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(54) Electronic hookah

(57) Certain embodiments of the invention relate to portable hookah. Certain embodiments relate to electronic portable water pipe.

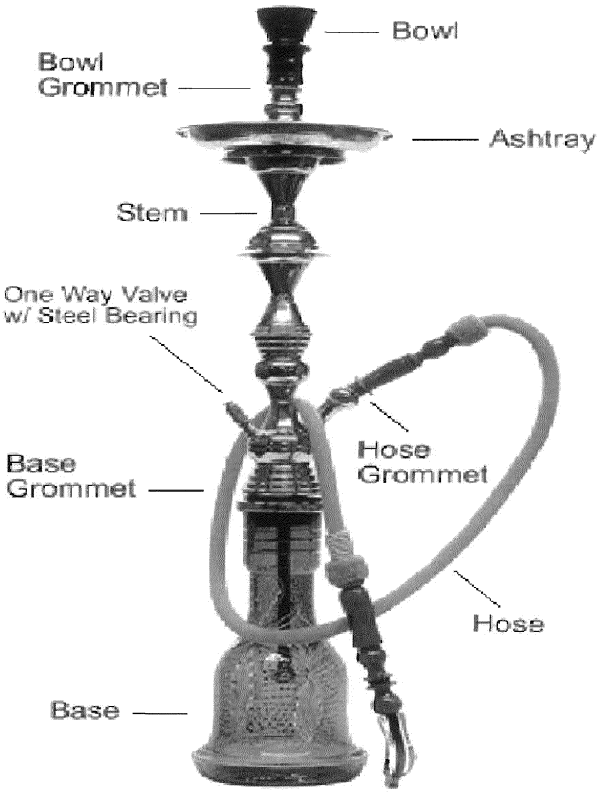

FIGURE 1

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Description

FIELD OF THE INVENTION

[0001] The present invention relates to a portable electronic hookah.

BACKGROUND

[0002] In recent years, it has become popular among some to smoke through a hookah, also known as a water pipe. A hookah is a large, free-standing apparatus that uses air pressure from a smoker sucking on a mouthpiece at the end of a long flexible use (see Figs. 1 to 3) to have air push smoke (from burning tobacco located in an upper portion of the apparatus) through water (in a vase portion of the apparatus) to filter and cool the smoke and then the smoke passes to the smoker's mouth through the hose and mouthpiece. The hookah is also known as a "hubble-bubble." The smoke is released at the bottom of the water and bubbles up to the surface, where it then may pass into the hose.

[0003] A hookah generally has a bowl, which contains hot coal to heat air that passes into the bowl. A windscreen may be placed over the bowl. Tobacco is placed in a bottom portion of the bowl. A plate is under the bowl to receive any falling ash from the coals. A body tube or conduit, normally rigid, may be connected to the plate at an upper end and communicate with a passage through the bowl. At the body tube's lower end, there is a water jar into which the body tube extends and is immersed into the water in the jar. There is an air inlet valve that communicates with air in the water jar above the water line. There is also an outlet from the jar to a long hose leading to a mouthpiece on which the smoker sucks.

[0004] Upon a smoker inhaling through the mouthpiece and thus the hose, air is pulled down through the charcoal, where the air is heated, and then the heated air is pulled into the lower portion of the bowl holding the tobacco. The hot air vaporizes the tobacco, thereby producing smoke. The smoke is goes down through the body tube into the water. Then, the smoke bubbles up through the water, which receives heat from the smoke and helps filter the smoke. The smoke then fills the top part of the water jar. The smoker's inhaling on the mouthpiece will make the smoke pass through the tube and into the smoker's mouth. There is a reduction in air pressure in the jar when this happens, thus pulling more air through the charcoal, continuing the process.

SUMMARY OF THE INVENTION

[0005] Certain embodiments of the invention may include a portable hookah. According to certain embodiments, a portable hookah may include at least one longitudinal member. The member may include an energy source coupled to the member. The member may be configured to receive at least one vaporizable element. The vaporizable element may include tobacco or non-tobacco products. The element may be configured to be vaporized by a heat source. The member may also include at least one chamber for channeling the vapor to the outside environment through at least one mouthpiece. When a user inhales the vapor, the user pulls the smoke through the chamber and the mouthpiece. According to certain embodiments, the invention may include a portable smoke pipe. The smoke pipe may include at least one mouthpiece coupled to a housing. The housing may include at least one heat source for heating a vaporizable material, and at least one energy source for operating the heat source. The portable smoke pipe may also include at least one container for holding a substance vaporizable by the heater and to be smoked. The mouthpiece may be communicating with container for receiving the vaporized substance in response to a smoker inhaling through the mouthpiece. The housing may be elongated. The housing may be in the form of a tube section of sufficient size to be held in a palm of an adult and having a cross section of a typical hookah tube. The mouthpiece and tube may be separable for inserting and removing the container. The container may be in the form of a cartridge.

[0006] According to other embodiments, the housing may be at least one inch in diameter. According to other embodiments, the housing may be at least one and one half inch in diameter. According to other embodiments, the housing may be at least two inches in diameter. According to other embodiments, the housing may be at least two and one half inches in diameter. According to other embodiments, the housing may be at least three inches in diameter. According to other embodiments, the housing may be six inches in diameter at a maximum. According to other embodiments, the housing is four inches in diameter at a maximum. According to other embodiments, the portable hookah may include plurality of chambers. According to other embodiments, the portable hookah may include at least one speaker for producing certain sounds. According to other embodiments, the portable hookah may include a scanner for scanning finger prints. According to other embodiments, the portable hookah may include at least one processor. According to other embodiments, the portable hookah may include at least one computer chip.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007]

Fig. 1 is a side view of a typical hookah;
Fig. 2 is a side view of another typical hookah;
Fig. 3 is a side view of a further typical hookah;
Fig. 4 is a schematic side partially cut away view of an electronic hookah;
Fig. 5 is an exploded view and an exterior view of another electronic cigarette;
Fig. 6 is a perspective view of a mouthpiece for a

hookah device;

Fig. 7 is a side view of an electronic hookah in accordance with an embodiment of the invention; and

Fig. 8 is a schematic view of an electronic hookah in accordance with certain embodiments of the invention.

DETAILED DESCRIPTION

[0008] According to certain embodiments, the invention may include a portable electronic hookah. The hookah may include at least one mouthpiece connected to a housing, at least one heater stored in the housing. The hookah may include at least one energy source, such a battery, operatively coupled the housing for operating the heater.

[0009] Other embodiments may include a cartridge mechanism for containing a substance vaporizable by the heater and to be smoked, the mouthpiece communicating with the cartridge mechanism for receiving the vaporized substance in response to a smoker inhaling through the mouthpiece. The housing may be in a form of a tube section of sufficient size to be held in a palm of an adult and may be having a cross section of a typical hookah tube. The mouthpiece and hookah tube may be separable for inserting and removing the cartridge mechanism. Certain embodiment is shown in Fig. 7. The mouthpiece may be integral or unitary with the coupling. The coupling may thread or snap onto the body/tube or otherwise connect to the tube. The coupling could be its own piece as well, with the mouthpiece connecting to it and the tube connecting to it, or the coupling could be unitary with the tube or otherwise attached. The end cap may be threaded or otherwise attached or unitary with the tube.

[0010] As shown in Fig. 8, inner structure of the electronic hookah may resemble that of an electronic cigarette but preferably with greater capacity/size. An LED mechanism may be included. However, the LED mechanism may still be included as it is also a useful way to indicate proper operation of the device and low battery or other issues. The mouthpiece may house a removable cartridge mechanism, e.g., a single cartridge or multiple cartridges.

[0011] The inner structure's cartridge mechanism may be located in the mouthpiece. Alternatively, given that the device is preferable significantly longer than a cigarette, the cartridge mechanism could be housed in the tube. The cartridge mechanism may be adapted to hold fluids that may have low boiling temperatures. The fluid may include propylene glycol (PG) and/or vegetable glycerin (VG) and/or polyethylene glycol 400 (PEG400), combinations, other alternative fluids, and/or often mixed with flavors. Optionally, a variable percent of a liquid nicotine concentrate may be used. Various flavors which resemble the taste of regular tobacco smoke (from a hookah), menthol, vanilla, coffee, cola and various fruits may be provided, and this may include mixtures of flavors as is typically done in hookah smoking. Nicotine concentration may vary from zero to larger amounts as desired. Nicotine-free solutions may be most desirable.

[0012] There is also an atomizing device typically containing a heating coil (like in an electronic cigarette) in liquid communication with an inserted cartridge. Suitable mechanisms for such communication would be evident to those of ordinary skill in the art, and may include, e.g., a metal mesh dome or wick to bring controlled amounts of liquid to the heating coil.

[0013] According to certain embodiments, the portable hookah may include sensors. Upon inhaling on the open/free end of the mouthpiece, a pressure sensor/voltage controller (PS/VC) senses the change in pressure and in response thereto electrically connects the battery to the heating coil via electrical connectors and wires, as in electronic cigarettes. The battery may be rechargeable or single use. The air pressure change (lower air pressure in the body/tube and mouthpiece in response to a smoker/user inhaling) may directly, or also through the PS/VC connection being enabled, cause liquid from the cartridge to leave an opening in the cartridge, wick to the heating coil, and be vaporized, whereupon the vapor escapes through the mouthpiece in a passage or passages/opening between the cartridge and the rest of the mouthpiece (or body/tube if the cartridge is in the body/tube).

[0014] The heating coil and cartridge mechanism may be made in one piece. There could also be, in lieu of the PS/VC, a button on the outside of the electronic hookah that causes atomization. The user presses the button, ideally when the user is inhaling or about to inhale. To simulate the fact that the smoke is cool in a hookah, the vapor may already be sufficiently cool.

[0015] For simulating a hookah, the dimensions of the electronic hookah may be comparable in diameter to a hookah hose and a hookah mouthpiece, and the dimensions of the mouthpiece length may be the same or similar to a hookah mouthpiece. The length of the body/tube (housing) may preferably be at least as long as the width of most human hands (so that it may be grasped like a hookah) and although it could be fairly long, preferably the entire length (mouthpiece and tube) may be no more than twelve to eighteen inches long.

[0016] The length of the tube may be in a range of two and a half inches to eighteen inches and may be three inches to twelve inches.

[0017] The length of the mouthpiece may be in a range of one inch to eight inches and may be two to six inches.

[0018] The length of the mouthpiece and tube together may be in a range of three and a half inches to twenty-six inches and may be five to eighteen inches.

[0019] In other embodiments, the housing may be at least one inch in diameter, at least one and one half inch in diameter, at least two inches in diameter, at least two and one half inches in diameter or at least three inches in diameter and a maximum of at least three inches in diameter, four, five or six inches in diameter.

[0020] Although the invention has been described us-

ing specific terms, devices, and/or methods, such description is for illustrative purposes of the preferred embodiment(s) only. Changes may be made to the preferred embodiment(s) by those of ordinary skill in the art without departing from the scope of the present invention. In addition, it should be understood that aspects of the preferred embodiment(s) generally may be interchanged in whole or in part.

Claims

1. An electronic hookah comprising:

   a mouthpiece connected to a housing; a heater stored in the housing; a battery stored in the housing for operating the heater; cartridge means for containing a substance vaporizable by the heater and to be smoked, the mouthpiece communicating with the cartridge means for receiving the vaporized substance in response to a smoker inhaling through the mouthpiece; and wherein
   the housing is in a form of a tube section of sufficient size to be held in a palm of an adult and having a cross section of a typical hookah tube, wherein the mouthpiece and hookah tube are separable for inserting and removing the cartridge means, and wherein the mouthpiece is sized and shaped as a typical hookah mouthpiece.

2. The electronic hookah of claim 1, wherein the housing is at least one inch in diameter.

3. The electronic hookah of claim 1, wherein the housing is at least one and one half inch in diameter.

4. The electronic hookah of claim 1, wherein the housing is at least two inches in diameter.

5. The electronic hookah of claim 1, wherein the housing is at least two and one half inches in diameter.

6. The electronic hookah of claim 1, wherein the housing is at least three inches in diameter.

7. The electronic hookah of any of claims 1 to 6, wherein the housing is six inches in diameter at a maximum.

8. The electronic hookah of any of claims 1 to 6, wherein the housing is four inches in diameter at a maximum.

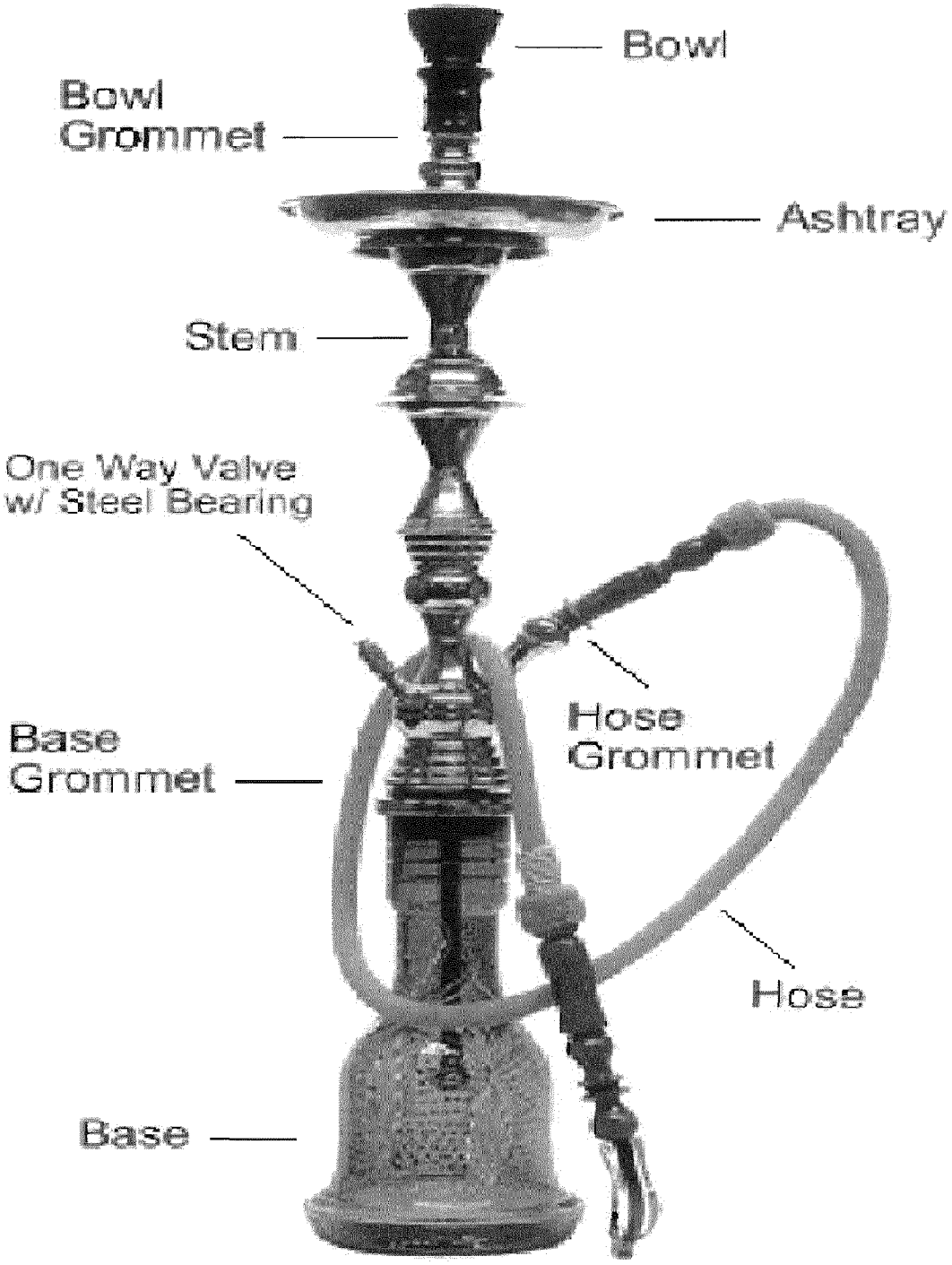

Bowl
Bowl Grommet
Ashtray
Stem
One Way Valve w/ Steel Bearing
Hose Grommet
Base Grommet
Hose
Base

FIGURE 1

FIGURE 2

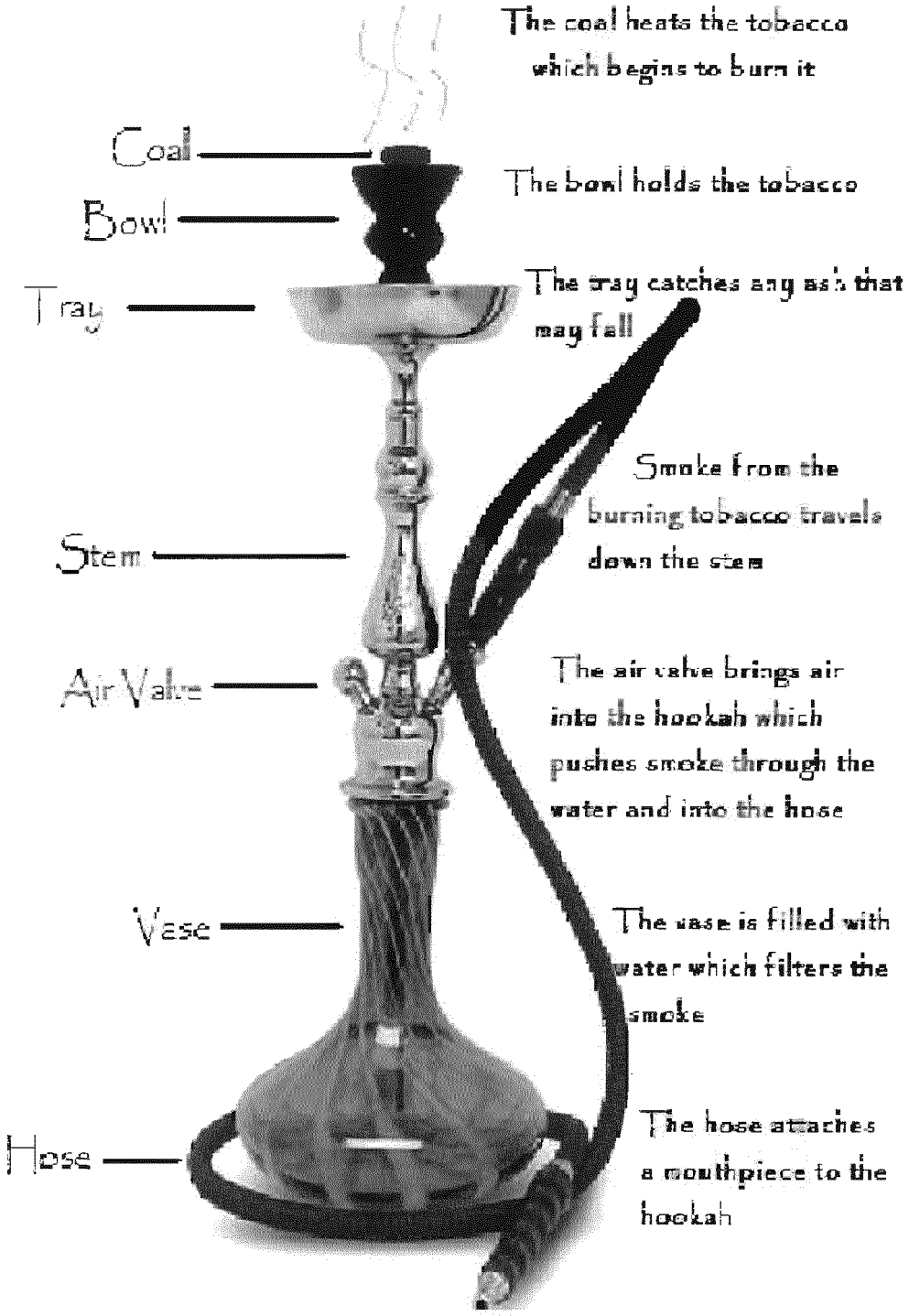
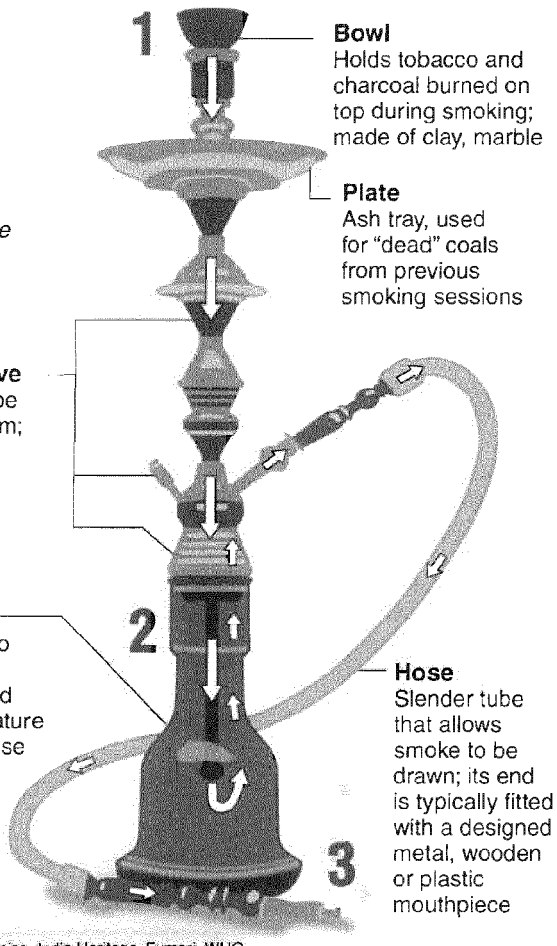

The coal heats the tobacco which begins to burn it
Coal
The bowl holds the tobacco
Bowl
The tray catches any ash that may fall
Tray
Smoke from the burning tobacco travels down the stem
Stem
Air Valve
The air valve brings air into the hookah which pushes smoke through the water and into the hose
Vase
The vase is filled with water which filters the smoke
Hose
The hose attaches a mouthpiece to the hookah

FIGURE 3

Hookah: Social smoking

A growing number of European teens and young adults are using the Middle Eastern water pipe (hookah, shisha).

Components



Bowl
Holds tobacco and charcoal burned on top during smoking; made of clay, marble

Plate
Ash tray, used for "dead" coals from previous smoking sessions

Body, gasket, valve
Body is a hollow tube with gasket at bottom; gasket has opening for hose and seals connection of body with water jar

Water jar
Smoke from tobacco passes through jar, gaining moisture and lowering its temperature before it reaches hose

Hose
Slender tube that allows smoke to be drawn; its end is typically fitted with a designed metal, wooden or plastic mouthpiece

How it works

1. Inhaling via the hose, air is pulled through coal and into bowl; hot air from charcoal burns tobacco, producing smoke
2. Smoke passes through body tube, extending into water jar; it bubbles up to the top of the water jar and into a channel connected to the hose
3. When a smoker inhales from the hose, pressure in the jar changes pulling more air through the charcoal and continuing the process

Health risks

- **More smoke**
Person inhales more smoke over a longer time compared to cigarette smoking
- **Exposure**
Increased carbon dioxide and nicotine exposure; may contribute to heart disease and cancer

Source: Encyclopaedia Britannica, India Heritage, Fumari, WHO
Graphic: Jutta Scheibe, Junie Bro-Jorgensen

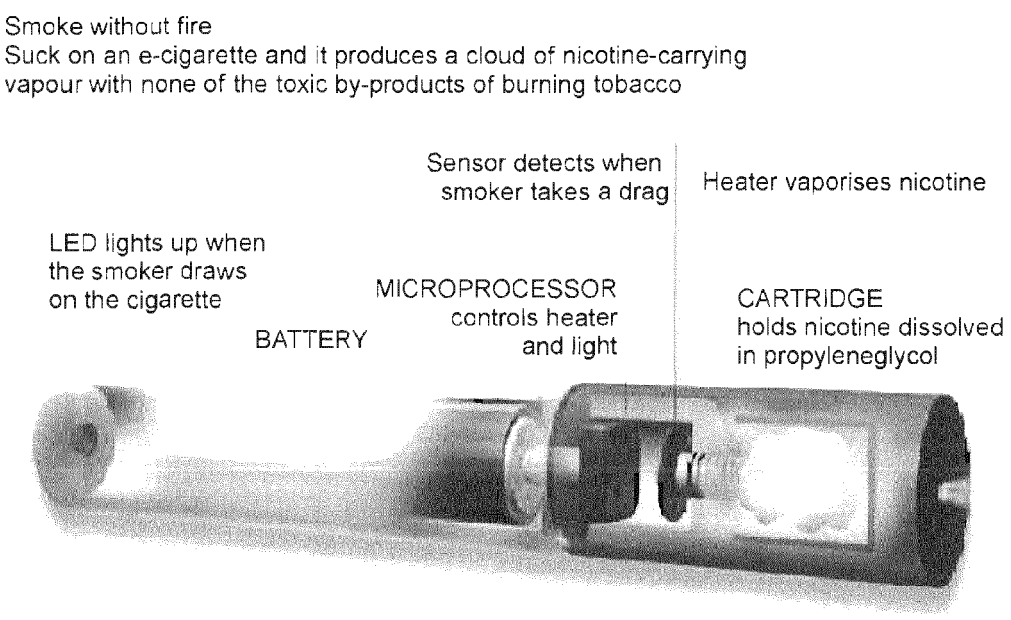

Smoke without fire
Suck on an e-cigarette and it produces a cloud of nicotine-carrying vapour with none of the toxic by-products of burning tobacco
Sensor detects when smoker takes a drag
Heater vaporises nicotine
LED lights up when the smoker draws on the cigarette
MICROPROCESSOR controls heater and light
BATTERY
CARTRIDGE holds nicotine dissolved in propyleneglycol

FIGURE 4

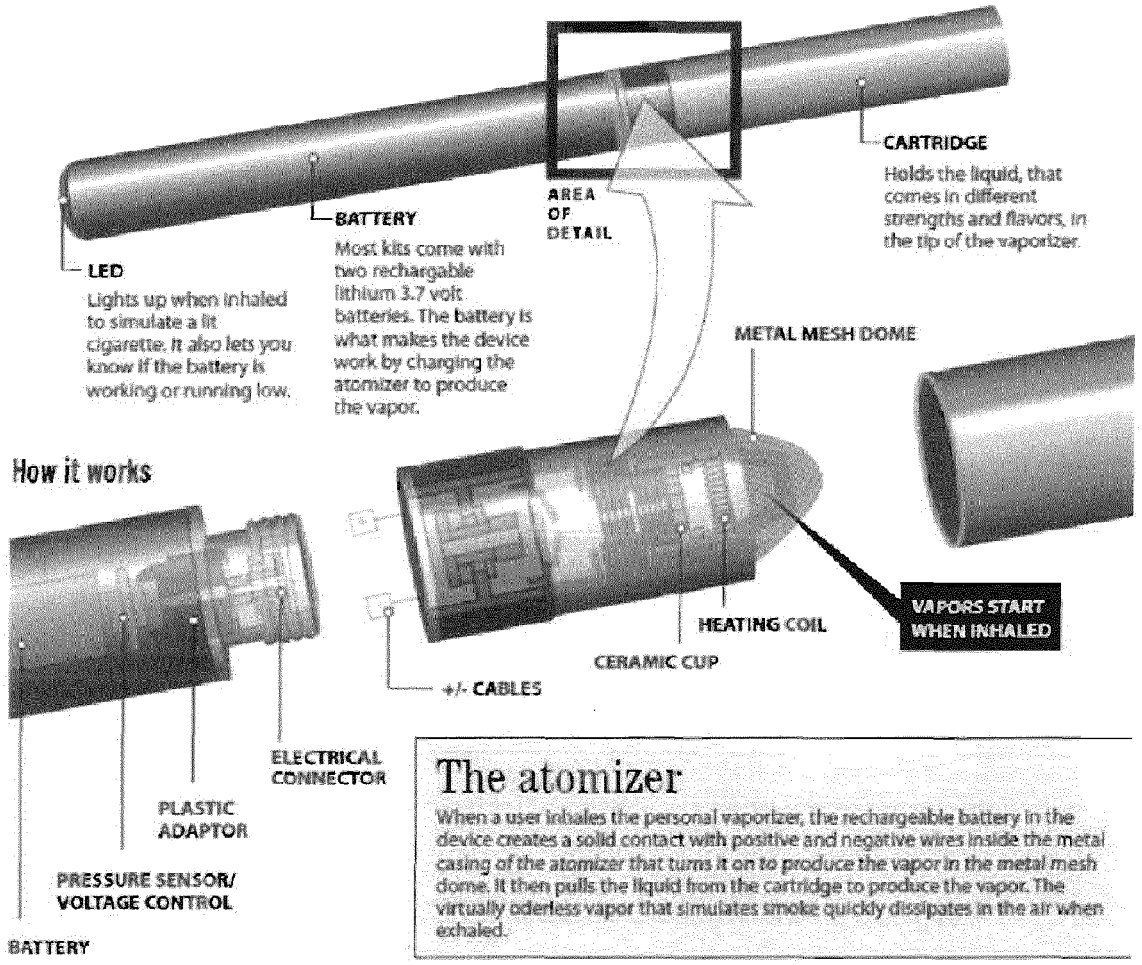

CARTRIDGE
Holds the liquid, that comes in different strengths and flavors, in the tip of the vaporizer.
AREA OF DETAIL
BATTERY
Most kits come with two rechargable lithium 3.7 volt batteries. The battery is what makes the device work by charging the atomizer to produce the vapor.
LED
Lights up when inhaled to simulate a lit cigarette. It also lets you know if the battery is working or running low.
METAL MESH DOME
How it works
VAPORS START WHEN INHALED
HEATING COIL
CERAMIC CUP
+/- CABLES
ELECTRICAL CONNECTOR
PLASTIC ADAPTOR
PRESSURE SENSOR/ VOLTAGE CONTROL
BATTERY
The atomizer
When a user inhales the personal vaporizer, the rechargeable battery in the device creates a solid contact with positive and negative wires inside the metal casing of the atomizer that turns it on to produce the vapor in the metal mesh dome. It then pulls the liquid from the cartridge to produce the vapor. The virtually odorless vapor that simulates smoke quickly dissipates in the air when exhaled.

FIGURE 5

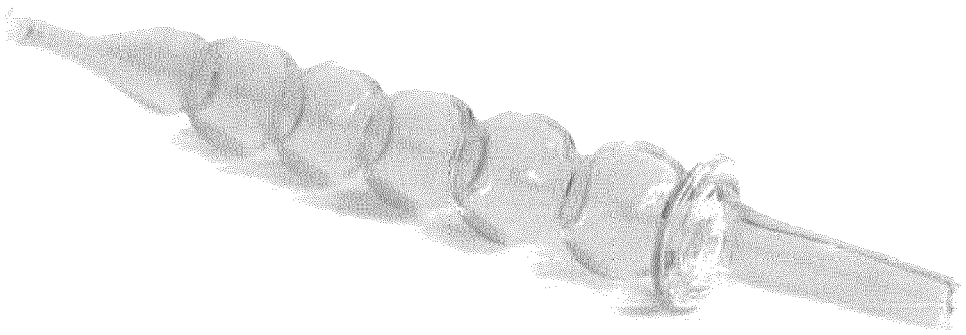


FIGURE 6

FIGURE 7

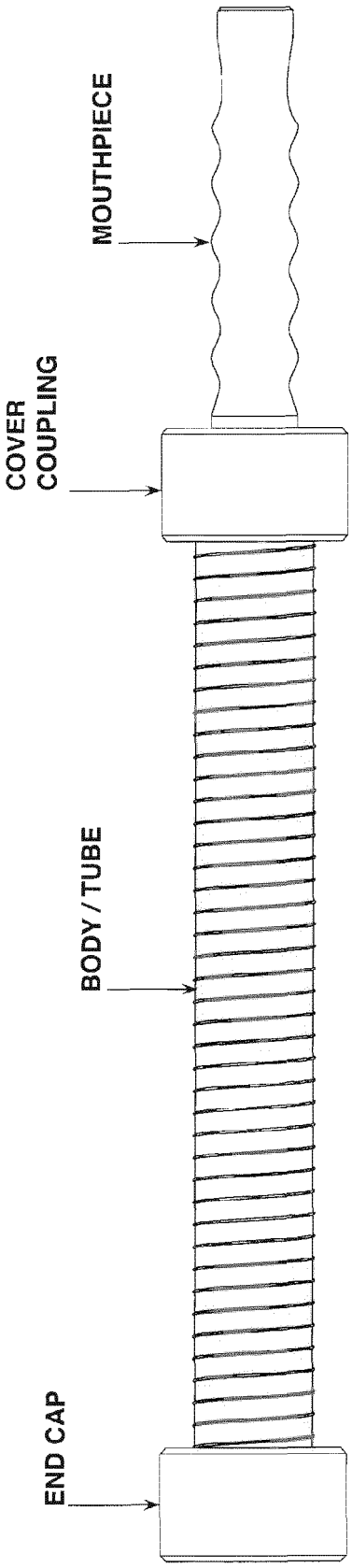
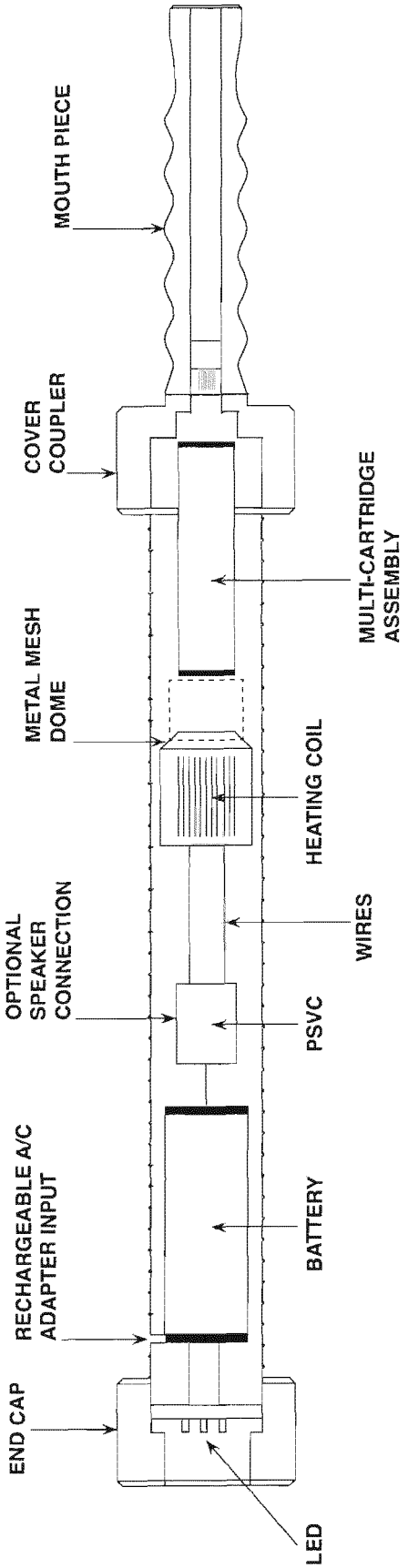


FIGURE 8


MOUTH PIECE
COVER COUPLER
MULTI-CARTRIDGE ASSEMBLY
METAL MESH DOME
HEATING COIL
WIRES
OPTIONAL SPEAKER CONNECTION
PSVC
RECHARGEABLE A/C ADAPTER INPUT
BATTERY
END CAP
LED

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EUROPEAN SEARCH REPORT

Application Number
EP 14 16 7232

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y	US 8 550 069 B2 (ALELOV ELI [US]) 8 October 2013 (2013-10-08) * column 2, line 34 - column 3, line 5; figure 1 *	1 2-8	INV. A24F47/00
Y	Fred Hart: "Introduction to Vaping and E-Cigarettes", , 16 August 2013 (2013-08-16), XP054975827, Retrieved from the Internet: URL:https://www.youtube.com/watch?v=fEn4tnXrC0E [retrieved on 2015-04-20] * the whole document *	2-8	
X Y	WO 2013/040193 A2 (PERRIGO L CO [US]; JOHNSON DAVID R [US]; COOK KENNETH D [US]; KANG LEE) 21 March 2013 (2013-03-21) * abstract; figures *	1 2-8	
X Y	US 2013/152922 A1 (BENASSAYAG CHARLY [US] ET AL) 20 June 2013 (2013-06-20) * abstract; figures *	1 2-8	TECHNICAL FIELDS SEARCHED (IPC) A24F
X Y	DE 10 2012 002044 A1 (PFEFFER MARCO [DE]) 8 August 2013 (2013-08-08) * the whole document *	1 2-8	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	27 April 2015	Kock, Søren

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 14 16 7232

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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27-04-2015

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DE 102012002044 A1	08-08-2013	NONE	

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