(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 3 018 424 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
11.05.2016 Bulletin 2016/19

(51) Int Cl.:
F24F 11/00 *(2006.01)*

(21) Application number: **15189378.1**

(22) Date of filing: **12.10.2015**

(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:
MA

(30) Priority: **17.10.2014 JP 2014212795**

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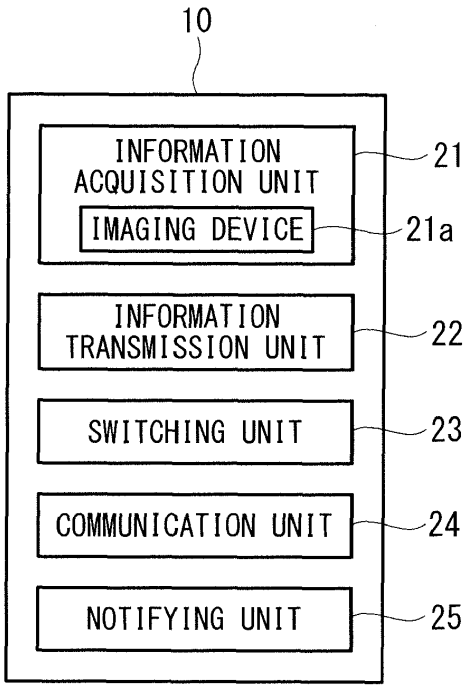
(54) CONTROL DEVICE OF INDOOR UNIT, AIR CONDITIONING SYSTEM EQUIPPED THEREWITH, METHOD OF CONTROLLING INDOOR UNIT, AND CONTROL PROGRAM

(57) The present invention has an object to safely perform registration of a combination of a terminal which performs remote control and a controlled apparatus. A control device (10) of an indoor unit of an air conditioning apparatus, in which the indoor unit is connected with a server so as to be able to exchange information with the server over a network, is remotely controllable by an information terminal via the server, and is installed in a space to be air-conditioned, is provided. The control device (10) includes an information acquisition unit (21) for acquiring first identification information on the information terminal; an information transmission unit (22) that transmits, to the server, association information in which the acquired first identification information on the information terminal and second identification information on the indoor unit are associated with each other; and a switching unit (23) that performs switching between a registration mode, in which the association information is able to be registered in the server, and a normal mode, in which the registration mode is cancelled, the first identification information on the information terminal is not acquired by the information acquisition unit (21), and the association information is not transmitted by the information transmission unit (22).

FIG. 2



EP 3 018 424 A1

Description

{Technical Field}

[0001] The present invention relates to a control device of an indoor unit, an air conditioning system equipped therewith, a method of controlling an indoor unit, and a control program.

{Background Art}

[0002] An electric apparatus such as an air conditioner, for example, is operated by a remote controller. A technology for allowing a communication unit to be built in an electric apparatus and remotely controlling respective functions of the controlled apparatus from a communication terminal such as a mobile phone having a remote control function, has been considered (Patent Literature 1 described below).

[0003] In such a technology, for remotely controlling a controlled apparatus such as an air conditioner from a mobile phone, a mechanism is employed in which individual identification information on the mobile phone and individual identification information on the controlled object are registered in advance in an authentication server in association with each other and only the authenticated mobile phone is permitted to perform remote control.

{Citation List}

{Patent Literature}

[0004] {PTL 1}
Japanese Unexamined Patent Application, Publication No. 2003-78977

{Summary of Invention}

{Technical Problem}

[0005] In the above-described mechanism, however, a mobile phone accesses the authentication server and performs the authentication procedure from the mobile phone. Further, as the individual identification number of a controlled object is provided on the surface of the body of the air conditioner and in the operation manual, for example, the individual identification number can be easily known to a third party other than the user of the apparatus. As such, there is a problem that registration and authentication procedures for remote control may be performed by a third party.

[0006] The present invention has been made in view of such a situation. An object of the present invention is to provide a control device of an indoor unit in which registration of a combination of a terminal used for remote control and a controlled apparatus can be performed safely, an air conditioning system equipped therewith, a method of controlling the indoor unit, and a control program.

{Solution to Problem}

[0007] A first aspect of the present invention is a control device of an indoor unit of an air conditioning apparatus, in which the indoor unit is connected with a server so as to be able to exchange information with the server over a network, is remotely controllable by an information terminal via the server, and is installed in a space to be air-conditioned. The control device includes an information acquisition means for acquiring first identification information on the information terminal, and an information transmission means for transmitting, to the server, association information in which the acquired first identification information on the information terminal and second identification information on the indoor unit are associated with each other.

[0008] According to the first aspect of the present invention, the control device of the indoor unit, in which the indoor unit of the air conditioning apparatus is connected with the server so as to be able to exchange information with the server over the network and is remotely controllable by the information terminal via the server, acquires the first identification information on the information terminal. Further, the association information, in which the acquired first identification information on the information terminal and the second identification information on the indoor unit are associated with each other, is transmitted to the server.

[0009] According to the present aspect, the indoor unit and the information terminal which remotely controls it are associated with each other by the indoor unit installed in a space to be air-conditioned, and association information is transmitted from the installed indoor unit to the server. As such, registration of association information in the server can only be performed by the installed indoor unit. Thereby, as the risk of unauthorized registration of the information terminal by a third party before the indoor unit is delivered to the user can be reduced, it is possible to safely register the information terminal, which remotely controls the indoor unit, in the server.

[0010] The control device of the indoor unit, according to the first aspect of the present invention, may include a switching unit that performs switching between a registration mode and a normal mode. The registration mode is a mode in which the association information is able to be registered in the server, and the normal mode is a mode in which the registration mode is cancelled, the first identification information on the information terminal is not acquired by the information acquisition means, and the association information is not transmitted by the information transmission means.

[0011] The registration mode in which the association information is registered in the server, and the normal mode in which the registration mode is cancelled, are switched from each other, and the registration mode may work during the time when the indoor unit performs air

conditioning operation, for example.

[0012] In the control device of the indoor unit according to the first aspect of the present invention, the information terminal may include an output means for outputting the first identification information to the indoor unit. The output means may output the first identification information by communication, and the information acquisition means may include a communication unit and acquire the first identification information on the information terminal via the communication unit.

[0013] Identification information can be output easily from the information terminal to the indoor unit by communication. Communication may be wireless communication for example, such as infrared communication, Bluetooth (registered trademark) communication, or ad-hoc communication.

[0014] In the control device of the indoor unit according to the first aspect of the present invention, the information terminal may include an output means for outputting the first identification information to the indoor unit. The output means may output the first identification information as an image, and the information acquisition means may include an imaging device and acquire the first identification information on the information terminal by capturing the image by the imaging device.

[0015] By capturing the image shown on the output means of the information terminal by a camera, the indoor unit is able to acquire identification information easily. The image which can identify identification information is a QR code (registered trademark), for example.

[0016] A second aspect of the present invention is an information terminal connected with a server so as to be able to exchange information with the server over a network, and capable of remotely controlling an indoor unit, installed in a space to be air-conditioned, of an air conditioning apparatus via the server. The information terminal includes an output means for outputting first identification information on the information terminal. The output means outputs an information transmission command for associating the output first identification information on the information terminal and second identification information on the indoor unit with each other, and transmitting association information from the indoor unit to the server.

[0017] A third aspect of the present invention is an air conditioning system including the control device of the indoor unit of the air conditioning apparatus according to any one of the aspects described above, the information terminal, the indoor unit, and a server including a storage means for storing association information in which first identification information on the information terminal and second identification information on the indoor unit are associated with each other.

[0018] A fourth aspect of the present invention is a method of controlling an indoor unit of an air conditioning apparatus, in which the indoor unit is connected with a server so as to be able to exchange information with the server over a network, and is remotely controllable by an information terminal via the server. The method includes a first step of acquiring first identification information on the information terminal, and a second step of transmitting, to the server, association information in which the acquired first identification information on the information terminal and second identification information on the indoor unit are associated with each other.

[0019] A fifth aspect of the present invention is a control program of an indoor unit of an air conditioning apparatus, in which the indoor unit is connected with a server so as to be able to exchange information with the server over a network and is remotely controllable by an information terminal via the server. The control program is a program for causing a computer to perform first processing to acquire first identification information on the information terminal, and second processing to transmit, to the server, association information in which the acquired first identification information on the information terminal and second identification information on the indoor unit are associated with each other.

{Advantageous Effects of Invention}

[0020] The present invention exhibits an advantageous effect that registration of a combination of a terminal used for remote control and a controlled apparatus can be performed safely.

{Brief Description of Drawings}

{Fig. 1}

[0021] Fig. 1 is a schematic configuration diagram of an air conditioning system according to the present invention.

{Fig. 2}

[0022] Fig. 2 is a functional block diagram of a control device according to the present invention.

{Fig. 3}

[0023] Fig. 3 is an operation flow of the air conditioning system according to the present invention.

{Fig. 4}

[0024] Fig. 4 is a continuous operation flow of the air conditioning system according to the present invention.

{Description of Embodiments}

[0025] Hereinafter, an embodiment of a control device of an indoor unit, an air conditioning system equipped therewith, a method of controlling an indoor unit, and a control program, according to the present invention, will be described with reference to the drawings.

[0026] Fig. 1 illustrates a schematic configuration of an air conditioning system 1 according to the present embodiment.

[0027] The air conditioning system 1 includes an indoor unit 2 and an outdoor unit 6 of an air conditioning apparatus, a server 3, and an information terminal 4 capable of remotely controlling the indoor unit 2 via the server 3. The indoor unit 2 of the air conditioning apparatus is provided in a space to be air-conditioned, the outdoor unit 6 is connected with the indoor unit 2, and the indoor unit 2 and the outdoor unit 6 are connected with the power source, respectively.

[0028] While, in the present embodiment, description is given on the case of a single-type air conditioning apparatus in which one indoor unit 2 is connected with one outdoor unit 6 as an example, the present invention is also applicable to a multiple-type air conditioning apparatus in which a plurality of indoor units 2 are connected in parallel with one outdoor unit 6.

[0029] The indoor unit 2 and the server 3, and the server 3 and the information terminal 4 are connectable with one another over the network 5, and information is exchangeable between them. The network 5 is a network using a standardized communication protocol (for example, TCP/IP: Transmission Control Protocol/Internet Protocol) such as the Internet, for example. Further, a communication medium of the network 5 may be a wired or wireless one.

[0030] The server 3 includes a storage unit (storage means) 31, and stores association information (the details are described below) acquired from the indoor unit 2 over the network 5. Further, when the server 3 acquires a remote control command of the indoor unit 2 from the information terminal 4 over the network 5, the server 3 reads association information between the information terminal 4, which has transmitted the remote control command, and the indoor unit 2 which is associated with the information terminal 4 and is capable of being controlled remotely, from the storage unit 31, and determines the propriety of remote control.

[0031] The outdoor unit 6 constitutes a chilling cycle together with a heat exchanger (not shown) provided in the indoor unit 2, and bears a function of adjusting a coolant supplied to the air conditioning system 1.

[0032] The indoor unit 2 is installed on a ceiling or the like in a room and connected with the outdoor unit 6 installed at an appropriate location outside the room, via a coolant pipe and electric wiring, to be used. Further, the indoor unit 2 intakes the air from an inlet, and sends it to an outlet by a fan driven by a DC fan motor.

[0033] The indoor unit 2 configured as described above includes a control device 10.

[0034] The control device 10 includes a CPU (Central Processing Unit), a RAM (Random Access Memory), a computer-readable recording medium, and the like, which are not shown. The steps of a series of processing for realizing the various functions described below are recorded on a recording medium or the like in a program form. The CPU reads the program from the RAM or the like and performs processing of information and arithmetic operation, whereby the various functions described below are realized.

[0035] Specifically, as shown in Fig. 2, the control device 10 includes an information acquisition unit (information acquisition means) 21, an information transmission unit (information transmission means) 22, a switching unit (switching means) 23, a communication unit 24, and a notifying unit 25.

[0036] The communication unit 24 includes a wireless device for performing wireless communication with the information terminal 4, and a communication device for connection with the server 3 over the network. In this embodiment, wireless communication includes infrared communication, Bluetooth (registered trademark) communication, ad-hoc communication (a system of direct communication between devices equipped with wireless LAN), and the like, for example. Further, communication devices connected with the server 3 are communication devices mutually connectable over the network 5.

[0037] The information acquisition unit 21 acquires first identification information on the information terminal 4. Specifically, the information acquisition unit 21 may acquire the first identification information from the information terminal 4 by wireless communication via the communication unit 24, or acquire the first identification information on the information terminal 4 by capturing (reading) the image displayed on the information terminal 4 via the imaging device 21a.

[0038] Further, the information acquisition unit 21 includes the imaging device 21a (for example, camera), and captures the image showing the first identification information.

[0039] The information transmission unit 22 transmits, to the server 3, association information in which the acquired first identification information on the information terminal 4 and second identification information on the indoor unit 2 are associated with each other. The second identification information on the indoor unit 2 is a serial number assigned at the stage where the indoor unit 2 is manufactured, for example.

[0040] The switching unit 23 performs switching between a registration mode and a normal mode which are different operation modes of the air conditioning apparatus. The registration mode is a control mode in which association information can be registered in the server 3. Specifically, it is a mode for registering, in the server 3, association information in which respective pieces of identification information on the information terminal 4 and the indoor unit 2 are associated with each other. It should be noted that even in the registration mode, control of air conditioning operation by the indoor unit 2 may be performed in parallel.

[0041] The normal mode is a control mode in which the registration mode is cancelled, the first identification information on the information terminal 4 is not acquired by the information acquisition unit 21, and association

information is not transmitted by the information transmission unit 22.

[0042] It should be noted that while description is given on the case where the switching unit 23 of the present embodiment is configured such that a button for performing switching between the registration mode and the normal mode is provided to the indoor unit 2 and switching is performed when the button is pressed, the present invention is not limited to this configuration. For example, it is possible to perform switching between the registration mode and the normal mode by pressing a predetermined button provided to the remote controller associated with the indoor unit 2 for controlling the indoor unit 2.

[0043] The notifying unit 25 gives notice of the registration mode and the normal mode. For example, the notifying unit 25 may be a liquid crystal screen which displays "registration mode" and "normal mode" by distinguishing them using characters or icons, or may be an LED (light emitting diode) light which displays "registration mode" and "normal mode" by distinguishing them using different displays such as flashing display and lighting display. The notification method is not limited particularly.

[0044] The information terminal 4 may be a personal computer, a mobile phone, a tablet terminal, or the like, which includes a storage unit such as a hard disk, a processing unit (CPU), a communication unit, an input device, an output device including a display, and the like. The communication unit of the information terminal 4 includes a wireless device for communicating with the indoor unit 2 and a communication device for communicating with the server 3 over the network 5.

[0045] The information terminal 4 includes an output unit (output means) 41 for outputting the first identification information on the information terminal 4 (individual identification information on the information terminal 4) to the indoor unit 2.

[0046] The output unit 41 may transmit the first identification information to the communication unit so as to allow the first identification information to be output by wireless communication, or allow the first identification information to be output to the output device such as a display as an image. In this embodiment, information on an image output from the output unit 41 is assumed to be a QR code (registered trademark), for example.

[0047] Further, the information terminal 4 is a terminal which connects to the network 5 whereby it is able to exchange information with the server 3, and remotely controls the indoor unit 2 via the server 3, and is managed by a user who uses the indoor unit 2.

[0048] The information terminal 4 has a remote control application installed therein in a state of being able to be started. The remote control application has a registration function for registering the first identification information on the information terminal 4 in the server 3, a remote control function for remotely controlling the indoor unit 2, a notification function for displaying messages from the manufacturer of the air conditioner, and the like. For example, the registration function outputs a registration command (information transmission command) for associating the output first identification information on the information terminal 4 and the second identification information on the indoor unit 2 with each other, and transmitting the association information from the indoor unit 2 to the server 3.

[0049] Further, the first identification information on the information terminal 4 may be any information individually assigned to the information terminal 4 such as a mobile phone terminal number, a SIM card (Subscriber Identity Module Card) number, a user ID (UID), a mobile phone number, and an e-mail address, for example, without any limitation.

[0050] Hereinafter, actions of the control device 10 according to the present embodiment will be described with reference to Figs. 1 to 4. In this embodiment, description is given based on the assumption of registering the information terminal 4 as a terminal capable of remotely controlling the indoor unit 2 in a state where operation of the indoor unit 2 is stopped (standby state where cooling and heating operation is not performed).

[0051] Operation of the indoor unit 2 is in the "normal mode", and even in the case where the operation of the indoor unit 2 is stopped, it is in a state where reception from a remote controller and connection to the network 5 (the Internet) can be made. When the indoor unit 2 is in the "normal mode", a registration command from the information terminal 4 is unacceptable.

[0052] When the indoor unit 2 is operated (or the remote controller attached to the indoor unit 2 is operated) by the user, the indoor unit 2 is switched from the "normal mode" to the "registration mode". The indoor unit 2 enters the "registration mode" and becomes a state of waiting for a registration command (step SA1 of Fig. 3). The fact that the indoor unit 2 is in the registration mode is notified via the notifying unit 25 of the indoor unit 2 (step SA2 of Fig. 3).

[0053] When the user confirms that the indoor unit 2 is in the registration mode, the user operates to start the remote control application in the information terminal 4, and the remote control application is started in the information terminal 4 (step SA3 of Fig. 3).

[0054] When the user operates the remote control application to display a screen of the registration function to register the first identification information on the information terminal 4 in the server 3, the registration function of the remote control application is started in the information terminal 4, and a screen of the registration function is displayed. For example, in the case of transmitting the first identification information by infrared communication, the user faces the infrared communication unit (communication unit) of the information terminal 4 toward the communication unit 24 of the indoor unit 2, and presses a "registration" button on the remote control application. Then, the remote control application acquires the first identification information on the information terminal 4, and transmits a registration command including the

first identification information, via the infrared communication unit of the information terminal 4 (step SA4 of Fig. 3).

[0055] The indoor unit 2 acquires the registration command including the first identification information from the information terminal 4 (step SA5 of Fig. 3), and transmits a notification that the registration command is acquired normally (signal of command acquisition success) to the information terminal 4 by infrared communication (step SA6 of Fig. 3).

[0056] In the indoor unit 2, the first identification information on the information terminal 4 is read from the acquired registration command. The indoor unit 2 associates the readout first identification information and the second identification information on the indoor unit 2 to generate association information, and transmits the association information to the server 3 connected over the Internet (step SA7 of Fig. 3). Upon acquisition of the association information, the server 3 stores the association information in the storage unit 31, and registers the first identification information on the information terminal 4 and the second identification information on the indoor unit 2 remotely controllable by the information terminal 4, in association with each other (step SA8 of Fig. 3).

[0057] After transmitting the registration command, if the information terminal 4 is not able to acquire a signal of command acquisition success from the indoor unit 2 after a predetermined period has elapsed, a message indicating that transmission of the first identification information has failed, such as "communication failed", is displayed on the registration screen of the remote control application, and the screen returns to the registration command transmission screen of step SA4 of Fig. 3 (No at step SA9 of Fig. 3).

[0058] Meanwhile, when the information terminal 4 acquires a signal of command acquisition success transmitted from the indoor unit 2 within a predetermined period, the information terminal 4 determines that infrared communication succeeded, and does not change the screen display of the remote control application (notifying that communication is in progress) (Yes at step SA9 of Fig. 3).

[0059] Then the remote control application of the information terminal 4 connects to the server 3 via the network 5 (the Internet) not via the indoor unit 2, and transmits a registration confirmation request whether or not the association information on its own is registered, to the server 3 (step SA10 of Fig. 3). After the server 3 receives the registration confirmation request from the information terminal 4 (step SA11 of Fig. 3), if registration of the association information on the information terminal 4 has been completed, the server 3 transmits a registration completion response to the information terminal 4 over the Internet (step SA12 of Fig. 3).

[0060] After transmitting the registration confirmation request, if the information terminal 4 does not acquire the registration completion response after a predetermined period has elapsed, the information terminal 4 displays a message of "registration failed" on the registration screen of the remote control application, and returns to step SA4 of Fig. 3 (No at step SA13 of Fig. 4). When the information terminal 4 acquires the registration completion response (Yes at step SA13 of Fig. 4), the information terminal 4 displays a message of "registration completed" on the registration screen of the remote control application (step SA14 of Fig. 4).

[0061] After the association information is registered in the server 3, when an instruction of remote control is acquired from the information terminal 4, the association information is referred to. If the information terminal 4 and the indoor unit 2 of the air conditioning apparatus, to which a remote control is instructed, matches those registered in the association information, the information terminal 4 is able to remotely control the indoor unit 2.

[0062] As described above, according to the control device 10 of the indoor unit 2, the air conditioning system 1 equipped therewith, the method of controlling the indoor unit 2, and the control program according to the present embodiment, the control device 10 of the indoor unit 2, in which the indoor unit 2 of the air conditioning apparatus is connected with the server 3 over the network 5 so as to be able to exchange information with the server 3 and is remotely controllable by the information terminal 4 via the server 3, acquires the first identification information on the information terminal 4, and transmits, to the server 3, association information in which the acquired first identification information on the information terminal 4 and the second identification information on the indoor unit 2 are associated with each other.

[0063] According to the present invention, the indoor unit 2 and the information terminal 4 which remotely controls it are associated with each other by the indoor unit 2 installed in a space to be air-conditioned, and association information is transmitted from the installed indoor unit 2 to the server 3. As such, registration of association information in the server 3 can only be performed by the installed indoor unit 2. Thereby, as the risk of unauthorized registration of the information terminal 4 by a third party before the indoor unit 2 is delivered to the user can be reduced, it is possible to safely register the information terminal 4, which remotely controls the indoor unit 2, in the server 3.

[0064] It should be noted that while the present embodiment has described the procedure of switching the mode to the "registration mode" and registering the information terminal 4 in a state where operation of the indoor unit 2 is stopped, the present invention is not limited to this configuration. For example, even in a period during which the indoor unit 2 operates to perform air conditioning, if the mode can be switched to the "registration mode", it is possible to register the information terminal 4 in the server 3, and during the registration operation, it is possible to continue operation of the indoor unit 2 and to operate air conditioning by the remote controller.

[0065] It should be noted that the present invention is

not limited to the embodiment described above. Changes can be made appropriately within the scope of the present invention.

{Reference Signs List}

[0066]

1	air conditioning system
2	indoor unit
3	server
4	information terminal
5	network
10	control device
21	information acquisition unit (information acquisition means)
21a	imaging device
22	information transmission unit (information transmission means)
23	switching unit (switching means)
24	communication unit
25	notifying unit

Claims

1. A control device of an indoor unit of an air conditioning apparatus, the indoor unit being connected with a server so as to be able to exchange information with the server over a network, being remotely controllable by an information terminal via the server, and being installed in a space to be air-conditioned, the control device comprising:

an information acquisition means for acquiring first identification information on the information terminal; and
an information transmission means for transmitting, to the server, association information in which the acquired first identification information on the information terminal and second identification information on the indoor unit are associated with each other.

2. The control device of the indoor unit according to claim 1, further comprising
a switching unit that performs switching between a registration mode and a normal mode, the registration mode being a mode in which the association information is able to be registered in the server, the normal mode being a mode in which the registration mode is cancelled, the first identification information on the information terminal is not acquired by the information acquisition means, and the association information is not transmitted by the information transmission means.

3. The control device of the indoor unit according to claim 1 or 2, wherein
the information terminal includes an output means for outputting the first identification information to the indoor unit,
the output means outputs the first identification information by communication, and
the information acquisition means includes a communication unit, and acquires the first identification information on the information terminal via the communication unit.

4. The control device of the indoor unit according to any one of claims 1 to 3, wherein
the information terminal includes an output means for outputting the first identification information to the indoor unit,
the output means outputs the first identification information as an image, and
the information acquisition means includes an imaging device, and acquires the first identification information on the information terminal by capturing the image by the imaging device.

5. An information terminal connected with a server so as to be able to exchange information with the server over a network and capable of remotely controlling an indoor unit of an air conditioning apparatus via the server, the indoor unit being installed in a space to be air-conditioned, the information terminal comprising
an output means for outputting first identification information on the information terminal, wherein
the output means outputs an information transmission command for associating the output first identification information on the information terminal and second identification information on the indoor unit with each other, and transmitting association information from the indoor unit to the server.

6. An air conditioning system comprising:

the control device of the indoor unit of the air conditioning apparatus according to any one of claims 1 to 4;
the information terminal according to claim 5;
the indoor unit; and
a server including a storage means for storing association information in which first identification information on the information terminal and second identification information on the indoor unit are associated with each other.

7. A method of controlling an indoor unit of an air conditioning apparatus, the indoor unit being connected with a server so as to be able to exchange information with the server over a network and being remotely controllable by an information terminal via the server, the method comprising:

a first step of acquiring first identification information on the information terminal; and
a second step of transmitting, to the server, association information in which the acquired first identification information on the information terminal and second identification information on the indoor unit are associated with each other.

8. A control program of an indoor unit of an air conditioning apparatus, the indoor unit being connected with a server so as to be able to exchange information with the server over a network and being remotely controllable by an information terminal via the server, the control program being a program for causing a computer to perform:

first processing to acquire first identification information on the information terminal; and
second processing to transmit, to the server, association information in which the acquired first identification information on the information terminal and second identification information on the indoor unit are associated with each other.

FIG. 1

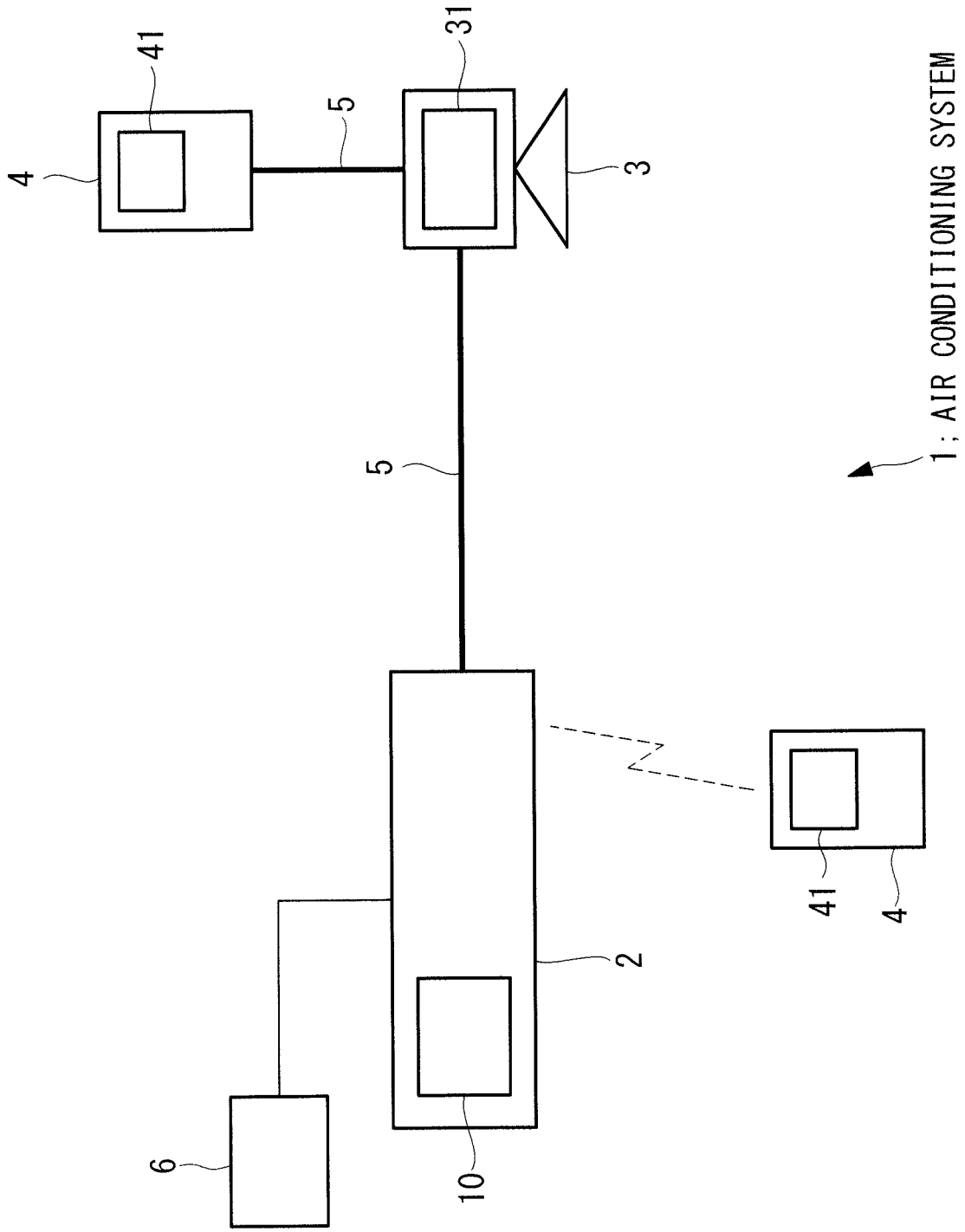


FIG. 2

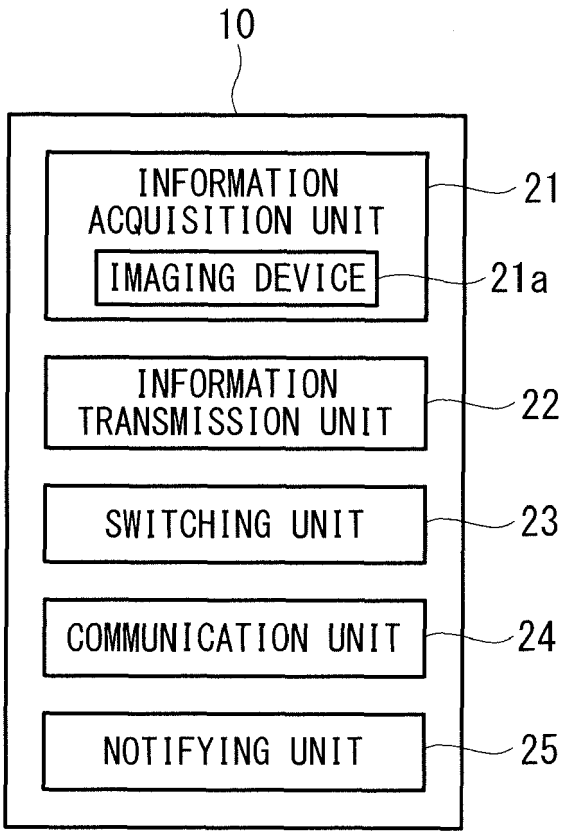

10
INFORMATION ACQUISITION UNIT
21
IMAGING DEVICE
21a
INFORMATION TRANSMISSION UNIT
22
SWITCHING UNIT
23
COMMUNICATION UNIT
24
NOTIFYING UNIT
25

FIG. 3

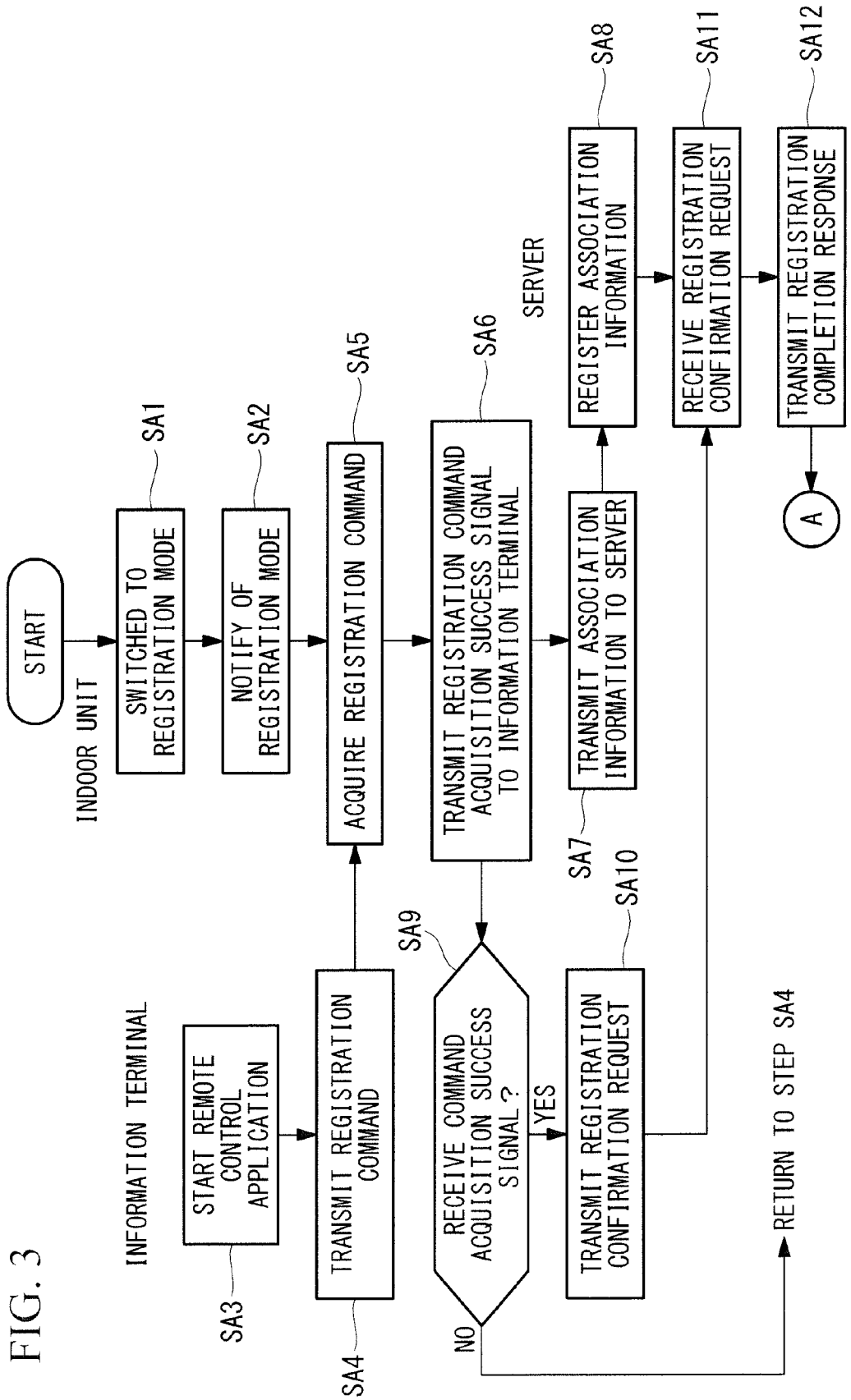
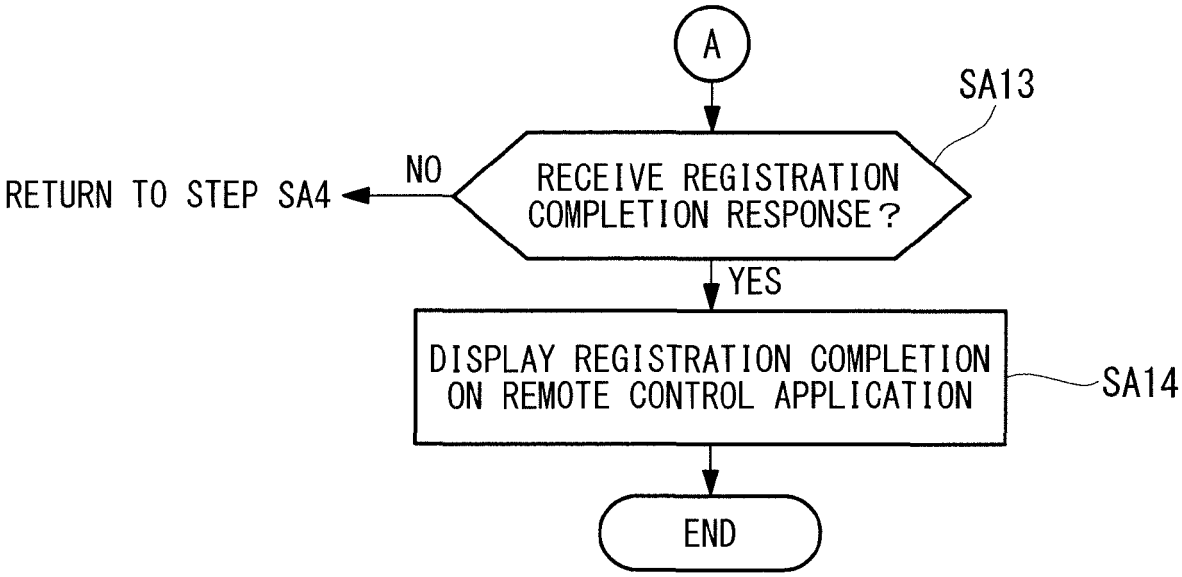

START
INDOOR UNIT
SWITCHED TO REGISTRATION MODE
SA1
NOTIFY OF REGISTRATION MODE
SA2
ACQUIRE REGISTRATION COMMAND
SA5
TRANSMIT REGISTRATION COMMAND ACQUISITION SUCCESS SIGNAL TO INFORMATION TERMINAL
SA6
SERVER
REGISTER ASSOCIATION INFORMATION
SA8
RECEIVE REGISTRATION CONFIRMATION REQUEST
SA11
TRANSMIT REGISTRATION COMPLETION RESPONSE
SA12
A
INFORMATION TERMINAL
START REMOTE CONTROL APPLICATION
SA3
TRANSMIT REGISTRATION COMMAND
SA4
RECEIVE COMMAND ACQUISITION SUCCESS SIGNAL?
SA9
NO
YES
TRANSMIT ASSOCIATION INFORMATION TO SERVER
SA7
TRANSMIT REGISTRATION CONFIRMATION REQUEST
SA10
RETURN TO STEP SA4

FIG. 4


A
SA13
RECEIVE REGISTRATION COMPLETION RESPONSE?
NO
RETURN TO STEP SA4
YES
DISPLAY REGISTRATION COMPLETION ON REMOTE CONTROL APPLICATION
SA14
END

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 15 18 9378

DOCUMENTS CONSIDERED TO BE RELEVANT

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Place of search	Date of completion of the search	Examiner
Munich	16 March 2016	Anconetani, Mirco

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