US012389945B2

(12) **United States Patent**
Hoffmann

(10) **Patent No.: US 12,389,945 B2**
(45) **Date of Patent: Aug. 19, 2025**

(54) **VAPOR CONDITIONING AND DISPENSING APPARATUS**

(71) Applicant: **AIRO Brands, Inc.**, Staten Island, NY (US)

(72) Inventor: **Allen David Hoffmann**, Westminster, CO (US)

(73) Assignee: **AIRO BRANDS, INC.**, Staten Island, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 411 days.

(21) Appl. No.: **17/977,006**

(22) Filed: **Oct. 31, 2022**

(65) **Prior Publication Data**

US 2024/0138476 A1 May 2, 2024

(51) **Int. Cl.**
A24F 40/44 (2020.01)
A24F 40/50 (2020.01)

(52) **U.S. Cl.**
CPC ***A24F 40/44*** (2020.01); ***A24F 40/50*** (2020.01)

(58) **Field of Classification Search**
CPC A24F 40/10; A24F 40/44; A24F 40/50
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

10,306,927 B2 6/2019 Rostami et al.
11,154,669 B2 10/2021 Bowen et al.
11,357,934 B2 * 6/2022 Hawes A61M 15/06
2015/0216237 A1 8/2015 Wensley et al.
2016/0374394 A1 * 12/2016 Hawes A24F 40/485 131/329
2020/0113244 A1 * 4/2020 Novak, III H01R 13/6205
2020/0359684 A1 * 11/2020 Bruton A24F 40/30
2022/0313928 A1 * 10/2022 Hunt A24F 40/42

OTHER PUBLICATIONS

International Search Report and Written Opinion issued in International Application No. PCT/US22/48356, dated Feb. 22, 2023, pp. 1-8.
International Report on Patentability issued in corresponding International Application No. PCT/US2022/048356, dated Apr. 29, 2025, pp. 1-6.

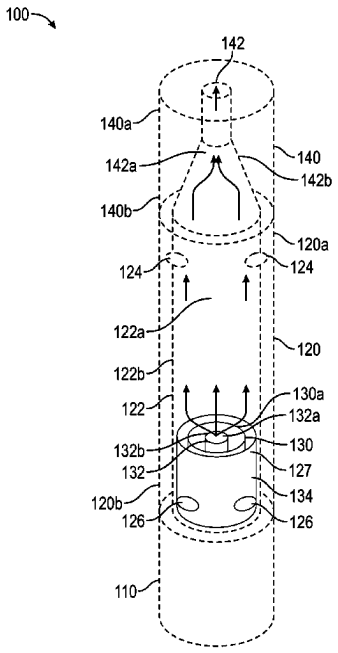
* cited by examiner

Primary Examiner — Abdullah A Riyami
Assistant Examiner — Thang H Nguyen
(74) *Attorney, Agent, or Firm* — Carter, DeLuca & Farrell LLP

(57) **ABSTRACT**

An apparatus for conditioning and dispensing vapor includes an atomizer, a body, and a mouth cap. The atomizer includes a first conduit. The body includes a leading end portion, a trailing end portion, and a second conduit. The second conduit has an internal diameter larger than an internal diameter of the first conduit. The trailing end portion of the body is in fluid communication with the atomizer. The mouth cap includes a leading end portion, a trailing end portion, and a third conduit. The trailing end portion of the mouth cap is in fluid communication with the leading end portion of the body. The leading end portion of the mouth cap has a cross-sectional area approximately equivalent to an internal diameter cross-sectional area of the first conduit.

20 Claims, 6 Drawing Sheets



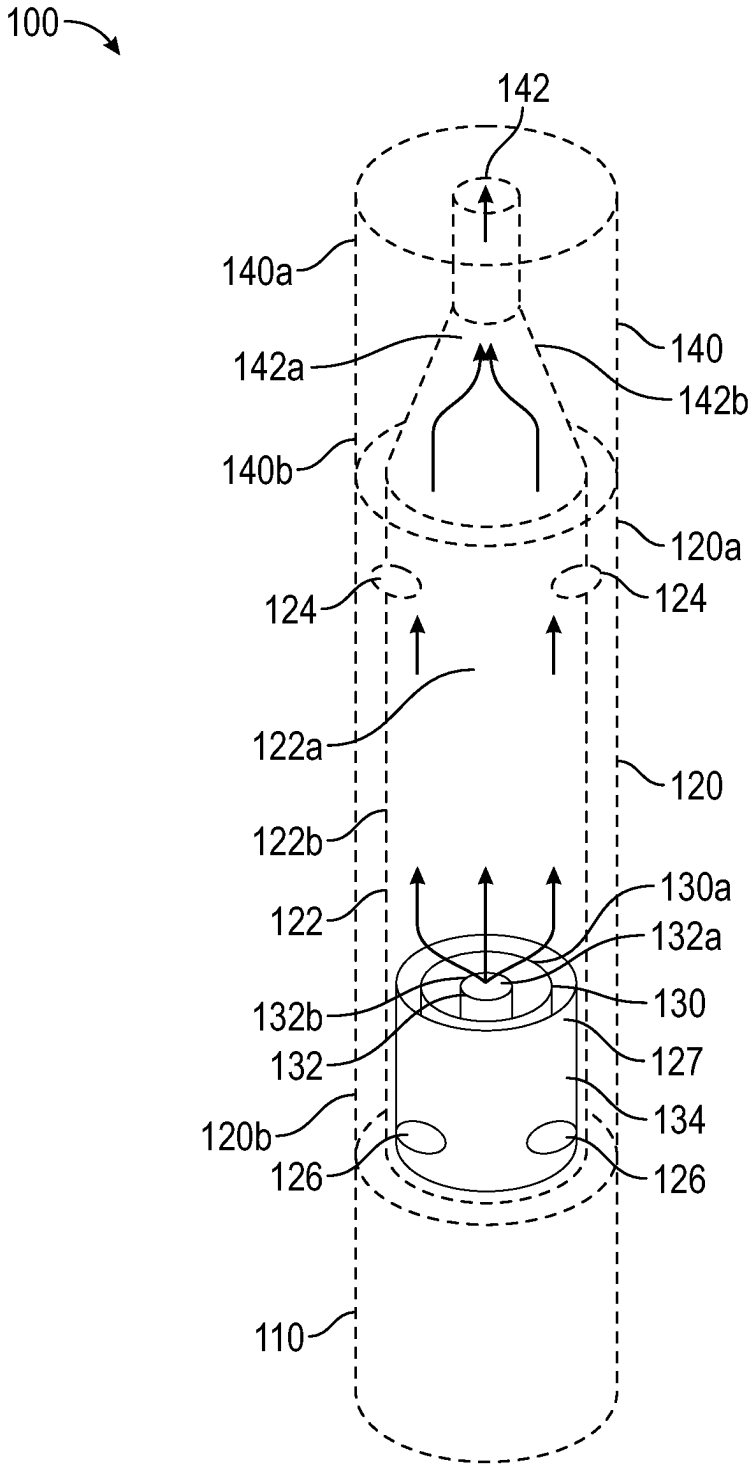

100
142
140a
142a
140
142b
140b
120a
124
124
122a
120
122b
122
130a
132a
132b
130
132
127
120b
134
126
126
110

FIG. 1

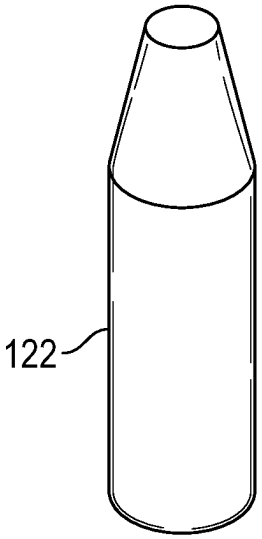


FIG. 2A

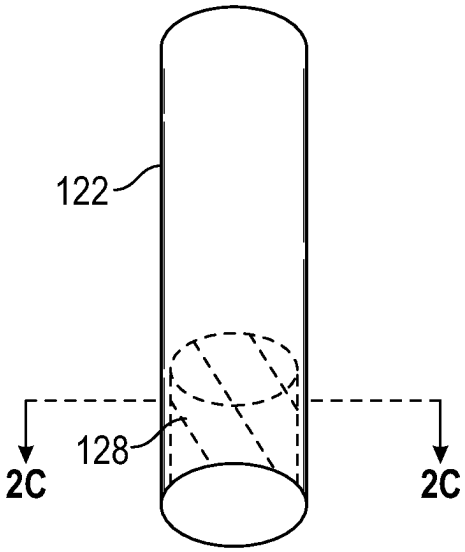


FIG. 2B

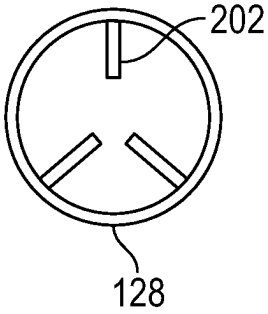


FIG. 2C

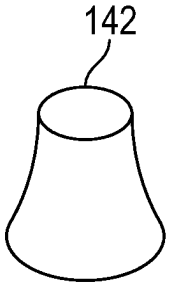


FIG. 3A

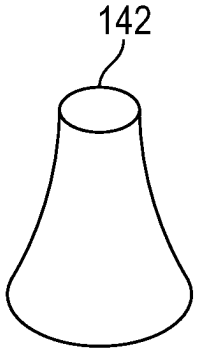


FIG. 3B

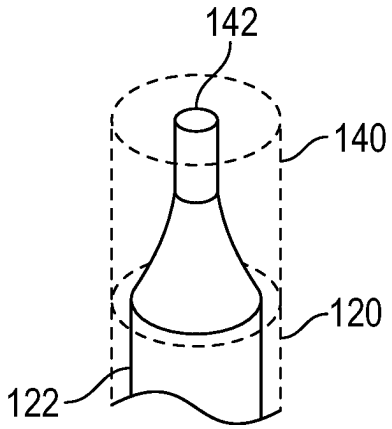


FIG. 3C

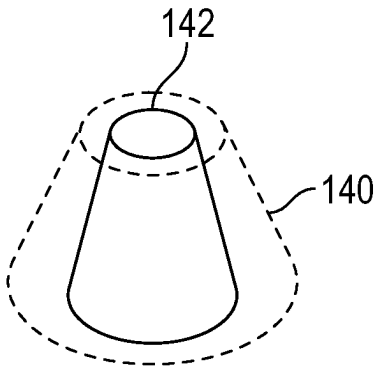


FIG. 4A

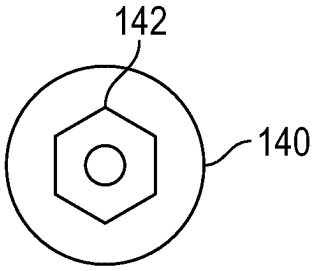


FIG. 4B

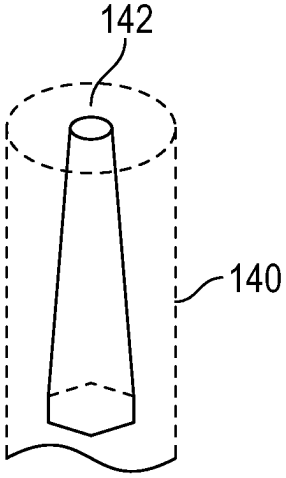


FIG. 4C

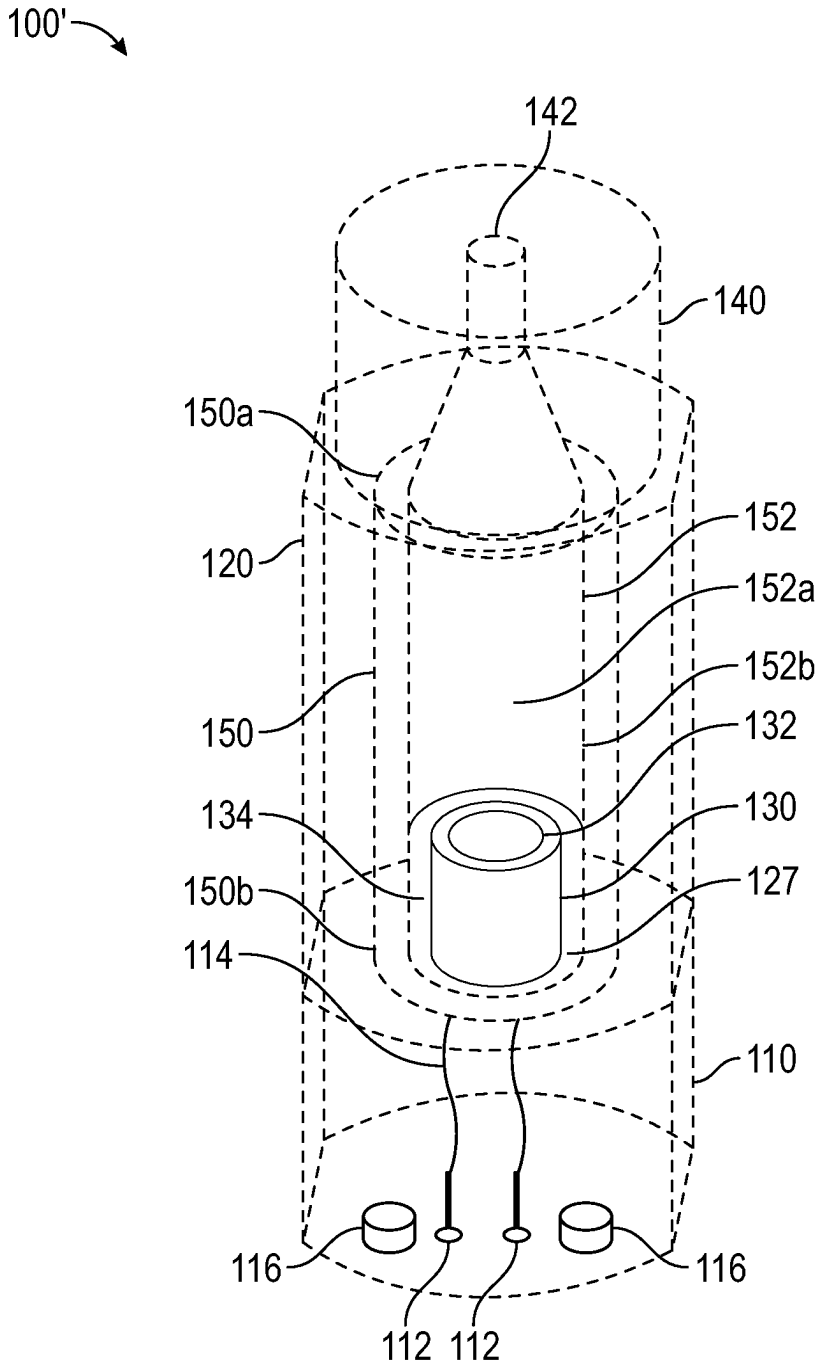

100'
142
140
150a
152
120
152a
152b
150
132
134
130
150b
127
114
110
116
116
112
112

FIG. 5

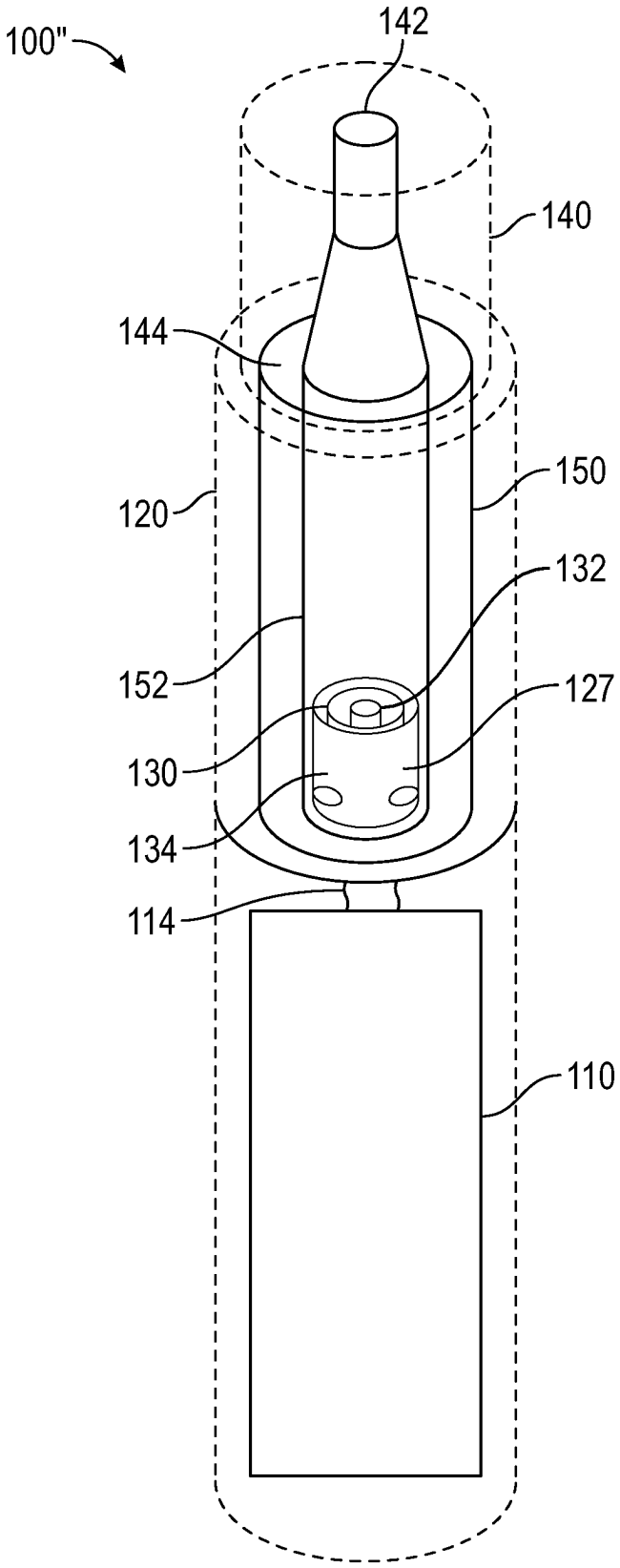


FIG. 6

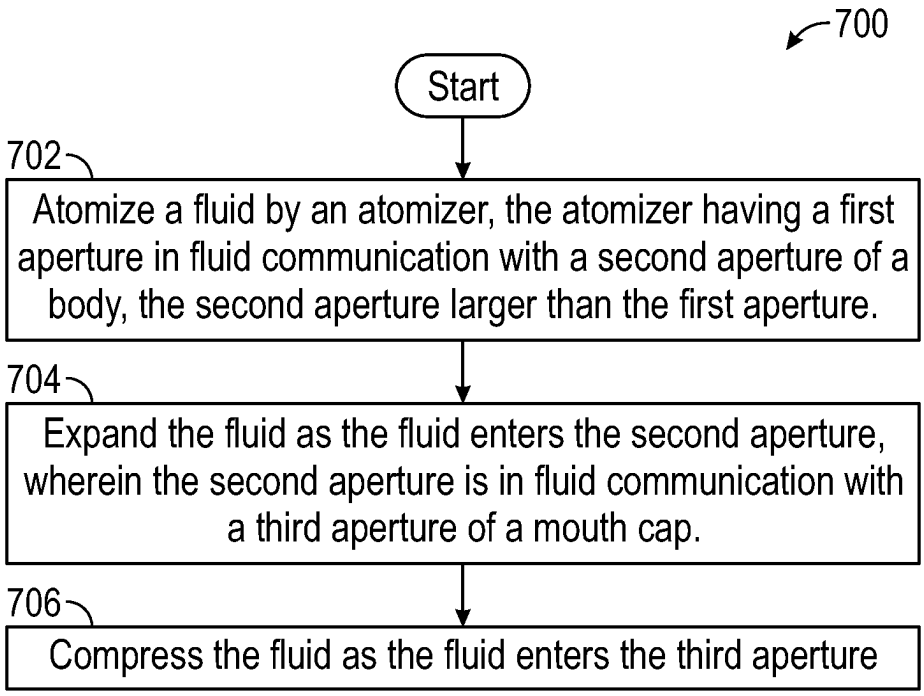

700
Start
702
Atomize a fluid by an atomizer, the atomizer having a first aperture in fluid communication with a second aperture of a body, the second aperture larger than the first aperture.
704
Expand the fluid as the fluid enters the second aperture, wherein the second aperture is in fluid communication with a third aperture of a mouth cap.
706
Compress the fluid as the fluid enters the third aperture

FIG. 7

VAPOR CONDITIONING AND DISPENSING APPARATUS

TECHNICAL FIELD

The present disclosure relates generally to the field of vaping apparatus, and more particularly, to vaping apparatus and methods for conditioning dispensed vapor.

BACKGROUND

Known vaping apparatus often have problems achieving desired vapor conditioning because such devices lack structure that sufficiently regulates vapor temperature and/or density. As a result, such vaping apparatus dispense overly dry and/or heated vapor that tends to cause discomfort in the throat, and in more severe cases, can engender lung inflammation and bronchitis.

SUMMARY

This disclosure is directed to vaping apparatus including vapor conditioning structure configured to lower vapor temperature and preserve vapor density of dispensed vapor for reducing throat discomfort and risks of lung inflammation and bronchitis.

An aspect of the present disclosure provides an apparatus for dispensing and conditioning vapor. The apparatus includes an atomizer, a body, and a mouth cap. The atomizer includes a first conduit. The body includes a leading end portion, a trailing end portion, and a second conduit. The second conduit of the body has an internal diameter larger than an internal diameter of the first conduit. The trailing end portion of the body is in fluid communication with the atomizer. The mouth cap includes a leading end portion, a trailing end portion, and a third conduit. The trailing end portion of the mouth cap is in fluid communication with the leading end portion of the body. The leading end portion of the mouth cap has a cross-sectional area approximately equivalent to an internal diameter cross-sectional area of the first conduit.

In an aspect of the present disclosure, the trailing end portion of the third conduit may have a cross-sectional area approximately equivalent to an internal diameter cross-sectional area of the second conduit. The cross-sectional area of the third conduit may taper down toward the leading end portion of the third conduit.

In aspect of the present disclosure, the apparatus may further include a power terminal configured to supply energy to the atomizer. The power terminal may be configured to mate with the trailing end portion of the body.

In an aspect of the present disclosure, the body may further include an outlet port configured to permit release of fluid from the body.

In an aspect of the present disclosure, the body may further include an inlet port configured to permit entrance of fluid into the body.

In an aspect of the present disclosure, the apparatus may further include wicking material proximate to the atomizer. The wicking material may be configured to supply fluid to the atomizer.

In an aspect of the present disclosure, the apparatus may further include an insert configured to control fluid movement. The insert may be disposed within the second conduit.

An aspect of the present disclosure provides an apparatus for dispensing and conditioning vapor. The apparatus includes an atomizer, a body, a mouth cap, and a container. The atomizer includes a first conduit. The body includes a second conduit. The mouth cap includes a leading end portion, a trailing end portion, and a third conduit. The leading end portion of the third conduit has a cross-sectional area approximately equivalent to an internal diameter cross-sectional area of the first conduit. The container is disposed within the second conduit. The container includes a leading end portion, a trailing end portion, and a fourth conduit. The fourth conduit has an internal diameter larger than the internal diameter of the first conduit. The leading end portion of the container is in fluid communication with the trailing end portion of the mouth cap. The trailing end portion of the container is in fluid communication with the atomizer.

In an aspect of the present disclosure, a trailing end of the third conduit may have a cross-sectional area approximately equivalent to an internal diameter cross-sectional area of the fourth conduit. The cross-sectional area of the third conduit may taper down toward the leading end portion of the third conduit.

In an aspect of the present disclosure, the apparatus may further include a power terminal configured to supply energy to the atomizer.

In an aspect of the present disclosure, the body may further include an outlet port configured to enable release of fluid from the body.

In an aspect of the present disclosure, the body may further include an inlet port configured to enable ingress of fluid into the body.

In an aspect of the present disclosure, the apparatus may further include wicking material proximate to the atomizer. The wicking material may be configured to supply fluid to the atomizer.

In an aspect of the present disclosure, the apparatus may further include an insert configured to control fluid flow. The insert may be disposed within the fourth conduit.

An aspect of the present disclosure provides a method for dispensing and conditioning vapor. The method includes atomizing a fluid by an atomizer. The atomizer has a first conduit in fluid communication with a second conduit of a body. The second conduit is larger than the first conduit. The method next includes expanding the fluid as the fluid enters the second conduit. The second conduit is in fluid communication with a third conduit of a mouth cap. Finally, the method includes compressing the fluid as the fluid enters the third conduit.

In an aspect of the present disclosure, the method may include reducing a temperature of the fluid from a first temperature to a second temperature as the fluid enters the third conduit.

In an aspect of the present disclosure, the atomizing may be performed by causing the fluid to enter the atomizer through a wicking material disposed around an outer surface of the atomizer.

In an aspect of the present disclosure, the method may include supplying energy to the atomizer through a power terminal.

In an aspect of the present disclosure, the method may include causing the fluid to enter or to exit the body through a port.

In an aspect of the present disclosure, the method may include controlling a movement of the fluid through the second conduit by an insert disposed within the second conduit.

Further details and aspects of the present disclosure are described in more detail below with reference to the appended drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

A better understanding of the features and advantages of the present disclosure will be obtained by reference to the following detailed description that sets forth illustrative aspects, in which the principles of the present disclosure are utilized, and the accompanying drawings of which:

FIG. **1** is a perspective view of an apparatus for conditioning and dispensing vapor, in accordance with aspects of the disclosure;

FIG. **2**A is a perspective view of a conduit of a body and a conduit of a mouth cap of the apparatus of FIG. **1**, in accordance with aspects of the disclosure;

FIG. **2**B provides a perspective view of an alternate conduit of the body of the apparatus of FIG. **1**;

FIG. **2**C provides a top view of an insert disposed within the body of the apparatus of FIG. **1**, in accordance with aspects of the disclosure;

FIG. **3**A is a perspective view of the conduit of a mouth cap of the apparatus of FIG. **1**, in accordance with aspects of the disclosure;

FIG. **3**B is a perspective view of an alternate conduit of the mouth cap of the apparatus of FIG. **1**, in accordance with aspects of the disclosure;

FIG. **3**C is a perspective view of a leading portion of the apparatus of FIG. **1**, in accordance with aspects of the disclosure;

FIG. **4**A is a perspective view of an alternate mouth cap of the apparatus of FIG. **1**, in accordance with aspects of the disclosure;

FIG. **4**B is a top view of an alternate mouth cap of the apparatus of FIG. **1**, in accordance with aspects of the disclosure;

FIG. **4**C is a perspective view of an alternate mouth cap of the apparatus of FIG. **4**B, in accordance with aspects of the disclosure;

FIG. **5** is a perspective view of an alternate apparatus for conditioning and dispensing vapor, in accordance with aspects of the disclosure;

FIG. **6** is a perspective view of an alternate apparatus for conditioning and dispensing vapor, including the container of FIG. **5** and a power terminal disposed within the body, in accordance with aspects of the disclosure; and

FIG. **7** is a flow diagram of a method for conditioning and dispensing vapor, in accordance with aspects of the present disclosure.

DETAILED DESCRIPTION

The present disclosure relates generally to the field of vaping apparatus. More specifically, an aspect of the present disclosure provides systems and methods for conditioning and dispensing vapor.

Aspects of the present disclosure are described in detail with reference to the drawings wherein like reference numerals identify similar or identical elements.

Although the present disclosure will be described in terms of specific aspects and examples, it will be readily apparent to those skilled in this art that various modifications, rearrangements, and substitutions may be made without departing from the spirit of the present disclosure.

For purposes of promoting an understanding of the principles of the present disclosure, reference will now be made to exemplary aspects illustrated in the drawings, and specific language will be used to describe the same. It will nevertheless be understood that no limitation of the scope of the present disclosure is thereby intended. Any alterations and further modifications of the novel features illustrated herein, and any additional applications of the principles of the present disclosure as illustrated herein, which would occur to one skilled in the relevant art and having possession of this disclosure, are to be considered within the scope of the present disclosure. For illustrative purposes, the following detailed description is directed to vaping devices, however, other devices which require the conditioning and/or dispensing of vapor are within the scope of the present disclosure as well.

Referring to FIG. **1**, an apparatus **100** for conditioning and dispensing vapor is shown. The apparatus **100** is configured to regulate the temperature and density of a vapor by causing the vapor to expand and compress before being dispensed. The apparatus **100** generally includes an atomizer **130**, a body **120**, and a mouth cap **140**. The apparatus **100** may further include a power terminal **110** (e.g., a battery). The body **120** includes a leading end portion **120***a* configured to mate with the mouth cap **140** and a trailing end portion **120***b* configured to mate with the power terminal **110**. The apparatus **100** provides an airpath that carries vapor from the atomizer **130** to the mouth cap **140** (e.g., a mouthpiece) in response to a negative pressure generated in the apparatus (e.g., a user inhalation).

The atomizer **130** is configured to convert a fluid (e.g., an oil precursor) into vapor, typically by using heat. For example, the atomizer **130** may have embedded or exposed heating elements configured for heating the fluid and converting the fluid to a vapor. The fluid may be stored in a container **127** that is in fluid communication with the atomizer **130**. The atomizer **130** may generally be disposed within the body **120**, particularly within a second conduit **122** of the body **120**, but may be disposed elsewhere as needed. For example, the atomizer **130** may be disposed outside of and abutted to the body **120**. The atomizer **130** may be made from ceramic or another suitable material. The atomizer **130** includes a leading end portion **130***a* and a first conduit **132**. The first conduit **132** includes an internal surface **132***b* that defines a passage **132***a* therethrough. Energy may be supplied to the atomizer **130** by the power terminal **110** (e.g., connected to a battery). The power terminal **110** may be configured to mate with the body **120** via any suitable method, such as threading, magnetics, snap-fit, fastening, and/or any other suitable technique for joining components. The fluid may enter the atomizer **130**, for example, through wicking material **134** from container **127**. The wicking material **134** may be constructed from cotton, silica, mesh, hemp, rayon, and/or another suitable material. In aspects, the wicking material **134** may cover all sides of the atomizer **130**, with the exception of the first conduit **132**, but may generally surround the side walls of the atomizer **130**. The atomizer **130** transforms the fluid into vapor by heating the fluid, which then enters the first conduit **132** as a vapor.

The body **120** includes the leading end portion **120***a*, the trailing end portion **120***b*, and a second conduit **122**. The body **120** may generally be cylindrical but may include another suitable shape. The second conduit **122** includes an internal surface **122***b* that defines a passage **122***a* therethrough. The second conduit **122** has an internal diameter larger than an internal diameter of the first conduit **132**. The second conduit **122** is in fluid communication with the first conduit **132**. The body **120** may be constructed from glass, steel, alloy, ceramic, polycarbonate, polyamide, engineered thermoplastics, and/or any other suitable material. The mouth cap **140** is configured to mate with the body **120**. The mouth cap **140** may be configured to mate with the body **120**

via threading, magnetics, snap-fit, fastening, and/or any other suitable technique for joining components. In aspects, the mouth cap **140** may be integral with the body **120**. The mouth cap **140** includes a leading end portion **140***a*, a trailing end portion **140***b*, and a third conduit **142**. The third conduit **142** includes an internal surface **142***b* that defines a passage **142***a* therethrough. The third conduit **142** is in fluid communication with the second conduit **122**. An internal diameter of the third conduit **142** is configured to transition from the internal diameter of the second conduit **122** to a cross-sectional area approximately equal to a cross-sectional inner diameter area of the first conduit **132**. The mouth cap **140** may be made from glass, steel, alloy, ceramic, polycarbonate, polyamide, engineered thermoplastics, stone, and/or any other suitable material.

In aspects, the body **120** may include inlet port(s) **126** (e.g., oil inlet port) to introduce fluid into the atomizer **130** and/or wicking material **134** from container **127**. The inlet port **126** is disposed proximate to the atomizer **130**. In other aspects, the body **120** may include an outlet port **124** (e.g., air outlet port). The outlet port **124** is configured to permit vapor and/or air to be externally released from the apparatus **100** when the mouth cap **140** is attached to the body **120**.

FIGS. **2**A-**2**C illustrate example layouts of the second conduit **122**. FIG. **2**A illustrates that the second conduit **122** may be configured in such a way as to induce the Venturi effect, a reduction in fluid pressure caused by vapor flowing through a constricted area. In this configuration, the second conduit **122** may narrow at the leading end portion **120***a* of the body **120** such that the internal diameter of the second conduit **122** is equivalent to the internal diameter of the first conduit **132**. The narrowing of the internal diameter of the second conduit **122** may occur linearly, exponentially, or in another suitable manner. FIG. **2**B shows that vapor flow may be controlled in the second conduit **122** through use of an insert **128** disposed within the second conduit **122**. As shown in FIGS. **2**B and **2**C, the insert **128** may include one or more beveled or angled fins **202** configured to spin the vapor through the second conduit **122**. Although three fins **202** are shown, any suitable number of fins may be used. The fins **202** may be of any suitable shape and/or angle. The insert **128** may be a thermally conductive material and/or may be constructed from another suitable material. In aspects, the geometry of the insert **128** may be formed into the body **120** and/or second conduit **122**.

FIGS. **3**A through **3**C display example configurations for the third conduit **142**. The internal diameter of the third conduit **142** may decrease linearly, exponentially, or may have any other suitable curve. FIG. **3**A shows a short third conduit **142** having a dramatic curve between the internal diameter of the third conduit **142** matching the internal diameter of the second conduit **122** and the internal diameter of the third conduit **142** matching the internal diameter of the first conduit **132**. FIG. **3**B shows an elongated third conduit **142** having a gentle, less dramatic curve between the internal diameter of the third conduit **142** matching the internal diameter of the second conduit **122** and the internal diameter of the third conduit **142** matching the internal diameter of the first conduit **132**. As shown in FIG. **3**C, the third conduit **142** may maintain a consistent internal diameter, with the reduction in the internal diameter cross-sectional area to that of the internal diameter cross-sectional area of the first conduit **132** instead occurring within the second conduit **122** (FIG. **2**A).

FIGS. **4**A-**4**C depict the third conduit **142** in relation to the external appearance of the mouth cap **140**. The third conduit **142** and the mouth cap **140** may both take a circular form and decrease linearly in diameter toward the leading end portion **140***a* (FIG. **4**A). In aspects, the mouth cap **140** may instead maintain a consistent external diameter (FIG. **4**C). A cross-sectional area of the third conduit **142** may differ in shape from the leading end portion **140***a* of the mouth cap **140** to the trailing end portion **140***b* of the mouth cap **140** (FIG. **4**B).

FIG. **5** displays an alternate configuration of the apparatus **100'** including a container **150** within the body **120**. The container **150** includes a leading end portion **150***a*, a trailing end portion **150***b*, and a fourth conduit **152** having an internal diameter larger than the internal diameter of the first conduit **132**. The fourth conduit **152** includes an internal surface **152***b* that defines a passage **152***a* therethrough. As in FIG. **5**, the atomizer **130** may be disposed in the fourth conduit **152**. The fourth conduit **152** may be in fluid communication with the first conduit **132** and the third conduit **142**. In aspects, the internal diameter of the third conduit **142** may be configured to transition from the internal diameter of the fourth conduit **152** to a cross-sectional area equal to a cross-sectional inner diameter area of the first conduit **132**. The exterior shape of the body **120** and the power terminal **110** may be non-cylindrical. The power terminal **110** may include a wire **114** to connect the power terminal **110** to the atomizer **130**. The wire **114** may be connected to a power-conducting pin **112**. In aspects, the power terminal **110** may contain a magnet **116**, where the magnet **116** is configured to allow the power terminal **110** to connect the apparatus **100'** to a compatible dispensing device battery terminal.

FIG. **6** shows a potentially disposable, all-in-one configuration of the apparatus **100"**. Referring to FIG. **6**, all components, including the power terminal **110**, are within a single body **120**. To maintain a seal within the apparatus **100"**, in aspects, a gasket **144** may be disposed between the body **120** and the mouth cap **140**.

Referring to FIG. **7**, a flow diagram for a method **700** of dispensing and conditioning vapor in accordance with the present disclosure is shown. Although the steps of FIG. **7** are shown in a particular order, the steps need not all be performed in the specified order, and certain steps can be performed in another order. These variations are contemplated to be within the scope of the present disclosure.

Initially, at step **702**, the apparatus **100**, **100'**, **100"** receives and atomizes a fluid into a vapor through the atomizer **130** (FIGS. **1**, **5**, **6**). For example, a user may atomize the fluid by powering on the power terminal **110** and/or by drawing a breath on the mouth cap **140**. The atomizer **130** may be supplied energy to atomize the fluid into vapor by the power terminal **110** (e.g., by a battery). The fluid, which is stored in container **127**, may enter the atomizer through an inlet port **126** in the body **120**. The fluid may be dispersed into the atomizer **130** through wicking material **134** disposed on an outer surface of the atomizer **130**, in container **127**. The first conduit **132** of the atomizer **130** is in fluid communication with the second conduit **122** of the body **120**. The second conduit **122** has an internal diameter larger than the internal diameter of the first conduit **132**.

At step **704**, the vapor flows from the first conduit **132** to the second conduit **122** (FIG. **1**). As the second conduit **122** is larger than the first conduit **132**, the vapor expands and experiences a decrease in temperature. The decrease in vapor density caused by the expansion in volume between the first conduit **132** and the second conduit **122** decreases the temperature of the vapor. In aspects, the vapor may flow through an insert **128** disposed within the second conduit **122**. The insert **128** may cause a further dissipation of

temperature of the vapor as the vapor moves through the second conduit **122**. The second conduit is in fluid communication with the third conduit **142** of the mouth cap **140**. The third conduit **142** ultimately has a cross-sectional internal diameter area equivalent to the cross-sectional internal diameter of the first conduit **132**.

Finally, at step **706**, the vapor within the second conduit **122** is compressed as the vapor flows into the third conduit **142**. The expansion and compression of the vapor cools the temperature of the vapor relative to the initial temperature of the vapor when it is atomized. As the vapor flows through the third conduit **142** and exits the mouth cap **140**, the user is supplied with vapor that is dense and temperature regulated. The disclosed technology provides the benefit of conditioning vapor density and providing a lower temperature vapor than an open airflow or a restricted airflow system would provide. Thus, the final temperature and density of the vapor are consistent and/or within the same ranges of the initial temperature and density of the vapor.

Certain aspects of the present disclosure may include some, all, or none of the above advantages and/or one or more other advantages readily apparent to those skilled in the art from the drawings, descriptions, and claims included herein. Moreover, while specific advantages have been enumerated above, the various aspects of the present disclosure may include all, some, or none of the enumerated advantages and/or other advantages not specifically enumerated above.

The aspects disclosed herein are examples of the disclosure and may be embodied in various forms. For instance, although certain aspects herein are described as separate aspects, each of the aspects herein may be combined with one or more of the other aspects herein. Specific structural and functional details disclosed herein are not to be interpreted as limiting, but as a basis for the claims and as a representative basis for teaching one skilled in the art to variously employ the present disclosure in virtually any appropriately detailed structure. Like reference numerals may refer to similar or identical elements throughout the description of the figures.

The phrases "in an aspect," "in aspects," "in various aspects," "in some aspects," or "in other aspects" may each refer to one or more of the same or different example Aspects provided in the present disclosure. A phrase in the form "A or B" means "(A), (B), or (A and B)." A phrase in the form "at least one of A, B, or C" means "(A); (B); (C); (A and B); (A and C); (B and C); or (A, B, and C)."

It should be understood that the foregoing description is only illustrative of the present disclosure. Various alternatives and modifications can be devised by those skilled in the art without departing from the disclosure. Accordingly, the present disclosure is intended to embrace all such alternatives, modifications, and variances. The aspects described with reference to the attached drawing figures are presented only to demonstrate certain examples of the disclosure. Other elements, steps, methods, and techniques that are insubstantially different from those described above and/or in the appended claims are also intended to be within the scope of the disclosure.

What is claimed is:

1. An apparatus for dispensing and conditioning vapor, the apparatus comprising:

an atomizer including a first conduit having an internal diameter, the atomizer configured to atomize a fluid into a vapor;

a body including a leading end portion, a trailing end portion, and a second conduit, the second conduit having an internal diameter larger than an internal diameter of the first conduit, wherein the trailing end portion of the body is in fluid communication with the atomizer, and wherein the second conduit is configured to receive the vapor from the first conduit and cause expansion of the vapor to reduce a temperature of the vapor; and

a mouth cap including a leading end portion, a trailing end portion, and a third conduit, wherein the trailing end portion of the mouth cap is in fluid communication with the leading end portion of the body, wherein the leading end portion of the mouth cap has a cross-sectional area approximately equivalent to an internal diameter cross-sectional area of the first conduit,

wherein the third conduit is configured to compress the expanded vapor to maintain vapor density and regulate a temperature of the vapor.

2. The apparatus of claim **1**, wherein a cross-sectional area at the trailing end portion of the third conduit has a cross-sectional area approximately equal to a cross-sectional area of the second conduit, and wherein the cross-sectional area of the third conduit tapers down toward the leading end portion of the third conduit.

3. The apparatus of claim **1**, further comprising a power terminal configured to supply energy to the atomizer, wherein the power terminal is configured to mate with a trailing end portion of the body.

4. The apparatus of claim **1**, wherein the body further includes an outlet port configured to enable release of fluid from the body.

5. The apparatus of claim **1**, wherein the body further includes an inlet port configured to enable an ingress of fluid into the body.

6. The apparatus of claim **1**, further comprising wicking material, wherein the wicking material is proximate to the atomizer, and wherein the wicking material is configured to supply fluid to the atomizer.

7. The apparatus of claim **1**, further comprising an insert configured to control fluid movement, wherein the insert is disposed within the second conduit.

8. An apparatus for dispensing and conditioning vapor, comprising:

an atomizer including a first conduit;

a body including a second conduit;

a mouth cap including a leading end portion, a trailing end portion, and a third conduit, the leading end portion of the third conduit having a cross-sectional area approximately equivalent to an internal diameter cross-sectional area of the first conduit; and

a container disposed within the second conduit, the container including a leading end portion, a trailing end portion, and a fourth conduit, the fourth conduit having an internal diameter larger than the internal diameter of the first conduit, wherein the leading end portion of the container is in fluid communication with the trailing end portion of the mouth cap, and wherein the second conduit is configured to receive the vapor from the first conduit and cause expansion of the vapor to reduce a temperature of the vapor, and wherein the trailing end portion of the container is in fluid communication with the atomizer,

wherein the fourth conduit is configured to allow expansion of vapor from the atomizer to reduce vapor temperature, and the third conduit is configured to compress the expanded vapor to maintain vapor density and regulate the vapor temperature.

9. The apparatus of claim 8, wherein a cross-sectional area at the trailing end portion of the third conduit has a cross-sectional area approximately equal to a cross-sectional area of the second conduit, and wherein the cross-sectional area of the third conduit tapers down toward the leading end portion of the third conduit.

10. The apparatus of claim 8, further comprising a power terminal configured to supply energy to the atomizer.

11. The apparatus of claim 8, wherein the body further includes an outlet port configured to enable release of fluid from the body.

12. The apparatus of claim 8, wherein the body further includes an inlet port configured to enable an ingress of fluid into the body.

13. The apparatus of claim 8, further comprising wicking material, wherein the wicking material is proximate to the atomizer, and wherein the wicking material is configured to supply fluid to the atomizer.

14. The apparatus of claim 8, further comprising an insert configured to control fluid flow, wherein the insert is disposed within the fourth conduit.

15. A method for dispensing and conditioning vapor, the method comprising:

atomizing a fluid by an atomizer, the atomizer having a first conduit with an internal diameter, the first conduit in fluid communication with a second conduit of a body, the second conduit larger than the first conduit;

expanding the fluid as the fluid enters the second conduit, wherein the second conduit is in fluid communication with a third conduit of a mouth cap;

compressing the fluid as the fluid enters the third conduit, wherein the expansion of the vapor in the second conduit reduces vapor temperature, and the compression of the vapor in the third conduit maintains vapor density; and

delivering the conditioned vapor through the mouth cap at a temperature lower than the temperature of the vapor exiting the atomizer.

16. The method of claim 15, further comprising:

reducing a temperature of the fluid from a first temperature to a second temperature as the fluid enters the third conduit.

17. The method of claim 15, wherein the atomizing is performed by causing the fluid to enter the atomizer through a wicking material disposed around an outer surface of the atomizer.

18. The method of claim 15, further comprising supplying energy to the atomizer through a power terminal.

19. The method of claim 15, further comprising causing the fluid to enter or to exit the body through a port.

20. The method of claim 15, further comprising controlling a movement of the fluid through the second conduit by an insert disposed within the second conduit.

* * * * *