US 20150342259A1

(19) United States

(12) Patent Application Publication

(10) Pub. No.: US 2015/0342259 A1

(43) Pub. Date: Dec. 3, 2015

BAKER et al.

(54) **E-LIQUID VAPORIZING APPARATUS**

(71) Applicant: **Carolina Vapordom, LLC**, Greenville, SC (US)

(72) Inventors: **LLOYD M BAKER**, GREENVILLE, SC (US); **Matthew C Baston**, Greer, SC (US); **Erica L Wayer**, Greenville, SC (US)

(73) Assignee: **Carolina Vapordom, LLC**, Greenville, SC (US)

(21) Appl. No.: **14/725,202**

(22) Filed: **May 29, 2015**

Related U.S. Application Data

(60) Provisional application No. 62/005,020, filed on May 30, 2014, provisional application No. 62/117,233, filed on Feb. 17, 2015.

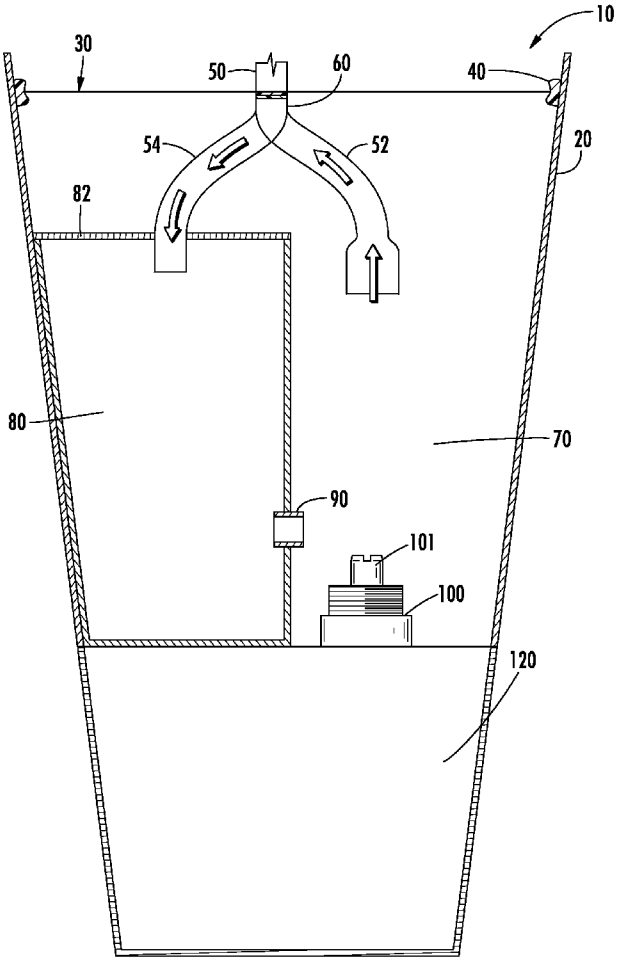
Publication Classification

(51) **Int. Cl.**
A24F 47/00 (2006.01)

(52) **U.S. Cl.**
CPC ***A24F 47/008*** (2013.01)

(57) **ABSTRACT**

An electronic cigarette is provided in which the mouthpiece of the electronic cigarette is in communication with a two-way valve. The valve allows the user to inhale a vapor from an electronic cigarette and then discharge the vapor back into the vapor electronic cigarette as the discharge vapor is introduced into the mouthpiece, the two-way valve shifts to a second position that directs the exhaled vapor into a filtration material that removes the vapors and odors from the exhaled vapor.



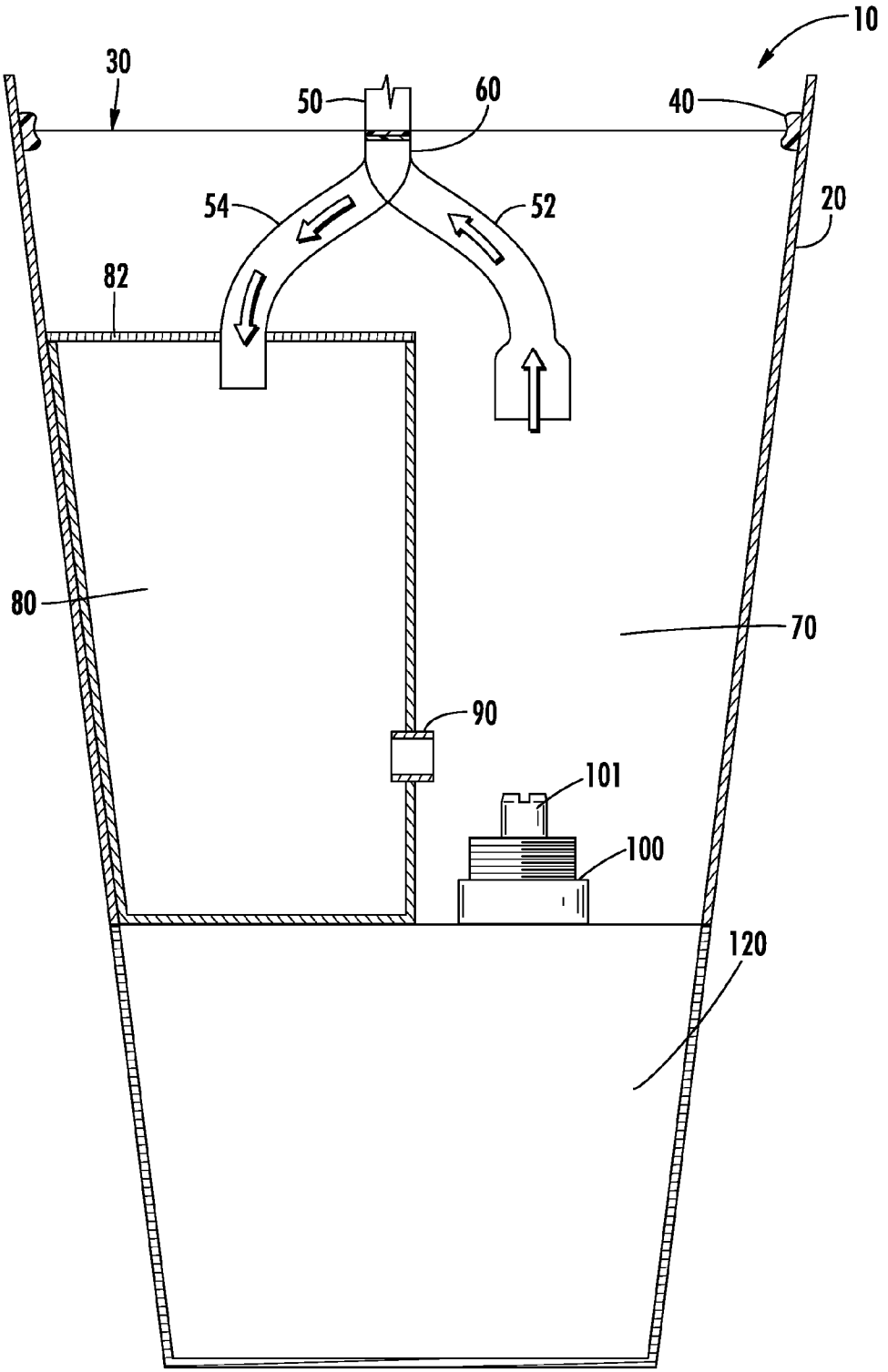


FIG. 1

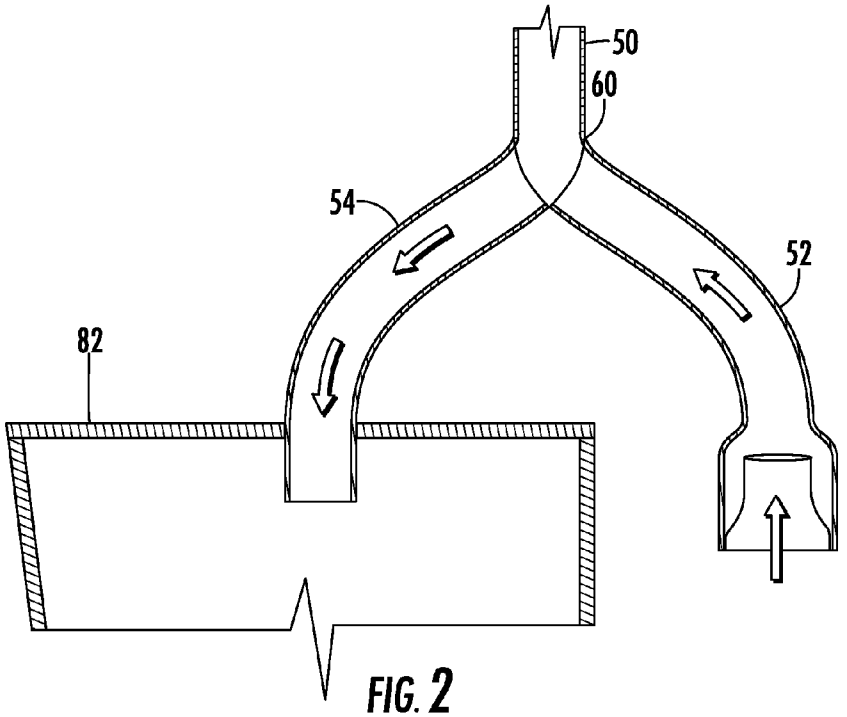


FIG. 2

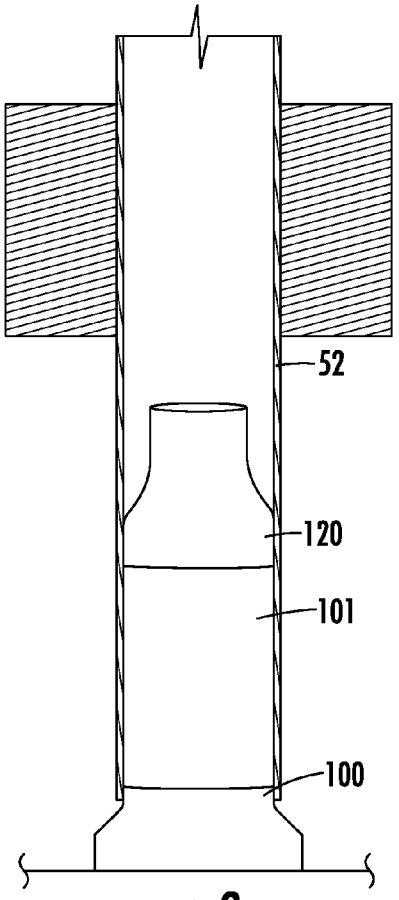


FIG. 3

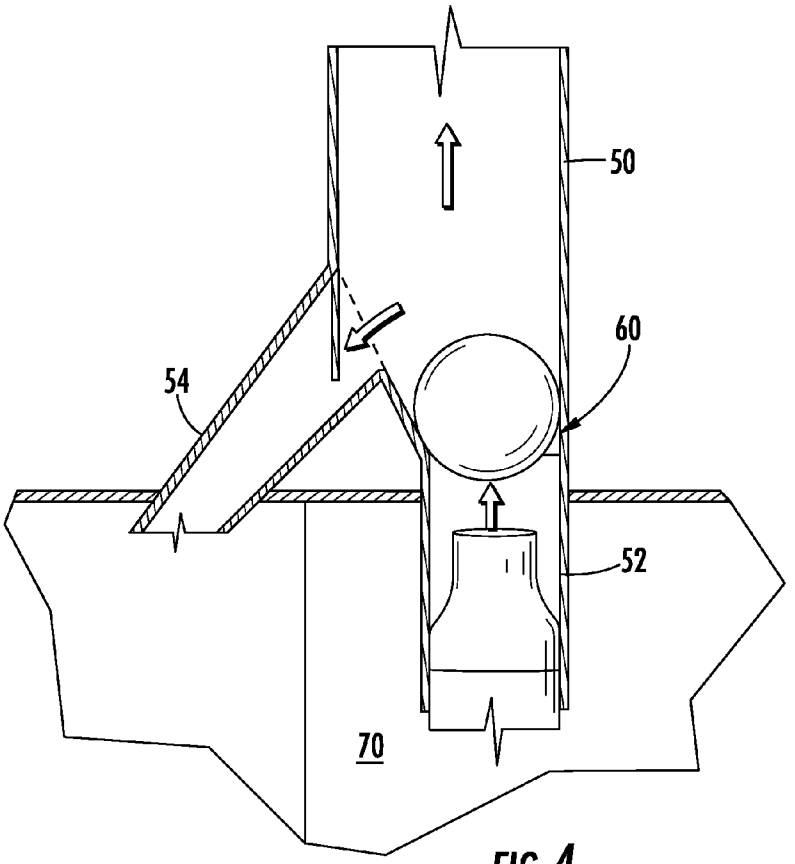


FIG. 4

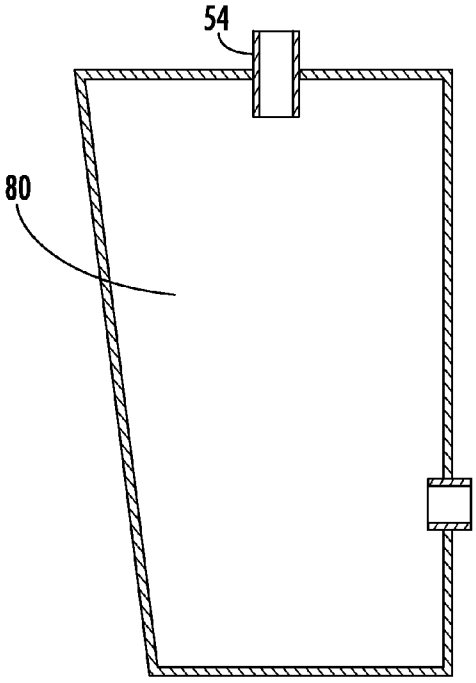


FIG. 5

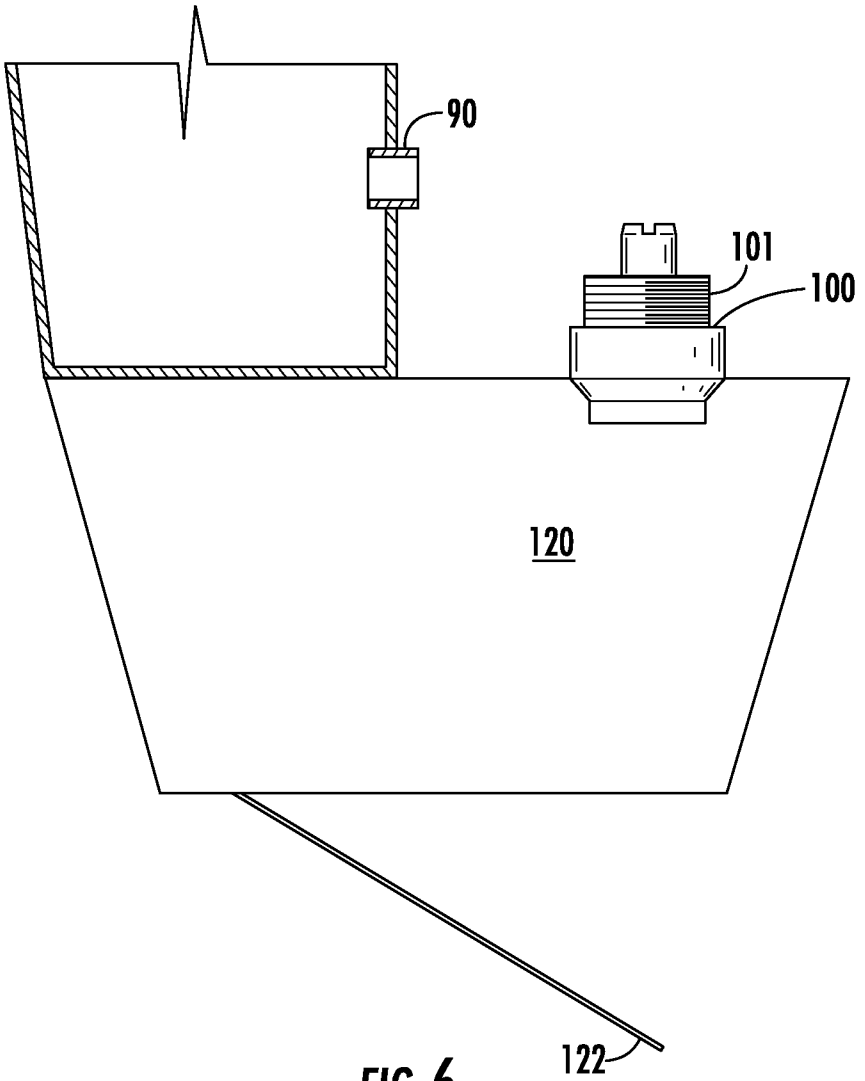


FIG. 6

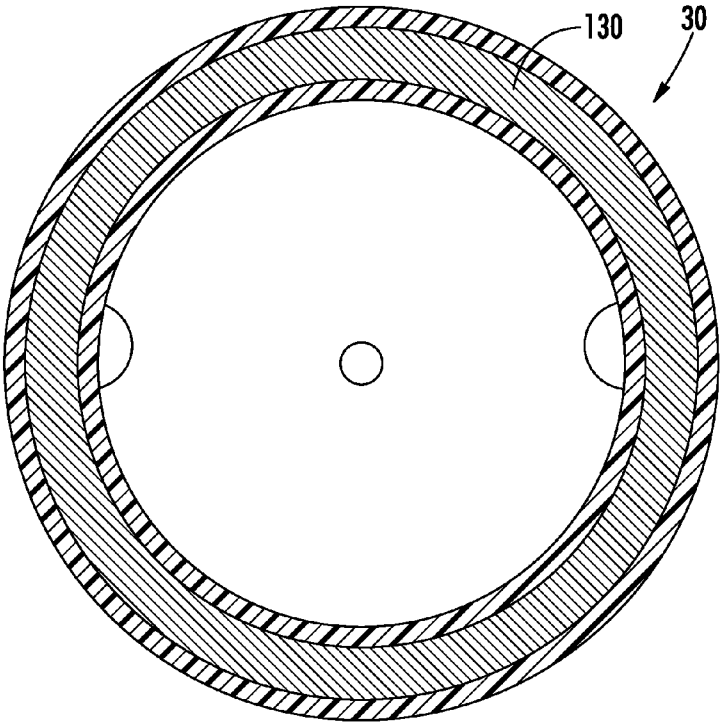


FIG. 7

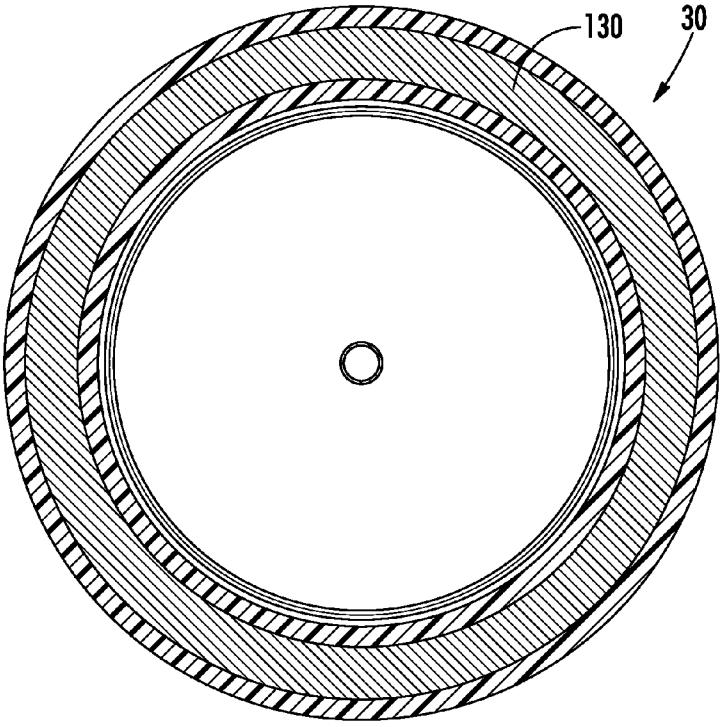


FIG. 8

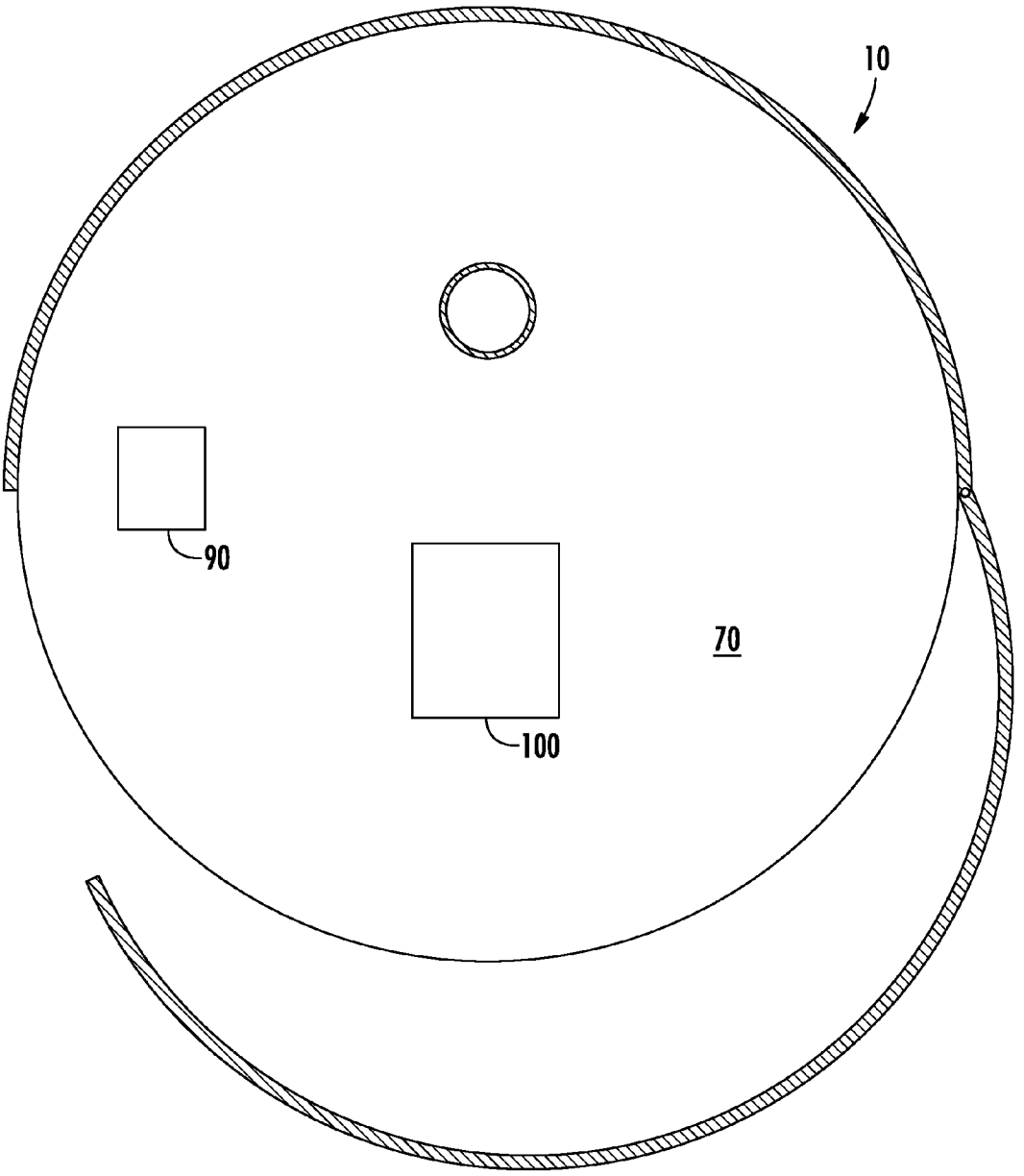


FIG. 9

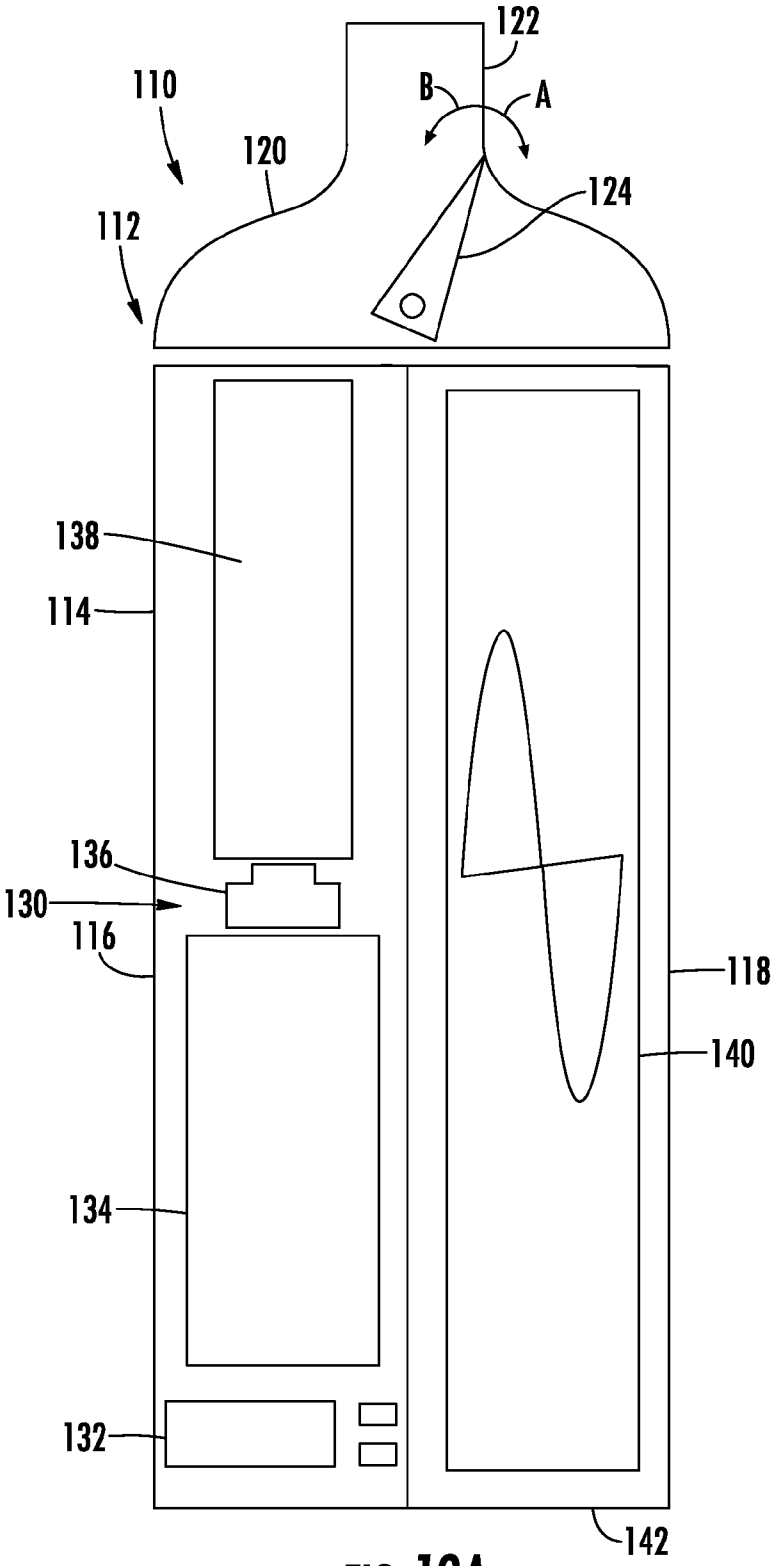


FIG. 10A

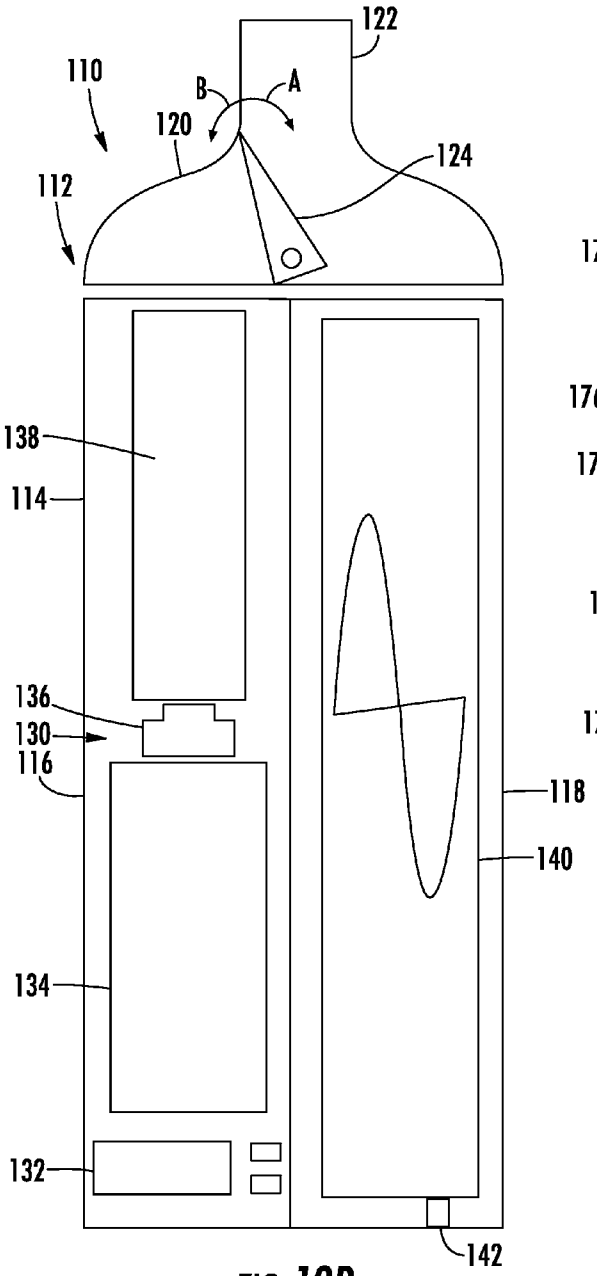


FIG. 10B

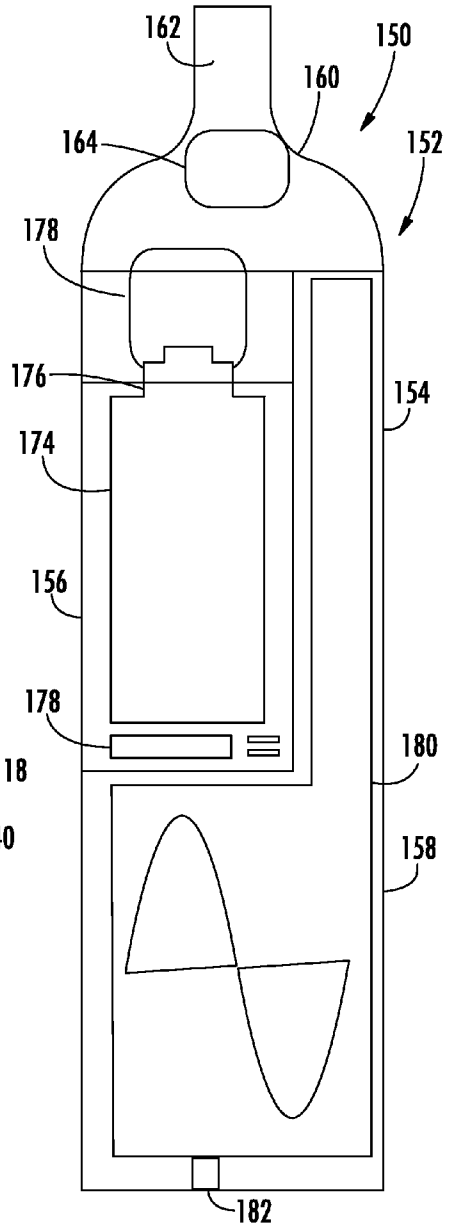


FIG. 11

E-LIQUID VAPORIZING APPARATUS

RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Application Ser. No. 62/005,020 filed on May 30, 2014 and U.S. Provisional Application Ser. No. 62/117,233 filed on Feb. 17, 2015 and which both are incorporated herein by reference.

FIELD OF THE INVENTION

[0002] The present subject matter is directed towards electronic cigarette apparatuses. In particular, the electronic apparatuses can comprise handheld electronic cigarette apparatuses that permit a user to inhale through a dispenser tip portion of the electronic cigarette apparatus and exhale into the same structure where a two-way valve within the tip portion will direct the exhaled vapor through a filtration system. The electronic cigarette apparatuses can have different shaped housings and exteriors including shapes similar to existing electronic cigarette apparatuses and shapes such as a beverage shaped container.

[0003] The invention is further directed towards a vaporizing unit such as an electronic cigarette which is configured to be housed within a standard personal beverage container such as a cup or travel mug. The apparatus allows a user to inhale through a straw or a dispenser tip portion of the beverage shaped container. The user can exhale into the same structure where a two-way valve within the tip will direct the exhaled vapor through a filtration system. Accordingly, no vapors are released and, to a casual observer, the user appears to be sipping from a beverage container as opposed to smoking an electronic cigarette.

BACKGROUND OF THE INVENTION

[0004] Electronic cigarettes have become increasingly popular in recent times. Electronic cigarettes emulate a tobacco cigarette, but without the combustion of tobacco during use. Rather than burning tobacco, a liquid is atomized within the electronic cigarette, which emulates the smoke produced in a tobacco cigarette. The liquid may contain flavoring agents such as tobacco flavor, menthol, and others, to enhance the "smoking" experience of the electronic cigarette. Nicotine has been added to the atomization liquid in prior art electronic cigarettes. In certain prior art electronic cigarettes, a reserve of liquid is stored within the cigarette housing in a porous material, which is placed into contact with an atomizing assembly such that the liquid can be gradually transferred to the atomizing assembly during consumption. A replaceable cartridge with a liquid soaked porous material has been provided to enable consumers to replenish the supply of liquid as it is depleted during use by replacing the cartridge.

[0005] Users of an electronic cigarette exhale a smoke-like vapor. While the vapor rapidly dissipates, non-smokers may object to the vapor and some individuals are sensitive to various flavoring agents that may linger from the vapor. Additionally, some users of electronic cigarettes may want to use the device but not have it be readily apparent that they are smoking an electronic cigarette. Accordingly, there remains room for improvement and variation within the art.

SUMMARY OF THE INVENTION

[0006] The present subject matter discloses electronic cigarette apparatuses. In particular, the electronic apparatuses can comprise handheld electronic cigarette apparatuses that permit a user to inhale through a dispenser tip portion of the electronic cigarette apparatus and exhale into the same structure where a two-way valve within the tip portion will direct the exhaled vapor through a filtration system. The electronic cigarette apparatuses can have different shaped housings and exteriors. For example, in some embodiments, the electronic cigarette can have an exterior that is shaped similar to existing electronic cigarette apparatuses that can be held like a cigar or a cigarette. In some embodiments, for example, the electronic cigarette can have an exterior that is shaped similar such as beverage shaped container.

[0007] It is one aspect of at least one of the present embodiments to provide for an electronic cigarette device which is configured for placement within, or alternatively, shaped as a beverage shaped container. The electronic cigarette of the present invention allows the user to inhale vapor from the electronic cigarette through a straw, or spout or other tip which forms part of the container. A two-way valve associated with container tip allows the user to exhale into the same tip such that the exhale vapor is passed through the filtration unit, thereby eliminating visible exhaled vapor and filters any aromas or residue from the exhaled vapor.

[0008] It is a further aspect of at least one embodiment of the present invention to provide for an electronic cigarette in which the electronic cigarette further defines a filtration unit which the user can exhale vapor through the filtration unit to remove vapor and aromas such that visible vapor and detectible aromas are perceptible to individuals in proximity to the user of the electronic cigarette.

[0009] Another aspect of at least one embodiment of the present invention is to provide for a filtration device configured in the form of a beverage container into which a user of a vaporizing unit can exhale the vapor from an electronic cigarette. The exhaled vapor passes through a filtration unit to remove the vapor and odors. Use of the unit by an individual gives the appearance to bystanders that the individual is merely drinking from a beverage container.

[0010] It is a further object of at least one embodiment of the present invention to provide a electronic cigarette comprising; a battery source; an atomizer in communication with the battery source; a reservoir for holding an e-liquid, the e-liquid in communication with the atomizer; a mouth piece in communication with the atomizer, the mouth piece in further communication with a two-valve wherein when the two-way valve is in first position the mouthpiece allows a vapor product to be removed from the e-cigarette and when the two-way valve is in a second position, the valve allows a vapor product to be delivered from a users mouth and through the valve; a filtration device in fluid communication with the two-way valve when the two-way valve is in a second position, the filtration device removing odors and visible vapor from the vapor product supplied by the user.

[0011] It is a further object of at least one embodiment of the present invention to provide a cartridge for an electronic cigarette comprising in an atomizer, a wick, an e-liquid reservoir, and a mouth piece, the improvement comprising; a two-way valve in communication with the mouth piece, the two-way valve having a first position for delivering a vapor from an e-cigarette to the user a second position for receiving a vapor containing exhale product from the user; and a filter in communication with the two-way valve when in a second position, the filter adapted for receiving the vapor from the user and removing the vapor from the exhaled product.

[0012] It is a further object of at least one embodiment of the present invention to provide a electronic cigarette comprising: housing; a vaporizing element carried within the housing; a tip portion in fluid communication with a vapor generating by the vaporizing element, the tip portion in further communication with the a two-way valve that can direct airflow an inhaled position to an exhale position; and a filtering unit in communication with the tip when the valve is in an exhale position.

[0013] It is a further object of at least one embodiment of the present invention to provide a process of using an electronic cigarette comprising the steps of supplying an electronic cigarette having a tip for inhaling, a vapor produced by the electronic cigarette, the electronic cigarette further defining a two-way valve; inhaling a vapor produced by the electronic cigarette, the vapor passing through a first direction of the two way valve and exiting the tip; exhaling a residual vapor into the mouthpiece, the residual vapor passing through the two way valve in a second direction and further passing through a filter for removing vapor and odors from the residual vapor stream.

[0014] Thus, it is an object of the presently disclosed subject matter to provide electronic cigarette apparatuses as well as methods related thereto. While one or more objects of the presently disclosed subject matter having been stated hereinabove, and which is achieved in whole or in part by the presently disclosed subject matter, other objects will become evident as the description proceeds when taken in connection with the accompanying drawings as best described herein below.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] A fully enabling disclosure of the present invention, including the best mode thereof to one of ordinary skill in the art, is set forth more particularly in the remainder of the specification, including reference to the accompanying drawings.

[0016] FIG. **1** is a sectional view through a cup shaped container illustrating the component parts of an electronic cigarette along with a valve and filter arrangement which allows for the user to exhale vapor into the container.

[0017] FIG. **2** is a sectional view of an inhale/exhale vapor pathway using a two-way valve within a tip of a cup-shaped housing.

[0018] FIG. **3** is a sectional view through the vaporizing portion of an electronic cigarette that may be utilized in conjunction with a container shaped electronic cigarette.

[0019] FIG. **4** is a view in partial section of a gravity operated ball bearing valve that may be used as a two-way valve of the electronic cigarette configuration described herein.

[0020] FIG. **5** illustrates the concept of using an electronic filtration unit within the filter compartment to provide filtering capability of an exhaled aerosol.

[0021] FIG. **6** is a sectional view of the power supply and ignition portion of an electronic cigarette as seen in relation to a filtration chamber and a connecting passage from the filtration chamber to the tank combustion chamber.

[0022] FIG. **7** is a top view of a plurality of sizing rings that allow for a fluid tight engagement with a beverage shaped container and having removable notches for providing access to a mouth piece and valve system of the electronic cigarette.

[0023] FIG. **8** is an alternative view of a top seal ring and top configuration for use with a beverage shaped container housing for an electronic cigarette.

[0024] FIG. **9** is a top view into an interior of a cup-shaped electronic cigarette showing placement of various items including a filter compartment, the ignition system, reservoir, and an air passage connecting the filtering department to the compartment housing the ignition source.

[0025] FIG. **10**A illustrates a schematic cross-sectional view of an embodiment of a handheld electronic cigarette having a check valve in a vaping position according to the present subject matter.

[0026] FIG. **10**B illustrates a schematic cross-sectional, view of an embodiment of a handheld electronic cigarette having a check valve in a filtering position according to the present subject matter.

[0027] FIG. **11** illustrates a schematic cross-sectional view of another embodiment of a handheld electronic cigarette according to the present subject matter.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0028] Reference will now be made in detail to the embodiments of the invention, one or more examples of which are set forth below. Each example is provided by way of explanation of the invention, not limitation of the invention. In fact, it will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the scope or spirit of the invention. For instance, features illustrated or described as part of one embodiment can be used on another embodiment to yield a still further embodiment. Thus, it is intended that the present invention cover such modifications and variations as come within the scope of the appended claims and their equivalents. Other objects, features, and aspects of the present invention are disclosed in the following detailed description. It is to be understood by one of ordinary skill in the art that the present discussion is a description of exemplary embodiments only and is not intended as limiting the broader aspects of the present invention, which broader aspects are embodied in the exemplary constructions.

[0029] In describing the various figures herein, the same reference numbers are used throughout to describe the same material, apparatus, or process pathway. To avoid redundancy, detailed descriptions of much of the apparatus once described in relation to a figure is not repeated in the descriptions of subsequent figures, although such apparatus or process is labeled with the same reference numbers.

[0030] The present disclosure relates electronic cigarette apparatuses. In particular, the electronic apparatuses can comprise handheld electronic cigarette apparatuses that permit a user to inhale through a dispenser tip portion of the electronic cigarette apparatus and exhale into the same structure where a two-way valve within the tip portion will direct the exhaled vapor through a filtration system. Thereby, through the use of the filtration system of the electronic cigarette, the user can exhale vapor through the filtration unit to remove vapor and aromas such that visible vapor and detectible aromas are not perceptible to individuals in proximity to the user of the electronic cigarette.

[0031] The electronic cigarette apparatuses can have different, shaped housings and exteriors including shapes similar to existing electronic cigarette apparatuses and shapes such as beverage shaped container.

[0032] In some embodiments, for example, an electronic cigarette apparatus can be configured for placement within a beverage shaped container. The electronic cigarette can allow

the user to inhale vapor from the electronic cigarette through a straw, or spout or other tip which forms part of the container. A two-way valve associated with container tip can allow the user to exhale into the same tip such that the exhaled residual vapor is passed through the filtration unit, thereby eliminating visible exhaled vapor and filters any aromas or residue from the exhaled residual vapor.

[0033] In another embodiment of the present subject matter, a filtration device can be provided that is configured in the form of a beverage container into which a smoker of an electronic cigarette can exhale the vapor from an electronic cigarette. The exhaled residual vapor passes through a filtration unit to remove the vapor and odors. Use of the unit by a smoker gives the appearance to bystanders that the smoker is merely drinking from beverage container.

[0034] The beverage container that houses the components of the electronic cigarette or tank system of an electronic cigarette can have several different appearances. For instance, the beverage shaped container can have a straw or mouthpiece portion that is in communication with or functions as the mouthpiece for the electronic cigarette suitable tip portions that simulate a beverage container include pop up closures similar to portable water bottles, a mouthpiece sipping portion similar to a travel mug, a straw that may be integral to a cup, or an opening similar to that of a water bottle or soft drink bottle. In each instance, the opening of the beverage shaped container either forms the mouthpiece or is in communication with the mouthpiece such that a user can inhale from the container and exhale into the container in accordance with the teachings herein.

[0035] In another embodiment, an electronic cigarette apparatus can comprise an exterior housing in the shape similar to existing electronic cigarettes that can be held like a cigar or a cigarette. The electronic cigarette apparatus can have a compartment where vapor is generated and a filtration compartment for holding a filtration unit or medium. The user can inhale vapor from the electronic cigarette apparatus through a tip portion such as a mouthpiece. A two-way valve associated with container tip can allow the user to then exhale into the same tip such that the exhaled vapor is passed through the filtration unit, thereby eliminating visible exhaled vapor and filters any aromas or residue from the exhaled vapor.

[0036] These electronic cigarette apparatuses can be used as other electronic cigarettes are used as replacement for tobacco cigarettes or marijuana cigarettes where legal. For example, the vapor tank that is used in such electronic cigarette apparatuses can be tanks that can contain liquid substitutes for tobacco that include nicotine therein or liquid substitutes for marijuana that include the substance Tetrahydrocannabinol ("THC") therein.

[0037] A number of vaporizing units and electronic cigarettes are known in the art, including the components which may be used in the present invention. Such teachings of vaporizing units, electronic cigarettes, and various components can be seen in reference to U.S. Pat. No. 8,156,944 entitled "Aerosol Electronic Cigarette"; U.S. Pat. No. 8,689,805 entitled "Electronic Cigarette"; U.S. Pat. No. 8,678,012 entitled "Tobacco Solution Atomizing Device Over Electronic Cigarette"; U.S. Pat. No. 8,714,161 entitled "Electronic Cigarette with Solid Tobacco Substance"; and U.S. Pat. No. 8,707,965 entitled "Electronic Cigarette with Liquid Reservoir", and the descriptions, specifications, teachings, and drawings of these patents are incorporated herein by reference.

[0038] As set forth in FIG. **1**, an electronic cigarette **10** is provided. Electronic cigarette **10** is configured to be housed within a cupped shaped container **20** having a removable top cap **30**. Optionally, a seal ring **40** can be provided along the edge of cup **20**. Sealing ring **40** allows for a fluid tight seal between the top cap **30** and the cup portion **20**. A tube **50** extends through a surface of the top cap **30** and is accessed by the user to both inhale vapor associated with the electronic cigarette and also permits the user to exhale vapor into the same opening **50**. A two-way valve **60** is positioned within the tube **50**. As illustrated tube **50** is in a selective fluid communication with a first conduit **52** which is in communication with a tank space **70** which houses a liquid reservoir and ignition source of the electronic cigarette.

[0039] A second conduit **54** is in communication with a filter compartment **80** in which exhaled vapor passes through the tip **50** along conduit **54** and into filter compartment **80**. The filter compartment **80** can be of any number of conventional materials including an activated carbon filter designed to remove odors and vapor from the exhaled vapor stream. Other filtration materials can include traditional cigarette filters, silica filters, paper filters, ionized paper filters, or cloth filters. The filter elements can include loose batting filtration materials, preconstructed filter units such as paper or linen filter units, activated charcoal filters in a disk or packet form, drop in filter packets made of silica, and other filter materials that can be fit within a sealed space and be easily removed and replaced. Filter compartment **80** may also define a hinged wall in the exterior surface of cup **20**. The wall allows easy access to change filter media.

[0040] As seen in reference to FIG. **5**, one variation of one embodiment of the invention may include an electronic filtration unit **80** which is activated by a sensor that detects a change in air pressure. When a change in air pressure and/or air flow is detected, the electronic filtration unit is activated to filter any evidence from the conduit **54**. The various electronic filtration units **80** can include electronic static filters or ion generators designed to remove particles and odors from an air stream. Power for an electronic filter may be from a battery dedicated for the filter unit **80** or use a battery source associated with vaporizing element **100**.

[0041] An air passage **90** is defined between tank space **70** and the compartment housing filter **80** allow for the filtered air to vent into the tank space. Optionally, the conduit **90** can include a secondary filter and help remove liquids, vapor and odor prior to the release of the filter vapor into the tank space **70**. The secondary filter can be of the same or one of the different filter materials and filter forms described above.

[0042] As seen in reference to FIG. **1**, a vaporizing element **100** is provided, such vaporizing elements being well known within the electronic cigarette industry. Any number of conventional vaporizing elements may be used and the electronic cigarette **10** can have appropriate threading and/or threadable adaptors **101** to take advantage of popular vaporizing elements that are available on the market. As such, the thread sizes can be varied as needed and various adaptors can be provided to accommodate the different brands of vaporizers.

[0043] Above the vaporizer unit **100** is an open tank space **70** to allow room for various tanks that may be associated with a conventional electronic cigarette. Conduit **52** has a terminal end defining a flexible nozzle that can be used to engage a tank used with a conventional vaporizing element.

[0044] A battery compartment **120** can be used to house a battery and associated electronics that will engage with the base of vaporizing element **100** as seen in reference to FIG. **6**.

[0045] The two-way valve **60** as seen in FIGS. **1**, **2**, **4**, **10**A and **10**B may be of any number of conventional designs that will allow vapor to be pulled from a tank housed within tank space **70** through conduit **52** and exit through a tip of tube **50**. When a user exhales vapor into the tip tube **50**, the valve shifts such that a flow direction from tube **50** is along conduit **54** and is directed into filter **80**. Suitable types of to a valve **60** may include a bidirectional "y" valve, a gravity ball bearing valve, a check valve or a mechanically switched valve. It is also possible to have two single direction valves present that the user can manually select.

[0046] The top cap ring **30** can be of any number of conventional configurations including a ring which will snap onto the opening of cover **20**. Alternatively, the top cap ring **30** can be adapted for threading onto a series of mated threads carried on the upper inner edge of container **20**.

[0047] As been seen in reference to FIGS. **7** and **8**, the top cap **30** can further define a series of one or more rings along the exterior circumference of the cap **30**. These rings are designed to nest on top of a separate container such that the entire apparatus **10** can be placed within a separate beverage container and held in place by its engagement of the sizing ring with the upper ring of a beverage container. This arrangement brings greater versiality to the electronic cigarette apparatus **10** since the unit can be placed within a variety of different beverage units including glasses, mugs, disposable containers and similar products.

[0048] In FIG. **3**, the vaporizing element **100** is seen in relation to a tank and a drip tip **120** of a conventional electronic cigarette apparatus. The end of the drip tip is designed to interengage with a terminal end of conduit **52** and allow the user to receive the vaporized product from the tank and drip tip.

[0049] While Applicant is describing the illustrated unit **10** as seen in reference to FIG. **1** as an electronic cigarette, it is appreciated and understood that the device can include a traditional electronic cigarette within the interior of the apparatus **10**. Applicant's electronic cigarette **10** has a conduit passageway, valve system and filtration system such that the inhalation and exhalation of vapors from an electronic cigarette can be confined to the interior of the cup portion **20** of the electronic cigarette apparatus **10**. The operator inhales residual vapor through the tube and exhales the residual vapor through the same tube. Accordingly, at no time is the exhaled residual vapor visible to the user or other people in the vicinity of the user.

[0050] The present invention addresses a number of issues with respect to the use of an electronic cigarette device. The apparatus **10** provides away of receiving the exhaled vapor and filtering the exhaled vapor. Others in the vicinity of a user will not see the vapor nor be able to perceive any lingering scent or aroma from use of a flavored liquid with the vaporizer unit. Accordingly, to the extent there are concerns regarding second hand vapor, such concerns are alleviated by the present invention.

[0051] Additionally, people are able to use the electronic cigarette apparatus **10** in places and environments that might discourage use of electronic cigarettes. For instance, a user may not want to use a traditional unit around young children. Use of the present invention makes it less apparent that the user is operating an electronic cigarette.

[0052] FIGS. **10**A, **10**B, and **11** show additionally handheld embodiments of electronic cigarette apparatuses that comprise conduit passageways, valve systems and filtration systems that allow the user to inhale vapors from and exhale into the interior of the electronic cigarette apparatus. In particular, the handheld embodiments of electronic cigarette apparatuses have shapes more similar to traditional e-cigarette devices. For example, these handheld electronic cigarette apparatus can be held more like a cigar or cigarette.

[0053] Referring to FIGS. **10**A and **10**B, an embodiment of an electronic cigarette apparatus, generally designated **110**, is provided. The electronic cigarette apparatus **110** can comprise a housing **112** that includes a lower container **114** having a first compartment, or element compartment, **116** therein for holding, a vapor element **130** and a second compartment, or filter compartment, **118** beside the first compartment **116**. The second compartment **118** can hold a filter system or unit **140**. The housing **112** can also comprise a tip portion **120** that can comprise a tip or draw conduit **122**, through which a user can draw to inhale the vapor generated from the vapor element **130** and into which the user can exhale into the filter unit **140**. The tip portion **120** can comprise a two-way valve **124** that can move between an inhale position as shown in FIG. **10**A and an exhale position as shown in FIG. **10**B. For example, the valve **124** can be a check valve that can rotate in directions A and B from an inhale position as shown in FIG. **10**A to the exhale position as shown in FIG. **10**B. Referring to FIG. **10**A, access to the second compartment **118** that includes the filter unit **140** is blocked when the valve **124** is in the inhale position and the passageway to the first compartment **116** that includes the vapor element **130** is opened to allow the user to pull vapor therefrom. Referring to FIG. **10**B, access to the first compartment **116** that includes the vapor element **130** is blocked when the valve **124** is in the exhale position and the passageway to the second compartment **118** that includes the filter unit **140** is opened to allow the user to exhale vapor thereto.

[0054] The vapor element **130** can comprise electronics **132** and a replaceable battery **134** for operating the vapor element **130**. The vapor element can also comprise a tank adapter **136** on which a vapor tank **138** can be secured. The vapor tanks **138** are exchangeable so that once used, the new vapor tank **138** can be installed and the old vapor tank **138** can be recycled or discarded. The vapor tanks **138** can include the heating elements that can vaporize the liquids therein. The tank adaptor **136** can engage the tanks **138**. The tank adaptor **136** and the electronics **134** and the battery **132** can provide power and moderate the operation of the vapor element **130**.

[0055] The filter unit **140** into in which exhaled vapor passes can be of any number of conventional materials including an activated carbon filter designed to remove odors and vapor from the exhaled vapor stream. Other filtration materials can include traditional cigarette filters, silica filters, paper filters, ionized paper filters, or cloth filters. The filter units can include loose batting filtration materials, preconstructed filter units such as paper or linen filter units, activated charcoal filters in a disk or packet form, drop in filter packets made of silica, and other filter materials that can be fit within a sealed space and be easily removed and replaced. The second compartment **118** can also comprise a vent **142** that can vent the air that has passed through the filter unit **140** to an exterior of housing **112**.

[0056] Referring to FIG. **11**, an embodiment of an electronic cigarette apparatus, generally designated **150**, is pro-

vided that can have a more slender shape than the electronic cigarette apparatus **110** shown in FIGS. **10**A and **10**B due to the vapor element compartment and the filtration compartment being inline instead of side-by-side. The electronic cigarette apparatus **150** can comprise a housing **152** that includes a lower container **154** having a first compartment, or element compartment, **156** therein for holding a vapor element **170** that is embedded within a second compartment, or filter compartment, **158**. The second compartment **158** can hold a filter system or unit **180**. The housing **152** can also comprise a tip portion **160** that can comprise a tip or draw conduit **162**, through which a user can draw to inhale the vapor generated from the vapor element **170** and into which the user can exhale into the filter unit **180**. The tip portion **160** can comprise a two-way valve **164** that can direct airflow between an inhale position and an exhale position. Access to the second compartment **158** that includes the filter unit **180** is blocked when the valve **164** is in the inhale position and the passageway to the first compartment **156** that includes the vapor element **170** is opened to allow the user to pull vapor therefrom. Access to the first compartment **156** that includes the vapor element **170** is blocked when the valve **164** is in the exhale position and the passageway to the second compartment **158** that includes the filter unit **180** is opened to allow the user to exhale vapor thereto.

[0057] As described above, the vapor element **170** in FIG. **11** can comprise electronics **172** and a replaceable battery **174** for operating the vapor element **170**. The vapor element **170** can also comprise a tank adapter **176** on which a vapor tank **178** can be secured. The vapor tanks **178** are exchangeable so that, once used, the new vapor tank **178** can be installed and the old vapor tank **178** can be recycled or discarded. The vapor tanks **178** can include the heating elements that can vaporize the liquids therein. The tank adaptor **176** can engage the tanks **178** to provide power and control the elements of the tanks **178**. The tank adaptor **176**, the electronics **174** and the battery **172** can provide power and moderate the operation of the vapor element **170**. Thus, a more compact version of vapor element **170** can be provided.

[0058] The filter unit **180** into in which exhaled vapor passes can be of any number of conventional materials including an activated carbon filter designed to remove odors and vapor from the exhaled vapor stream. Other filtration materials can include traditional cigarette filters, silica filters, paper filters, ionized paper filters, or cloth filters. The filter units can include loose batting filtration materials, preconstructed filter units such as paper or linen filter units, activated charcoal filters in a disk or packet form, drop in filter packets made of silica, and other filter materials that can be fit within a sealed space and be easily removed and replaced. The second compartment **118** can also comprise a vent **182** that can vent the air through the housing **152** that has passed through the filter unit **180**.

[0059] One of ordinary skill in the art will appreciate that the filtering media and process is largely directed to removing a vapor and materials within the vapor. Accordingly, any material that helps condense or cool the vapor will also precipitate out any materials carried within the vapor. Accordingly, providing a filter media having a high surface area and/or a tortuous pathway can facilitate the precipitation of the vapor and any compounds carried within the vapor.

[0060] The present invention also encompasses a process of using an electronic cigarette comprising the steps of supplying an electronic cigarette having a tip for inhaling a vapor produced by the electronic cigarette, the electronic cigarette further defining a two-way valve; inhaling a vapor produced by the electronic cigarette, the vapor passing through a first direction of the two way valve and exiting the tip; exhaling a residual vapor into the mouthpiece, the residual vapor passing, through the two way valve in a second direction and further passing through a filter for removing vapor and odors from the residual vapor stream.

[0061] Although preferred embodiments of the invention have been described using specific terms, devices, and methods, such description is for illustrative purposes only. The words used are words of description rather than of limitation. It is to be understood that changes, and variations may be made by those of ordinary skill in the art without departing from the spirit or the scope of the present invention which is set forth in the following claims. In addition, it should be understood that aspects of the various embodiments may be interchanged, both in whole, or in part. Therefore, the spirit and scope of the appended claims should not be limited to the description of the preferred versions contained therein.

That which is claimed:

1. An electronic cigarette comprising;
a battery source;
an atomizer in communication with the battery source;
a reservoir for holding an e-liquid, the e-liquid in communication with the atomizer;
a mouth piece in communication with the atomizer, the mouth piece in further communication with a two-valve wherein when the two-way valve is in first position the mouthpiece allows a vapor product to be removed from the e-cigarette and when the two-way valve is in a second position, the valve allows a vapor product to be delivered from a users mouth and through the valve;
a filtration device in fluid communication with the two-way valve when the two-way valve is in a second position, the filtration device removing odors and visible vapor from the vapor product supplied by the user.

2. A cartridge for an electronic cigarette comprising in an atomizer, a wick, an e-liquid reservoir, and a mouth piece, the improvement comprising;
a two-way valve in communication with the mouth piece, the two-way valve having a first position for delivering a vapor from an e-cigarette to the user;
a second position for receiving a vapor containing exhale product from the user; and,
a filter in communication with the two-way valve when in a second position, the filter adapted for receiving the vapor from the user and removing the vapor from the exhaled product.

3. An electronic cigarette comprising:
a housing;
a vaporizing element carried within the housing;
a tip portion in fluid communication with a vapor generated by the vaporizing element, the tip portion in further communication with a two-way valve that can direct airflow from an inhaled position to an exhale position; and,
a filtering unit in communication with the tip when the valve is in an exhale position.

4. The apparatus according to claim **1** wherein the electronic cigarette is in the shape of a beverage container.

5. The apparatus according to claim **1** wherein the cartridge is adapted for being housed within a container resembling a beverage container.

6. The electronic cigarette according to claim **3** wherein the housing is in the shape of a beverage container.

7. The electronic cigarette according to claim **6** wherein the tip portion of the electronic cigarette is configured to resemble an opening of the beverage container.

8. The electronic cigarette according to claim **7** wherein the tip of the beverage shaped container is selected from the group consisting of a straw, a spout, a bottle opening, and a dispenser.

* * * * *