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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/154,373	03/10/2020	10583449	1.106C.18	5326

4219 7590 02/19/2020
MALLOY & MALLOY
2800 S.W. THIRD AVENUE
HISTORIC CORAL WAY
MIAMI, FL 33129

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Air Essentials Inc., Miami, FL
Marc T. Levy, Palmetto Bay, FL;
Craig Huck, Waterford, PA;
Steven Semoff, New City, NY;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Air Essentials Inc.

Inventors: Marc T. Levy, Craig Huck, and Steven Semoff

Serial No.: 16/154,373

Filing Date: October 8, 2018

For: FLUID DISPERSION ASSEMBLY

Confirmation No. 5326
Customer No. 04219
Examiner Davis D. Hwu
Group Art Unit 3763

2800 S.W. Third Avenue
Historic Coral Way
Miami, Florida 33129

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF EFS-WEB TRANSMISSION

I HEREBY CERTIFY that this correspondence is being transmitted via the U.S. Patent and Trademark Office (USPTO) electronic filing system (EFS-Web) to the USPTO this 28th day of January, 2020.

Respectfully Submitted,

MALLOY & MALLOY, P.L.
Attorneys for Applicant
2800 S.W. Third Avenue
Miami, Florida 33129
(305)858-8000

By: /John Fulton, Jr./
John Fulton, Jr.
Reg. No. 46,716
Email: patents@malloylaw.com

Date: January 28, 2020

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

4219 7590 11/15/2019
MALLOY & MALLOY
2800 S.W. THIRD AVENUE
HISTORIC CORAL WAY
MIAMI, FL 33129

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/154,373	10/08/2018	Marc T. Levy	1.106C.18	5326

TITLE OF INVENTION: FLUID DISPERSION ASSEMBLY

APPL.N. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	02/18/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
HWU, DAVIS D	3763	239-427000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1. Malloy & Malloy, P.L.

2. _____

3. _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

Air Essentials Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Miami, Florida

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☒ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature John Fulton, Jr.

Date January 28, 2020

Typed or printed name John Fulton, Jr.

Registration No. 46,716

Electronic Patent Application Fee Transmittal

Application Number:	16154373			
Filing Date:	08-Oct-2018			
Title of Invention:	FLUID DISPERSION ASSEMBLY			
First Named Inventor/Applicant Name:	Marc T. Levy			
Filer:	John Fulton/Kyra Brusch			
Attorney Docket Number:	1.106C.18			
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	500	500

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				500

Electronic Acknowledgement Receipt

EFS ID:	38419719
Application Number:	16154373
International Application Number:	
Confirmation Number:	5326
Title of Invention:	FLUID DISPERSION ASSEMBLY
First Named Inventor/Applicant Name:	Marc T. Levy
Customer Number:	4219
Filer:	John Fulton/Kyra Brusch
Filer Authorized By:	John Fulton
Attorney Docket Number:	1.106C.18
Receipt Date:	28-JAN-2020
Filing Date:	08-OCT-2018
Time Stamp:	14:16:59
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 500
RAM confirmation Number	E20201RE17381984
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	2020_01_28_EFS_CERT_Filed_1106C.pdf	11558	no	1
			37e9101436f19c9232fe66013f0bddf5b7b0eacb		
Warnings:					
Information:					
2	Issue Fee Payment (PTO-85B)	2020_01_28_Issue_Fee_Filed_1106C.pdf	7543779	no	1
			b1f3643d7104c650bd75130be4b773fbd85f0e68		
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30130	no	2
			e3353b77d8f16cd384362db7d66a00ab93c93369		
Warnings:					
Information:					
Total Files Size (in bytes):			7585467		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



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NOTICE OF ALLOWANCE AND FEE(S) DUE

4219 7590 11/15/2019
MALLOY & MALLOY
2800 S.W. THIRD AVENUE
HISTORIC CORAL WAY
MIAMI, FL 33129

EXAMINER

HWU, DAVIS D

ART UNIT

PAPER NUMBER

3763

DATE MAILED: 11/15/2019

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/154,373	10/08/2018	Marc T. Levy	1.106C.18	5326

TITLE OF INVENTION: FLUID DISPERSION ASSEMBLY

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	02/18/2020

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

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CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

4219 7590 11/15/2019
MALLOY & MALLOY
2800 S.W. THIRD AVENUE
HISTORIC CORAL WAY
MIAMI, FL 33129

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/154,373	10/08/2018	Marc T. Levy	1.106C.18	5326

TITLE OF INVENTION: FLUID DISPERSION ASSEMBLY

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	02/18/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
HWU, DAVIS D	3763	239-427000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/154,373	10/08/2018	Marc T. Levy	1.106C.18	5326
4219	7590	11/15/2019	EXAMINER	
MALLOY & MALLOY 2800 S.W. THIRD AVENUE HISTORIC CORAL WAY MIAMI, FL 33129			HWU, DAVIS D	
			ART UNIT	PAPER NUMBER
			3763	

DATE MAILED: 11/15/2019

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b) (2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 16/154,373	Applicant(s) Levy et al.	
	Examiner Davis Hwu	Art Unit 3763	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment of 10/22/2019.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 1-7 and 9-20. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some *c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892) 2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____. 3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____. 4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.	5. ☒ Examiner's Amendment/Comment 6. ☐ Examiner's Statement of Reasons for Allowance 7. ☐ Other _____.
--	--

/DAVIS D HWU/
Primary Examiner, Art Unit 3763

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

In claim 9, please change "claim 8" to --claim 7--.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davis Hwu whose telephone number is (571)272-4904. Examiner interviews are available via telephone. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on 571-272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DAVIS D HWU/
Primary Examiner, Art Unit 3763

Search Notes 	Application/Control No. 16/154,373	Applicant(s)/Patent Under Reexamination Levy et al.
	Examiner Davis Hwu	Art Unit 3763

CPC - Searched*		
Symbol	Date	Examiner
B05B 11/046, 7/2494, 14/00, 1/002, 15/00, 7/0012, 7/2424, 7/2491, 7/2405, 7/005, 7/006, 11/08, 11/3042	07/17/2019	dh
A61M 15/0036, 16/14, 16/201, 11/06	"	"
A61L 9/14	"	"

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
239	427, 310, 311	07/17/2019	dh

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
east	07/17/2019	dh
search updated	10/27/2019	dh

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	all of above	10/27/2019	dh

/D.D.H/ Primary Examiner, Art Unit 3763	
--	--

Issue Classification 	Application/Control No. 16/154,373	Applicant(s)/Patent Under Reexamination Levy et al.
	Examiner Davis Hwu	Art Unit 3763

CPC						
Symbol					Type	Version
B05B	/	7	/	2494	F	2013-01-01
B05B	/	1	/	002	I	2018-08-01
B05B	/	7	/	2491	I	2013-01-01
A61L	/	9	/	14	I	2013-01-01
B05B	/	7	/	2424	I	2013-01-01
B05B	/	7	/	0012	I	2013-01-01
B05B	/	14	/	00	I	2018-02-01

CPC Combination Sets				
Symbol	Type	Set	Ranking	Version
/				

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 19	
/DAVIS D HWU/ Primary Examiner, Art Unit 3763 (Primary Examiner) _____ (Date) 27 October 2019		O.G. Print Claim(s) 7	O.G. Print Figure 3

Issue Classification 	Application/Control No. 16/154,373	Applicant(s)/Patent Under Reexamination Levy et al.
	Examiner Davis Hwu	Art Unit 3763

INTERNATIONAL CLASSIFICATION			
CLAIMED			
B05B	/	7	/ 06
NON-CLAIMED			
/	/		

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS
239	427

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	19	
/DAVIS D HWU/ Primary Examiner, Art Unit 3763 (Primary Examiner)	27 October 2019 (Date)	O.G. Print Claim(s) 7	O.G. Print Figure 3

Issue Classification 	Application/Control No. 16/154,373	Applicant(s)/Patent Under Reexamination Levy et al.
	Examiner Davis Hwu	Art Unit 3763

☐ Claims renumbered in the same order as presented by applicant
 ☐ CPA
 ☒ T.D.
 ☐ R.1.47

CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	10	11	19	20										
2	2	11	12												
3	3	12	13												
4	4	13	14												
5	5	14	15												
6	6	15	16												
7	7	16	17												
8	9	17	18												
9	10	18	19												

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 19	
/DAVIS D HWU/ Primary Examiner, Art Unit 3763 (Primary Examiner) _____ (Date) 27 October 2019		O.G. Print Claim(s) 7	O.G. Print Figure 3

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Air Essentials Inc.

Inventors: Marc T. Levy, Craig Huck, and Steven Semoff

Serial No.: 16/154,373

Filing Date: October 8, 2018

For: FLUID DISPERSION ASSEMBLY

Confirmation No. 5326
Customer No. 04219
Examiner Davis D. Hwu
Group Art Unit 3763

2800 S.W. Third Avenue
Historic Coral Way
Miami, Florida 33129

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

In response to the Office Action of July 22, 2019, please amend the above-referenced application as follows:

Amendments to the Claims begin on page **2** of this paper.

Remarks begin on page **6** of this paper.

Electronic Acknowledgement Receipt

EFS ID:	37528705
Application Number:	16154373
International Application Number:	
Confirmation Number:	5326
Title of Invention:	FLUID DISPERSION ASSEMBLY
First Named Inventor/Applicant Name:	Marc T. Levy
Customer Number:	4219
Filer:	John Fulton/Kyra Brusch
Filer Authorized By:	John Fulton
Attorney Docket Number:	1.106C.18
Receipt Date:	22-OCT-2019
Filing Date:	08-OCT-2018
Time Stamp:	16:12:10
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	2019_10_22_EFS_CERT_Filed_1106C.pdf	11546 152aab4d547c66c5ea51f435d9e89017ff874e43	no	1

Warnings:

Information:					
2		2019_10_22_Amendment_File d_1106C.pdf	36542 3e8599bd5eb02e7e6912346bf0da61c027d78649	yes	7
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Applicant Arguments/Remarks Made in an Amendment		6	7	
	Claims		2	5	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
Warnings:					
Information:					
Total Files Size (in bytes):			48088		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Air Essentials Inc.

Inventors: Marc T. Levy, Craig Huck, and Steven Semoff

Serial No.: 16/154,373

Filing Date: October 8, 2018

For: FLUID DISPERSION ASSEMBLY

Confirmation No. 5326
Customer No. 04219
Examiner Davis D. Hwu
Group Art Unit 3763

2800 S.W. Third Avenue
Historic Coral Way
Miami, Florida 33129

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF EFS-WEB TRANSMISSION

I HEREBY CERTIFY that this correspondence is being transmitted via the U.S. Patent and Trademark Office (USPTO) electronic filing system (EFS-Web) to the USPTO this 22nd day of October, 2019.

Respectfully Submitted,

MALLOY & MALLOY, P.L.
Attorneys for Applicant
2800 S.W. Third Avenue
Miami, Florida 33129
(305)858-8000

By: /John Fulton, Jr./
John Fulton, Jr.
Reg. No. 46,716
Email: patents@malloylaw.com

Date: October 22, 2019

REMARKS

This amendment is submitted in full response to the outstanding Office Action dated July 22, 2019, and as such, reconsideration of the present application is respectfully requested.

As an initial matter, claims 1 through 20 stand rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1 through 15 of U.S. Patent Nos. 10,092,918, 9,527,094, and 9,126,215, each owned by Applicant herein. In response, Applicant submits a Terminal Disclaimer for each of U.S. Patent Nos. 10,092,918, 9,527,094, and 9,126,215, which disclaims the terminal portion of any patent granted on this application, which would extend beyond the expiration date of the above-referenced patents.

Further, Applicant acknowledges with appreciation the Examiner's indication that claims 8 through 10, and 13 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In the present Office Action, claims 7, 11, and 12 stand rejected under 35 U.S.C. §102 as being unpatentable over U.S. Patent No. 3,985,299 to Brenez. Applicant has amended independent claim 7 to incorporate the allowable subject matter of dependent claim 8, now cancelled without prejudice to presenting the content thereof in a continuing application. As such, independent claim 7 and all claims dependent therefrom are believed to be in condition for immediate allowance.

Based on the above amendments and remarks, reconsideration of this application is hereby requested. It is believed that this application is now in condition for allowance and such action is respectfully requested.

Respectfully Submitted,

MALLOY & MALLOY, P.L.
Attorneys for Applicant
2800 S.W. Third Avenue
Miami, Florida 33129
(305)858-8000

By: /John Fulton, Jr./
John Fulton, Jr.
Reg. No. 46,716
Email: patents@malloylaw.com

Date: October 22, 2019

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of the claims in the application:

Listing of Claims:

What is claimed is:

1. (Original) A fluid dispersion assembly operatively engages a container of an operative fluid and a compressed air source and generates and discharges a fluid dispersion into a surrounding airspace, said fluid dispersion assembly comprising:

a diffusion unit at least partially defining an enclosed diffusion chamber,

a discharge port disposed in fluid communication between said diffusion chamber and the surrounding airspace,

a diffusion assembly disposed in an operative engagement with said diffusion unit,

wherein said diffusion assembly comprises an atomizer assembly,

said atomizer assembly comprising an atomizer air inlet channel, a fluid inlet, a mixing chamber, and an atomizer exhaust aperture, and

said atomizer air inlet channel interconnected to the compressed air source and said fluid inlet disposed in fluid communication with the operative fluid in the container, the compressed air and the operative fluid mix together in said mixing chamber to form the fluid dispersion.

2. (Original) The fluid dispersion assembly as recited in claim 1 further comprising a cap cooperatively configured and disposed in a sealing engagement with said diffusion unit.

3. (Original) The fluid dispersion assembly as recited in claim 1 further comprising a drip tube disposed in an interconnecting relation between said diffusion chamber and the container.

4. (Original) The fluid dispersion assembly as recited in claim 1 wherein said diffusion chamber facilitates formation of the fluid dispersion prior to discharge of the fluid dispersion from said diffusion chamber through said discharge port and into the surrounding airspace.

5. (Original) The fluid dispersion assembly of claim 1 further comprising a silencer assembly having a silencer inlet, a silencer outlet, and a baffle.

6. (Original) The fluid dispersion assembly of claim 5 wherein said baffle partially restricts movement of the fluid dispersion through said silencer chamber from said silencer inlet to said silencer outlet, thereby dampening sound waves generated during operation of said fluid dispersion assembly.

7. (Currently Amended) A fluid dispersion assembly is operatively interconnected to a container of an operative fluid and a compressed air source to generate and discharge a fluid dispersion into a surrounding airspace, said fluid dispersion assembly comprising:

a diffusion unit at least partially defining a diffusion chamber,

a discharge port disposed in fluid communication between said diffusion chamber and the surrounding airspace, and

a diffusion assembly disposed in an operative engagement with said diffusion unit, wherein said diffusion assembly comprises an atomizer assembly, said atomizer assembly comprising an atomizer air inlet channel, a fluid inlet, a mixing chamber, and an atomizer exhaust aperture.

8. (Cancelled)

9. (Original) The fluid dispersion assembly as recited in claim 8 wherein said atomizer air inlet channel is interconnected to the compressed air source and said fluid inlet disposed in fluid communication with the operative fluid in the container, the compressed air and the operative

fluid mix together in said mixing chamber to form the fluid dispersion.

10. (Original) The fluid dispersion assembly as recited in claim 9 wherein said diffusion chamber facilitates formation of the fluid dispersion prior to discharge of the fluid dispersion from said diffusion chamber through said discharge port and into the surrounding airspace.

11. (Original) The fluid dispersion assembly as recited in claim 7 further comprising a container interconnect operatively interconnecting said diffusion unit to the container.

12. (Original) The fluid dispersion assembly as recited in claim 7 further comprising a drip tube disposed in an interconnecting relation between said diffusion chamber and the container.

13. (Original) The fluid dispersion assembly of claim 7 further comprising a silencer assembly having a silencer inlet, a silencer outlet, and a baffle.

14. (Original) A fluid dispersion assembly interconnects to a container of an operative fluid and a compressed air source and generates and discharges a fluid dispersion into a surrounding airspace, said fluid dispersion assembly comprising:

a diffusion unit having an enclosed diffusion chamber,

a diffusion assembly disposed in an operative engagement with said diffusion unit,

said diffusion assembly comprises an atomizer assembly having an atomizer exhaust aperture, and

said diffusion chamber facilitates formation of the fluid dispersion prior to discharge of the fluid dispersion from said diffusion chamber, wherein the fluid dispersion discharged from said atomizer exhaust aperture into said diffusion chamber is directed into and interrupted in a suppression chamber, thereby dampening sound waves generated during operation of said fluid dispersion assembly.

15. (Original) The fluid dispersion assembly as recited in claim 14 wherein said atomizer

assembly further comprises an atomizer air inlet channel, a fluid inlet, and a mixing chamber.

16. (Original) The fluid dispersion assembly as recited in claim 15 wherein said atomizer air inlet channel is interconnected to the compressed air source and said fluid inlet is disposed in fluid communication with the preselected fluid in the container, wherein the compressed air and the preselected fluid are mixed together in said mixing chamber to form the fluid dispersion.

17. The fluid dispersion assembly as recited in claim 14 further comprising a drip tube disposed in an interconnecting relation between said diffusion chamber and the container.

18. (Original) The a fluid dispersion assembly as recited in claim 17 wherein said drip tube is disposed to direct coalesced fluid from the diffusion chamber back into the container of operative fluid.

19. (Original) The assembly of claim 14 further comprising a silencer assembly having a silencer inlet, a silencer outlet, and a baffle.

20. (Original) The assembly of claim 19 wherein said baffle partially restricts movement of the fluid dispersion through said silencer chamber from said silencer inlet to said silencer outlet, thereby dampening sound waves generated during operation of said fluid dispersion assembly.

Doc Code: DIST.E.FILE Document Description: Electronic Terminal Disclaimer - Filed		PTO/SB/26 U.S. Patent and Trademark Office Department of Commerce	
Electronic Petition Request	TERMINAL DISCLAIMER TO OBIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT		
Application Number	16154373		
Filing Date	08-Oct-2018		
First Named Inventor	Marc Levy		
Attorney Docket Number	1.106C.18		
Title of Invention	FLUID DISPERSION ASSEMBLY		
☒ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action ☒ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.			
Owner		Percent Interest	
Air Essentials Inc.		100%	
The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s) 10092918 9527094 9126215 as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns. In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later: - expires for failure to pay a maintenance fee; - is held unenforceable; - is found invalid by a court of competent jurisdiction; - is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321; - has all claims canceled by a reexamination certificate; - is reissued; or - is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.			

☒ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.

☐ I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.

Applicant claims the following fee status:

☒ Small Entity

☐ Micro Entity

☐ Regular Undiscounted

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

☒ An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application

Registration Number 46716

☐ A sole inventor

☐ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application

☐ A joint inventor; all of whom are signing this request

Signature	/John Fulton, Jr./
Name	John Fulton, Jr

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal

Application Number:	16154373			
Filing Date:	08-Oct-2018			
Title of Invention:	FLUID DISPERSION ASSEMBLY			
First Named Inventor/Applicant Name:	Marc T. Levy			
Filer:	John Fulton/Kyra Brusch			
Attorney Docket Number:	1.106C.18			
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
STATUTORY OR TERMINAL DISCLAIMER	2814	1	160	160
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				160

Doc Code: DISQ.E.FILE

Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 16154373

Filing Date: 08-Oct-2018

Applicant/Patent under Reexamination: Levy

Electronic Terminal Disclaimer filed on October 22, 2019

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt

EFS ID:	37528409
Application Number:	16154373
International Application Number:	
Confirmation Number:	5326
Title of Invention:	FLUID DISPERSION ASSEMBLY
First Named Inventor/Applicant Name:	Marc T. Levy
Customer Number:	4219
Filer:	John Fulton/Kyra Brusch
Filer Authorized By:	John Fulton
Attorney Docket Number:	1.106C.18
Receipt Date:	22-OCT-2019
Filing Date:	08-OCT-2018
Time Stamp:	16:05:07
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 160
RAM confirmation Number	E20190LG04472316
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

--

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer-Filed (Electronic)	eTerminal-Disclaimer.pdf	33743	no	2
			30d1dff1a375dd9df9040463d3bfe633f89c3aae		

Warnings:**Information:**

2	Fee Worksheet (SB06)	fee-info.pdf	30255	no	2
			a5eb44e4ec8f5d4c7989818da7bd5b1053e16a99		

Warnings:**Information:**

Total Files Size (in bytes):			63998
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/154,373	10/08/2018	Marc T. Levy	1.106C.18	5326
4219	7590	07/22/2019	EXAMINER	
MALLOY & MALLOY 2800 S.W. THIRD AVENUE HISTORIC CORAL WAY MIAMI, FL 33129			HWU, DAVIS D	
			ART UNIT	PAPER NUMBER
			3763	
			NOTIFICATION DATE	DELIVERY MODE
			07/22/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATENTS@MALLOYLAW.COM

Office Action Summary**Application No.**

16/154,373

Applicant(s)

Levy et al.

Examiner

Davis Hwu

Art Unit

3763

AIA (FITF) Status

No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 October 2018.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

- 5) ☒ Claim(s) 1-20 is/are pending in the application.
5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-20 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some** c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date ____.
- 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 4) ☐ Other: ____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP §§ 706.02(I)(1) - 706.02(I)(3) for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal

Art Unit: 3763

Disclaimer that meets all requirements is auto-processed and approved immediately upon submission.

For more information about eTerminal Disclaimers, refer to

www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

2. Claims 1-20 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 10,092,918. Although the claims at issue are not identical, they are not patentably distinct from each other because the instant claims are a broader recitation of the claims of '918 and '918 discloses the claimed structure limitations of the instant claims. Regarding claim 14, the lower chamber of claim 11 of '918 is the equivalent of the suppression chamber recited in the instant invention.

3. Claims 1-20 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 9,527,094. Although the claims at issue are not identical, they are not patentably distinct from each other because the instant claims are a broader recitation of the claims of '094 and '094 discloses the claimed structure limitations of the instant claims.

4. Claims 1-20 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 9,126,215. Although the claims at issue are not identical, they are not patentably distinct from each other because the instant claims are a broader recitation of the claims of '215 and '215 discloses the claimed structure limitations of the instant claims.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 7, 11, and 12 rejected under pre-AIA 35 U.S.C. 102b as being anticipated by Brenz.

Brenz shows a fluid dispersion assembly (the entire device of the figure) operatively interconnected to a container 16 of an operative fluid and a compressed air source (column 3, lines 17-18) to generate and discharge a fluid dispersion into a surrounding airspace, the fluid dispersion assembly comprising: a diffusion unit 11 at least partially defining a diffusion chamber 25; a discharge port 34 in fluid communication between the diffusion chamber and the airspace; and a diffusion assembly 10 disposed in an operative engagement with the diffusion unit, wherein the diffusion assembly comprised an atomizer assembly 26 (column 3, lines 29-30). Regarding claim 11, the assembly further comprises a container interconnect 22 operatively interconnecting the diffusion unit to the container. Regarding claim 12, the assembly further comprises a drip tube 22 interconnecting the diffusion chamber and the container.

Allowable Subject Matter

7. Claims 8-10, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if the above double patenting rejections are overcome.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davis Hwu whose telephone number is (571)272-4904. Examiner interviews are available via telephone. Please call the examiner to schedule. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on 571-272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

Art Unit: 3763

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer

Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR

CANADA) or 571-272-1000.

/DAVIS D HWU/

Primary Examiner, Art Unit 3763

Notice of References Cited	Application/Control No. 16/154,373		Applicant(s)/Patent Under Reexamination Levy et al.	
	Examiner Davis Hwu		Art Unit 3763	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-3985299-A	10-1976	Brenez; Jean	B05B11/046	239/119
	B					
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes 	Application/Control No. 16/154,373	Applicant(s)/Patent Under Reexamination Levy et al.
	Examiner Davis Hwu	Art Unit 3763

CPC - Searched*		
Symbol	Date	Examiner
B05B 11/046, 7/2494, 14/00, 1/002, 15/00, 7/0012, 7/2424, 7/2491, 7/2405, 7/005, 7/006, 11/08, 11/3042	07/17/2019	dh
A61M 15/0036, 16/14, 16/201, 11/06	"	"
A61L 9/14	"	"

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
239	427, 310, 311	07/17/2019	dh

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
east	07/17/2019	dh

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/D.D.H/ Primary Examiner, Art Unit 3763	
--	--

Bibliographic Data

Application No: 16/154,373

Foreign Priority claimed: ☐ Yes ☒ No

35 USC 119 (a-d) conditions met: ☐ Yes ☐ No ☐ Met After Allowance

Verified and Acknowledged:

/DAVIS D HWU/

Examiner's Signature

Initials

Title:

FLUID DISPERSION ASSEMBLY

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/08/2018	239	3763	1.106C.18
RULE			

APPLICANTS

Air Essentials Inc., Miami, FL,

INVENTORS

Marc T. Levy Palmetto Bay, FL, UNITED STATES

Craig Huck Waterford, PA, UNITED STATES

Steven Semoff New City, NY, UNITED STATES

CONTINUING DATA

This application is a CIP of 15353951 11/17/2016 PAT 10092918

15353951 is a CIP of 14844650 09/03/2015 PAT 9527094

14844650 is a CON of 13838364 03/15/2013 PAT 9126215

13838364 has PRO of 61694500 08/29/2012

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

10/26/2018

**** SMALL ENTITY ****

STATE OR COUNTRY

UNITED STATES

ADDRESS

MALLOY & MALLOY
2800 S.W. THIRD AVENUE
HISTORIC CORAL WAY
MIAMI, FL 33129
UNITED STATES

FILING FEE RECEIVED

\$785

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number
16/154,373

APPLICATION AS FILED - PART I

(Column 1)		(Column 2)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	75		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	330		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	380		N/A	
TOTAL CLAIMS (37 CFR 1.16(j))	20	minus 20 = *	x 50 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3 = *	x 230 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
			TOTAL	785		TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
16/154,373	10/08/2018	1715	865	1.106C.18	20	3

4219
MALLOY & MALLOY
2800 S.W. THIRD AVENUE
HISTORIC CORAL WAY
MIAMI, FL 33129

CONFIRMATION NO. 5326
UPDATED FILING RECEIPT



Date Mailed: 02/01/2019

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Marc T. Levy, Palmetto Bay, FL;
Craig Huck, Waterford, PA;
Steven Semoff, New City, NY;

Applicant(s)

Air Essentials Inc., Miami, FL

Power of Attorney: The patent practitioners associated with Customer Number 04219

Domestic Priority data as claimed by applicant

This application is a CIP of 15/353,951 11/17/2016 PAT 10092918
which is a CIP of 14/844,650 09/03/2015 PAT 9527094
which is a CON of 13/838,364 03/15/2013 PAT 9126215
which claims benefit of 61/694,500 08/29/2012

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: No

Permission to Access Search Results: No

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 10/26/2018

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/154,373**

Projected Publication Date: Request for Non-Publication Acknowledged

Non-Publication Request: Yes

Early Publication Request: No

**** SMALL ENTITY ****

Title

FLUID DISPERSION ASSEMBLY

Preliminary Class

427

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Air Essentials Inc.
Inventors: Marc Levy, Craig Huck, and Steven Semoff
Serial No.: 16/154,373
Filing Date: October 8, 2018
For: FLUID DISPERSION ASSEMBLY

Confirmation No. 5326
Customer No. 04219

2800 S.W. Third Avenue
Miami, Florida 33129

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO NOTICE TO FILE MISSING PARTS

Filed herewith is the Declaration and Power of Attorney for the above-referenced Patent Application, duly executed by each of the inventors. In addition, payment in the amount of \$80.00, representing the surcharge for late filing, is made herewith via credit card.

Respectfully Submitted,

MALLOY & MALLOY, P.L.
Attorneys for Applicant
2800 S.W. Third Avenue
Miami, Florida 33129
(305)858-8000

By: /John Fulton, Jr./
John Fulton, Jr.
Reg. No. 46,716
Email: patents@malloylaw.com

Date: January 30, 2019

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Air Essentials Inc.
Inventors: Marc Levy, Craig Huck, and Steven Semoff
Serial No.: 16/154,373
Filing Date: October 8, 2018
For: FLUID DISPERSION ASSEMBLY

Confirmation No. 5326
Customer No. 04219

2800 S.W. Third Avenue
Miami, Florida 33129

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR EXTENSION OF TIME

A one (1) month extension of time is hereby requested pursuant to 37 CFR, Section 1.136 in order to respond to the Notice to File Missing Parts dated October 30, 2018.

In accordance with 37 CFR, Section 1.17(a)(1), payment in the amount of \$100.00 for the requested extension of time of one (1) month is made herewith via credit card.

Respectfully Submitted,

MALLOY & MALLOY, P.L.
Attorneys for Applicant
2800 S.W. Third Avenue
Miami, Florida 33129
(305)858-8000

By: /John Fulton, Jr./
John Fulton, Jr.
Reg. No. 46,716
Email: patents@malloylaw.com

Date: January 30, 2019

MALLOY & MALLOY, P.L.
2800 S.W. Third Avenue
Miami, Florida 33129

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

TITLE OF INVENTION:

FLUID DISPERSION ASSEMBLY

the application for which

is attached hereto; or

z was filed on October 8, 2018 and has been assigned

Application Serial No. 16/154,373;

and was amended on and _____
(if applicable)

As a below named inventor or joint inventor, I hereby declare that:

The above-identified application was made or was authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under section 1001 of title 18 by fine or imprisonment of not more than five (5) years, or both.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made of information and belief are believed to be true, and further, and that any willful false statements may jeopardize the validity of the application or any patent issued thereon.

I hereby state that I have reviewed and understand the contents of the above-identified application, including the claims, as amended by any amendment referred to above.

I hereby acknowledge the duty to disclose all information known to me to be material to the patentability of this invention in accordance with 37 CFR 1.56.

POWER OF ATTORNEY: As a below named inventor or joint inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

All practitioners associated with: Customer Number: 04219.

Direct all correspondence to the address associated with: Customer Number: 04219.

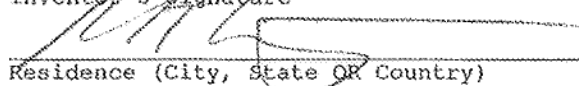
Direct telephone calls to: (305) 858-8000.

1.106C.18

Legal name of sole or first joint inventor

MARC T. LEVY

Inventor's signature



1/28/19
Date

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Citizenship (Country)

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1.106C.18

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Craig Huck

Inventor's signature

Date

1-30-19

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Citizenship (Country)

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Mailing Address

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Legal name of third joint inventor, if any

Steven Semoff

Inventor's signature

Date

Residence (City, State OR Country)

New City, New York

Citizenship (Country)

USA

Mailing Address

4 Evan Drive, New City, New York 10956

1.106C.18

Legal name of sole or first joint inventor

MARC T. LEVY

Inventor's signature

Date

Residence (City, State OR Country)

Palmetto Bay, Florida

Citizenship (Country)

USA

Mailing Address

9300 SW 178th street, Palmetto Bay, Florida 33157

Legal name of second joint inventor, if any

Craig Huck

Inventor's signature

Date

Residence (City, State OR Country)

Waterford, Pennsylvania

Citizenship (Country)

USA

Mailing Address

493 Hull Road, Waterford, Pennsylvania 16441

Legal name of third joint inventor, if any

Steven Semoff

Inventor's signature

Date

10-9-18

Residence (City, State OR Country)

New City, New York

Citizenship (Country)

USA

Mailing Address

4 Evan Drive, New City, New York 10956

1.106C.18

Electronic Patent Application Fee Transmittal

Application Number:	16154373			
Filing Date:	08-Oct-2018			
Title of Invention:	FLUID DISPERSION ASSEMBLY			
First Named Inventor/Applicant Name:	Marc T. Levy			
Filer:	John Fulton/Kyra Brusch			
Attorney Docket Number:	1.106C.18			
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
LATE FILING FEE FOR OATH OR DECLARATION	2051	1	80	80
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Extension - 1 month with \$0 paid	2251	1	100	100
Miscellaneous:				
Total in USD (\$)				180

Electronic Acknowledgement Receipt

EFS ID:	35010928
Application Number:	16154373
International Application Number:	
Confirmation Number:	5326
Title of Invention:	FLUID DISPERSION ASSEMBLY
First Named Inventor/Applicant Name:	Marc T. Levy
Customer Number:	4219
Filer:	John Fulton/Kyra Brusch
Filer Authorized By:	John Fulton
Attorney Docket Number:	1.106C.18
Receipt Date:	30-JAN-2019
Filing Date:	08-OCT-2018
Time Stamp:	17:18:10
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 180
RAM confirmation Number	013119INTEFSW17193500
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	2019_01_30_EFS_CERT_Filed_1106C.pdf	11449	no	1
			4b758c8a6180642d07c7554ca8b837d39e154037		
Warnings:					
Information:					
2	Applicant Response to Pre-Exam Formalities Notice	2019_01_30_Response_To_Missing_Parts_Filed_1106C.pdf	19171	no	1
			0d5d8b85f88cbace1d5614ab24afad729a668bcb6		
Warnings:					
Information:					
3	Extension of Time	2019_01_30_Request_For_Extension_Filed_1106C.pdf	19543	no	1
			aceeff39c5dcfb9d09940cf66f7f7937a806a487		
Warnings:					
Information:					
4	Oath or Declaration filed	2019_01_30_DEC_and_POA_Filed_1106C.pdf	3463215	no	4
			d3f8afcc6e1ac663aac2224ce90fa52ee5033660		
Warnings:					
The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	32415	no	2
			40f7e0948f3c2e714f64247da4950cc85af0a907		
Warnings:					
Information:					
Total Files Size (in bytes):			3545793		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Air Essentials Inc.
Inventors: Marc Levy, Craig Huck, and Steven Semoff
Serial No.: 16/154,373
Filing Date: October 8, 2018
For: FLUID DISPERSION ASSEMBLY

Confirmation No. 5326
Customer No. 04219

2800 S.W. Third Avenue
Miami, Florida 33129

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF EFS-WEB TRANSMISSION

I HEREBY CERTIFY that this correspondence is being transmitted via the U.S. Patent and Trademark Office (USPTO) electronic filing system (EFS-Web) to the USPTO this 30th day of January, 2019.

Respectfully Submitted,

MALLOY & MALLOY, P.L.
Attorneys for Applicant
2800 S.W. Third Avenue
Miami, Florida 33129
(305) 858-8000

By: /John Fulton, Jr./
John Fulton, Jr.
Reg. No. 46,716
Email: patents@malloylaw.com

Date: January 30, 2019



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/154,373	10/08/2018	Marc T. Levy	1.106C.18

CONFIRMATION NO. 5326

FORMALITIES LETTER



4219
MALLOY & MALLOY
2800 S.W. THIRD AVENUE
HISTORIC CORAL WAY
MIAMI, FL 33129

Date Mailed: 10/30/2018

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing.

Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- Surcharge as set forth in 37 CFR 1.16(f) must be submitted.

The surcharge is due for any one of:

- late submission of the basic filing fee, search fee, or examination fee,
- late submission of inventor's oath or declaration,
- filing an application that does not contain at least one claim on filing, or
- submission of an application filed by reference to a previously filed application.

SUMMARY OF FEES DUE:

The fee(s) required within **TWO MONTHS** from the date of this Notice to avoid abandonment is/are itemized below. Small entity discount is in effect. If applicant is qualified for micro entity status, an acceptable Certification of Micro Entity Status must be submitted to establish micro entity status. (See 37 CFR 1.29 and forms PTO/SB/15A and 15B.)

- \$ 80 surcharge.
- \$(0) previous unapplied payment amount.
- \$ 80 TOTAL FEE BALANCE DUE.

Items Required To Avoid Processing Delays:

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):

Marc T. Levy
Craig Huck
Steven Semoff

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web, including a copy of this Notice and selecting the document description "Applicant response to Pre-Exam Formalities Notice".
<https://portal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html>

For more information about EFS-Web please call the USPTO Electronic Business Center at 1-866-217-9197 or visit our website at <http://www.uspto.gov/ebc>.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/sudenboba/

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number
16/154,373

APPLICATION AS FILED - PART I

(Column 1)		(Column 2)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	75		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	330		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	380		N/A	
TOTAL CLAIMS (37 CFR 1.16(j))	20	minus 20 = *	x 50 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3 = *	x 230 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
			TOTAL	785		TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
16/154,373	10/08/2018	1715	785	1.106C.18	20	3

CONFIRMATION NO. 5326

FILING RECEIPT



0000000103398086

4219
MALLOY & MALLOY
2800 S.W. THIRD AVENUE
HISTORIC CORAL WAY
MIAMI, FL 33129

Date Mailed: 10/30/2018

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Marc T. Levy, Palmetto Bay, FL;
Craig Huck, Waterford, PA;
Steven Semoff, New City, NY;

Applicant(s)

Air Essentials Inc., Miami, FL

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CIP of 15/353,951 11/17/2016 PAT 10092918
which is a CIP of 14/844,650 09/03/2015 PAT 9527094
which is a CON of 13/838,364 03/15/2013 PAT 9126215
which claims benefit of 61/694,500 08/29/2012

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: No

Permission to Access Search Results: No

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 10/26/2018

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/154,373**

Projected Publication Date: Request for Non-Publication Acknowledged

Non-Publication Request: Yes

Early Publication Request: No

**** SMALL ENTITY ****

Title

FLUID DISPERSION ASSEMBLY

Preliminary Class

427

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

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The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

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NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

NON-PROVISIONAL UTILITY PATENT APPLICATION TRANSMITTAL LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Docket No. **1.106C.18**
Customer No. **04219**

Transmitted herewith for filing are papers related to the patent application of:

Applicant: Air Essentials Inc.
Inventor(s): Marc Levy, Craig Huck, and Steven Semoff
For: FLUID DISPERSION ASSEMBLY

Enclosed are:

<u>XX</u>	<u>41</u>	pages of specification, including Abstract and claims.
<u>X</u>	<u>7</u>	sheet(s) of drawings.
<u>X</u>		A Declaration and Power of Attorney.
<u>X</u>		Application Data Sheet 37 CFR 1.76.
<u>X</u>		Nonpublication Request Under 35 U.S.C. 122(b)(2)(B)(i).
<u> </u>		An assignment of the invention to: _____.
<u> </u>		Certified copy(s) of the following application(s) the priority of which is hereby claimed under 35 USC §119: _____.

The filing fee has been calculated as shown below:

			Small Entity Rate	Fees	Large Entity Rate	Fees
Basic Online Filing, Search, and Examination Fees:				\$785		\$1,720
Total Claims:	<u>20</u>	- 20=	<u>0</u>	x 40 =	x 80 =	
Independent Claims:	<u>3</u>	- 3=	<u>0</u>	x 210 =	x 420 =	
Total Sheets (if >100):	<u> </u>	-100=	<u>/50</u>	x 200 =	x 400 =	
Multiple Dependent Claims:	<u> </u>			x 390 =	x 780 =	
Non-English Specification	<u> </u>			+ 70 =	+ 140 =	
Total Fees:				\$		\$ 0

[] Please charge Deposit Account No. _____ in the amount of \$_____.

[X] Payment by credit card to cover the filing fee of **\$785**.

[] A duplicate copy of this sheet is enclosed.

[] The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. _____. A duplicate copy of this sheet is enclosed.

[] Any additional filing fees required under 37 CFR 1.16.

[] Any patent application processing fees under 37 CFR 1.17.

[] The Commissioner is hereby authorized to charge payment of the following fees during the pendency of this application or credit any overpayment to Deposit Account No. _____. A duplicate copy of this sheet is enclosed.

A duplicate copy of this sheet is enclosed.

[] Any filing fees under 37 CFR 1.16 for presentation of extra claims.

[] Any patent application processing fees under 37 CFR 1.17.

[] The issue fee set in 37 CFR 1.18 at or before mailing of the Notice of Allowance pursuant to 37 CFR 1.311(b).

October 8, 2018
Date

/John Fulton, Jr./

Jennie S. Malloy
Reg. No. 37,670
John Fulton, Jr.
Reg. No. 46,716

Peter A. Matos
Reg. No. 37,884

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Miami, Florida 33129
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Email: patents@malloylaw.com

2018_10_08_Transmittal_EFS_Filed_1106C

1 FLUID DISPERSION ASSEMBLY

2
3 BACKGROUND OF THE INVENTION

4 Field of the Invention

5 This invention relates generally to the field of dispersion of
6 various fluids including, but not limited to, fragrant oils,
7 essential oils, odor neutralizers, disinfectants, e.g., triethylene
8 glycol, air sanitizers, and the like, into a generally enclosed
9 airspace.

10
11 DESCRIPTION OF THE RELATED ART

12 There are various devices that can be used to deliver fragrant
13 oils, essential oils, as well as other fluids into the air. Spray
14 cans are commonly used, however, such devices require a user to
15 repeatedly and manually spray when and where necessary. Plug-in
16 devices that heat oils for dispersion into the air are also
17 commonly used, but they require constant heating of the oil via an
18 electrical outlet, which consumes energy and poses a potential fire
19 hazard.

20 Fluid diffusion devices utilizing forced and/or compressed air
21 for delivery of fragrant oils, essential oils, or other liquids are
22 desirable alternatives to spray cans and plug-in devices since they
23 do not require heating or constant user interaction, however, they
24 have drawbacks as well. One drawback of many known fluid diffusion
25 devices utilizing forced air is that they tend to make an

1 undesirable and often, depending on the location, such as an office
2 of other place of business, a disruptive amount of noise when in
3 operation. In particular, the release of a fluid dispersed in the
4 forced and/or compressed air from such a device is often
5 unacceptably noisy.

6 As such, there is a need for a fluid dispersion assembly that
7 is designed to significantly reduce the amount of noise generated
8 during operation. A further need exists for such a fluid dispersion
9 assembly to not only operate more quietly, but to operate quietly
10 while generating a fluid dispersion in air having a uniform
11 particle size distribution, such that dosing of an airspace with a
12 particular liquid, whether it be oil, sanitizer, disinfectant,
13 etc., can be predicted within acceptable limits.

14 15 SUMMARY OF THE INVENTION

16 The present invention addresses the need for a forced air
17 diffusion and dispersion assembly for fluids such as fragrant oils,
18 essential oils, odor neutralizers, disinfectants, air sanitizers,
19 etc., that significantly reduces the amount of noise generated
20 during operation. In at least one embodiment, the present invention
21 is directed to a fluid dispersion assembly which operatively
22 engages a fluid container, and is powered by a compressed air
23 source. The fluid dispersion assembly includes a diffusion unit
24 having oppositely disposed ends, which at least partially defines a
25 diffusion chamber. The diffusion chamber is structured so as to

1 facilitate formation of a fluid dispersion comprising a plurality
2 of substantially uniform droplets prior to discharge from the
3 diffusion chamber.

4 In at least one embodiment, a cap is cooperatively configured
5 in sealing engagement with one of the oppositely disposed ends of
6 the diffusion unit. Furthermore, the cap may be removably attached
7 to the diffusion unit. The cap includes a discharge port disposed
8 in communication with the diffusion chamber such that the fluid
9 dispersion can exit the diffusion chamber and into an airspace
10 surrounding the fluid dispersion assembly, while the assembly is in
11 use. In some embodiments, the cap may include a service access port
12 disposed therethrough. The service access port may also include a
13 service access plug removably disposed therein, wherein removal of
14 the service access plug allows for removal, repair, and/or cleaning
15 of the internal components of the fluid dispersion assembly.

16 The present fluid dispersion assembly, in at least one
17 embodiment, further includes a container interconnect affixed to a
18 different one of the oppositely disposed ends of the diffusion unit
19 which is cooperatively structured to interconnect the diffusion
20 unit to the fluid container in a substantially sealed relationship.
21 In at least one embodiment, a sealing washer is provided to
22 facilitate formation of the substantially sealed relationship, and
23 a drip tube is disposed in an interconnecting relation between the
24 diffusion chamber and the fluid container, in at least one further
25 embodiment, to protect the sealing washer from contact with the

1 operative fluid(s).

2 In one embodiment, a diffusion assembly is disposed in an
3 operative engagement with the diffusion unit via a cartridge port.
4 The diffusion assembly is removably engaged with the cartridge
5 port, in at least one embodiment. In some embodiments, the
6 cartridge port is disposed directly through the diffusion unit
7 between the oppositely disposed ends. The cartridge port may be
8 oriented on the diffusion unit such that the diffusion assembly is
9 at a substantially perpendicular orientation to the diffusion unit
10 upon engagement therewith. In at least one other embodiment, a
11 cartridge port is disposed through the cap. The diffusion assembly
12 comprises an atomizer assembly, which in one embodiment comprises
13 an inlet channel, a mixing chamber, and an atomizer exhaust
14 channel, wherein the inlet channel is interconnected to the
15 compressed air source and the mixing chamber comprises a fluid
16 inlet disposed in fluid communication with the fluid in the fluid
17 container. Compressed air and fluid are initially mixed together in
18 the mixing chamber to form a fluid dispersion.

19 These and other objects, features and advantages of the
20 present invention will become clearer when the drawings as well as
21 the detailed description are taken into consideration.

22

23 BRIEF DESCRIPTION OF THE DRAWINGS

24 For a fuller understanding of the nature of the present
25 invention, reference should be had to the following detailed

1 description taken in connection with the accompanying drawings in
2 which:

3 Figure 1 is a cross-sectional elevation of one illustrative
4 embodiment of a fluid dispersion assembly as disclosed in the
5 present specification.

6 Figure 2 is a cross-sectional elevation of the illustrative
7 embodiment of the fluid dispersion assembly of Figure 1 showing the
8 path of flow of air and the fluid/air dispersion therethrough.

9 Figure 3 is a cross-sectional view of another illustrative
10 embodiment of a fluid dispersion assembly as disclosed in the
11 present specification.

12 Figure 4 is a plan view of the illustrative embodiment of the
13 fluid dispersion assembly of Figures 1 and 2.

14 Figure 5 is a cross-sectional elevation of one further
15 illustrative embodiment of a fluid dispersion assembly in
16 accordance with the present specification.

17 Figure 6 is a cross-sectional elevation of yet another
18 illustrative embodiment of a fluid dispersion assembly in
19 accordance with the present specification.

20 Figure 7 is a cross-sectional elevation of still one further
21 illustrative embodiment of a fluid dispersion assembly in
22 accordance with the present specification.

23 Like reference numerals refer to like parts throughout the
24 several views of the drawings.

1 DETAILED DESCRIPTION

2 As illustrated in the accompanying figures, and with initial
3 reference to Figures 1 and 2, the present invention is directed to
4 a fluid dispersion assembly, generally indicated as 10, powered by
5 a compressed air source. In at least one embodiment, the fluid
6 dispersion assembly 10 is further structured to operatively engage
7 a fluid container (FC). The fluid dispersion assembly 10 is
8 structured to combine an amount of an operative fluid with
9 compressed air to generate a fluid dispersion.

10 More in particular, a “fluid dispersion” in accordance with
11 the present specification shall mean a mixture of an operative
12 fluid in air comprising a plurality of substantially uniform
13 droplets of the operative fluid dispersed throughout the air.
14 Further, and once again, as used in the present specification,
15 “substantially uniform droplets” shall mean droplets having
16 substantially the same diameter. In at least one embodiment, the
17 plurality of “substantially uniform droplets” each have a diameter
18 in the range of about one micron (1 μm), in another embodiment, the
19 diameter of the droplets is in the range of about three microns (3
20 μm), and, in one further embodiment, droplet diameter is in the
21 range of about five microns (5 μm).

22 The fluid dispersion assembly 10 includes a diffusion unit 100
23 having oppositely disposed ends, as at 110 and 113, as shown in the
24 illustrative embodiment of Figure 1. The diffusion unit 100 at
25 least partially defines a diffusion chamber 112, and in at least

1 one embodiment, the diffusion chamber 112 is substantially enclosed
2 within diffusion unit 100. The diffusion unit 100 may be
3 constructed of any rigid material or materials which are chemically
4 inert, or at least chemically resistant to the intended operative
5 fluid(s) which include, but once again are not limited to, fragrant
6 oils, essential oils, essential oil extracts, odor neutralizers,
7 disinfectants, e.g., triethylene glycol, air sanitizers, etc.
8 Further, the material of construction selected for the diffusion
9 unit 100 must be capable of withstanding compressed air at
10 operative pressures, which may range anywhere from about 5 to 50
11 psig, in most embodiments of the present fluid dispersion assembly
12 10. In one lower pressure embodiment, the operating pressure of the
13 present fluid dispersion assembly 10 is in the range of about 5 to
14 10 psig, and in one further embodiment, the operating pressure is
15 in a range of between about 5 to 7 psig. Conversely, a higher
16 pressure embodiment of the present fluid dispersion assembly 10
17 operates at pressures in the range of about 20 to 25 psig, and in
18 the range of between about 23 to 24 psig in yet one further
19 embodiment. As such, the material or materials of construction of a
20 diffusion unit 100 in accordance with the present invention may
21 include metals, engineered plastic materials, e.g., polyvinyl
22 chloride, high-density polyethylene, etc., and/or composite
23 materials, just to name a few.

24 In one embodiment, a cap 130 is cooperatively configured and
25 disposed in a sealing engagement with one of the oppositely

1 disposed ends 110, 113 of the diffusion unit 100. The cap 130
2 includes a discharge port 132 therethrough in communication with
3 the diffusion chamber 112, and provides a point of release of the
4 fluid dispersion from the diffusion chamber 112 into the airspace
5 surrounding the fluid dispersion assembly 10. In at least one
6 embodiment, the cap 130 is removably attached in a sealing
7 engagement to the diffusion unit 100. Figure 4 is a plan view of
8 the embodiment of the fluid dispersion assembly 10 as shown in
9 Figures 1 and 2, and shows the cap 130 having a discharge port 132
10 disposed therethrough. As shown in the embodiment of Figure 3, the
11 cap 130 may include a service access port 160 disposed
12 therethrough. The service access port 160 includes a service access
13 plug 162 removably disposed therein, wherein removal of the service
14 access plug 162 allows access for removal and cleaning or repair of
15 a diffusion assembly 200, as disclosed in greater detail below.

16 The fluid dispersion assembly 10, in at least one embodiment,
17 includes a container interconnect 140 which is cooperatively
18 structured to interconnect the diffusion unit 100 to the fluid
19 container (FC) in a substantially sealed relationship. In one
20 embodiment, the container interconnect 140 is disposed at a
21 different one of the oppositely disposed ends 110, 113, opposite of
22 cap 130 of the diffusion unit 100. A sealing washer 170 is disposed
23 between the diffusion unit 100 and the fluid container (FC), in at
24 least one embodiment, so as to provide a substantially sealed
25 relationship between the diffusion unit 100 and the fluid container

1 (FC). The sealing washer 170 may be constructed from any of a
2 variety of materials such as, but not limited to, rubber, nylon,
3 plastic, PVC, TEFLON, or a composite material, once again, provided
4 the material of construction is chemically inert or at least
5 chemically resistant to the operative fluid(s).

6 In one further embodiment of a fluid dispersion assembly 10 in
7 accordance with the present invention, a drip tube 120 is disposed
8 in an interconnecting relation between the diffusion unit 100 and
9 the fluid container (FC). As shown in Figures 1 and 2, the drip
10 tube 120 is disposed through a sealing washer 170, and thus, the
11 drip tube 120 serves to minimize contact between the sealing washer
12 170 and the operative fluid, by essentially preventing the
13 operative fluid from making contact in and around the sealing
14 washer 170 disposed between the fluid container (FC) and the
15 container interconnect 140. More in particular, the drip tube 120
16 channels any operative fluid which may agglomerate and/or
17 accumulate in the diffusion chamber 112 through the drip tube 120
18 directly back into the fluid container (FC) without contacting the
19 sealing washer 170, once again, as shown in Figures 1 and 2.

20 The container interconnect 140 may be structured in a variety
21 of ways to allow interconnection to the fluid container (FC). As
22 one example, the container interconnect 140 may be threaded,
23 internally or externally, such that the diffusion unit 100 is
24 interconnected to the fluid container (FC) by screwing the
25 container interconnect 140 into place onto corresponding threads on

1 the neck of the fluid container (FC). In at least one other
2 embodiment, the container interconnect 140 comprises one portion of
3 a quick-connect type fitting and the fluid container (FC) comprises
4 a complimentary portion of such a quick-connect type fitting
5 whereby once operatively engaged, a substantially sealed
6 relationship is created between the diffusion unit 100 and the
7 fluid container (FC). In at least some embodiments, the
8 substantially sealed relationship is further enhanced by a sealing
9 washer 170, as disclosed above.

10 In at least one embodiment, a cartridge port 150 is provided
11 into the diffusion chamber 112 to facilitate operative engagement
12 of a diffusion assembly 200 with the diffusion chamber 112. The
13 diffusion assembly 200 may be removably engaged with the cartridge
14 port 150 to aid in removal and replacement and/or cleaning of the
15 diffusion assembly 200 and/or components thereof. In some
16 embodiments, the cartridge port 150 is disposed directly through
17 the diffusion unit 100 and into the diffusion chamber 112, and is
18 positioned between the oppositely disposed ends 110, 113. In at
19 least one embodiment, the cartridge port 150 is disposed on the
20 diffusion unit 100 such that the diffusion assembly 200 is disposed
21 in a substantially perpendicular orientation relative to the
22 diffusion unit 100 when operatively engaging the cartridge port
23 150, such as is shown in the illustrative embodiment of Figure 1.
24 The diffusion assembly 200 is also shown disposed substantially
25 perpendicular to the diffusion unit 100 in the plan view of Figure

1 4. In at least one other embodiment, the cartridge port 150 is
2 disposed through the cap 130. In yet another embodiment, the
3 diffusion assembly 200 comprises an integral component of the cap
4 130 itself, such as in the embodiment of Figure 3.

5 As illustrated in Figures 1 and 3, the diffusion assembly 200
6 comprises an air inlet 210 and an atomizer assembly 220. The
7 atomizer assembly 220 comprises an atomizer air inlet channel 222,
8 a mixing chamber 226, and an atomizer exhaust channel 228. The
9 atomizer air inlet channel 222 is interconnected to the compressed
10 air source via the air inlet 210. Moreover, the atomizer air inlet
11 channel 222 may also include an inlet aperture 223, a first portion
12 224 and a second portion 225. The first portion 224 and the second
13 portion 225 are collectively structured to facilitate delivery of
14 compressed air into the mixing chamber 226. The first portion 224
15 of the atomizer air inlet channel 222 may comprise a larger
16 diameter than the second portion 225, such as is shown in the
17 illustrative embodiment of Figure 1. Of course, it is within the
18 scope and intent of the present invention for the atomizer air
19 inlet channel 222 to comprise a constant diameter along its entire
20 length, i.e., a diameter of a first portion 224 is substantially
21 equal to a diameter of a second portion 225.

22 Further, the mixing chamber 226 comprises a fluid inlet 227
23 disposed in fluid communication with an operative fluid in the
24 fluid container (FC) via a fluid delivery tube 300. The fluid
25 delivery tube 300 is disposed in a fluid communicating relation

1 between the atomizer assembly 220 and the fluid container (FC) to
2 facilitate delivery of an amount of the operative fluid into the
3 atomizer assembly 220. In at least one embodiment, the fluid
4 delivery tube 300 connects to the atomizer assembly 220 via the
5 fluid inlet 227 into the mixing chamber 226.

6 As shown in Figures 1 and 2, the fluid inlet 227 is
7 substantially perpendicular to a compressed air flowpath through
8 the atomizer assembly 200. More in particular, and with reference
9 to Figure 1, the compressed air flowpath extends horizontally
10 through the air inlet 210, atomizer air inlet channel 222, mixing
11 chamber 226, and out through the atomizer exhaust 228.

12 As such, when compressed air is supplied to the diffusion
13 assembly 200, a corresponding amount of operative fluid is drawn
14 into the mixing chamber 226 through the fluid delivery tube 300 as
15 a result of the venturi effect of the compressed air flowing past
16 the opening of the fluid inlet 227 into the mixing chamber 226.
17 More in particular, at each different compressed air flowrate,
18 i.e., each "predetermined amount" of compressed air which is
19 dictated and fixed by a compressed air operating pressure supplied
20 to diffusion assembly 200, a different corresponding and
21 substantially constant amount, i.e., a "preselected amount" of an
22 operative fluid corresponding to each different predetermined
23 amount of compressed air, will be drawn into the mixing chamber
24 226. More importantly, the "predetermined amount" of compressed air
25 and the "preselected amount" of the operable fluid are initially

1 mixed together in the mixing chamber 226 to form a fluid
2 dispersion. The diffusion chamber 112 is further structured to
3 facilitate the formation of a plurality of substantially uniform
4 droplets, as defined herein, in the fluid dispersion prior to
5 discharge from the diffusion chamber 112 through discharge port
6 132.

7 As illustrated in Figures 1 and 2, the fluid dispersion
8 assembly 10 also includes a suppressor assembly 230 disposed in
9 communication with the diffusion assembly 200. The suppressor
10 assembly 230 comprises a suppression chamber 232, disposed in a
11 communicating relation with the atomizer exhaust channel 228 of the
12 atomizer assembly 220. More in particular, the suppression chamber
13 232 receives the fluid dispersion from the mixing chamber 226. The
14 suppressor assembly 230 helps to suppress the noise generated
15 during operation of the fluid dispersion assembly 10 as it disrupts
16 the path of flow of the fluid dispersion out of the atomizer
17 assembly 200 and into diffusion chamber 112, and therefore,
18 disrupts and dampens the sound waves associated therewith. Further,
19 the walls of the suppressor assembly 230 itself serve to absorb and
20 dampen the sound waves generated by the flow of the fluid
21 dispersion out of the mixing chamber 236 through atomizer exhaust
22 channel 228.

23 The suppressor assembly 230 may also include a suppressor
24 discharge port 234 to facilitate transfer of the fluid dispersion
25 from the suppressor chamber 232 into the diffusion chamber 112. In

1 at least one embodiment, such as is shown in Figure 1, the
2 suppressor discharge port 234 is located through a low point in the
3 suppressor chamber 232. Of course, as shown in the alternative
4 embodiment of Figure 2, the suppressor discharge port 234 is
5 located through the sides of the suppressor chamber 232.

6 In at least one embodiment, a fluid dispersion assembly 10 in
7 accordance with the present specification further includes a
8 silencer assembly 134 in communication with the discharge port 132,
9 such as is illustrated in Figures 1 and 2. The silencer assembly
10 134 serves to further minimize the amount of noise generated during
11 operation of the fluid dispersion assembly 10. The silencer
12 assembly 134 comprises a baffle 136 disposed in a silencer chamber
13 138 between a silencer inlet 135 and a silencer outlet 137. The
14 baffle 136 is structured and disposed to further disrupt the flow
15 of the fluid dispersion through the fluid dispersion assembly 10,
16 and more specifically, through the silencer chamber 138. In at
17 least one embodiment, the silencer inlet 135 is disposed relative
18 to the baffle 136 to at least partially, if not substantially,
19 direct the flow of the fluid dispersion towards the baffle 136, so
20 as to maximize the disruption of flow. Once again, as disclosed
21 above with regard to the suppressor assembly 230, the disruption in
22 the flow of the fluid dispersion through the silencer assembly 134
23 also creates a disruption and dampening of the sound waves
24 associated therewith. As a result, the amount of noise generated
25 during the operation of a fluid dispersion assembly 10 in

1 accordance with the present specification is significantly reduced.

2 Figure 5 is illustrative of an alternative embodiment of a
3 fluid dispersion assembly 10, wherein a modified diffusion chamber
4 112' is configured to suppress and/or dampen sound waves generated
5 during operation, similar to the suppressor assembly 230 disclosed
6 above. However, as will be appreciated from the following
7 disclosure, the diffusion chamber 112' of the embodiment of Figure
8 5 serves to suppress sound waves generated during operation without
9 the need for a separate suppression chamber, as in previously
10 disclosed embodiments.

11 Before addressing the modified diffusion chamber 112' of the
12 embodiment of Figure 5, it is noted that, in many respects, the
13 fluid dispersion assembly 10 of Figure 5 is similar to the
14 previously disclosed embodiments herein. To begin, the fluid
15 dispersion assembly 10 of Figure 5 comprises a diffusion unit 100
16 having oppositely disposed ends 110, 113, and a diffusion chamber
17 112' disposed therebetween. Unlike previously disclosed
18 embodiments, however, the fluid dispersion assembly 10 of Figure 5
19 includes a service access port 160 having a removable service
20 access plug 162 disposed directly through one end 113 of the
21 diffusion unit 100, rather than through a separate cap disposed at
22 one end of the unit 100.

23 The fluid dispersion assembly 10 of Figure 5 further comprises
24 a container interconnect 140 cooperatively structured to
25 interconnect the diffusion unit 100 to a fluid container (FC) in a

1 substantially sealed relationship and, as before, a sealing washer
2 170 is provided to maintain a substantially sealed relationship.

3 A cartridge port 150 is disposed through one side of the
4 diffusion unit 100, in the illustrative embodiment of Figure 5, and
5 a diffusion assembly 200 is operatively positioned therethrough and
6 into fluid communication with diffusion chamber 112', as in
7 previously disclosed embodiments. The diffusion cartridge 200
8 includes an air inlet 210 disposed in communication with an
9 atomizer assembly 220. Further, and as in previously disclosed
10 embodiments, when compressed air is supplied to the diffusion
11 assembly 200, and more in particular, atomizer assembly 220,
12 through air inlet 210, a corresponding amount of fluid is drawn
13 into a mixing chamber 226 from the fluid container (FC) through a
14 fluid delivery tube 300, as a result of the venturi effect of
15 compressed air flowing past the opening of a fluid inlet 227 into
16 the mixing chamber 226. As a result, a fluid dispersion is formed
17 and discharged from the atomizer assembly 220 through atomizer
18 exhaust channel 228, and directly into diffusion chamber 112'.

19 As noted above, and as may be seen with reference to Figure 5,
20 the diffusion chamber 112' of the present embodiment comprises a
21 modified configuration. Specifically, the modified diffusion
22 chamber 112' comprises an upside down L-shaped configuration,
23 wherein a first axial portion 114 of the diffusion chamber 112' is
24 disposed in a substantially axial orientation adjacent and relative
25 to the discharge of the atomizer exhaust channel 228. A second

1 transverse portion 115 of the diffusion chamber 112' is disposed in
2 a substantially downwardly directed orientation, as shown in Figure
3 5, substantially transverse or perpendicular to the direction of
4 flow from atomizer exhaust channel 228.

5 The second or transverse portion 115 of the modified diffusion
6 chamber 112', in at least one embodiment, comprises a fluid return
7 lip 116 disposed at a lower end thereof in a surrounding relation
8 to incoming fluid delivery tube 300. The fluid return lip 116, in
9 at least one embodiment, extends downwardly and outwardly from the
10 walls of the second portion 115 of the diffusion chamber 112', such
11 that any liquid which coalesces in the diffusion chamber 112' along
12 the walls thereof, will be directed into drip tube 120, disposed in
13 an abutting relation along the underside of the fluid return lip
14 116, and back into fluid container (FC).

15 More importantly, the fluid dispersion discharged from the
16 atomizer assembly 220 through atomizer exhaust channel 228 into
17 diffusion chamber 112' is interrupted and redirected by virtue of
18 axial portion 114 and transverse portion 115 therein. The
19 interruption and redirection of flow in the modified diffusion
20 chamber 112' during operation of the fluid dispersion assembly 10
21 in accordance with the present embodiment, serves to suppress or
22 dampen sound waves generated therein, in a similar manner as the
23 suppression chamber 232 of previously disclosed embodiments.
24 Further, the restricted discharge from the transverse portion 115
25 of the modified diffusion chamber 112' may serve to further

1 suppress or dampen sound waves, thus reducing the noise generated
2 during operation to an even greater extent.

3 After being discharged from the diffusion chamber 112', the
4 fluid dispersion enters the freeboard above the liquid in the fluid
5 container (FC), the freeboard serving as a quasi-diffusion chamber
6 prior to final discharge of the fluid dispersion from the diffusion
7 unit 100. A discharge chamber 117 is disposed in fluid
8 communication with the freeboard of the fluid container (FC), such
9 that the fluid dispersion can pass therethrough, into a discharge
10 head 118 and out through discharge channel 119 into the airspace
11 surrounding the fluid dispersion assembly 10, as shown in the
12 illustrative embodiment of Figure 5.

13 Turning next to the illustrative embodiment of Figure 6, the
14 present invention is directed to yet another embodiment of a
15 diffusion unit 100 of a fluid dispersion assembly 10 which is also
16 powered by a compressed air source (not shown). In at least one
17 embodiment, the fluid dispersion assembly 10 is further structured
18 to operatively engage a fluid container, and to combine an amount
19 of an operative fluid with compressed air to generate a fluid
20 dispersion.

21 As before, a "fluid dispersion" in accordance with the present
22 invention shall mean a mixture of an operative fluid in air
23 comprising a plurality of substantially uniform droplets of the
24 operative fluid dispersed throughout the air. Further, and once
25 again, as used in the present specification, "substantially uniform

1 droplets" shall mean droplets having substantially the same
2 diameter. In at least one embodiment, the plurality of
3 "substantially uniform droplets" each have a diameter in the range
4 of about one micron (1 μm), in another embodiment, the diameter of
5 the "substantially uniform droplets" is in the range of about three
6 microns (3 μm), and, in one further embodiment, the plurality of
7 "substantially uniform droplets" each have a diameter in the range
8 of about five microns (5 μm). In another embodiment, the plurality
9 of "substantially uniform droplets" comprise a diameter in a range
10 of about 2 to 3 microns, and in yet one further embodiment, the
11 plurality of "substantially uniform droplets" comprise a diameter
12 in a range of about 2.3 to 3 microns.

13 In at least one embodiment, a diffusion unit 100 comprises
14 oppositely disposed ends, as at 110 and 113. Further, a diffusion
15 unit 100 at least partially defines a diffusion chamber 112'', and
16 in at least one embodiment, the diffusion chamber 112'' is
17 substantially enclosed within diffusion unit 100. As before, the
18 diffusion unit 100 may be constructed of any rigid material or
19 materials which are chemically inert, or at least chemically
20 resistant to the intended operative fluid(s) which include, but
21 once again are not limited to, fragrant oils, essential oils,
22 essential oil extracts, odor neutralizers, disinfectants, e.g.,
23 triethylene glycol, air sanitizers, etc.

24 Further, the material of construction selected for the
25 diffusion unit 100 must be capable of withstanding compressed air

1 at operative pressures, which may range anywhere from about 5 to 50
2 psig, in most embodiments of the present fluid dispersion assembly
3 10. In one lower pressure embodiment, the operating pressure of the
4 present fluid dispersion assembly 10 is in the range of about 5 to
5 10 psig, and in one further embodiment, the operating pressure is
6 in a range of about 5 to 7 psig. Conversely, a higher pressure
7 embodiment of the present fluid dispersion assembly 10 operates at
8 pressures in the range of about 20 to 25 psig, and in the range of
9 about 23 to 24 psig in yet one further embodiment. As such, the
10 material or materials of construction of a diffusion unit 100 in
11 accordance with the present invention may include metals,
12 engineered plastic materials, e.g., polyvinyl chloride, high-
13 density polyethylene, etc., and/or composite materials, just to
14 name a few.

15 In one embodiment, a cap 130 is cooperatively configured and
16 disposed in a sealing engagement with one of the oppositely
17 disposed ends 110, 113 of the diffusion unit 100. The cap 130
18 includes a discharge port 132 therethrough in communication with
19 the diffusion chamber 112'', and provides a point of release of a
20 fluid dispersion from the diffusion chamber 112'' into the airspace
21 surrounding the fluid dispersion assembly 10. In at least one
22 embodiment, the cap 130 is removably attached in a sealing
23 engagement to the diffusion unit 100.

24 The fluid dispersion assembly 10, in at least one embodiment,
25 includes a container interconnect 140 which is cooperatively

1 structured to interconnect the diffusion unit 100 to a fluid
2 container in a substantially sealed relationship. In one
3 embodiment, the container interconnect 140 is disposed at a
4 different one of the oppositely disposed ends 110, 113, opposite of
5 the cap 130 of the diffusion unit 100. A sealing washer 170 is
6 disposed between the diffusion unit 100 and the fluid container, in
7 at least one embodiment, so as to provide a substantially sealed
8 relationship between the diffusion unit 100 and the fluid container
9 (not shown). The sealing washer 170 may be constructed from any of
10 a variety of materials such as, but not limited to, rubber, nylon,
11 plastic, PVC, TEFLON, or a composite material, once again, provided
12 the material of construction is chemically inert or at least
13 chemically resistant to the operative fluid(s).

14 In one further embodiment of a fluid dispersion assembly 10 in
15 accordance with the present invention, a drip tube 120 is disposed
16 in an interconnecting relation between the diffusion unit 100 and
17 the fluid container. As shown in Figure 6, the drip tube 120 is
18 disposed through a sealing washer 170, and thus, the drip tube 120
19 serves to minimize contact between the sealing washer 170 and the
20 operative fluid, by essentially preventing the operative fluid from
21 making contact in and around the sealing washer 170 disposed
22 between the fluid container (not shown) and the container
23 interconnect 140. More in particular, the drip tube 120 channels
24 any operative fluid which may agglomerate and/or accumulate in the
25 diffusion chamber 112'' through the drip tube 120 directly back

1 into the fluid container (not shown) without contacting the sealing
2 washer 170, once again, as shown in Figure 6.

3 As before, the container interconnect 140 may be structured in
4 a variety of ways to allow interconnection to the fluid container.
5 As one example, the container interconnect 140 may be threaded,
6 internally or externally, such that the diffusion unit 100 is
7 interconnected to the fluid container by screwing the container
8 interconnect 140 into place onto corresponding threads on the neck
9 of the fluid container. In at least one other embodiment, the
10 container interconnect 140 comprises one portion of a quick-connect
11 type fitting and the fluid container comprises a complimentary
12 portion of such a quick-connect type fitting whereby once
13 operatively engaged, a substantially sealed relationship is created
14 between the diffusion unit 100 and the fluid container. In at least
15 some embodiments, the substantially sealed relationship is further
16 enhanced by a sealing washer 170, as disclosed above.

17 In at least one embodiment, a cartridge port 150 is provided
18 into the diffusion chamber 112'' to facilitate operative engagement
19 of a diffusion assembly 200 with the diffusion chamber 112''. The
20 diffusion assembly 200 may be removably engaged with the cartridge
21 port 150 to aid in removal and replacement and/or cleaning of the
22 diffusion assembly 200 and/or components thereof. As shown in the
23 illustrative embodiment of Figure 6, the cartridge port 150 is
24 disposed directly through the diffusion unit 100 and into the
25 diffusion chamber 112'', and is positioned between the oppositely

1 disposed ends 110, 113. In accordance with the illustrative
2 embodiment of Figure 6, the cartridge port 150 is disposed on the
3 diffusion unit 100 such that the diffusion assembly 200 is disposed
4 in a substantially perpendicular orientation relative to the
5 diffusion unit 100 when operatively engaging the cartridge port
6 150. As further illustrated in the embodiment of Figure 6, while
7 operatively disposed in the diffusion chamber 112'', the diffusion
8 assembly 200 is disposed between the upper chamber 115'' and the
9 lower chamber 114'' of the diffusion chamber 112''. In at least one
10 other embodiment, the cartridge port 150 is disposed through the
11 cap 130. In yet another embodiment, the diffusion assembly 200
12 comprises an integral component of the cap 130 itself.

13 As illustrated in Figure 6, the diffusion assembly 200
14 comprises an air inlet 210 and an atomizer assembly 220. The
15 atomizer assembly 220 comprises an atomizer air inlet channel 222,
16 a mixing chamber 226, and an atomizer exhaust aperture 228''. The
17 atomizer air inlet channel 222 is interconnected to the compressed
18 air source via the air inlet 210. Moreover, the atomizer air inlet
19 channel 222 includes an inlet aperture 223 and an outlet aperture
20 223'', as may be seen in Figure 6. As may also be seen in the
21 illustrative embodiment of Figure 6, the inlet aperture 223 and
22 outlet aperture 223'' are substantially equal in diameter, and is
23 the channel 223' disposed therebetween.

24 Further, the mixing chamber 226 comprises a fluid inlet 227
25 disposed in fluid communication with an operative fluid in the

1 fluid container via a fluid delivery tube 300. The fluid delivery
2 tube 300 is disposed in a fluid communicating relation between the
3 atomizer assembly 220 and the fluid container to facilitate
4 delivery of an amount of the operative fluid into the atomizer
5 assembly 220. In at least one embodiment, the fluid delivery tube
6 300 connects to the atomizer assembly 220 via the fluid inlet 227
7 into the mixing chamber 226.

8 As shown in Figure 6, the fluid inlet 227 is substantially
9 perpendicular to a compressed air flowpath through the atomizer
10 assembly 200. More in particular, and with reference to Figure 6,
11 the compressed air flowpath extends horizontally through the air
12 inlet 210, atomizer air inlet channel 222, inlet aperture 223,
13 channel 223', and outlet aperture 223'', into mixing chamber 226,
14 and out through the atomizer exhaust aperture 228''.

15 As such, when compressed air is supplied to the diffusion
16 assembly 200, a corresponding amount of operative fluid is drawn
17 into the mixing chamber 226 through the fluid delivery tube 300 as
18 a result of the venturi effect of the compressed air flowing over
19 the opening of the fluid inlet 227 into the mixing chamber 226.
20 More in particular, at each different compressed air flowrate,
21 i.e., each "predetermined amount" of compressed air which is
22 dictated and fixed by a compressed air operating pressure supplied
23 to diffusion assembly 200, a different corresponding and
24 substantially constant amount, i.e., a "preselected amount" of an
25 operative fluid corresponding to each different predetermined

1 amount of compressed air, will be drawn into the mixing chamber
2 226. More importantly, the "predetermined amount" of compressed air
3 and the "preselected amount" of the operable fluid are initially
4 mixed together in the mixing chamber 226 to form a fluid
5 dispersion. The diffusion chamber 112'' is further structured to
6 facilitate the formation of a plurality of substantially uniform
7 droplets, as defined hereinabove, in the fluid dispersion prior to
8 discharge from the diffusion chamber 112'' through discharge port
9 132.

10 Figure 6 is illustrative of an alternative embodiment of a
11 diffusion unit 100 having a modified diffusion chamber 112''. More
12 in particular, the modified diffusion chamber 112'' is configured
13 to suppress and/or dampen sound waves generated during operation,
14 similar to the suppressor assembly 230 disclosed above. However, as
15 will be appreciated from the following, the modified diffusion
16 chamber 112'' of the embodiment of Figure 6 serves to suppress
17 sound waves generated during operation without the need for a
18 separate suppression chamber, as in previously disclosed
19 embodiments.

20 As noted above, and as may be seen with reference to Figure 6,
21 the diffusion chamber 112'' of the present embodiment comprises a
22 modified configuration. Specifically, the modified diffusion
23 chamber 112'' comprises a lower chamber 114'' which is disposed
24 below and adjacent to the discharge of a fluid dispersion through
25 the atomizer exhaust aperture 228''. An upper chamber 115'' of the

1 diffusion chamber 112'' is disposed above the diffusion assembly
2 200, as shown in Figure 6, substantially opposite to the direction
3 of flow of a fluid dispersion from atomizer exhaust aperture 228''.

4 More importantly, the fluid dispersion discharged from the
5 atomizer assembly 220 through atomizer exhaust aperture 228'' into
6 diffusion chamber 112'' is interrupted and redirected by virtue of
7 lower chamber 114'' and upper chamber 115'' therein. The
8 interruption and redirection of flow in the modified diffusion
9 chamber 112'' during operation of the fluid dispersion assembly 10
10 in accordance with the present embodiment, serves to suppress or
11 dampen sound waves generated therein, much like the suppression
12 chamber 232 of previously disclosed embodiments. Further, the
13 restricted discharge from the upper chamber 115'' of the modified
14 diffusion chamber 112'' serves to further suppress or dampen sound
15 waves, thus reducing the noise generated during operation to an
16 even greater extent.

17 After being discharged from the mixing chamber 226 through the
18 atomizer exhaust aperture 228'', the fluid dispersion is at least
19 partially deflected into the freeboard above the liquid in the
20 fluid container, the freeboard serving as a quasi-diffusion chamber
21 prior to final discharge of the fluid dispersion from the diffusion
22 unit 100 through discharge port 132 and into the airspace
23 surrounding the fluid dispersion assembly 10. A portion of the
24 fluid dispersion is also deflected against the bottom surface of
25 the lower chamber 114'' of the modified diffusion chamber 112'' and

1 upwardly into the upper chamber 115'' of the modified diffusion
2 chamber 112'' before being discharged through discharge port 132
3 into the airspace surrounding the fluid dispersion assembly 10.

4 Figure 7 presents yet one further illustrative embodiment of a
5 fluid dispersion assembly 10 in accordance with the present
6 invention. As before, the fluid dispersion assembly 10 is powered
7 by a compressed air source. In at least one embodiment, the fluid
8 dispersion assembly 10 is further structured to operatively engage
9 a fluid container (FC). Also as before, the fluid dispersion
10 assembly 10 as shown in the illustrative embodiment of Figure 7 is
11 structured to combine an amount of an operative fluid with
12 compressed air to generate a fluid dispersion.

13 Once again, a "fluid dispersion" in accordance with the
14 present specification shall mean a mixture of an operative fluid in
15 air comprising a plurality of substantially uniform droplets of the
16 operative fluid dispersed throughout the air. Further, and once
17 again, as used in the present specification, "substantially uniform
18 droplets" shall mean droplets having substantially the same
19 diameter. In at least one embodiment, the plurality of
20 "substantially uniform droplets" each have a diameter in the range
21 of about one micron (1 μm), in another embodiment, the diameter of
22 the droplets is in the range of about three microns (3 μm), and, in
23 one further embodiment, droplet diameter is in the range of about
24 five microns (5 μm).

25 The fluid dispersion assembly 10 includes a diffusion unit

1 100, as shown in the illustrative embodiment of Figure 7. The
2 diffusion unit 100 at least partially defines a diffusion chamber
3 112, and in at least one embodiment, the diffusion chamber 112 is
4 substantially enclosed within diffusion unit 100. As before, the
5 diffusion unit 100 may be constructed of any rigid material or
6 materials which are chemically inert, or at least chemically
7 resistant to the intended operative fluid(s) which include, but
8 once again are not limited to, fragrant oils, essential oils,
9 essential oil extracts, odor neutralizers, disinfectants, e.g.,
10 triethylene glycol, air sanitizers, etc. Further, the material of
11 construction selected for the diffusion unit 100 must be capable of
12 withstanding compressed air at operative pressures, which may range
13 anywhere from about 5 to 50 psig, in most embodiments of the
14 present fluid dispersion assembly 10. In a lower pressure
15 embodiment, the operating pressure of the present fluid dispersion
16 assembly 10 is in the range of about 5 to 10 psig, and in one
17 further embodiment, the operating pressure is in a range of between
18 about 5 to 7 psig. Conversely, a higher pressure embodiment of the
19 present fluid dispersion assembly 10 operates at pressures in the
20 range of about 20 to 25 psig, and in the range of between about 23
21 to 24 psig in yet one further embodiment. As such, the material or
22 materials of construction of a diffusion unit 100 in accordance
23 with the present invention may include metals, engineered plastic
24 materials, e.g., polyvinyl chloride, high-density polyethylene,
25 etc., and/or composite materials, just to name a few.

1 Looking further to the illustrative embodiment of Figure 7, a
2 cap 130 is cooperatively configured and disposed in a sealing
3 engagement with the diffusion unit 100. The cap 130 includes a
4 discharge port 132 therethrough in communication with the diffusion
5 chamber 112, and provides a point of release of the fluid
6 dispersion from the diffusion chamber 112 into the airspace
7 surrounding the fluid dispersion assembly 10. In at least one
8 embodiment, the cap 130 is removably attached in a sealing
9 engagement to the diffusion unit 100. An O-ring 174 is provided in
10 at least one embodiment to minimize the release of compressed air
11 through the interface between the diffusion unit 100 and the cap
12 130. The O-ring 174 assures quieter operation of the present fluid
13 dispersion assembly 10, which is an important operational
14 consideration in certain environments where the fluid dispersion
15 assembly 10 may be installed, such as, by way of example only, in
16 an office setting. Similar to the sealing washer 170 described
17 above, O-ring 174 may be constructed from any of a variety of
18 materials such as, but not limited to, rubber, nylon, plastic, PVC,
19 TEFLON, or a composite material, once again, provided the material
20 of construction is chemically inert or at least chemically
21 resistant to the operative fluid(s).

22 As further shown in the illustrative embodiment of Figure 7,
23 the cap 130 includes a service access port 160 disposed
24 therethrough. The service access port 160 includes a service access
25 plug 162 removably disposed therein, wherein removal of the service

1 access plug 162 allows access for removal and cleaning or repair of
2 a diffusion assembly 200, as disclosed in greater detail below. As
3 also shown in the illustrative embodiment of Figure 7, an O-ring
4 164 is provided, once again, to minimize the release of compressed
5 air between the cap 130 and the service access plug 162. This again
6 assures quieter operation of the present fluid dispersion assembly
7 10. As before, this is an important operational consideration in
8 certain environments where the fluid dispersion assembly 10 may be
9 installed. Similar to washer 170 and O-ring 174 described above, O-
10 ring 164 may be constructed from any of a variety of materials such
11 as, but not limited to, rubber, nylon, plastic, PVC, TEFLON, or a
12 composite material, once again, provided the material of
13 construction is chemically inert or at least chemically resistant
14 to the operative fluid(s).

15 Similar to the previously described embodiments of a fluid
16 dispersion assembly 10 in accordance with the present invention,
17 the fluid dispersion assembly 10 as shown in the illustrative
18 embodiment of Figure 7 includes a container interconnect which is
19 cooperatively structured to interconnect the diffusion unit 100 to
20 the fluid container (FC) in a substantially sealed relationship.

21 In at least one embodiment of a fluid dispersion assembly 10
22 in accordance with the present invention, a drip tube 120 is
23 disposed in an interconnecting relation between the diffusion unit
24 100 and the fluid container (FC), such as is shown in Figure 7.
25 More in particular, the drip tube 120 channels any operative fluid

1 which may agglomerate and/or accumulate in the diffusion chamber
2 112 through the drip tube 120 directly back into the fluid
3 container (FC).

4 As further shown in the illustrative embodiment of Figure 7,
5 the present fluid dispersion assembly 10 includes a diffusion
6 assembly 200 which comprises an air inlet 210 and an atomizer
7 assembly 220. The atomizer assembly 220 comprises an atomizer air
8 inlet channel 222, a mixing chamber 226, and an atomizer exhaust
9 channel 228. The atomizer air inlet channel 222 is interconnected
10 to the compressed air source via the air inlet 210. Moreover, the
11 atomizer air inlet channel 222 may also include an inlet aperture
12 223, a first portion 224 and a second portion 225. The first
13 portion 224 and the second portion 225 are collectively structured
14 to facilitate delivery of compressed air into the mixing chamber
15 226. The first portion 224 of the atomizer air inlet channel 222
16 may comprise a larger diameter than the second portion 225, such as
17 is shown in the illustrative embodiment of Figure 7. Of course, it
18 is within the scope and intent of the present invention for the
19 atomizer air inlet channel 222 to comprise a constant diameter
20 along its entire length, i.e., a diameter of a first portion 224 is
21 substantially equal to a diameter of a second portion 225.

22 Further, the mixing chamber 226 comprises a fluid inlet 227
23 disposed in fluid communication with an operative fluid in the
24 fluid container (FC) via a fluid delivery tube 300. The fluid
25 delivery tube 300 is disposed in a fluid communicating relation

1 between the atomizer assembly 220 and the fluid container (FC) to
2 facilitate delivery of an amount of the operative fluid into the
3 atomizer assembly 220. In at least one embodiment, the fluid
4 delivery tube 300 connects to the atomizer assembly 220 via the
5 fluid inlet 227 into the mixing chamber 226.

6 As such, when compressed air is supplied to the diffusion
7 assembly 200, a corresponding amount of operative fluid is drawn
8 into the mixing chamber 226 through the fluid delivery tube 300 as
9 a result of the venturi effect of the compressed air flowing past
10 the opening of the fluid inlet 227 into the mixing chamber 226.
11 More in particular, at each different compressed air flowrate,
12 i.e., each "predetermined amount" of compressed air which is
13 dictated and fixed by a compressed air operating pressure supplied
14 to diffusion assembly 200, a different corresponding and
15 substantially constant amount, i.e., a "preselected amount" of an
16 operative fluid corresponding to each different predetermined
17 amount of compressed air, will be drawn into the mixing chamber
18 226. More importantly, the "predetermined amount" of compressed air
19 and the "preselected amount" of the operable fluid are initially
20 mixed together in the mixing chamber 226 to form a fluid
21 dispersion. The diffusion chamber 112 is further structured to
22 facilitate the formation of a plurality of substantially uniform
23 droplets, as defined herein, in the fluid dispersion prior to
24 discharge from the diffusion chamber 112 through discharge port
25 132.

1 As further shown in the illustrative embodiment of Figure 7,
2 the fluid dispersion assembly 10 also includes a suppressor
3 assembly 230 disposed in communication with the diffusion assembly
4 200. The suppressor assembly 230 comprises a suppression chamber
5 232, disposed in a communicating relation with the atomizer exhaust
6 channel 228 of the atomizer assembly 220. More in particular, the
7 suppression chamber 232 receives the fluid dispersion from the
8 mixing chamber 226. The suppressor assembly 230 helps to suppress
9 the noise generated during operation of the fluid dispersion
10 assembly 10 as it disrupts the path of flow of the fluid dispersion
11 out of the atomizer assembly 200 and into diffusion chamber 112,
12 and therefore, the suppressor assembly 230 disrupts and dampens the
13 sound waves associated therewith. Further, the walls of the
14 suppressor assembly 230 itself serve to absorb and dampen the sound
15 waves generated by the flow of the fluid dispersion out of the
16 mixing chamber 236 through atomizer exhaust channel 228.

17 The suppressor assembly 230 may also include a suppressor
18 discharge port 234 to facilitate transfer of the fluid dispersion
19 from the suppressor chamber 232 into the diffusion chamber 112. In
20 at least one embodiment, such as is shown in Figure 7, the
21 suppressor discharge port 234 is located through a low point in the
22 suppressor chamber 232.

23 As further shown in the illustrative embodiment of Figure 7,
24 the fluid dispersion assembly 10 also includes a silencer assembly
25 134 in communication with the discharge port 132. The silencer

1 assembly 134 serves to further minimize the amount of noise
2 generated during operation of the fluid dispersion assembly 10. The
3 silencer assembly 134 comprises a baffle 136 disposed in a silencer
4 chamber 138 between a silencer inlet 135 and a silencer outlet 137.
5 The baffle 136 is structured and disposed to further disrupt the
6 flow of the fluid dispersion through the fluid dispersion assembly
7 10, and more specifically, through the silencer chamber 138. In at
8 least one embodiment, the silencer inlet 135 is disposed relative
9 to the baffle 136 to at least partially, if not substantially,
10 direct the flow of the fluid dispersion towards the baffle 136, so
11 as to maximize the disruption of flow. Once again, as disclosed
12 above with regard to the suppressor assembly 230, the disruption in
13 the flow of the fluid dispersion through the silencer assembly 134
14 also creates a disruption and dampening of the sound waves
15 associated therewith. As a result, the amount of noise generated
16 during the operation of a fluid dispersion assembly 10 in
17 accordance with the present specification is significantly reduced.

18 It is further envisioned that at least one embodiment of the
19 fluid dispersion assembly 10 of the present invention is operated
20 via a programmable timer to control a fragrance intensity and
21 character in an airspace by metering the fragrance delivered in an
22 enclosed environment. The fluid dispersion assembly 10 delivers a
23 specific amount of a fragrance, i.e., the delivery rate, based upon
24 such factors as the specific physical configuration of the atomizer
25 assembly 220 and the fluid container (FC) / fluid delivery tube

1 300, the pressure and volume of the compressed air supplied into
2 air inlet 210, as well as the physical properties of the fragrance
3 itself, such as, viscosity, surface tension, vapor pressure, etc.,
4 wherein the delivery rate is measured in grams per minute of a
5 fragrance dispersed. The perceived fragrance intensity in a
6 specific airspace is measured from a sensory point of view using a
7 labeled magnitude scale. The data is directly correlated to the
8 amount of fragrance delivered and may be measured in either grams
9 per liter or grams per cubic meter. Since the delivery rate is
10 fixed, fragrance intensity is controlled by cycling the fluid
11 dispersion assembly 10 through an on/off programming cycle every
12 minute to deliver the intensity and character levels that are
13 desired by a user. The optimization process is a function of dosing
14 time per minute and a user's desired fragrance experience.

15 Since many modifications, variations and changes in detail can
16 be made to the described preferred embodiment of the invention, it
17 is intended that all matters in the foregoing description and shown
18 in the accompanying drawings be interpreted as illustrative and not
19 in a limiting sense. Thus, the scope of the invention should be
20 determined by the appended claims and their legal equivalents.

1 What is claimed is:

2 1. A fluid dispersion assembly operatively engages a container of
3 an operative fluid and a compressed air source and generates and
4 discharges a fluid dispersion into a surrounding airspace, said
5 fluid dispersion assembly comprising:

6 a diffusion unit at least partially defining an enclosed
7 diffusion chamber,

8 a discharge port disposed in fluid communication between said
9 diffusion chamber and the surrounding airspace,

10 a diffusion assembly disposed in an operative engagement with
11 said diffusion unit, wherein said diffusion assembly comprises an
12 atomizer assembly,

13 said atomizer assembly comprising an atomizer air inlet
14 channel, a fluid inlet, a mixing chamber, and an atomizer exhaust
15 aperture, and

16 said atomizer air inlet channel interconnected to the
17 compressed air source and said fluid inlet disposed in fluid
18 communication with the operative fluid in the container, the
19 compressed air and the operative fluid mix together in said mixing
20 chamber to form the fluid dispersion.

21 2. The fluid dispersion assembly as recited in claim 1 further
22 comprising a cap cooperatively configured and disposed in a sealing
23 engagement with said diffusion unit.

24 3. The fluid dispersion assembly as recited in claim 1 further
25 comprising a drip tube disposed in an interconnecting relation

1 between said diffusion chamber and the container.

2 4. The fluid dispersion assembly as recited in claim 1 wherein
3 said diffusion chamber facilitates formation of the fluid
4 dispersion prior to discharge of the fluid dispersion from said
5 diffusion chamber through said discharge port and into the
6 surrounding airspace.

7 5. The fluid dispersion assembly of claim 1 further comprising a
8 silencer assembly having a silencer inlet, a silencer outlet, and a
9 baffle.

10 6. The fluid dispersion assembly of claim 5 wherein said baffle
11 partially restricts movement of the fluid dispersion through said
12 silencer chamber from said silencer inlet to said silencer outlet,
13 thereby dampening sound waves generated during operation of said
14 fluid dispersion assembly.

15 7. A fluid dispersion assembly is operatively interconnected to a
16 container of an operative fluid and a compressed air source to
17 generate and discharge a fluid dispersion into a surrounding
18 airspace, said fluid dispersion assembly comprising:

19 a diffusion unit at least partially defining a diffusion
20 chamber,

21 a discharge port disposed in fluid communication between said
22 diffusion chamber and the surrounding airspace, and

23 a diffusion assembly disposed in an operative engagement with
24 said diffusion unit, wherein said diffusion assembly comprises an
25 atomizer assembly.

1 8. The fluid dispersion assembly as recited in claim 7 wherein
2 said atomizer assembly comprising an atomizer air inlet channel, a
3 fluid inlet, a mixing chamber, and an atomizer exhaust aperture.

4 9. The fluid dispersion assembly as recited in claim 8 wherein
5 said atomizer air inlet channel is interconnected to the compressed
6 air source and said fluid inlet disposed in fluid communication
7 with the operative fluid in the container, the compressed air and
8 the operative fluid mix together in said mixing chamber to form the
9 fluid dispersion.

10 10. The fluid dispersion assembly as recited in claim 9 wherein
11 said diffusion chamber facilitates formation of the fluid
12 dispersion prior to discharge of the fluid dispersion from said
13 diffusion chamber through said discharge port and into the
14 surrounding airspace.

15 11. The fluid dispersion assembly as recited in claim 7 further
16 comprising a container interconnect operatively interconnecting
17 said diffusion unit to the container.

18 12. The fluid dispersion assembly as recited in claim 7 further
19 comprising a drip tube disposed in an interconnecting relation
20 between said diffusion chamber and the container.

21 13. The fluid dispersion assembly of claim 7 further comprising a
22 silencer assembly having a silencer inlet, a silencer outlet, and a
23 baffle.

24 14. A fluid dispersion assembly interconnects to a container of an
25 operative fluid and a compressed air source and generates and

1 discharges a fluid dispersion into a surrounding airspace, said
2 fluid dispersion assembly comprising:

3 a diffusion unit having an enclosed diffusion chamber,

4 a diffusion assembly disposed in an operative engagement with
5 said diffusion unit,

6 said diffusion assembly comprises an atomizer assembly having
7 an atomizer exhaust aperture, and

8 said diffusion chamber facilitates formation of the fluid
9 dispersion prior to discharge of the fluid dispersion from said
10 diffusion chamber, wherein the fluid dispersion discharged from
11 said atomizer exhaust aperture into said diffusion chamber is
12 directed into and interrupted in a suppression chamber, thereby
13 dampening sound waves generated during operation of said fluid
14 dispersion assembly.

15 15. The fluid dispersion assembly as recited in claim 14 wherein
16 said atomizer assembly further comprises an atomizer air inlet
17 channel, a fluid inlet, and a mixing chamber.

18 16. The fluid dispersion assembly as recited in claim 15 wherein
19 said atomizer air inlet channel is interconnected to the compressed
20 air source and said fluid inlet is disposed in fluid communication
21 with the preselected fluid in the container, wherein the compressed
22 air and the preselected fluid are mixed together in said mixing
23 chamber to form the fluid dispersion.

24 17. The fluid dispersion assembly as recited in claim 14 further
25 comprising a drip tube disposed in an interconnecting relation

1 between said diffusion chamber and the container.

2 18. The a fluid dispersion assembly as recited in claim 17 wherein
3 said drip tube is disposed to direct coalesced fluid from the
4 diffusion chamber back into the container of operative fluid.

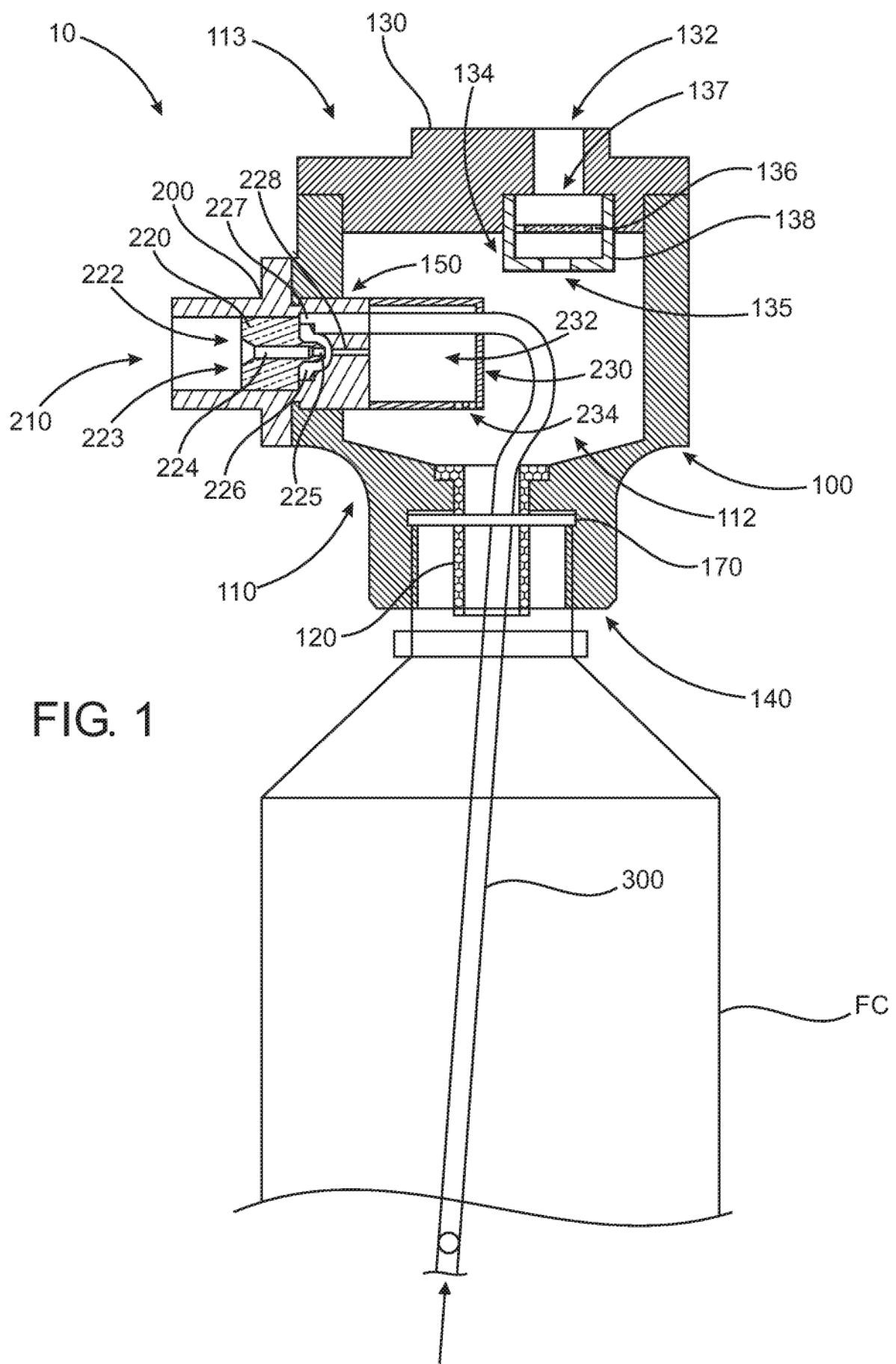
5 19. The assembly of claim 14 further comprising a silencer
6 assembly having a silencer inlet, a silencer outlet, and a baffle.

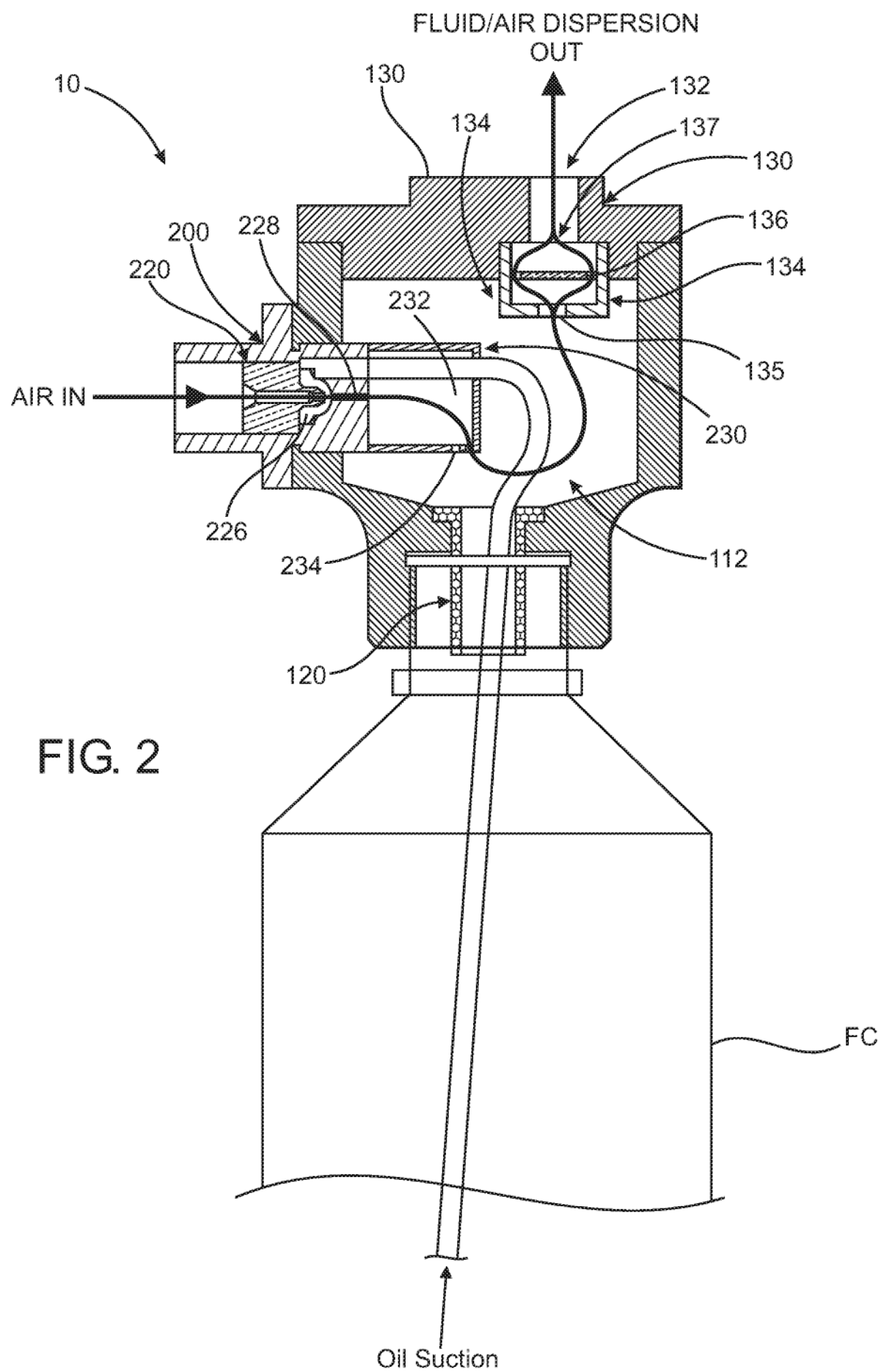
7 20. The assembly of claim 19 wherein said baffle partially
8 restricts movement of the fluid dispersion through said silencer
9 chamber from said silencer inlet to said silencer outlet, thereby
10 dampening sound waves generated during operation of said fluid
11 dispersion assembly.

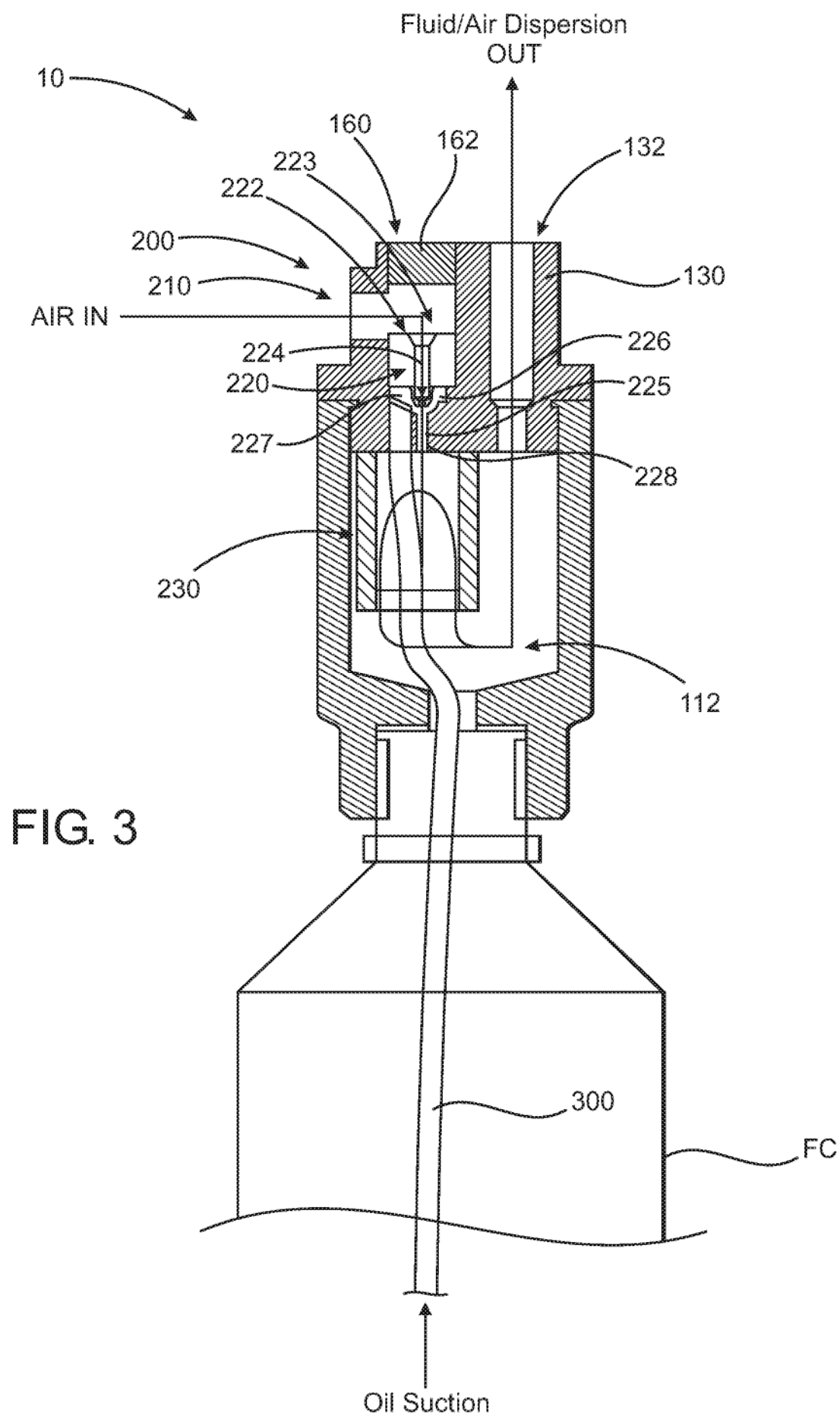
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1 ABSTRACT OF THE DISCLOSURE

2 A fluid dispersion assembly comprises a diffusion unit
3 disposed in fluid communication with a fluid container, the
4 assembly being powered by a compressed air source. The diffusion
5 unit at least partially defines a diffusion chamber, and includes a
6 diffusion assembly containing an atomizer assembly which, in
7 combination with the diffusion chamber, generates a fluid
8 dispersion from a mixture of compressed air and an operative fluid,
9 for example, fragrant oils, essential oils, odor neutralizers,
10 disinfectants such as triethylene glycol, air sanitizers, etc.







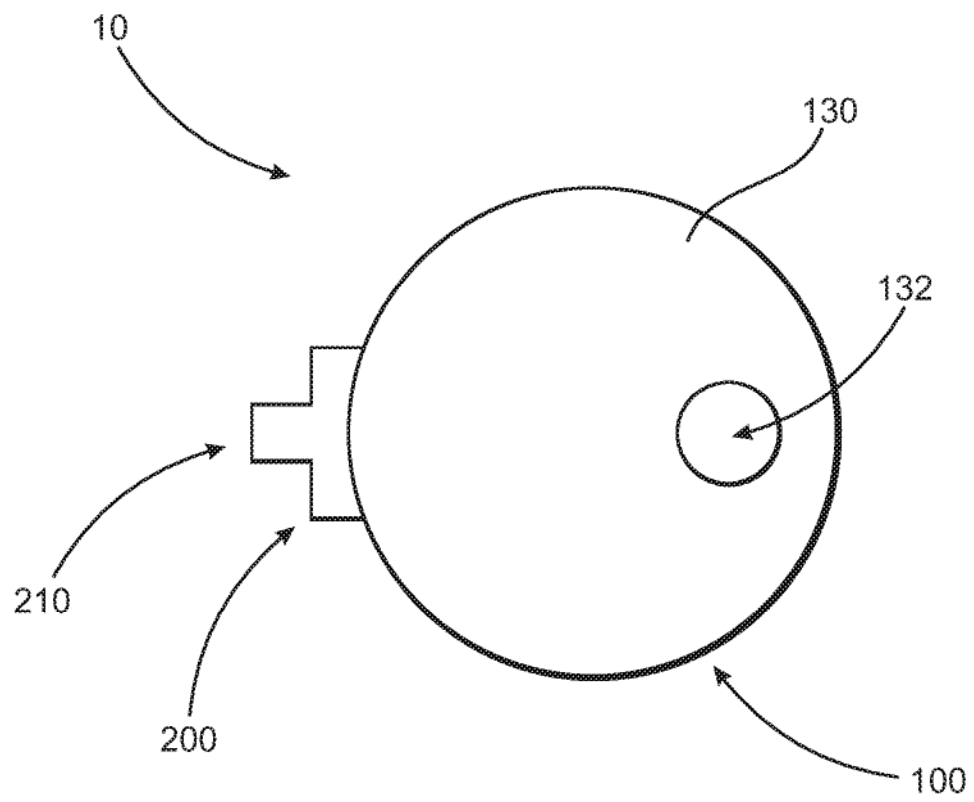


FIG. 4

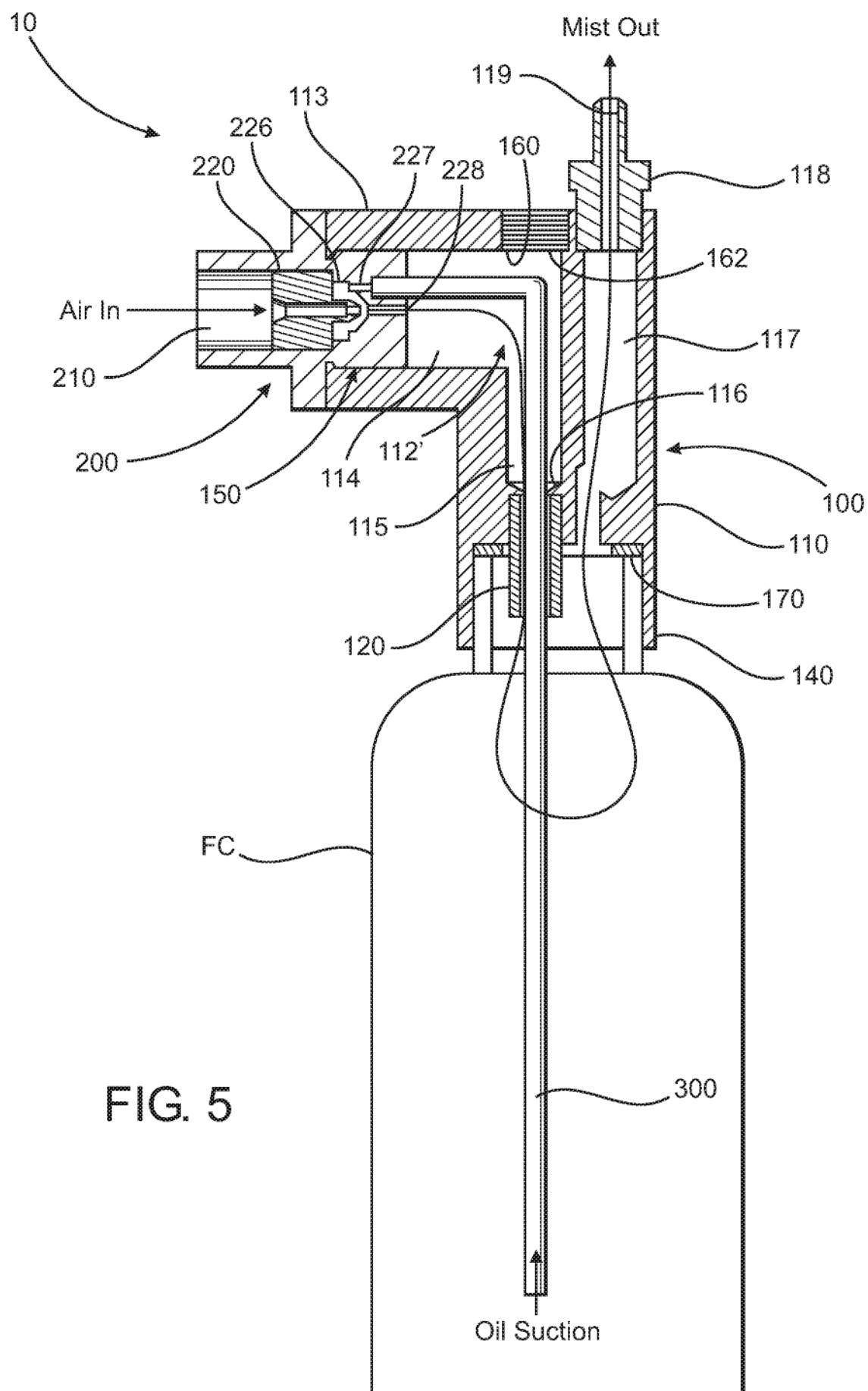
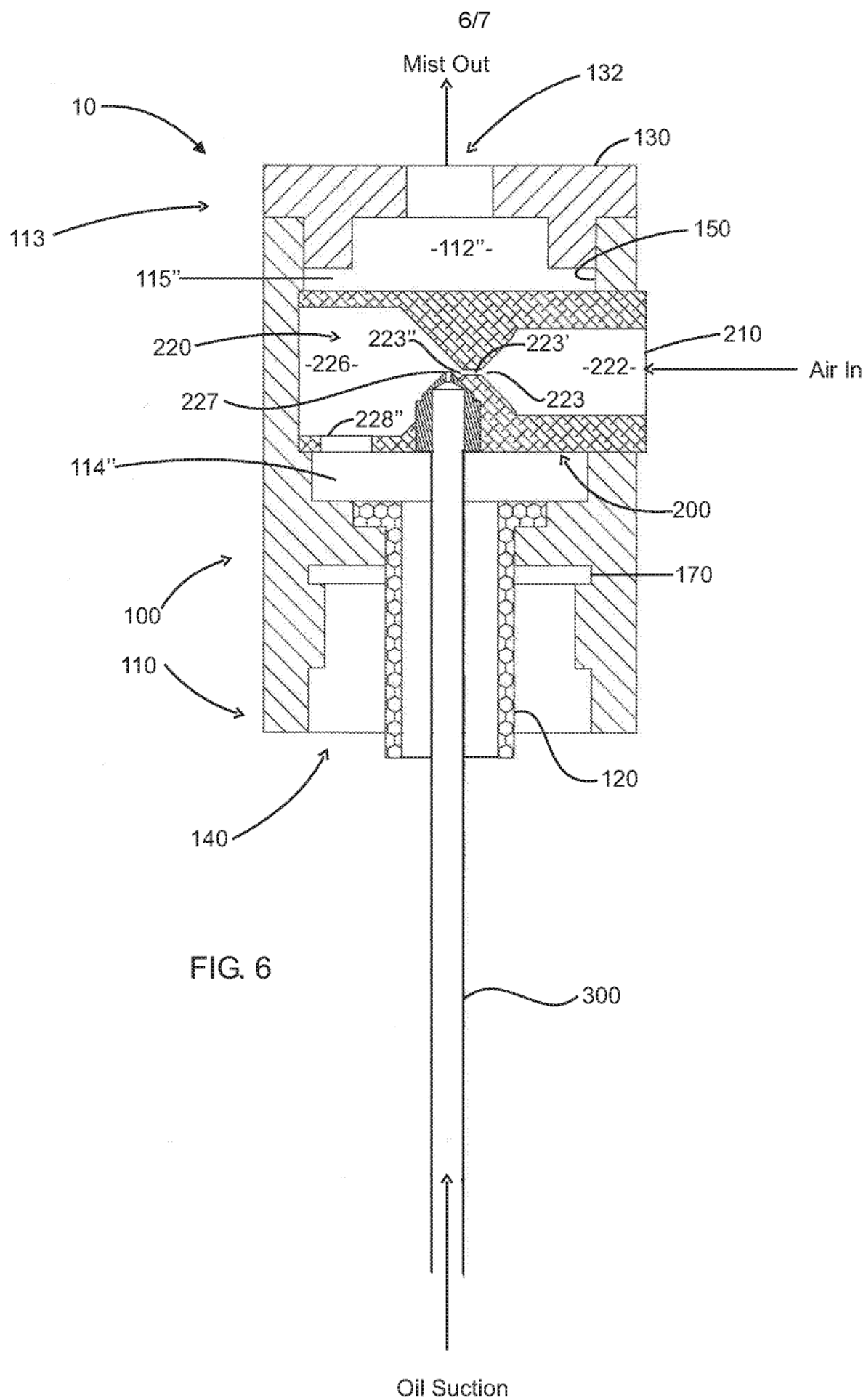
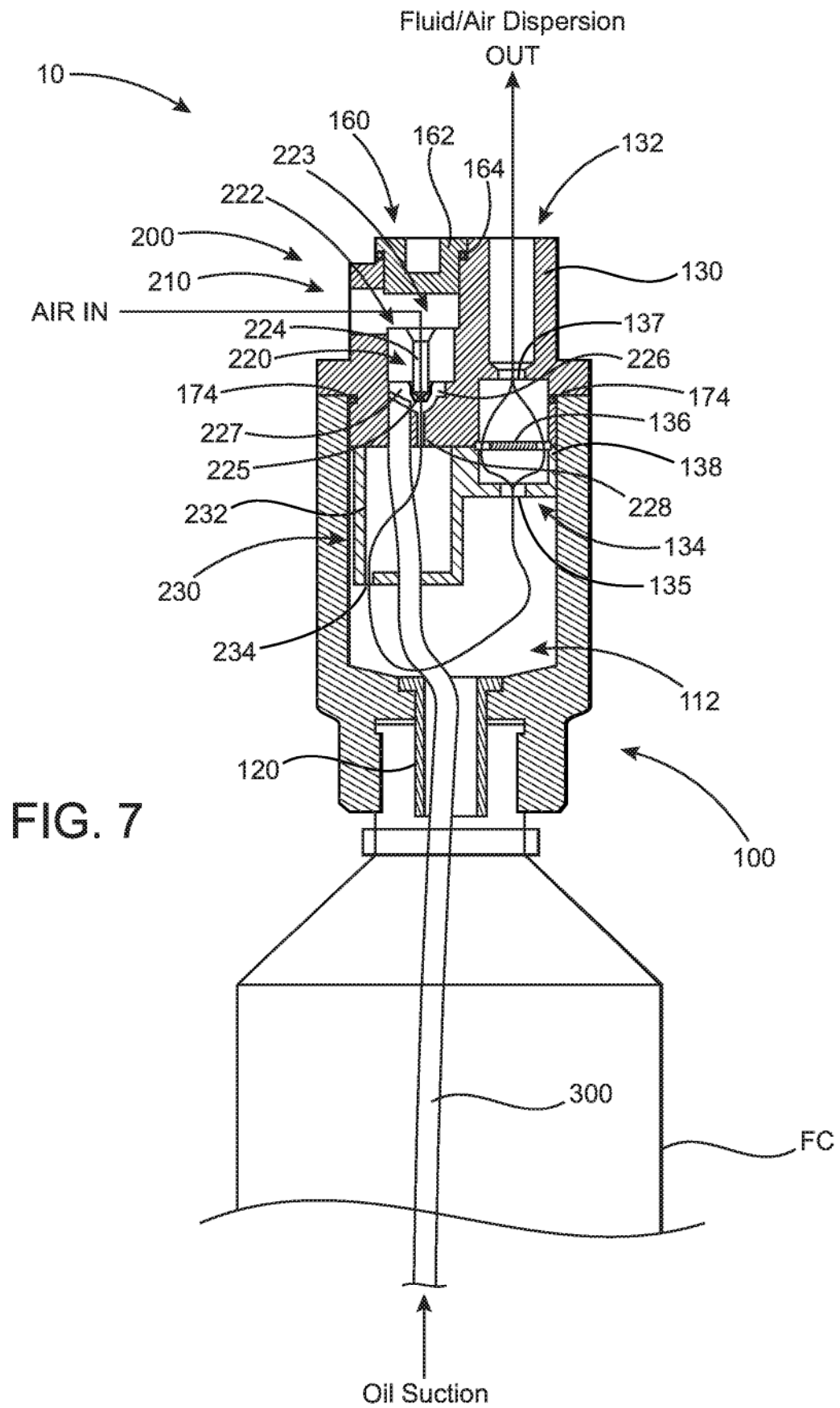


FIG. 5





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1.106C.18

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1.106C.18
		Application Number	
Title of Invention	FLUID DISPERSION ASSEMBLY		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2

☐	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number		1.106C.18	
		Application Number			
Title of Invention		FLUID DISPERSION ASSEMBLY			
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Application Information:

Title of the Invention	FLUID DISPERSION ASSEMBLY		
Attorney Docket Number	1.106C.18	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	7	Suggested Figure for Publication (if any)	7

Filing By Reference :

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☒ Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1.106C.18
		Application Number	
Title of Invention	FLUID DISPERSION ASSEMBLY		

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
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Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the application number blank.

Prior Application Status	Pending	Remove			
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)		
	Continuation in part of	15353951	2016-11-17		
Prior Application Status	Patented	Remove			
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15353951	Continuation in part of	14844650	2015-09-03	9527094	2016-12-27
Prior Application Status	Patented	Remove			
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
14844650	Continuation of	13838364	2013-03-15	9126215	2015-09-08
Prior Application Status	Expired	Remove			
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)		
13838364	Claims benefit of provisional	61694500	2012-08-29		
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button. Add					

Foreign Priority Information:

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1.106C.18
		Application Number	
Title of Invention	FLUID DISPERSION ASSEMBLY		

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)	Remove

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

- ☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
- NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Authorization to Permit Access:

- ☐ Authorization to Permit Access to the Instant Application by the Participating Offices

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1.106C.18
		Application Number	
Title of Invention	FLUID DISPERSION ASSEMBLY		

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.			
Applicant	1		Remove
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.			
Clear			
Assignee	Legal Representative under 35 U.S.C. 117		Joint Inventor
Person to whom the inventor is obligated to assign.		Person who shows sufficient proprietary interest	
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor :			
If the Applicant is an Organization check here. ☒			
Organization Name	Air Esscentials Inc.		
Mailing Address Information For Applicant:			
Address 1	7055 SW 47th Street		
Address 2			
City	Miami	State/Province	FL
Country	US	Postal Code	33155
Phone Number		Fax Number	

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1.106C.18
		Application Number	
Title of Invention	FLUID DISPERSION ASSEMBLY		
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button.			Add

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Assignee	1			
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.				
				Remove
If the Assignee or Non-Applicant Assignee is an Organization check here.				☐
Prefix	Given Name	Middle Name	Family Name	Suffix
Mailing Address Information For Assignee including Non-Applicant Assignee:				
Address 1				
Address 2				
City		State/Province		
Country ⁱ		Postal Code		
Phone Number		Fax Number		
Email Address				
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.				Add

Signature:

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Signature	/John Fulton, Jr./		Date (YYYY-MM-DD)	2018-10-08
First Name	John	Last Name	Fulton, Jr.	Registration Number
			46716	
Additional Signature may be generated within this form by selecting the Add button.				Add

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1.106C.18
		Application Number	
Title of Invention	FLUID DISPERSION ASSEMBLY		

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

**NONPUBLICATION REQUEST
UNDER
35 U.S.C. 122(b)(2)(B)(i)**

First Named Inventor

Marc T. Levy

Title

FLUID DISPERSION ASSEMBLY

Attorney Docket Number

1.106C.18

I hereby certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

I hereby request that the attached application not be published under 35 U.S.C. 122(b).

/John Fulton, Jr./

10/08/2018

Signature

Date

John Fulton, Jr.

46,716

Typed or printed name

Registration Number, if applicable

305-858-8000

Telephone Number

This request must be signed in compliance with 37 CFR 1.33(b) and submitted with the application **upon filing**.

Applicant may rescind this nonpublication request at any time. If applicant rescinds a request that an application not be published under 35 U.S.C. 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, the applicant **must** notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. **Failure to do so will result in abandonment of this application (35 U.S.C. 122(b)(2)(B)(iii)).**

This collection of information is required by 37 CFR 1.213(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:

Filing Date:

Title of Invention:

FLUID DISPERSION ASSEMBLY

First Named Inventor/Applicant Name:

Marc T. Levy

Filer:

John Fulton/Kyra Brusch

Attorney Docket Number:

1.106C.18

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	75	75
UTILITY SEARCH FEE	2111	1	330	330
UTILITY EXAMINATION FEE	2311	1	380	380

Pages:

Claims:

Miscellaneous-Filing:

Petition:

Patent-Appeals-and-Interference:

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				785

Electronic Acknowledgement Receipt

EFS ID:	33945971
Application Number:	16154373
International Application Number:	
Confirmation Number:	5326
Title of Invention:	FLUID DISPERSION ASSEMBLY
First Named Inventor/Applicant Name:	Marc T. Levy
Customer Number:	4219
Filer:	John Fulton/Kyra Brusch
Filer Authorized By:	John Fulton
Attorney Docket Number:	1.106C.18
Receipt Date:	08-OCT-2018
Filing Date:	
Time Stamp:	16:59:05
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 785
RAM confirmation Number	100918INTEFSW16594900
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	2018_10_08_EFS_CERT_Transmittal_Filed_1106C.pdf	17076	no	1
			b4d4425379606ecca2aa90343c81c80f46ea8fa		
Warnings:					
Information:					
2	Transmittal of New Application	2018_10_08_Transmittal_EFS_Filed_1106C.pdf	17852	no	1
			103670ebc35d063e8262aaae0a7f36cc760fd741		
Warnings:					
Information:					
3		2018_10_08_Second_CIP_Patent_Application_Filed_1106C.pdf	150977	yes	41
			da28cdbbc9f4ea0b87f98cb203fca74c73a81dbfc		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	35	
	Claims		36	40	
	Abstract		41	41	
Warnings:					
Information:					
4	Drawings-only black and white line drawings	2018_10_08_Drawings_Filed_1106C.pdf	695549	no	7
			ffbcb1734af3ecec4d7eeca85e09234ec506f929d48		
Warnings:					
Information:					
5	Oath or Declaration filed	2018_10_08_Dec_and_POA_Filed_1106C.pdf	24007	no	2
			ffd67fc4421bc30cac00aa1594cb2a0dc45fb10f		

Warnings:					
Information:					
6	Application Data Sheet	2018_10_08_ADS_Filed_1106C.pdf	1819560	no	8
			f742cbc89458a0ca00e6ec44dddc87dde75a378c		
Warnings:					
Information:					
7	Nonpublication request from applicant	2018_10_08_Non_Pub_Req_Filed_1106C.pdf	234765	no	2
			79b0bf40cf131179e26d5b2c74664b0aa7f852c1		
Warnings:					
Information:					
8	Fee Worksheet (SB06)	fee-info.pdf	35087	no	2
			7e38e77709ef9e2725d986b70ace7995567e3e2b		
Warnings:					
Information:					
Total Files Size (in bytes):			2994873		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Air Essentials Inc.

Inventors: Marc T. Levy, Craig Huck, and Steven Semoff

Serial No.:

Filing Date:

For: FLUID DISPERSION ASSEMBLY

Customer No. 04219
2800 S.W. Third Avenue
Historic Coral Way
Miami, Florida 33129

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF EFS-WEB TRANSMISSION

I HEREBY CERTIFY that this correspondence is being transmitted via the U.S. Patent and Trademark Office (USPTO) electronic filing system (EFS-Web) to the USPTO this 8 day of October, 2018.

Respectfully Submitted,

MALLOY & MALLOY, P.L.
Attorneys for Applicant
2800 S.W. Third Avenue
Historic Coral Way
Miami, Florida 33129
(305)858-8000

By: /John Fulton, Jr./
John Fulton, Jr.
Reg. No. 46,716
Email: patents@malloylaw.com

Date: October 8, 2018