Specifically, the first vertical column is configured for the user to input the time period information, wherein the user only needs to input time points in the first vertical column so that the air conditioner can take two adjacent time points as two endpoints of the time period by default; the second vertical column is configured for the user to input information of the on/off state, such as power-on or power-off; the third vertical column is configured for the user to input information of the operating mode, such as a cooling mode, a heating mode and an air supplying mode; the fourth vertical column is configured for the user to input information of the set temperature, and the user may input a set value of the temperature by himself/herself according to the actual requirements on use; the fifth vertical column is configured for the user to input information of the set wind speed, such as high-speed wind, low-speed wind and medium-speed wind; and the sixth vertical column is configured for the user to input information of the air supplying mode, such as up-and-down swing, left-and-right swing, and no swing. It should be noted that the technician may also set by himself/herself the type of parameter information that the user needs to input, according to the actual use condition. The description in the present preferred embodiment is only illustrative, and the user may determine by himself/herself how many time periods a day is divided into, according to the requirements on use, as long as the air conditioner can take two adjacent time points as two endpoints of the time period by default after the user inputs a plurality of time points in the first vertical column. In addition, in the present preferred embodiment, the control terminal not only divides the daily operation template input area into the workday operation template input area and the holiday operation template input area, but also the workday operation template input area and the holiday operation template input area are further divided into four input areas: spring, summer, autumn, and winter; the user may click on different icons on the left side of the interface to enter different daily operation template input areas, so

that the user can input different operating parameter information in the daily operation template input areas; that is, the user can set one or more daily operation templates by himself/herself according to actual requirements on use, so that when the user needs it, the air conditioner can operate according to the daily operation template set by the user.

[0028] Reference is made to FIG. 3 below, which is a schematic view of a second operation interface of a control terminal of the present invention. As shown in FIG. 3, on some specific days, the shopping mall usually has different requirements on the use of the air conditioner from those on normal days; for example, the specific days may be a store-celebration day or a discount promotion day of the shopping mall; it should be noted that this setting is not limiting. The user may set the number and type of the daily operation templates by himself/herself according to the actual requirements on use. The daily operation template input area described in the present preferred embodiment further includes a specific-day operation template input area, and the parameter information required to be input in the specific-day operation template input area is the same as the parameter information required to be input in the workday operation template input area and the holiday operation template input area; wherein the first vertical column is configured for the user to input time period information, and the second vertical column to the sixth vertical column are configured for the user to input the operating parameter information corresponding to the time period information. Specifically, the first vertical column is configured for the user to input the time period information, wherein the user only needs to input time points in the first vertical column so that the air conditioner can take two adjacent time points as two endpoints of the time period by default; the second vertical column is configured for the user to input information of the on/off state, such as power-on or power-off; the third vertical column is configured for the user to input information of the operating mode, such as a cooling mode, a heating mode and an air supplying mode; the fourth vertical column is configured for the user to input information of the set temperature, and the user may input a set value of the temperature by himself/herself according to the actual requirements on use; the fifth vertical column is configured for the user to input information of the set wind speed, such as high-speed wind, low-speed wind and medium-speed wind; and the sixth vertical column is configured for the user to input information of the air supplying mode, such as up-and-down swing, left-and-right swing, and no swing. It should be understood by those skilled in the art that the technician may also set by himself/herself the type of parameter information that the user needs to input, according to the actual use condition. The description in the present preferred embodiment is only illustrative, and the user may determine by himself/herself how many time periods a day is divided into, according to the requirements on use, as long as the air conditioner can take two adjacent time points as

two endpoints of the time period by default after the user inputs a plurality of time points in the first vertical column. In addition, it should be noted that, although the daily operation template input area described in the present preferred embodiment includes a workday operation template input area, a holiday operation template input area, and a specific-day operation template input area, the user may set the number and type of the daily operation templates by himself/herself according to the actual requirements on use, and changes of the specific contents that have been set do not deviate from the basic principle of the present invention.

[0029] Reference is made to FIG. 4, which is a schematic view of a third operation interface of a control terminal of the present invention. A monthly operation template input area is shown in FIG. 4, and the user may change the month to be set on an upper side of the interface. Taking the monthly operation template set for November as an example, since November is in autumn, the user only needs to input the workday operation template and the holiday operation template for autumn into each day; of course, the user may also input the specific-day operation template into some dates, and the specific setting manner is determined by the user himself/herself according to the actual requirements on use so that when the user needs it, the air conditioner can operate according to the monthly operation template set by the user. It should be noted that although the monthly operation template described in the present preferred embodiment is composed of daily operation templates, it is obvious that the monthly operation template may also be composed of weekly operation templates, or a combination of daily operation templates and weekly operation templates, wherein the weekly operation template is composed of a plurality of daily operation templates, that is, the user may set the template by himself/herself according to the actual requirements on use. In addition, those skilled in the art may understand that the user can also set the yearly operation template by himself/herself according to the actual requirements on use. The yearly operation template is composed of a plurality of daily operation templates and/or at least one weekly operation template and/or at least one monthly operation template. The setting is similar to the setting of the monthly operation template, and will not be repeated herein.

[0030] Finally, it should be noted that the above examples are all preferred embodiments of the present invention and are not intended to limit the scope of protection of the present invention. Those skilled in the art may appropriately add or delete some of the steps or change the order between different steps as needed when actually using the present invention. These changes do not go beyond the basic principle of the present invention and fall within the scope of protection of the present invention.

[0031] Heretofore, the preferred embodiments of the present disclosure have been described in conjunction with the accompanying drawings, but it can be easily un-

derstood by those skilled in the art that the scope of protection of the present disclosure is obviously not limited to these specific embodiments. Those skilled in the art can make equivalent changes or replacements to the related technical features without departing from the principle of the present disclosure. The technical solutions after the modification or replacement will fall within the scope of protection of the present disclosure.

Claims

1. A control method for an air conditioner, wherein the control method comprises the following steps:

acquiring set parameter information; and
setting an operation template for the air conditioner according to the parameter information.

2. The control method according to claim 1, wherein the air conditioner comprises a control terminal, and the step of "acquiring set parameter information" specifically comprises:

acquiring time period information and operating parameter information corresponding to the time period information, input by the control terminal or transmitted from a cloud server.

3. The control method according to claim 2, wherein the operating parameter information comprises one or more of an on/off state, an operating mode, a set temperature, a set wind speed, and an air supplying mode of the air conditioner.

4. The control method according to any one of claims 1 to 3, wherein the step of "setting the operation template for the air conditioner according to the parameter information" specifically comprises:

setting a daily operation template for the air conditioner according to the parameter information.

5. The control method according to claim 4, wherein the step of "setting the daily operation template for the air conditioner according to the parameter information" specifically comprises:

setting a workday operation template for the air conditioner according to the parameter information, and/or setting a holiday operation template for the air conditioner according to the parameter information, and/or setting a specific-day operation template for the air conditioner according to the parameter information.

6. The control method according to claim 5, wherein after the step of "setting the daily operation template for the air conditioner according to the parameter information", the control method further comprises: setting a weekly operation template for the air con-

ditioner according to a plurality of daily operation templates.

7. The control method according to claim 6, wherein after the step of "setting the weekly operation template for the air conditioner according to the plurality of daily operation templates", the control method further comprises:

setting a monthly operation template for the air conditioner according to the plurality of daily operation templates and/or the at least one weekly operation template.

8. The control method according to claim 7, wherein after the step of "setting the monthly operation template for the air conditioner according to the plurality of daily operation templates and/or the at least one weekly operation template", the control method further comprises:

setting a yearly operation template according to the plurality of daily operation templates and/or the at least one weekly operation template and/or the at least one monthly operation template.

9. An air conditioner, comprising a controller, wherein the controller is capable of performing the control method according to any one of claims 1 to 8.

10. The air conditioner according to claim 9, wherein the air conditioner further comprises a control terminal, the control terminal is provided with a daily operation template input area, a weekly operation template input area, a monthly operation template input area, and a yearly operation template input area, the daily operation template input area is configured to input parameter information, the weekly operation template input area is configured to input a daily operation template, the monthly operation template input area is configured to input the daily operation template and a weekly operation template, and the yearly operation template input area is configured to input the daily operation template, the weekly operation template, and a monthly operation template.

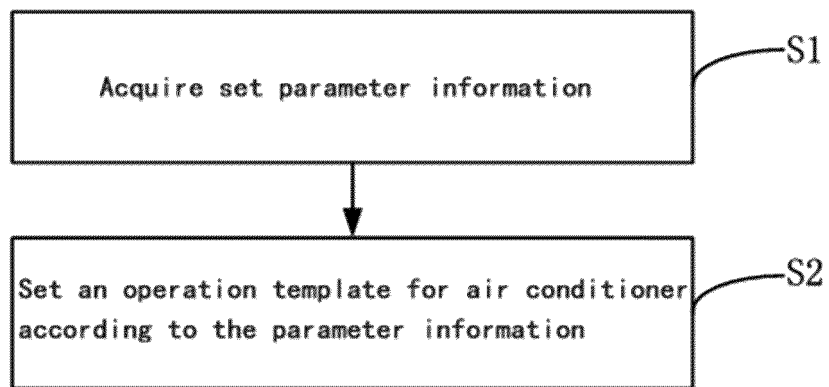


Fig.1

Daily operation template	Workday (Summer)						
Workday(Spring)	Follow current setting Save						
Holiday (Spring)	8:00	Power-on	Cool	24°C	High-speed wind	Up-down swing	☐
Workday(Summer)	--:--	---	---	---	---	---	☐
Holiday (Summer)	--:--	---	---	---	---	---	☐
Workday (Autumn)	--:--	---	---	---	---	---	☐
Holiday (Autumn)	--:--	---	---	---	---	---	☐
Workday(Winter)	--:--	---	---	---	---	---	☐
Holiday (Winter)	--:--	---	---	---	---	---	☐

Fig.2

Daily operation template	Specific day (1)																																																								
Specific day (1)	Follow current setting Save																																																								
Specific day (2)	<table><tr><td>8:00</td><td>Power-on</td><td>Cool</td><td>24°C</td><td>High-speed wind</td><td>Up-down swing</td><td>☐</td></tr><tr><td>--:--</td><td>--</td><td>--</td><td>--</td><td>--</td><td>--</td><td>☐</td></tr><tr><td>--:--</td><td>--</td><td>--</td><td>--</td><td>--</td><td>--</td><td>☐</td></tr><tr><td>--:--</td><td>--</td><td>--</td><td>--</td><td>--</td><td>--</td><td>☐</td></tr><tr><td>--:--</td><td>--</td><td>--</td><td>--</td><td>--</td><td>--</td><td>☐</td></tr><tr><td>--:--</td><td>--</td><td>--</td><td>--</td><td>--</td><td>--</td><td>☐</td></tr><tr><td>--:--</td><td>--</td><td>--</td><td>--</td><td>--</td><td>--</td><td>☐</td></tr><tr><td>--:--</td><td>--</td><td>--</td><td>--</td><td>--</td><td>--</td><td>☐</td></tr></table>	8:00	Power-on	Cool	24°C	High-speed wind	Up-down swing	☐	--:--	--	--	--	--	--	☐	--:--	--	--	--	--	--	☐	--:--	--	--	--	--	--	☐	--:--	--	--	--	--	--	☐	--:--	--	--	--	--	--	☐	--:--	--	--	--	--	--	☐	--:--	--	--	--	--	--	☐
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Fig.3

Schedule query and application						
November 2017						
			Follow current setting		Workday (Autumn)	
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
		Workday (Autumn)	Workday (Autumn)	Workday (Autumn)	Workday (Autumn)	Holiday (Autumn)
6	7	8				
Holiday (Autumn)	Workday (Autumn)	Workday (Autumn)	Workday (Autumn)	Workday (Autumn)	Workday (Autumn)	Holiday (Autumn)
		15				
Holiday (Autumn)	Workday (Autumn)	Workday (Autumn)	Workday (Autumn)	Workday (Autumn)	Workday (Autumn)	Holiday (Autumn)
Holiday (Autumn)	Workday (Autumn)	Workday (Autumn)	Workday (Autumn)	Workday (Autumn)	Workday (Autumn)	Holiday (Autumn)
Holiday (Autumn)	Workday (Autumn)	Workday (Autumn)	Workday (Autumn)			

Fig.4

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2019/088230

5	A. CLASSIFICATION OF SUBJECT MATTER	
	F24F 11/64(2018.01)i; F24F 11/65(2018.01)i; F24F 11/00(2018.01)i	
	According to International Patent Classification (IPC) or to both national classification and IPC	
	B. FIELDS SEARCHED	
10	Minimum documentation searched (classification system followed by classification symbols)	
	F24F11	
	Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched	
15	Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)	
	CNABS; CNTXT; DWPI; SIPOABS; USTXT; JPTXT; EPTXT; CNKI: 美的, 海尔, 格力, 空调, 空气调节, 运行, 时间, 时段, 日, 周, 月, 年, 终端, air condition+, date, period, week, run+	
	C. DOCUMENTS CONSIDERED TO BE RELEVANT	
20	Category*	Citation of document, with indication, where appropriate, of the relevant passages
	PX	CN 109751726 A (QINGDAO HAIER AIR CONDITIONER ELECTRIC CO., LTD. et al.) 14 May 2019 (2019-05-14) description, paragraphs [0004]-[0035], and figures 1-4
25	X	CN 104697104 A (GUANGDONG MIDEA REFRIGERATION EQUIPMENT CO., LTD.) 10 June 2015 (2015-06-10) description, paragraphs [0028]-[0068], and figures 1-10
	A	CN 107990483 A (GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI) 04 May 2018 (2018-05-04) entire document
30	A	CN 103982982 A (MIDEA GROUP CO., LTD.) 13 August 2014 (2014-08-13) entire document
35		
	☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.	
40	* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	
45	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family	
	Date of the actual completion of the international search	Date of mailing of the international search report
	09 July 2019	08 August 2019
50	Name and mailing address of the ISA/CN	Authorized officer
	China National Intellectual Property Administration (ISA/CN) No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088 China	
55	Facsimile No. (86-10)62019451	Telephone No.

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/CN2019/088230

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN	109751726	A	14 May 2019	None	
CN	104697104	A	10 June 2015	None	
CN	107990483	A	04 May 2018	CN	107990483 B 11 December 2018
CN	103982982	A	13 August 2014	CN	103982982 B 19 October 2016