



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
31.03.2021 Bulletin 2021/13

(51) Int Cl.:
F24F 11/36 ^(2018.01)

(43) Date of publication A2:
09.12.2020 Bulletin 2020/50

(21) Application number: **20173895.2**

(22) Date of filing: **11.05.2020**

(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

(30) Priority: **04.06.2019 JP 2019104100**

(71) Applicant: **Hitachi-Johnson Controls Air Conditioning, Inc.**
Tokyo 105-0022 (JP)

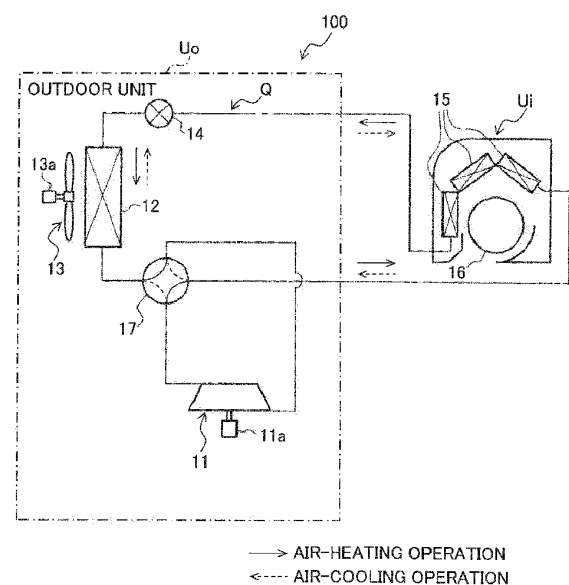
(72) Inventors:
• **IDA, Aya**
Minato-ku, Tokyo 105-0022 (JP)
• **KAWASHIMA, Yoshinori**
Minato-ku, Tokyo 105-0022 (JP)

(74) Representative: **MERH-IP Matias Erny Reichl Hoffmann**
Patentanwälte PartG mbB
Paul-Heyse-Strasse 29
80336 München (DE)

(54) **AIR-CONDITIONER**

(57) An air-conditioner including: a switching section configured to switch a setting by manual operation; and a control section configured to report an abnormality by a reporting means in a case where a refrigerant detection sensor is not electrically connected to the control section in a state in which the setting of the switching section has been switched to a setting that the refrigerant detection sensor is installed.

FIG. 1





EUROPEAN SEARCH REPORT

Application Number
EP 20 17 3895

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	JP 2017 036890 A (DAIKIN IND LTD) 16 February 2017 (2017-02-16)	1-7,9	INV. F24F11/36
Y	* paragraphs [0029], [0030], [0044], [0049] - [0051], [0066], [0067], [0071] - [0081], [0085] * * paragraphs [0087], [0090] - [0092], [0100] - [0102], [0131], [0135]; figures 1-6 *	8	
X	JP 2017 053560 A (JOHNSON CONTROLS HITACHI AIR CONDITIONING TECH (HONGKONG) LTD) 16 March 2017 (2017-03-16)	1-7,9	
Y	* paragraphs [0010] - [0013], [0016] - [0039]; figures 1-8 *	8	
Y	EP 3 460 346 A1 (MITSUBISHI ELECTRIC CORP [JP]) 27 March 2019 (2019-03-27) * paragraphs [0014] - [0020], [0025] - [0031]; figures 1-3 *	8	TECHNICAL FIELDS SEARCHED (IPC) F24F
A	US 2017/292725 A1 (CONLEY JUSTIN DEAN [US] ET AL) 12 October 2017 (2017-10-12) * paragraphs [0188], [0189]; figures 4a, 4b *	1-9	
A	WO 2018/229921 A1 (MITSUBISHI ELECTRIC CORP [JP]) 20 December 2018 (2018-12-20) * the whole document *	1-9	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 16 February 2021	Examiner Schwaiger, Bernd
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			

EPO FORM 1503 03.82 (P04C01)

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

EP 20 17 3895

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

16-02-2021

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 2017036890 A	16-02-2017	JP 6168113 B2	26-07-2017
		JP 2017036890 A	16-02-2017
JP 2017053560 A	16-03-2017	JP 6655919 B2	04-03-2020
		JP 2017053560 A	16-03-2017
EP 3460346 A1	27-03-2019	CN 109073260 A	21-12-2018
		EP 3460346 A1	27-03-2019
		JP 6611928 B2	27-11-2019
		JP WO2017199340 A1	30-08-2018
		WO 2017199340 A1	23-11-2017
US 2017292725 A1	12-10-2017	CN 107436014 A	05-12-2017
		US 2017292725 A1	12-10-2017
WO 2018229921 A1	20-12-2018	AU 2017418267 A1	17-10-2019
		CN 110730891 A	24-01-2020
		EP 3640567 A1	22-04-2020
		JP 6704522 B2	03-06-2020
		JP WO2018229921 A1	19-12-2019
		US 2020300493 A1	24-09-2020
		WO 2018229921 A1	20-12-2018