



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
26.07.2023 Bulletin 2023/30

(51) International Patent Classification (IPC):
F24F 9/00 ^(2006.01)

(43) Date of publication A2:
07.06.2023 Bulletin 2023/23

(52) Cooperative Patent Classification (CPC):
F24F 9/00; F24F 8/108; F24F 8/192; F24F 8/20;
F24F 8/30; F24F 2009/002

(21) Application number: **22210526.4**

(22) Date of filing: **30.11.2022**

(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 ME MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA
Designated Validation States:
KH MA MD TN

(71) Applicant: **Carrier Corporation**
Palm Beach Gardens, FL 33418 (US)

(72) Inventor: **KJELLMAN, Thomas C.**
Ashland, 01721 (US)

(74) Representative: **Dehns**
St. Bride's House
10 Salisbury Square
London EC4Y 8JD (GB)

(30) Priority: **01.12.2021 US 202163264757 P**

(54) **AIRBORNE CONTAMINANT ABATEMENT SYSTEMS AND METHODS**

(57) Disclosed is an airborne contaminant abatement apparatus (100) comprising an air mover having an air mover inlet and an air mover outlet and configured to create an airflow when operating; a filter disposed in fluid communication with the airflow and configured to remove airborne contaminants therefrom; a supply air passage (120) disposed in fluid communication with the air mover

outlet and a vent (130); the vent disposed along at least a portion of a boundary of a plurality of spaces to be occupied, wherein the vent is configured to accelerate the airflow passing therethrough to create an air curtain (200) extending from the boundary; a return air passage (160) configured to receive the airflow at a return port (160) and direct the airflow to the air mover inlet.

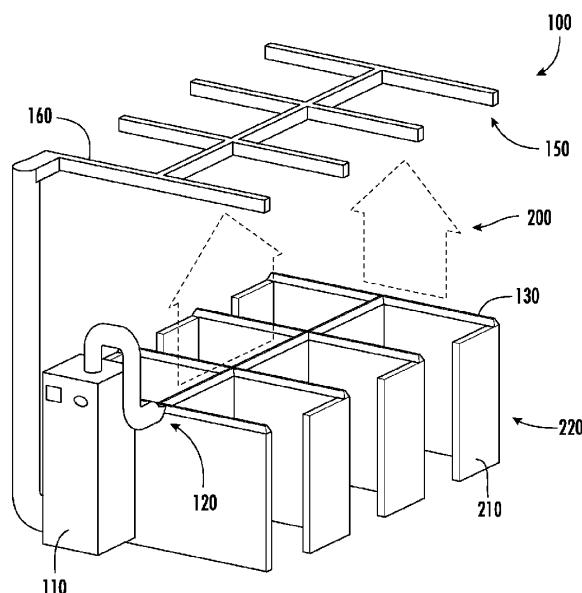


FIG. 1



PARTIAL EUROPEAN SEARCH REPORT

Application Number

under Rule 62a and/or 63 of the European Patent Convention.
This report shall be considered, for the purposes of
subsequent proceedings, as the European search report

EP 22 21 0526

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	CN 111 219 835 A (HEFEI ZHENGHAO MECH TECH CO LTD) 2 June 2020 (2020-06-02)	1,5-13	INV. F24F9/00
Y	* figures 1-2 *	8-10	
X	WO 2021/228410 A1 (GEORG SILVANO [DE]; DECHERT MICHAEL DIETER [DE]) 18 November 2021 (2021-11-18)	1-4,6-12	
Y	* figures 1-4 *	8-10	
X	CA 3 186 155 A1 (DECHERT MICHAEL DIETER [DE]; GEORG SILVANO [DE]) 18 November 2021 (2021-11-18)	1,4,6-12	
Y	* figures 1-14 *	8-10	TECHNICAL FIELDS SEARCHED (IPC) F24F
Y	JP H05 223304 A (MATSUSHITA SEIKO KK) 31 August 1993 (1993-08-31)	8-10	
A	US 2021/348784 A1 (HENWOOD GERARD STEPHEN [US]) 11 November 2021 (2021-11-11)	1-13	
	* figures 1-14 *		
		-/--	
INCOMPLETE SEARCH			
The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC so that only a partial search (R.62a, 63) has been carried out.			
Claims searched completely :			
Claims searched incompletely :			
Claims not searched :			
Reason for the limitation of the search:			
see sheet C			
Place of search		Date of completion of the search	Examiner
Munich		14 June 2023	Ismail, Youssef
CATEGORY OF CITED DOCUMENTS		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	
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			

2
EPO FORM 1503 03.82 (P04E07)



PARTIAL EUROPEAN SEARCH REPORT

Application Number

EP 22 21 0526

5

10

15

20

25

30

35

40

45

50

55

2

EPO FORM 1503 03.82 (P04C10)

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	JP 2011 137588 A (SUGAYA AKIMASA; NAKAZUMI SHINICHI) 14 July 2011 (2011-07-14) * figures 1-7 *	1-13	
A	JP 6 932823 B1 (KUSUKAZE ENERGY SYSTEM CO LTD) 8 September 2021 (2021-09-08) * figures 1-11 *	1-13	
A	JP 6 868922 B1 (JAPAN MACHINE SERVICE CO LTD) 12 May 2021 (2021-05-12) * figures 1-12 *	1-13	
A	CN 108 518 791 A (UNIV JIANGXI SCI & TECHNOLOGY) 11 September 2018 (2018-09-11) * figures 1-3 *	1-13	TECHNICAL FIELDS SEARCHED (IPC)

INCOMPLETE SEARCH
SHEET C

Application Number

EP 22 21 0526

5

Claim(s) completely searchable:
1-13

10

Claim(s) not searched:
14, 15

Reason for the limitation of the search:

15

Multiple independent claims, the applicant requested in his letter dated 8 June 2023 to search the method of independent claim 1 and the apparatus of independent claim 7.
Claims 14 and 15 (dependent on claim 14) are therefore not searched.

20

25

30

35

40

45

50

55

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

EP 22 21 0526

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.

14-06-2023

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CN 111219835 A	02-06-2020	NONE	
WO 2021228410 A1	18-11-2021	WO 2021228410 A1	18-11-2021
		WO 2021228416 A1	18-11-2021
CA 3186155 A1	18-11-2021	AU 2021271182 A1	19-01-2023
		CA 3186155 A1	18-11-2021
		EP 4150268 A2	22-03-2023
		US 2023175714 A1	08-06-2023
		WO 2021229074 A2	18-11-2021
JP H05223304 A	31-08-1993	NONE	
US 2021348784 A1	11-11-2021	NONE	
JP 2011137588 A	14-07-2011	NONE	
JP 6932823 B1	08-09-2021	JP 6932823 B1	08-09-2021
		JP 2022029357 A	17-02-2022
JP 6868922 B1	12-05-2021	JP 6868922 B1	12-05-2021
		JP 2022051458 A	31-03-2022
CN 108518791 A	11-09-2018	NONE	