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(54) **AIRE-DRIVE**

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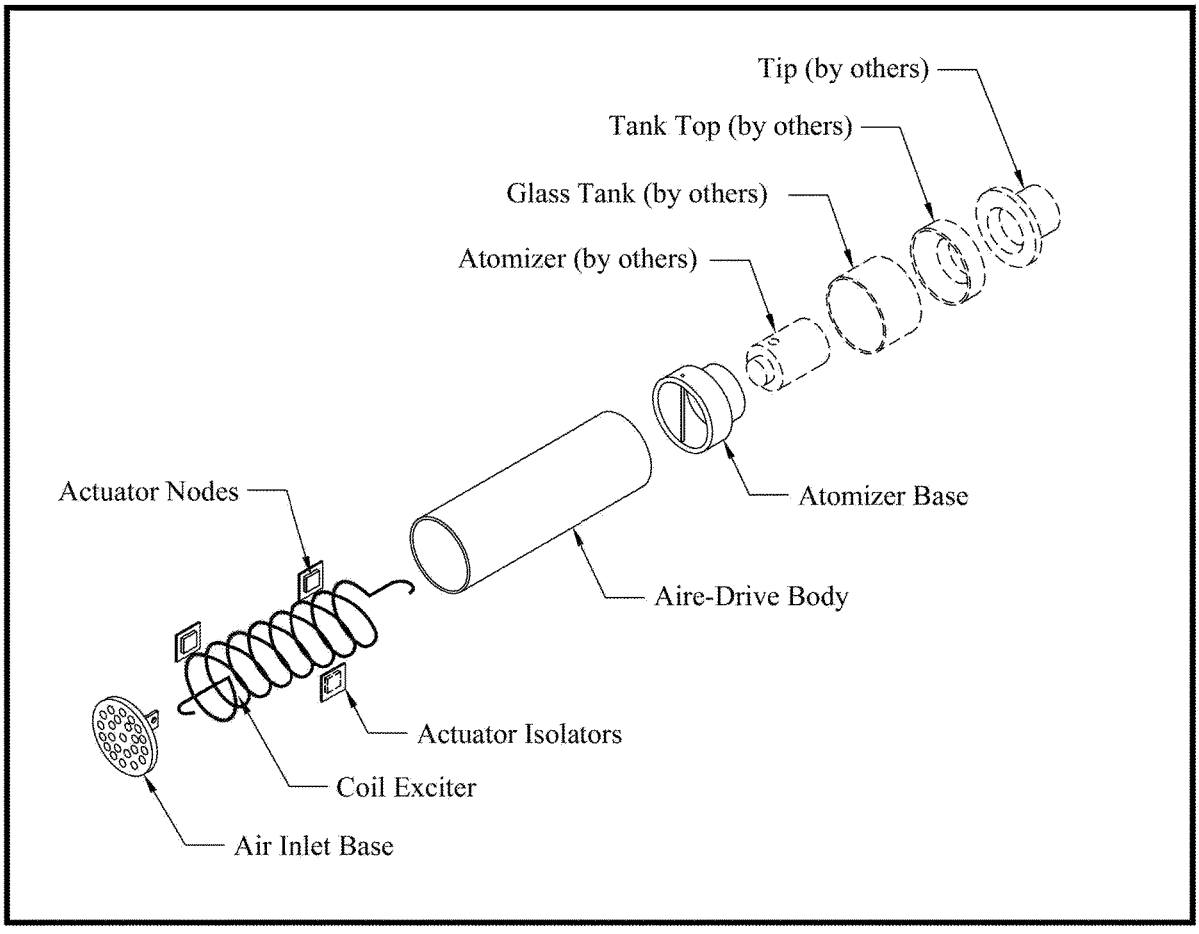
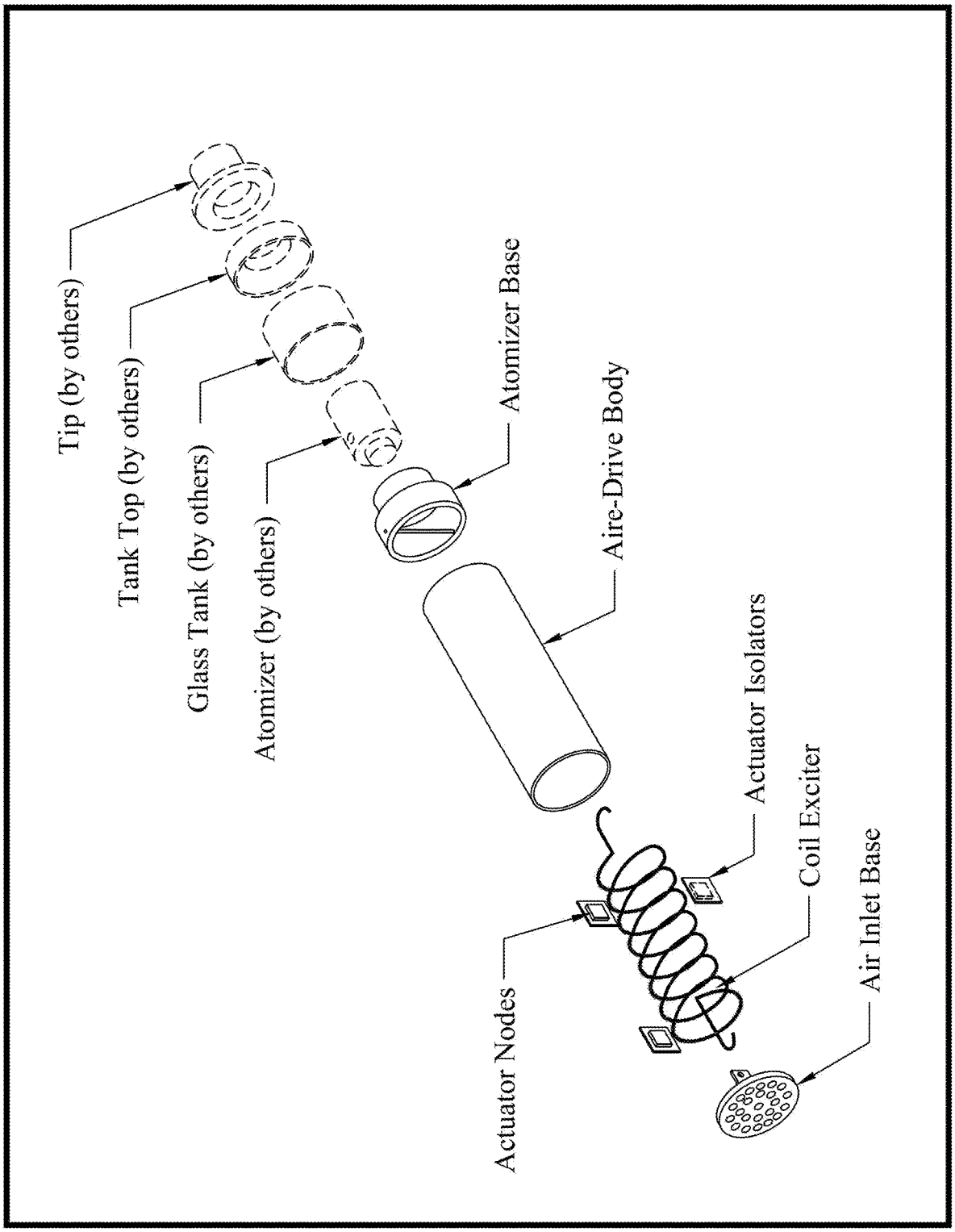
(57) **ABSTRACT**

Purpose of invention is to address and correct the limitations with vaping battery technology and to market the device to manufacturers of electronic cigarette/vaping devices. Current technology requires the use of lithium ion batteries which can accidentally explode during use or charging operations. There has been documented instances of spontaneous over-amping of batteries in devices causing burns and injuries to the users. My invention would completely do away with the use of internal batteries in vaping devices. Some of the benefits would be simplicity of use, increased safety, reduction of device weight, scalability to working with various manufacturers equipment and size reduction of device to name a few.




Tip (by others)
Tank Top (by others)
Glass Tank (by others)
Atomizer (by others)
Atomizer Base
Aire-Drive Body
Actuator Isolators
Coil Exciter
Air Inlet Base
Actuator Nodes

AIRE-DRIVE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] Not Applicable

BACKGROUND OF INVENTION

[0002] This invention addresses the limitations of current technology used in the production and operation of commercially available vaping devices. Vaping battery technology requires frequent charging of battery with a commercial power source when battery reaches a depleted level. This requires the user to connect device with cables to a commercial power source to replenish the internal battery of the device, thus rendering the device unusable during its charging period. Or in the case of devices with pass through charging, requires the user to remain close to a commercial power outlet while using.

SUMMARY OF INVENTION

[0003] My invention introduces a completely new, safe innovation to current industry standard vaping devices. By use of the Aire-Drive, it eliminates the need for internal lithium ion battery to activate the device. It would also decrease the cost of manufacturing by eliminating all electronics from the device such as IC circuit boards, charging ports, wiring and activation buttons. It would also increase customer satisfaction by eliminating the need of cords, plugs and having to locate an available commercial power outlet or carrying extra batteries.

BRIEF DESCRIPTION OF THE DRAWING

[0004] Drawing **1** is an exploded view of the Aire-Drive device. The device has a cylindrical tube body that houses a suspended metal coil exciter surrounded by three isolated actuators. The body of the device is sealed by a perforated air inlet on the bottom and an atomizer base on top which contains the standard **510** threaded connection for commercially available atomizers. Both Air inlet and atomizer base have the anchor points for the coil. It shows the relationship of the device to external components which are depicted by the dash line type. External components are not part of this submission and produced by others.

DETAILED DESCRIPTION OF INVENTION

[0005] Invention makes use of the positive and negative ions and humidity in the air. The ambient air that contains humidity is drawn over an internal coil surrounded by activating nodes, which act as a set of microcell batteries that create an electric field and wirelessly generates low voltage electricity in the presence of humidity. The inhaled air that is drawn into the device, and over the coil, creates a vortex effect and speeds up the air increasing heat on the coil. The heat then creates a low voltage current, which in turn is transferred to a coil inside the standard atomizer that vaporizes the e-liquid that has soaked the internal cotton wicking of the atomizer being used thus producing vapor. The user holding the metal device acts as the ground for the system, thus completing the circuit. This eliminates a need for a lithium ion battery. Use of standardized **510** threaded atomizers, the unit functions like any normal vaping device. Various types of atomizers, tips and glass reservoirs will allow versatility and be compatible with different manufacturers products.

[0006] Manufacture of the device consists of the following:

[0007] Device body: a mild steel tube with outside diameter of 21 mm with wall thickness of 2 mm. Length of body should be approximately 55 mm to suspend coil in a spring-like state.

[0008] Internal coil: a 28 ga. half hard sterling silver wire consisting of nine coils evenly spaced, Diameter of coil is ⅝ inch. Coil should be able to produce 4.2 volts and 9 amps during use.

[0009] Actuators: Pure Zinc metal squares that measure 2.5 mm×2.5 mm×1 mm in thickness spaced evenly horizontally on coil.

[0010] Isolators: Adhesive backed aluminum tabs measuring 3 mm×3 mm. used to isolate actuators from device body.

[0011] Air inlet: Mild steel disc having a diameter of 21 mm with a thickness of 0.06 mm. Internal wall diameter of 20.8 mm will be press fit to match ID on device body. Inlet will have twelve 1/32-inch diameter holes concentrically spaced on diameter to allow air into body and coil. Base will also have metal attach point for internal coil.

[0012] Atomizer Base: Mild steel piece having a diameter of 20.8 mm to be press fit into device body. Base has standard 510 internal threaded connection for commercially available atomizers as well as anchor point for internal coil which consists of steel pin which is placed so atomizers make a connection with anchor point of internal coil.

[0013] All parts must be press fit together to increase air tightness of the device.

1. Benefits will include but are not limited to the following:

- Increased satisfaction.
- Elimination of internal battery and potential hazardous situations during use and charging.
- Elimination of all electronics.
- Increased safety.
- Device is inert, until activated by user.
- Eco friendly technology.
- No hazardous waste when device has reached the end of its life cycle.
- Scalable to fit different manufacturers devices.

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