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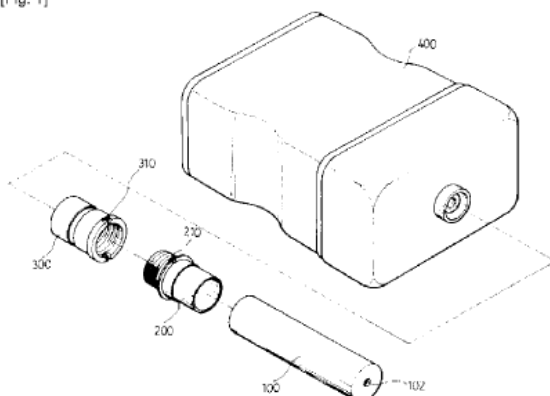
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(54) Title: DEVICE FOR VAPORISATION AND INHALATION, A COMPOSITION FOR VAPORISATION AND INHALATION USED THEREWITH, AND A METHOD FOR VAPORISING THE COMPOSITION FOR VAPORISATION AND INHALATION

(54) TITLE: DEVICE FOR VAPORISATION AND INHALATION, A COMPOSITION FOR VAPORISATION AND INHALATION USED THEREWITH, AND A METHOD FOR VAPORISING THE COMPOSITION FOR VAPORISATION AND INHALATION

[Fig. 1]



(57) Abstract: Disclosed are a device for vaporisation and inhalation, a composition for vaporisation and inhalation used therewith, and a method for vaporising the composition for vaporisation and inhalation. The disclosed composition for vaporisation and inhalation comprises a 0.5 to 10 : 1 weight ratio mixture of one or more substance to be vaporised and inhaled into the human body, selected from the group consisting of mint, rosemary, basil, peppermint, juniper, geranium, clary sage, ylang ylang, lavender, rosewood, lavender, lemon, chamomile, spearmint, beauty grain, pine needle, myrrh, may chang, cinnamon, orange bitter, jasmine, rose, geranium, grapefruit, patchouli, phytoncide and ginseng extract, and a vaporisation-promoting substance of which at least one or more is selected from propylene glycol, glycerin or alcohol. The disclosed device for vaporisation and inhalation, the composition for vaporisation and inhalation used therewith and the method for vaporising the composition for vaporisation and inhalation are advantageous in that they allow the vaporisation and easy inhalation of any substance as desired in accordance with the user's reason for use.

(57) ABSTRACT

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Disclosed are a device for vaporisation and inhalation, a composition for vaporisation and inhalation used therewith, and a method for vaporizing the composition for vaporisation and inhalation. The disclosed composition for vaporisation and inhalation comprises a 0.5 to 10 : 1 weight ratio mixture of one or more substance to be vaporized and inhaled into the human body, selected from the group consisting of mint, rosemary, basil, peppermint, juniper, geranium, clary sage, ylang ylang, lavandin, rosewood, lavender, lemon, chamomile, spearmint, petit grain, pine needle, myrrh, may chang, cinnamon, orange bitter, jasmine, rose, geranium, grapefruit, patchouli, phytoncide and ginseng extract, and a vaporisation-promoting substance of which at least one or more is selected from propylene glycol, glycerin or alcohol. The disclosed device for vaporisation and inhalation, the composition for vaporisation and inhalation used therewith and the method for vaporizing the composition for vaporisation and inhalation are advantageous in that they allow the vaporisation and easy inhalation of any substance as desired in accordance with the user's reason for use.

SPECIFICATION

TITLE OF INVENTION: DEVICE FOR VAPORISATION AND INHALATION, A COMPOSITION FOR VAPORISATION AND INHALATION USED THEREWITH, AND A METHOD FOR VAPORISING THE COMPOSITION FOR VAPORISATION AND INHALATION

TECHNICAL FIELD

- [1] The present invention relates to a device for vaporisation and inhalation that vaporizes a substance beneficial to the human body so that it can be inhaled through the oral cavity and respiratory system of a user, a composition for vaporisation and inhalation applied thereto, and a method for vaporizing the composition for vaporisation and inhalation.

BACKGROUND

- [2] Utility Model Publication No. 20-2009-0003871, the applicant of which is Sonen Co., Ltd. and which is entitled "liquid vaporisation and inhalation device," discloses a liquid vaporisation device having a structure for increasing a capacity for a liquid substance to be vaporized.
- [3] The liquid vaporizing device according to this utility model document includes a case, a liquid accommodating member that is interchangeably inserted into the case and accommodates a substance to be vaporized in a liquid state therein, and a heating member that generates heat so that the liquid in the liquid accommodating member is vaporized.
- [4] Such a liquid vaporizing device may allow water to flow into the lungs of a user when the liquid substance in a vaporized state is converted back into a liquid substance before inhalation.

SUMMARY

Technical Problem

- [5] Accordingly, an object of the present invention is to provide a target substance for vaporisation and inhalation having a high vaporisation rate and a high inhalation possibility, and a vaporisation and inhalation device necessary to use the same.
- [6] Another object of the present invention is to provide a vaporisation and inhalation device having a structure in which each of vaporisation and inhalation substances can be easily exchanged according to a user's choice.
- [7] Another object of the present invention is to provide a vaporisation and inhalation device having a structure in which there is little possibility that a substance in a liquid state permeates into the lungs in the body.
- [8] Another object of the present invention is to provide a device for vaporisation and inhalation capable of increasing vaporisation efficiency by shortening the installation path of an inductor so that highly viscous target substances for vaporisation and inhalation such as amino acids, vitamins, and minerals can be sufficiently induced.
- [9] Another object of the present invention is to provide a device for vaporisation and inhalation capable of presenting a replacement structure through which sanitary management of a cartridge containing a composition is possible.
- [10] Another object of the present invention is to provide a device for vaporisation and inhalation capable of increasing manufacturing efficiency and drastically reducing manufacturing costs by unifying the inductor and a heating member in order to facilitate the induction and supply of liquid for a highly viscous mixed composition.
- [11] Meanwhile, in using the device for vaporisation and inhalation applied in the present invention, by including minerals, vitamins, and amino acids as target substances for vaporisation and inhalation applied thereto, another object of the present invention is to

provide a composition for vaporisation and inhalation in which a mixture of a vaporisation-promoting composition and a composition for vaporisation and inhalation in a weight ratio of 1:0.0005 to 1:0.5 can be used.

Solution to Problem

- [12] A composition for vaporisation and inhalation according to one aspect of the present invention comprises a 0.5 to 10 : 1 weight ratio mixture of at least one target substance for vaporisation and inhalation into the human body, the substance being selected from the group consisting of mint, rosemary, basil, peppermint, juniper, geranium, clary sage, ylang ylang, lavandin, rosewood, lavender, lemon, chamomile, spearmint, petit grain, pine needle, myrrh, may chang, cinnamon, orange bitter, jasmine, rose, geranium, grapefruit, patchouli, phytoncide and ginseng extract, and at least one vaporisation-promoting substance selected from propylene glycol, glycerin or alcohol.
- [13] A device for vaporisation and inhalation according to an aspect of the present invention is provided with a switching means and a power supply means,
- [14] and is characterized by comprising a storage container in which a filling space for accommodating a mixed composition is secured and an air inhalation tube for inhaling the vaporized mixed composition through an inhalation nozzle is installed; an inductor module that communicates with the inside of the filling space and includes an inductor for inducing the mixed composition through capillarity; an atomization unit installed adjacent to the inductor module and composed of a heating module including a heating member controlled by the switching means and the power supply means.

Advantageous Effects of the Invention

- [15] According to the present invention, it is possible to easily inhale a desired substance by vaporizing it according to the user's purpose of use. For example, in order to avoid drowsiness while driving, drowsiness can be easily avoided while driving by using a vaporisation inhaler in which a desired substance such as spearmint and a vaporisation-promoting substance are stored together.
- [16] In addition, the device for vaporisation and inhalation according to the present invention has a structure in which the possibility of permeation of liquid substances into the lungs in the body is low.
- [17] The device for vaporisation and inhalation according to the present invention and the composition for vaporisation and inhalation applied thereto can increase the vaporisation efficiency by shortening the installation path of the inductor so that the highly viscous target substances for vaporisation and inhalation can be sufficiently induced and also has the effects of increasing the efficiency of manufacturing production and drastically reducing the manufacturing costs by unifying the inductor and the heating member in order to facilitate the induction and supply of liquid for the highly viscous mixed composition.

Brief Description of the Drawings

- [18] FIG. 1 is an exploded perspective view of a vaporisation and inhalation device according to one preferred embodiment of the present invention.
- [19] FIG. 2 is a cross-sectional view of a main part of the vaporisation and inhalation device in an exploded view shown in FIG. 1;
- [20] FIG. 3 is an enlarged view of part A of FIG. 2;
- [21] FIG. 4 is an enlarged view of part B of FIG. 2;

- [22] FIG. 5 is a view illustrating a fluid flow in an inhalation nozzle of FIG. 2;
- [23] FIG. 6 is an exploded perspective view of a vaporisation and inhalation device according to another preferred embodiment of the present invention.
- [24] FIG. 7 is a perspective view showing a vaporisation unit of an inhalation nozzle side of the device for vaporisation and inhalation according to the present invention.
- [25] FIG. 8 is an exploded perspective view of FIG. 7;
- [26] FIG. 9 is a perspective view for explaining an atomization container of FIG. 7 and its interior;
- [27] FIG. 10 is a cross-sectional view showing a storage container of FIG. 7; and
- [28] FIG. 11 is a cross-sectional view showing an assembled state of the vaporisation unit of the inhalation nozzle side according to the present invention.

Best Mode for Carrying out the Invention

- [29] As used herein, the terms "front" and "rear" should be understood as front for a short distance and rear for a long distance from the user's point of view, unless otherwise specified.
- [30] As used herein, the term "switching means" includes a switching means for operating a power supply device by a user with an arbitrary manipulation means such as a button, and a switching means that operates in response to the inhalation pressure of a user. Hereinafter, for the purpose of explanation, only the switching means that operates in response to the inhalation pressure of the user has been described as an example, and when reading this specification, it should be recognized that the power supply device can also be driven manually. A person skilled in the art who has thoroughly read this specification will be able to reconstruct by excluding the component operating in response to the inhalation pressure described below in the case where the switching means is manual.
- [31] Hereinafter, the present invention will be described in detail with reference to the accompanying exemplary drawings.
- [32] FIG. 1 schematically shows a vaporisation and inhalation device according to one preferred embodiment of the present invention, FIG. 2 shows a cross-sectional view of an assembled state of the device for vaporisation and inhalation shown in FIG. 1, FIG. 3 shows an enlarged view of part A of FIG. 2, and FIG. 4 shows an enlarged view of part B of FIG. 2. In addition, FIG. 4 shows a part of an inhalation nozzle side of FIG. 2 and the flow of fluid such as vapor.
- [33] Referring to FIG. 1, the vaporisation and inhalation device according to a preferred embodiment of the present invention includes a vaporisation unit 100 of an inhalation nozzle side provided therein with a reservoir in which a target substance for vaporisation and inhalation is stored, a first connection body 200, a second connection body 300, and a power operation unit 400.
- [34] The power operation unit 400 has a curved portion on its side so that a user can easily grip it by hand.
- [35] The vaporisation unit 100 of the inhalation nozzle side is provided with an inhalation nozzle 102 communicating with the inside as shown in the figure, a first connection body 200 is provided with a hole 210 leading to the inside of the screw thread portion connected to a second connection body 300. Meanwhile, the second connecting body 300 has a groove at a portion connected to the first connection body 200, and the groove serves as an air passage 310 when coupled with the second connection body 300. In this embodiment, it is provided in the form of a groove, but those skilled in the art will recognize that it may be provided in the form of a hole as long as it communicates with the hole 210. The inner space between the air passage 310 and the hole 210 is formed

to allow fluid movement.

- [36] Referring to FIGS. 2 and 3, the vaporisation and inhalation device according to a preferred embodiment of the present invention includes a reservoir 106 in which a substance to be vaporized is stored. As shown in the figure, the reservoir 106 has a closed structure except for the left portion. In the drawing, a liquid induction member 108 including a capillary bundle through which a substance in a liquid state can move is provided in close contact with the open portion of the reservoir 106 on the left side of the reservoir 106. Non-limiting examples of the liquid induction member 108 may include multi-layered foamed nickel mesh, stainless fiber felt, polymer foam, and porous metal.
- [37] The liquid induction member 108 is supported on the rear side by a support member 122 as shown in the figure.
- [38] In this embodiment, it is limited to the case where the substance to be vaporized stored in the reservoir 106 is maintained in a liquid state, but when the substance to be vaporized is a solid substance rather than a liquid, the liquid induction member 108 and its supporting member 122 may be omitted.
- [39] A heating element 110 is provided on the rear side of the support member 122. A heating wire may be preferably used as the heating element 110. The heating wire 110 may be made of, for example, a composite material such as a nickel alloy or a rare earth element. In this embodiment, the heating element is used to vaporize the substance to be vaporized, but an ultrasonic generator may be used in addition to the heating element. When an ultrasonic generator is used, a thermal isolation member 120 described later may be omitted.
- [40] The thermal isolation member 120 capable of blocking heat generated from the heating element 110 is provided on the rear side of the heating element 110. The thermal isolation member 120 is made of ceramic, for example. In the thermal isolation member 120, provided is a jet orifice 118 through which the substance to be vaporized (liquid or solid substance) from the reservoir 106 is heated by the heating element 110, and the material in a vaporized state is inhaled through the inhalation nozzle 102. A backflow hole 116 is provided in the space between the reservoir 106 and the heating element 110 so that gaseous-state substances are converted into liquid-state substances, or liquid substances that have not reached the gaseous state are re-supplied to the reservoir.
- [41] Meanwhile, a liquid storage chamber 112 is provided on the rear side of the heating element 110 as shown in the figure, and the liquid-state substances stored in the liquid storage chamber 112 are converted back to gaseous-state substances by heating by the heating element 110. This liquid storage chamber 112 is made of, for example, a multi-layered foamed nickel mesh.
- [42] A moisture suppressing member 114 is provided on the rear side of the liquid storage chamber 112 to prevent the liquid-state substances from entering the rear side. One end of the liquid induction member 108 is connected to the liquid storage chamber 112, and a liquid absorption body such as a cotton thread is provided in the middle thereof. The liquid substances are introduced into the liquid storage chamber 112 by the capillarity of the liquid inducing member 108, and small liquid droplets are sprayed through the jet orifice 118 of the thermal isolation member 120 by the action of the air flow. The

liquid is vaporized by the action of the heating wire 110 and moves to the absorption nozzle 102 through the fluid passage provided on the outer surface of the liquid storage chamber 112.

- [43] The moisture suppressing member 114 serves to prevent the liquid in the liquid storage chamber 112 from flowing backward.
- [44] Referring to FIG. 5 together with FIG. 3, the reservoir 106 is provided in a casing 104 spaced apart from the inner side thereof, and a fluid passage 116 through which a fluid including gaseous-state substances can move is provided between the outer circumferential surface of the reservoir 106 and the inner circumferential surface of the casing 104. An inhalation nozzle 102 is provided with the fluid passage 116 between the inner circumferential surface of the casing 104 and the outer circumferential surface of the reservoir 106. As shown in the figure, the inner surface of the inhalation nozzle 102 is provided with a moisture suppressing container 120 for blocking the entry of moisture into the oral cavity.
- [45] Referring to FIG. 2 together with FIG. 1, the power operation unit 400 includes a power supply device 410 such as a rechargeable battery and a switching means.
- [46] The switching means is provided with a spring shown with reference numeral 412, a movable contact 404 which operates by moving transversely to the longitudinal action of the spring 412, and a fixed contact 406 which is electrically interrupted in contact with the movable contact 404. The spring 412 and the movable contact 404 are interconnected by a plastic rod 402 containing rubber as shown in the figure. The fixed contact 406 is fixed to the plastic support 407 as shown in the figure.
- [47] In FIG. 4, a connection portion between the first connection body 200 and the second connection body 300 is shown enlarged.
- [48] Referring to FIG. 4 together with FIG. 2, a switch valve 214 is provided in the first connection body 200, and an air entry hole 210 is formed on a side thereof. When the user inhales, air is introduced through the air entry hole 210, the switch valve 214 is opened, and a negative pressure chamber 408 is formed between the right side of the spring 412 and a connection conductor 301 by the action of the air flow. Due to the action of the negative pressure, the spring 412 moves to the right in the drawing, and at the same time, the movable contact 404 connected to the plastic rod 402 moves in the lateral direction and electrically contacts the fixed contact 406. When the user's inhalation power decreases, the switch valve 214 is closed and the air flow from the air entry hole 210 is blocked. The negative pressure chamber 408 is maintained for a certain period of time, and when the user stops inhaling, the air flow quickly enters the negative pressure chamber 408 through an intermediate passage 302 of the connection conductor 301. Accordingly, the negative pressure immediately disappears and the spring 412 is restored to its original position. When the spring 412 moves to its original position, the plastic rod 402 moves to the left in the drawing, and the movable contact 404 is electrically disconnected from the fixed contact 406.
- [49] As shown in the figure, the connection conductor 301 is provided with a female screw thread 304 and a male screw thread 212 and connected to each other, the connection

conductor 301 is connected to the negative electrode of the wire connected to the heating element 110 and the two central rod-shaped conductors 206 and 310 are connected to the positive electrode of the wire connected to the heating element 110. The connection conductor 301 and the central rod-shaped conductor 310 are electrically separated by an insulating material 306 located therebetween.

[50] FIG. 6 shows a variant of the power operation unit. Except for the fact that the outer shape of the power operation unit is cylindrical, it is the same as the vaporisation and inhalation device of the present invention shown in FIG. 1 described above.

[51] Although not shown, the vaporisation and inhalation device according to the present invention is provided with a remaining amount display unit for displaying the remaining amount of power, and this display unit may be a liquid crystal display. Through the remaining amount display unit, the user can know the remaining amount of power, so that the replacement time of the power can be easily recognized.

[52] In addition, the present invention includes the substances to be vaporized stored in the reservoir 106. The substances to be vaporized include both liquid-state substances and solid-state substances. In the case of solid-state substances, as described above, the liquid induction member 108 and the support member 122 are omitted so that heating by the heating element 110 is directly performed with one end of the reservoir 106 open.

[53] For the substances to be vaporized stored in the reservoir 106, vaporisation-promoting substances and desired substances are mixed in a specific ratio, and stored together.

[54] As the vaporisation-promoting substances in the substances to be vaporized belonging to a part of the present invention, at least one selected from propylene glycol, glycerin, or alcohols including ethanol is used. In particular, propylene glycol and glycerin are used in the present invention.

[55] In addition, the desired substances among the substances to be vaporized belonging to a part of the present invention are various and are exemplarily listed in Table 1 below.

[56]

[57] Table 1

Therapy	Effect		Agent
aroma, functional food	nervous system/ circulatory system	concentration enhancement	Mint, Rosemary, Basil, Peppermint, etc.
		prevent drowsiness	
		memory enhancement, senile dementia	Juniper, Fibroin, BF-7, Silkworm Extract, Stachys affinis, Pachira, Minocycline, Lecithin, Soybean Extract, Green Tea Extract, Black Tea Extract, Gardenia Extract, Leek Extract
		depression	Geranium, Clary Sage
		stress, nervous tension	Ylang ylang
		insomnia	Lavandin, Rosewood
		headache, migraine	Lavender, Peppermint, Lemon, Chamomile, German Chamomile, Eucalyptus, etc.
		mental fatigue	Rosewood, Spearmint
		mental instability	Orange Bitter, Petit Grain
		anemia, dizziness	Chamomile
	respiratory system	cold	Spearmint, Black pepper, Lavandin, etc.
		bronchitis, asthma, etc.	Petit Grain, Pine Needle, Tea Tree, Myrrh, etc.
	digestive system	indigestion	Basil, May chang, Melissa
		digestive cramps	Cinnamon
	muscles, joints	muscle pain	Rosewood
		arthritis	Vertiver
	skin	acne	Vertiver, Juniper
		ringworm	Tea tree
		oily skin	Thyme
		dry skin, anti-aging	Patchuli, Carrot seed, etc.
	bowel, urinary system	strengthen the intestines	Fennel
		cystitis	Pine needle
		constipation	Orange bitters
	Improvement and strengthening of sexual function	enhancing sexual function, regulating hormones	Jasmine, Rose
		hysterospasm, dysmenorrhea, premenstrual syndrome	Jasmine, Geranium
		good for gynecology	Rose
	other	appetite suppression, diet	Grapefruit, Patchuli
		oral disinfection, bad breath removal	Lemon, Lavender, Mint, Frankincense, Rosemary, Tea Tree, Peppermint, Spearmint, Citrus, Phytonkid (derived from cypress tree), etc.
		oral ulcers, oral infections	Tea tree, Phytonkid (derived from cypress trees)
		hair loss	Thyme, Cedarwood, Isoflavones
		osteoporosis	Isoflavones
		cancer prevention	Genistein
		diabetes prevention	Oligosaccharide
nutrition, health supplements	vitamins, red ginseng, wild ginseng, other extracts, etc.		

[58]

[59] The various target substances for vaporisation and inhalation listed in Table 1 above may be used alone or in combination with vaporisation-promoting substances, and the mixing weight ratio of the vaporisation-promoting substances used to the target substances for vaporisation and inhalation is preferably 1:0.5 to 10.

[60] In particular, for the purpose of preventing drowsiness, propylene glycol is used as the vaporisation-promoting substance, and mint or rosemary, or a combination of the two, is used as the target substance. The weight ratio of propylene glycol to mint or rosemary used is preferably 1:0.5 to 10. In the case of mint, vaporisation is possible without the use of vaporisation-promoting substances, and it is also used for oral cleaning purposes. In the case of rosemary, it can also be used for concentration-enhancing purposes.

[61] In addition, in particular, in the case of the purpose of stabilizing the mind and body, propylene glycol is used as the vaporisation-promoting substance, and lavender is used as the target substance. Lavender is preferably used in an amount of 1:0.5 to 10 based on the weight of the vaporisation-promoting substance.

[62] Hereinafter, the present invention will be described by the following non-limiting examples.

[63] **Examples 1 to 36**

[64] At least one of propylene glycol, glycerin, or alcohol was selected and used as vaporisation-promoting substances and the substances listed in Table 2 below were used as the desired target substances for vaporisation and inhalation. In addition, the experiments were conducted both in the presence and absence of the target substances for vaporisation and inhalation and was performed while changing the vaporisation-promoting substances and the target substances for vaporisation and inhalation. As a result, except for some substances, vaporisation was carried out at a certain ratio of the vaporisation-promoting substances. According to the results, the experiment was conducted by setting the weight ratio of the vaporisation-promoting substance to the target substance for vaporisation and inhalation to be mixed in the range of 1:0.5 to 10. As a vaporisation and inhalation device, the device according to the present invention shown in FIG. 1 was used, and whether vaporisation was carried out or not was determined by visual identification and whether or not the distinctive fragrance of each was emitted. Vaporisation by visual identification is the basis for determining whether the target substances are vaporized or not, and fragrance emission is the basis for determining whether the target substances are vaporized alone or together with the vaporisation-promoting substances without changing its components.

[65]

[66] Table 2

Examples	Purpose of use	Vaporisation-promoting substances (A)	Vaporisation and inhalation target substances (B)	Blending weight ratio (A:B)
1	concentration enhancement	propylene glycol	mint	1:0.5
2		propylene glycol	mint	1:3
3		propylene glycol	mint	1:7
4		glycerin	mint	1:1
5		propylene glycol + glycerin (1:1 mixing)	mint	1:2
6		propylene glycol	mint + rosemary(1:1 mixing)	1:2
7		glycerin	peppermint	1:1
8	memory enhancement	propylene glycol	juniper	1:2
9	depression	propylene glycol	geranium + clary sage	1:2
10	stress, nervous tension	propylene glycol	ylang ylang	1:2
11	insomnia	propylene glycol	lavandin	1:2
12		propylene glycol	rosewood	1:2
13	headache, migraine	propylene glycol	lavender	1:2
14		propylene glycol	lavender + Peppermint (1:1 mixing)	1:2
15	mental fatigue	propylene glycol	rosewood	1:2
16	mental instability	propylene glycol	orange bitters	1:2
17	anemia, dizziness	propylene glycol	chamomile	1:2
18	cold	propylene glycol	spearmint + lavandin (1:1 mixing)	1:2
19	bronchitis, asthma	propylene glycol	petit grain	1:2
20		propylene glycol	pine needle	1:2
21		propylene glycol	myrrh	1:2
22	indigestion	propylene glycol	basil	1:2
23		propylene glycol	may chang	1:2
24	digestive cramps	propylene glycol	cinnamon	1:2
25	enhancement of sexual function, hormone regulation	propylene glycol	jasmine	1:2
26		propylene glycol	rose	1:2
27		propylene glycol	jasmine + rose (1:1 mixing)	1:2
28	dysmenorrhea	propylene glycol	geranium	1:2
29	appetite suppression, diet	propylene glycol	grapefruit	1:2
30		propylene glycol	patchouli	1:2
31	oral disinfection, bad breath removal	propylene glycol	lemon + lavender (1:1 mixing)	1:2
32		propylene glycol	mint + rosemary(1:1 mixing)	1:2
33		propylene glycol	peppermint	1:2
34		propylene glycol	spearmint	1:2
35		propylene glycol	phytoncide	1:2

36	nutrition, health supplements	propylene glycol	ginseng extract	1:2
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[67]

[68] **Test result**

[69] The desired target substance for vaporisation and inhalation is vaporized while emitting a characteristic fragrance of the desired target substance for vaporisation and inhalation at a ratio of 1:1 to 5 based on the weight of propylene glycol, and this was found as a result of sensory tests such as smoke level, fragrance, and taste of the conventional panel according to the above embodiment.

[70] Although the above has been described with reference to preferred embodiments of the present invention, those skilled in the art will understand that various modifications and changes can be made to the present invention without departing from the spirit and scope of the present invention described in the claims below.

Mode for Carrying Out the Invention

[71] Hereinafter, another embodiment of the present invention will be described with reference to the drawings. In carrying out this description, descriptions overlapping those already described in the best mode for carrying out the present invention are replaced therewith and will be omitted here.

[72] First, FIG. 7 is a perspective view showing a vaporisation unit on an inhalation nozzle side according to an embodiment of the present invention. This corresponds to the vaporisation unit of the inhalation nozzle side already described in the best mode for carrying out the present invention described above, and the power operation unit, including the following first connection body and the second connection body, has the same structure as that of the present invention, and redundant description thereof will be omitted.

[73] As shown in the figure, an inhalation contact 1213 for inhaling the mixed composition through body contact is provided in the vaporisation unit 1200 on the inhalation nozzle side having a cylindrical structure, and a fastening part 1207, which is fastened with a first connection body (not shown) that performs electrical switching in the air inhalation process, is formed at the end, and between the fastening part 1207 and the inhalation contact 1213, a storage container 1201 in which a predetermined filling space is secured so that the mixed composition can be filled in a liquid state and an atomization container 1203 for vaporizing the mixed composition by direct or indirect heating through a predetermined heating member after inducing the mixed composition of the storage container 1201 using capillarity are disposed.

[74] Here, the atomization container 1203 may be molded into any shape, and if necessary, a heating member may be mounted on the storage container 1201 without having the shape. That is, in the embodiment of the present invention, the atomization container 1203 is presented, but this is to explain the atomization container and the storage container as a structure separated from each other as an embodiment, and when the atomization container and the storage container are molded into a mutually integrated structure, the shape of the atomization container itself becomes unnecessary.

[75] In addition, the inhalation contact 1213 presented in this embodiment may also be manufactured in an integrated structure at the end of the storage container 1201 and therefore, the inhalation contact 1213 is only described for convenience of explanation,

and the meaning as a functional element or structural element of the inhalation contact will be insufficient.

- [76] Meanwhile, the storage container 1201 has a liquid introduction valve 1205 and opens and closes the liquid introduction valve 1205 to load a predetermined mixed composition. Therefore, the user can selectively load a desired mixed composition using the liquid introduction valve 1205, and the storage container 1201 integrated with the inhalation contact 1213, if necessary, can be made separable from the atomization container 1203. This will allow the storage container 1201 and the inhalation contact 1213 to be replaced depending on frequent use for hygiene management of the user, or each storage container 1201 to be used according to the selection of the mixed composition. In addition, the liquid introduction valve 1205 is shown as a visualized structure in the embodiment of the present invention, but this is to explain a structure capable of introducing the corresponding composition by mechanical means in the manufacturing process, rather than the concept of a valve that can be opened and closed. Accordingly, the liquid introduction valve 1205 may not be visualized and, moreover, its position may not be determined.
- [77] In addition, the atomization container 1203 vaporizes the mixed composition induced from the storage container 1201 using a heating member, the heating member is a filament-type heating element made of a composite such as a nickel alloy or a rare earth element, or the mixed composition can be vaporized using a high-frequency or ultra-high frequency generator, and a Peltier element may be applied as needed. The Peltier element has a structure in which one side heats up and the other side absorbs heat depending on the electrical polarity, and is possible to prevent a phenomenon in which the shell of the atomization container 1203 generates heat due to frequent use. Of course, since the start-up time of the Peltier element is delayed, it is desirable to interlock with the filament-type heating element.
- [78] The fastening part 1207 is provided with a hollow threaded portion for fastening with the first connection body, an electrode 1209 for power supply for smooth operation of the atomization container 1203 protrudes from the center of the threaded portion, and an inhalation port 1211 is provided so that the amount of air inhaled by the inhalation contact 1213 communicates with the first connection body and the second connection body not described. The fastening part 1207 may be made of a metal material, and thus the electrode 1209 may be set as a '+' terminal, and the fastening part 1207 may be set as a '-' terminal, and for convenience of manufacturing, the polarity of the terminal may be varied.
- [79] Therefore, after vaporisation unit 1200 of the inhalation nozzle side is fastened to the first connection body using the fastening part 1207, the first connection body is fastened to the second connection body, and the second connection body is connected to the power operation unit. The power supplied from the power operating unit is connected to the electrode 1209 via the second connection body and the first connection body, and interlocks with the inhalation port 1211 of the fastening part 1207 or the first connection body. The air pressure inhaled through the inhalation port 1211 induces a switching operation of the first connection body, and thus is controlled so that power is supplied to the electrode 1209 during the user's inhalation process.

- [80] FIG. 8 is an exploded perspective view showing the vaporisation unit 1200 of the inhalation nozzle side according to the present invention. First, in the present invention, the storage container 1201 and the atomization container 1203 may be manufactured in a separate structure or provided in a mutually integrated structure. The storage container 1201 is an assembly structure in which the end portion coupled to the atomization container 1203 has a stepped structure and is inserted into the inner circumferential surface of the atomization container 1203. Accordingly, the storage container 1201 and the atomization container 1203 may form protrusions of a mutually concave-convex structure so that the direction and position may be fixed during the coupling process. In addition, the storage container 1201 and the atomization container 1203 cannot be fastened by screwing due to their structure, and therefore may be formed into a fastening structure by an interference fit or an elastic protrusion.
- [81] The storage container 1201 has a hollow structure in which an air inhalation tube 1313 is buried in the center, and the air inhalation tube 1313 has an integrated communication structure therearound. Also, in the communication structure, a fluid insertion hole 1311 communicating with the outside is provided. The air inhalation tube 1313 is in communication with the inhalation contact 1213, and air pressure is transferred to the first connection body through the air inhalation tube 1313 during the user's inhalation process. A heating module 1303 is fastened and fixed to the inside of the atomization container 1203, and an inductor module 1301 is installed on the top of the heating module 1303.
- [82] The heating module 1303 has a coupling threaded portion 1321 fixed in electrical contact with the inner bottom surface of the atomization container 1203 having a hollow structure with both ends open, and a + electrode 1323, which protrudes to one end of the atomization container 1203, and has electrical contact with the heating member 1319, is formed on one side of the coupling threaded portion 1321 and has the inhalation port 1211 communicating with the air inhalation tube 1313. The heating module 1303 is also implemented with a metal material, and the body forms a - electrode 1325 and is in contact with the atomization container 1203.
- [83] Meanwhile, the inductor module 1301 is fixed or joined to the other opening of the atomization container 1203 and forms a fixing plate 1327 provided with an air entry hole 1317 communicating with the air inhalation tube 1313, an inductor 1315 fixedly installed to correspond to the inductor insertion holes 1311 is formed at one end of the fixing plate 1327, and the inductor 1315 is made of a material for inducing the mixed composition loaded in the storage container 1201 by capillarity. The inductor 1315 may be composed of a multi-layered foamed nickel mesh, a stainless fiber felt, a polymer foam, and a porous metal. The fixing plate 1327 divides the internal space and the external space of the atomization container 1203, and the inductor 1315 is installed close to the heating member 1319 of the heating module 1303 installed in the internal space, and at the same time, is drawn out a predetermined distance into the external space so that it is introduced into the inductor insertion holes 1311.
- [84] As the heating member 1319, a heating element in a filament structure may be used, and the polarity of the electrode 1209 in this case will be meaningless. However, it is natural that the heating member 1319 requires a set polarity when a high frequency generator or a Peltier element is used or interlocked. In an embodiment of the present

invention, the heating member 1319 is a filament-type heating element, and the filament has a structure in which the inductor 1315 is closely wound. Thus, the heating member 1319 vaporizes the mixed composition introduced through the inductor 1315. Due to this, the inductor 1315 has a pipe structure having a circular cross section and is bent.

- [85] On the other hand, when the heating member 1319 is a high frequency generating element, the inductor 1315 may increase the application area of the high frequency by shaping a portion in contact with the high frequency generating element into a flat plate structure. Also, when the heating member 1319 includes a Peltier element, that is, when a high frequency generating element and a Peltier element are used in combination, or the filament and a Peltier element are used in combination, the heat absorbing portion, that is, the cooling surface of the Peltier element is tightly fixed to the coupling threaded portion 1321. Since the response speed of the Peltier element is slow as described above, the mixed composition cannot be directly heated, but it can be preheated in conjunction with other materials (filament, high frequency generator). Also, as the heat absorbing portion of the Peltier element is in close contact with the heating module 1303 made of metal, by suppressing the heating state of the atomization container 1203, durability of the product is improved.
- [86] FIG. 9 is a perspective view showing the atomization container assembly and its internal structure according to the present invention. The atomization container assembly is a state in which the heating module 1303 and the inductor module 1301 are sequentially assembled, at the lower end of the atomization container 1203 made of metal, there is a screw-coupled structure having an - electrode 1325, and the inductor module 1301 is assembled at the upper end so that the inductor 1315 protrudes.
- [87] Accordingly, the heating module 1303 includes a metal coupling threaded portion 1321 and has a protrusion having a non-conductive material such as plastic at one end, and a + electrode 1323 made of metal is formed on one side of the outer circumference of the protrusion. Also, the coupling threaded portion 1321 of the heating module 1303 is made of metal and has an - electrode 1325. Therefore, when the heating member 1319 is fastened to the coupling threaded portion 1321, the - pole is directly connected to the coupling threaded portion 1321, and the + pole is connected to the + electrode 1323 through the inside of the protrusion.
- [88] The inductor 1315 is fixed by the fixing plate 1327 and divided into upper and lower portions at the same time, the upper end of the inductor 1315 is wound by the heating member 1319, and the lower end of the inductor 1315 extends by a predetermined length to be inserted into the inductor insertion holes 1311 of the storage container 1201. After the heating module 1303 and the inductor module 1301 configured as described above are assembled together, they are fastened into the atomization container 1203 through the coupling threaded portion 1321 of the heating module 1303. Here, as the coupling threaded portion 1321 of the heating module 1303 has a screw structure, when the heating module 1303 is fastened into the atomization container 1203, the inductor module 1301 interlocks with the rotation of the heating module 1303. When the assembly of the heating module 1303 is completed, the fixing plate 1327 of the inductor module 1301 is fitted into a coupling protrusion (not shown).
- [89] FIG. 10 is a cross-sectional view showing the storage container 1201 according to the

present invention, and FIG. 11 is an assembled cross-sectional view of the vaporisation unit 1200 of the inhalation nozzle side according to the present invention. As shown in the figures, it has a hollow structure and the cylindrical air inhalation tube 1313 is buried in the center, and the air inhalation tube 1313 communicates with an inhalation nozzle 1501 of the inhalation contact 1213. Accordingly, the storage container 1201 has a loading portion 1503 as the remaining space except for the air inhalation tube 1313, and the loading portion 1503 is loaded with the mixed composition through the liquid introduction valve 1205. The mixed composition comes into contact with one end of the inductor 1315 pressed-in and installed through the inductor insertion hole 1311, and the inductor 1315 adsorbs the mixed composition by capillarity and is heated by the heating member 1319.

- [90] That is, the inductor 1315 directly contacts the mixed composition in the loading portion 1503, thereby shortening the moving path of the mixed composition. This is to prevent the deterioration of fluid movement due to viscosity when the viscosity of the mixed composition is high. Meanwhile, a gap may be generated between the inductor insertion hole 1311 and the inductor 1315 during the installation process, and it is apprehended that the mixed composition in the loading portion 1503 may leak out due to such a gap. Therefore, by accommodating the fiber material inside the loading portion 1503, the leakage of the mixed composition can be prevented.
- [91] Meanwhile, in the embodiment of the present invention, it has been described that the end of the inductor 1315 is inserted into the inductor insertion hole 1311 of the storage container, but considering the possibility of leakage of the mixed composition, as another embodiment of the present invention, the end of the inductor 1315 may be brought into close contact with or adhered to the inductor insertion hole 1311. Here, since the inductor insertion hole 1311 according to another embodiment of the present invention is not a structure for inserting an inductor, it may be referred to as a communication groove. That is, the communication groove and the inductor insertion hole 1311 have the same structure, but have different names due to the different purpose of use, and the establishment of the technical concept of the communication groove used in the following description should be preceded.
- [92] After all, according to another embodiment of the present invention, as a structure for the inductor 1315 to be in close contact with the communication groove, after designing the diameter of the inductor 1315 to be larger than that of the communication groove, the end of the inductor 1315 is bonded to the outer periphery of the communication groove by using silicon. Alternatively, after designing the diameter of the inductor 1315 to be larger than that of the communication groove, by pressurizing and installing the inductor 1315 into the communication groove, the mixed composition leaked out through the communication groove is absorbed into the inductor 1315.
- [93] As such, the present invention presents the vaporisation unit 1200 of the inhalation nozzle side that can use a highly viscous mixed composition, and thus can use vaporisation and inhalation target substances such as minerals, vitamins, and amino acids having an extremely high content ratio of the vaporisation-promoting composition. In addition, as the vaporisation-promoting composition, at least one selected from propylene glycol, glycerin, or alcohols including ethanol is used, the content ratio of the vaporisation-promoting composition is 95% or more, and the weight ratio of the vaporisation-promoting composition and the vaporisation and inhalation target substances has a weight ratio of 1:0.0005 to 1:0.5. Preferably, it may have a weight ratio of 1:0.05.
- [94] Therefore, glycerin, etc. constituting the vaporisation-promoting composition is a solvent

with a very high oily component and therefore, eventually, the viscosity of the vaporisation and inhalation target substances becomes high. Due to this viscosity, it is preferable that the switching structure of the device for vaporisation and inhalation enables both automatic and manual functions. That is, for the purpose of vaporisation of the mixed composition, manual preheating or overheating can be temporarily induced. Therefore, it is appropriate for the present invention to separately provide a manual button.

[95] Table 3 below exemplarily lists vaporisation and inhalation target substances according to the present invention, and also presents their efficacy.

[96]

[97] Table 3

Division	Vaporisation and inhalation substances and target	Efficacy and effect
Nutrient	amino acids	fatigue recovery
	Ginkgo Biloba	improve memory and cognitive function
	coenzyme Q 10 (Co-Q10)	
	Phosphatidyl Serine (PS)	
	Alpha Lipoic Acid	
	inorganic salts	essential nutrients such as sodium, magnesium, iron and calcium
Tea	minerals	proper composition of body fluids, formation of blood and bone, maintenance of healthy nerve function, and regulation of muscular tension, including the muscle of the cardiovascular system
	green tea	cholesterol reduction, diet
	solomon's seal tea	metabolism promotion, energy recovery
	schizandra chinensis tea	sweat control, memory, thinking, attention improvement, fatigue recovery
	Liriope platyphylla tea	wolfberry-like effect
	corn silk tea	diuretic effect, waste removal, blood sugar control
	plum tea	balance, sterilization and detoxification of the body fluid
	tangerine peel tea	digestion, fatigue recovery
	aged tangerine peel tea	digestion
	chrysanthemum Tea	headache, antipyretic, detoxification, dizziness, anti-aging
	Eleutherococcus sessiliflorus	fatigue recovery, arthritis, muscle pain
	quince	cold, diarrhea
	arrowroot	hangover
	wolfberry	liver
	cornus officinalis	Diet
	persimmon leaves	
	eucommia	
	oolong	
	cluster mallow seed tea	
fruit	orange	supply of various vitamins
	lemon	
	grapefruit	stomach ulcer, fatigue recovery, arteriosclerosis, osteoporosis, diet, skin care
vegetables	broccoli extract	prostate cancer, bladder cancer prevention, acne control
	cabbage extract	
	onion	anti-cancer, anti-aging, high blood pressure
	garlic	anti-cancer, allergy suppression, tonic, fatigue recovery
	ginger	anti-cancer, cholesterol removal, cold prevention
	lettuce extract	anti-cancer, acne control, skin trouble suppression
	kale extract	
	bellflower root extract	
	tomato extract	
oriental medicine	ginkgo leaves	blood circulation, anti-aging
	black raspberry	improve female-male fertility
	wolfberry	
	Schisandrae fructus	
	Cnidii fructus	
	Semen cuscutae	
	Corni fructus	
	Cassiae semen	good for eyes
functional component	royal jelly	suppression of atopy
	plum	suppression of atopy
	Hovenia dulcis Thunb	hangover

[98]

[99] The target substances for vaporisation and inhalation for various purposes listed in Table 3 are used in combination with a vaporisation-promoting substance, and propylene

glycol or glycerin is used as the vaporisation-promoting substance. In this case, the mixing weight ratio of the vaporisation-promoting substance and the target substance for vaporisation and inhalation is 1:0.0005 to 1:0.5, preferably 1:0.0005 to 1:0.05.

[100] Meanwhile, as described above, as the vaporisation and inhalation target substance applied in the present invention, calcium, phosphorus, iron, sodium, magnesium, manganese, zinc, cobalt, copper, molybdenum, selenium, fluorine, iodine, ash, calcium, phosphorus, iron, sodium, zinc, which are minerals, may be used, and as a vitamin, vitamin A, retinol (RE), beta-carotene, thiamine, riboflavin, niacin, vitamin C, vitamin B6, pantothenic acid, vitamin B12, folic acid, vitamin D, vitamin E, vitamin K, vitamin, thiamin are used. Also, isoleucine, leucine, lysine, methionine, cysteine, phenylalanine, tyrosine, threonine, tryptophan, valine, histidine, arginine, aspartic acid, glutamic acid, glycine, proline, serine may be used as an amino acid.

[101] As needed, water, proteins, lipids, carbohydrates, insoluble dietary fibers, soluble dietary fibers, total dietary fibers and sugar can be used as a general nutrient, and daidzein, genistein, glycitein, cyanidin, delphinidin, malvidin, pelargonidin, penonidin, peturidine, epicatechin, epicatechin-3-galleate, epicallocatechin, epicallocatechin-3-galleate, catechin, gallocatechin, eriodictyol, hesperetin, naringenin, epignin, luteolin, isorhamnetin, kaempferol, myricetin, quercetin, monomeric proanthocyanidin, dimeric proanthocyanidin, trimeric proanthocyanidin, 4-6-meric proanthocyanidins, 7-10-meric proanthocyanidins, polymeric proanthocyanidin, choline, betanin, procholine, glycerophosphocholine, phosphocholine, phosphatidylcholine, sphingomyelin may be used as a bioactive agent.

[102] In addition, it was tested that the nutrient components of vaporisation and inhalation target substance, that is, water, proteins, lipids, carbohydrates, insoluble dietary fibers, soluble dietary fibers, total dietary fibers, sugar, etc. are maintained at a weight ratio of 1:0.0005 to 1:0.5 based on the weight of propylene glycol.

[103] Table 4 below shows the functionality of the vaporisation and inhalation target substances through experiments on the vaporisation-promoting substance used in the device for vaporisation and inhalation according to the present invention.

[104]

[105] Table 4

Examples	Vaporisation-promoting substances	Vaporisation and inhalation target substances	Blending weight ratio	Smoking degree	Preference
1	propylene glycol	functional substance	1:1	10	12
2	propylene glycol		1:0.5	9	12
3	propylene glycol		1:0.5	9	13
4	propylene glycol		1: 0.005	9	12
5	propylene glycol		1: 0.0005	9	12
6	glycerin		1:1	10	13
7	glycerin		1:0.5	10	13
8	glycerin		1: 0.5	9	12
9	glycerin		1: 0.005	10	12
10	glycerin		1: 0.0005	9	12

[106]

[107] Here, the vaporisation and inhalation target substances include herbs, extracts, vitamins, amino acids, bioactive agents, nutritional components by efficacy including general nutrients, tea, fruits, vegetables, oriental medicine, and functional ingredients as functional substances. If necessary, the functional ingredients may further include xylitol. In addition, the blending weight ratio of the vaporisation-promoting substance to the functional substance is sufficiently smoked up to 1:0.0005, and the preference is also not deteriorated.

[108] While the invention has been shown and described with respect to specific embodiments, those skilled in the art will know that the present invention can be variously modified and changed without departing from the spirit and scope of the present invention described in the claims below. However, it should be clearly stated that all of these modifications and variations are included within the scope of the present invention.

Industrial applicability

[109] As described above, the device for vaporisation and inhalation according to the present invention and the composition for vaporisation and inhalation applied thereto are believed to have sufficiently high industrial value by inducing market expansion of health supplements.

[110]

CLAIMS

1. A composition for vaporisation and inhalation, comprising a 0.5 to 10 : 1 weight ratio mixture of: at least one target substance for vaporisation and inhalation into the human body, the substance being selected from the group consisting of mint, rosemary, basil, peppermint, juniper, geranium, clary sage, ylang ylang, lavandin, rosewood, lavender, lemon, chamomile, spearmint, petit grain, pine needle, myrrh, may chang, cinnamon, orange bitter, jasmine, rose, geranium, grapefruit, patchouli, phytoncide and ginseng extract; and at least one vaporisation-promoting substance selected from propylene glycol, glycerin or alcohol.
2. A method for vaporizing the composition for vaporisation and inhalation according to claim 1, wherein the composition for vaporisation and inhalation is stored in a reservoir 106 of a vaporisation and inhalation device and vaporized by a vaporizing means and the vaporisation and inhalation device comprises the reservoir 106; a switching means, a power supply device 410 for operating according to the switching means, and a vaporizing means operating by a voltage applied from the power supply device 410 to vaporize the vaporization target substance stored in the reservoir 106; and an inhalation nozzle 102 for inhaling the vaporisation target substance vaporized by the vaporizing means.
3. The method of claim 2, wherein the switching means is a switching means operating according to inhalation pressure or a switching means operating manually.
4. The method of claim 3, characterized in that the vaporizing means is a heating element 110, an ultrasonic generator or a high frequency generator, or an optional combination thereof.
5. The method of claim 4, characterized in that the reservoir 106 is provided spaced apart from an inner side of a casing 104, a fluid passage 116 through which a fluid including gaseous-state substances is movable is provided between an outer circumferential surface of the reservoir 106 and an inner circumferential surface of the casing 104, and the inhalation nozzle 102 is provided with the fluid passage 116 between the inner circumferential surface of the casing 104 and the outer circumferential surface of the reservoir 106.
6. The method of claim 5, characterized in that a plurality of capillary bundles are provided on one side of the reservoir 106 on one surface of the heating element.

7. The method of claim 6, characterized in that an absorbing member 112 capable of absorbing a substance in a liquid state is provided downstream of the heating element 110, and the absorbing member 112 fluidically communicates with the inhalation nozzle 102.
8. The method of claim 7, characterized in that the switching means operates by electrical contact by moving in an inhalation pressure dependent manner by inhalation through the inhalation nozzle 102.
9. The method of claim 8, characterized in that the switching means comprises a negative pressure chamber 408 in which negative pressure is generated by inhalation, a spring 412 movable to an inhalation side by the negative pressure generated in the negative pressure chamber 408, and a moving contact 404 and a fixed contact 406 electrically connected or disconnected by moving a contact point according to the operation of the spring 412.
10. A device for vaporisation and inhalation having a switching means and a power supply means, the device comprising: a storage container in which a filling space for accommodating the mixed composition is secured and an air inhalation tube for inhaling the vaporized mixed composition through an inhalation nozzle is installed; an inductor module that communicates with the inside of the filling space and comprises an inductor for inducing the mixed composition through capillarity, an atomization unit installed adjacent to the inductor module and composed of a heating module including a heating member controlled by the switching means and the power supply means.
11. The device of claim 10, characterized in that the atomization unit is integrally formed with the storage container, or the atomization unit and the storage container are detachable.
12. The device of claim 10, characterized in that the storage container further comprises a liquid introduction valve for introducing the mixed composition.
13. The device of claim 11, characterized in that the storage container further comprises a liquid introduction valve for introducing the mixed composition.

14. The device of claim 10, characterized in that the air inhalation tube is partitioned and installed in the center of the storage container or formed along the inner circumferential surface of the storage container.
15. The device of claim 11, characterized in that the air inhalation tube is partitioned and installed in the center of the storage container or formed along the inner circumferential surface of the storage container.
16. The device of claim 10, characterized in that a fluid insertion hole communicating with the outside is provided on one side of the end of the storage container forming the filling space, and a part of the end of the inductor is inserted into the fluid insertion hole.
17. The device of claim 11, characterized in that a fluid insertion hole communicating with the outside is provided on one side of the end of the storage container forming the filling space, and a part of the end of the inductor is inserted into the fluid insertion hole.
18. The device of claim 10, characterized in that a communication groove communicating with the outside is provided on one side of the end of the storage container forming the filling space, and a part of the end of the inductor is in close contact with to the communication groove.
19. The device of claim 11, characterized in that a communication groove communicating with the outside is provided on one side of an end of the storage container forming the filling space, and a part of the end of the inductor is in close contact with the communication groove.
20. The device of claim 10, characterized in that the inductor module comprises a fixing plate that divides the internal space of the storage container or atomization container into an internal space and an external space, and the fixing plate installs the inductor in the internal space so as to be close to the heating member, and at the same time draws a part of the end of the inductor into the external space by a predetermined distance.
21. The device of claim 11, characterized in that the inductor module comprises a fixing plate that divides the internal space of the storage container or atomization container into an internal space and an external space, and the fixing plate installs the inductor in the internal space so as to be close to the heating member, and at the same time draws a part of the end of the inductor into the external space by a predetermined distance.

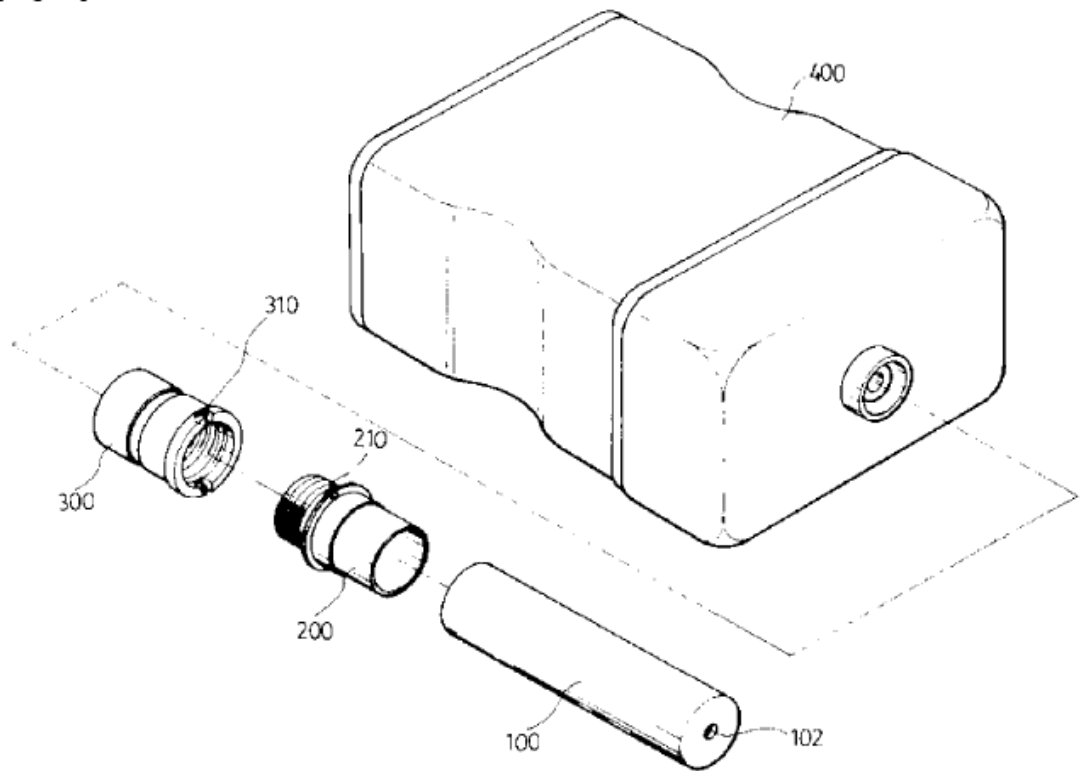
22. The device of claim 10, characterized in that the inductor is prepared from any one of a multi-layered foamed nickel mesh, stainless fiber felt, polymer foam, porous metal, and fiber, or a combination thereof.
23. The device of claim 11, characterized in that the inductor is prepared from any one of a multi-layered foamed nickel mesh, stainless fiber felt, polymer foam, porous metal, and fiber, or a combination thereof.
24. The device of claim 10, characterized in that as the heating member, a filament-type heating element having a coil structure made of a composite such as a nickel alloy or a rare earth element is used, and the inductor is wound from the filament.
25. The device of claim 11, characterized in that as the heating member, a filament-type heating element having a coil structure made of a composite such as a nickel alloy or a rare earth element is used, and the inductor is wound from the filament.
26. The device of claim 10, characterized in that the heating member is a high-frequency or an ultra-high frequency generator, and the inductor is formed into a flat plate structure in close contact with the high-frequency or ultra-high frequency generator.
27. The device of claim 11, characterized in that the heating member is a high-frequency or an ultra-high frequency generator, and the inductor is formed into a flat plate structure in close contact with the high-frequency or ultra-high frequency generator.
28. The device of claim 26, characterized in that the heating member comprises a Peltier element electrically connected in parallel, and a heat absorbing plate of the Peltier element is in physical contact with the heating module.
29. The device of claim 27, characterized in that the heating member comprises a Peltier element electrically connected in parallel, and a heat absorbing plate of the Peltier element is in physical contact with the heating module.
30. The device of claim 10, characterized in that the heating member is a filament-type heating element having a coil structure made of a composite such as a nickel alloy or a rare earth element, and a high-frequency or ultra-high frequency generator.

31. The device of claim 11, characterized in that the heating member is a filament-type heating element having a coil structure made of a composite such as a nickel alloy or a rare earth element, and a high-frequency or ultra-high frequency generator.
32. The device of claim 30, characterized in that the heating member comprises a Peltier element electrically connected in parallel, and a heat absorbing plate of the Peltier element is in physical contact with the heating module.
33. The device of claim 31, characterized in that the heating member includes a Peltier element electrically connected in parallel, and a heat absorbing plate of the Peltier element is in physical contact with the heating module.
34. The device of claim 10, characterized in that the switching means is either automatic or manual, or both.
35. The device of claim 11, characterized in that the switching means is either automatic or manual, or both.
36. A composition for vaporisation and inhalation among mixed compositions applied to the device for vaporisation and inhalation according to claim 10, the composition being characterized in that the composition for vaporisation and inhalation is any one among general nutrients, minerals, vitamins, amino acids, and bioactive agents and at least one vaporisation-promoting composition selected from propylene glycol, glycerin, or ethanol is mixed in a weight ratio of 0.0005 to 0.5:1.
37. The composition of claim 36, characterized in that the vaporisation-promoting composition is mixed in a weight ratio of 0.0005 to 0.05:1.
38. The composition of claim 36, characterized in that the general nutrient is: any one selected from among water, proteins, lipids, carbohydrates, insoluble dietary fibers, soluble dietary fibers, total dietary fibers and sugar; any one or a combination of two or more selected from among calcium, phosphorus, iron, sodium, magnesium, manganese, zinc, cobalt, copper, molybdenum, selenium, fluorine, iodine, ash, calcium, phosphorus, iron, sodium, and zinc as a mineral; any one or a combination of two or more selected from among vitamin A, retinol (RE), beta-carotene, thiamine, riboflavin, niacin, vitamin C, vitamin B6, pantothenic acid, vitamin B12, folic acid, vitamin D, vitamin E, vitamin K, vitamins, and thiamine as a vitamin; any one or a combination of two or more selected from among isoleucine, leucine, lysine, methionine, cysteine, phenylalanine, tyrosine, threonine, tryptophan, valine, histidine, arginine, aspartic acid, glutamic acid, glycine, proline, and serine as an amino acid; or any one or a combination of two or more selected from among daidzein, genistein, glycitein, cyanidin, delphinidin, malvidin, pelargonidin, penonidin, peturidine, epicatechin, epicatechin-3-Galleate, epicallocatechin, epicallocatechin-3-galleate, catechin, gallocatechin, eriodictyol, hesperetin, naringenin, epignin, luteolin, isorhamnetin, kaempferol, myricetin, quercetin, monomeric proanthocyanidin, dimeric proanthocyanidin, trimeric proanthocyanidin, 4-6-meric proanthocyanidins, 7-10-meric proanthocyanidins, polymeric proanthocyanidin, choline, betanin, procholine, glycerophosphocholine, phosphocholine, phosphatidylcholine, and sphingomyelin as a bioactive agent.

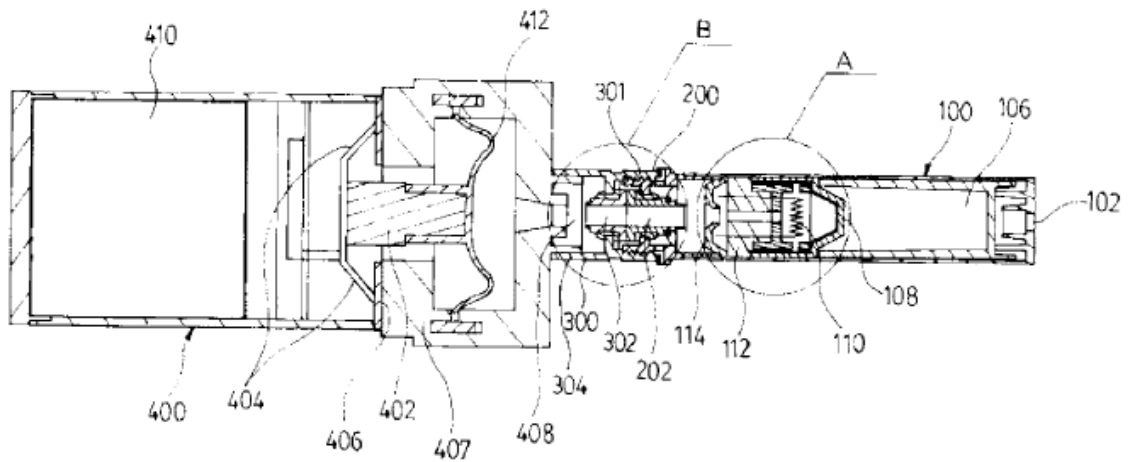
39. The composition of claim 37, characterized in that the general nutrient is: any one selected from among water, proteins, lipids, carbohydrates, insoluble dietary fibers, soluble dietary fibers, total dietary fibers and sugar; any one or a combination of two or more selected from among calcium, phosphorus, iron, sodium, magnesium, manganese, zinc, cobalt, copper, molybdenum, selenium, fluorine, iodine, ash, calcium, phosphorus, iron, sodium, and zinc as a mineral; any one or a combination of two or more selected from among vitamin A, retinol (RE), beta-carotene, thiamine, riboflavin, niacin, vitamin C, vitamin B6, pantothenic acid, vitamin B12, folic acid, vitamin D, vitamin E, vitamin K, vitamins, and thiamine as a vitamin; any one or a combination of two or more selected from among isoleucine, leucine, lysine, methionine, cysteine, phenylalanine, tyrosine, threonine, tryptophan, valine, histidine, arginine, aspartic acid, glutamic acid, glycine, proline, and serine as an amino acid; or any one or a combination of two or more selected from among daidzein, genistein, glycitein, cyanidin, delphinidin, malvidin, pelargonidin, penonidin, peturidine, epicatechin, epicatechin-3-Galleate, epicallocatechin, epicallocatechin-3-galleate, catechin, gallocatechin, eriodictyol, hesperetin, naringenin, epignin, luteolin, isorhamnetin, kaempferol, myricetin, quercetin, monomeric proanthocyanidin, dimeric proanthocyanidin, trimeric proanthocyanidin, 4-6-meric proanthocyanidins, 7-10-meric proanthocyanidins, polymeric proanthocyanidin, choline, betanin, procholine, glycerophosphocholine, phosphocholine, phosphatidylcholine, and sphingomyelin as a bioactive agent.

40. The composition of claim 36, characterized in that the composition for vaporisation and inhalation further comprises one selected from among: a nutrient of any one among amino acids, Ginkgo Biloba, coenzyme Q10 (Co-Q10), Phosphatidyl Serine (PS), Alpha Lipoic Acid, inorganic salts, and minerals; a tea component of any one among green tea, solomon's seal tea, schizandra chinensis tea, Liriope platyphylla tea, corn silk tea, plum tea, tangerine peel tea, aged tangerine peel tea, chrysanthemum tea, Eleutherococcus sessiliflorus, quince, arrowroot, wolfberry, cornus officinalis, persimmon leaves, eucommia, oolong, and cluster mallow seed tea; a fruit component of any one among orange, lemon, and grapefruit; a vegetable component of any one among broccoli extract, cabbage extract, onion, garlic, ginger, lettuce extract, kale extract, bellflower extract, and tomato extract; an oriental medicine component of any one among ginkgo leaves, black raspberry, wolfberry, Schisandrae fructus, Cnidii fructus, Semen cuscutae, Corni fructus, and Cassiae semen; and a functional component of any one among royal jelly, plum, Hovenia dulcis Thunb, and xylitol, or a group selected from a combination of two or more thereof.
41. The composition of claim 37, characterized in that the composition for vaporisation and inhalation further comprises one selected from among: a nutrient of any one among amino acids, Ginkgo Biloba, coenzyme Q10 (Co-Q10), Phosphatidyl Serine (PS), Alpha Lipoic Acid, inorganic salts, and minerals; a tea component of any one among green tea, solomon's seal tea, schizandra chinensis tea, Liriope platyphylla tea, corn silk tea, plum tea, tangerine peel tea, aged tangerine peel tea, chrysanthemum tea, Eleutherococcus sessiliflorus, quince, arrowroot, wolfberry, cornus officinalis, persimmon leaves, eucommia, oolong, and cluster mallow seed tea; a fruit component of any one among orange, lemon, and grapefruit; a vegetable component of any one among broccoli extract, cabbage extract, onion, garlic, ginger, lettuce extract, kale extract, bellflower extract, and tomato extract; an oriental medicine component of any one among ginkgo leaves, black raspberry, wolfberry, Schisandrae fructus, Cnidii fructus, Semen cuscutae, Corni fructus, and Cassiae semen; and a functional component of any one among royal jelly, plum, Hovenia dulcis Thunb, and xylitol, or a group selected from a combination of two or more thereof.

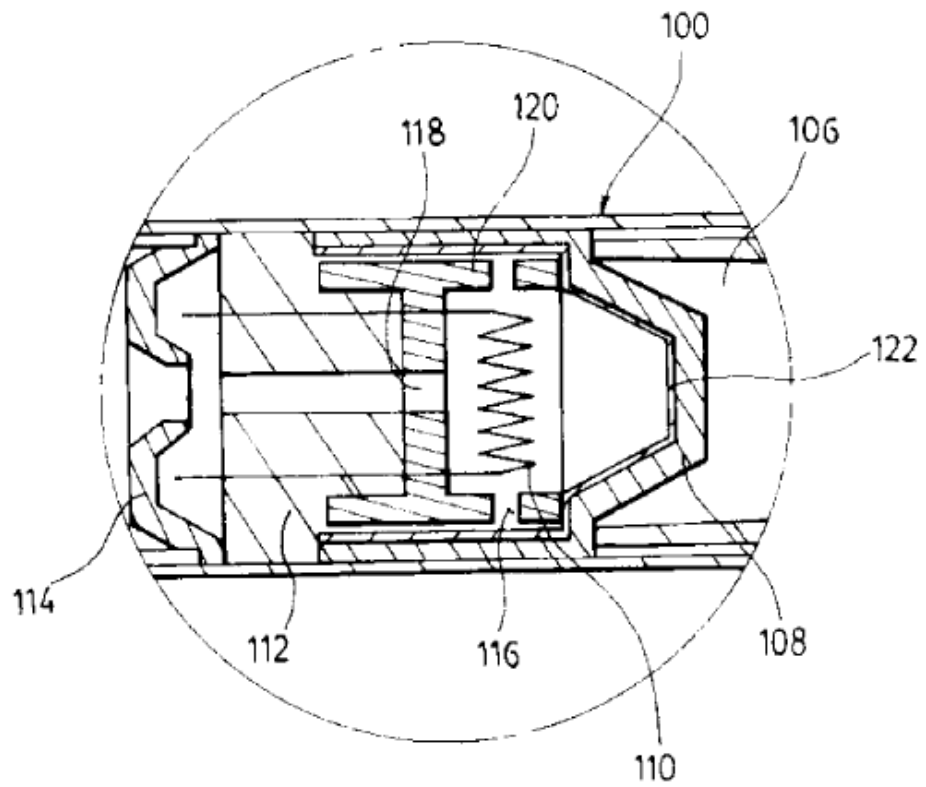
[Fig. 1]



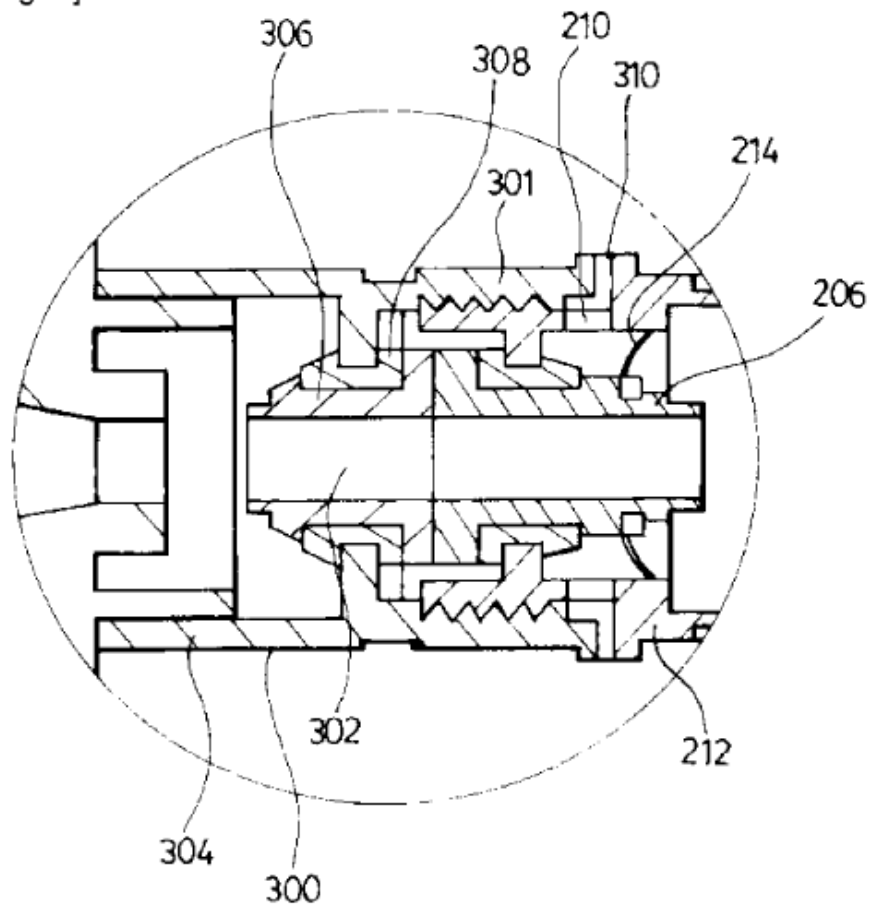
[Fig. 2]



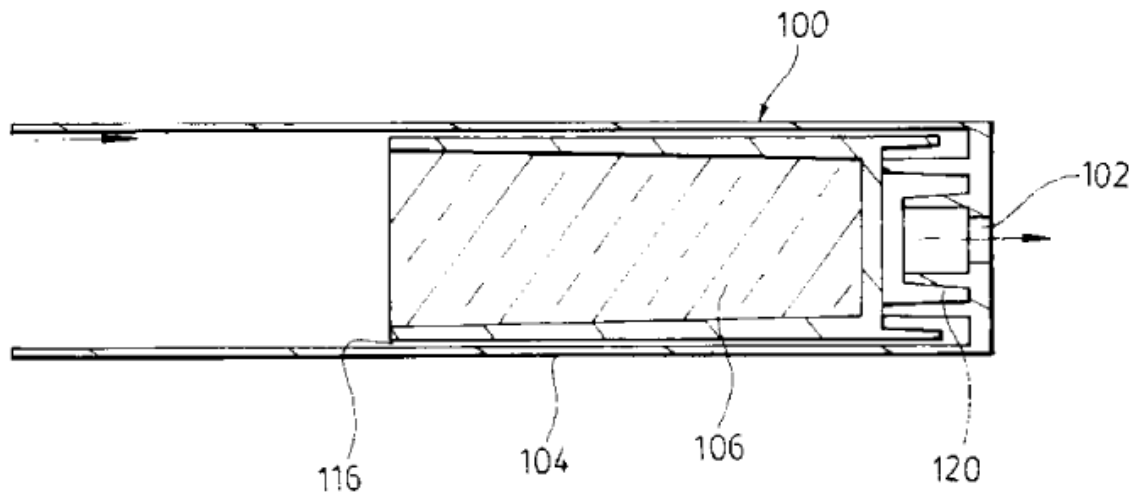
[Fig. 3]



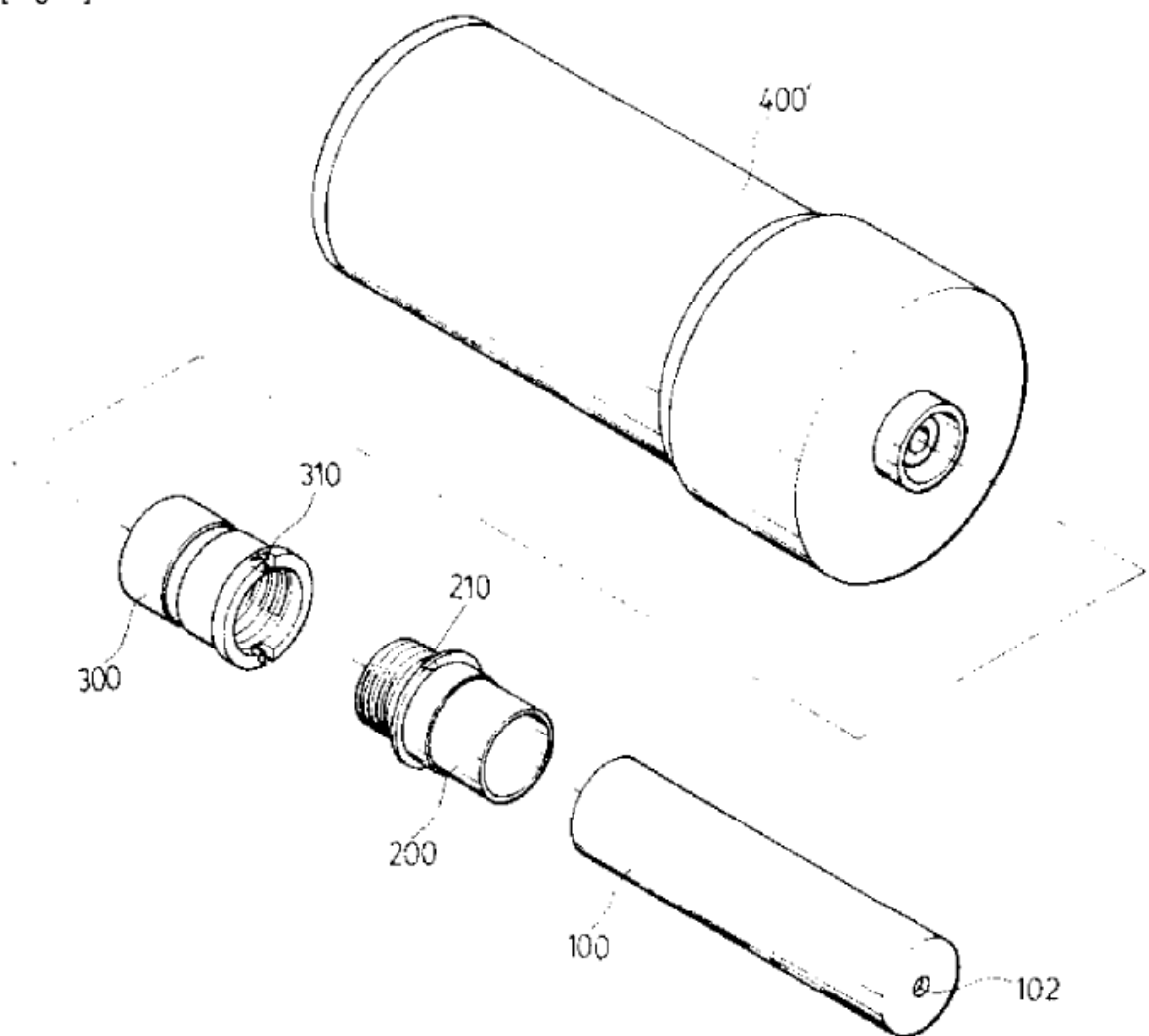
[Fig. 4]



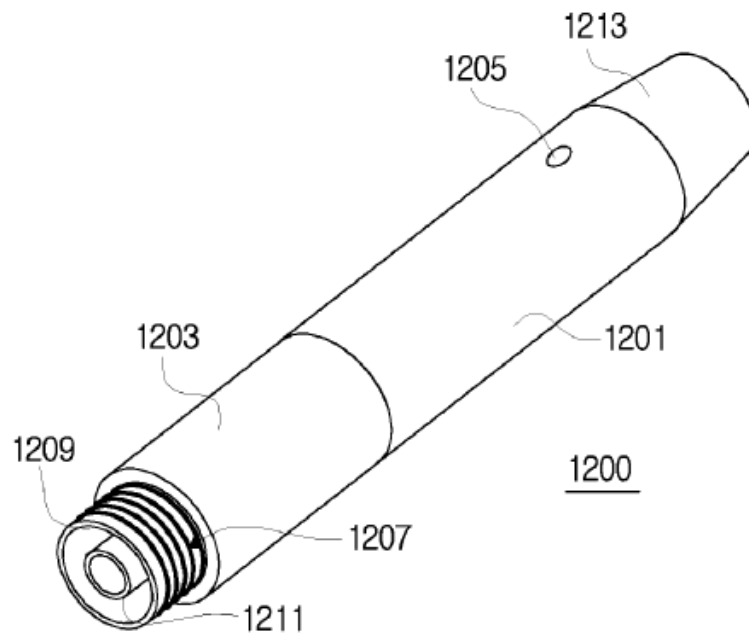
[Fig. 5]



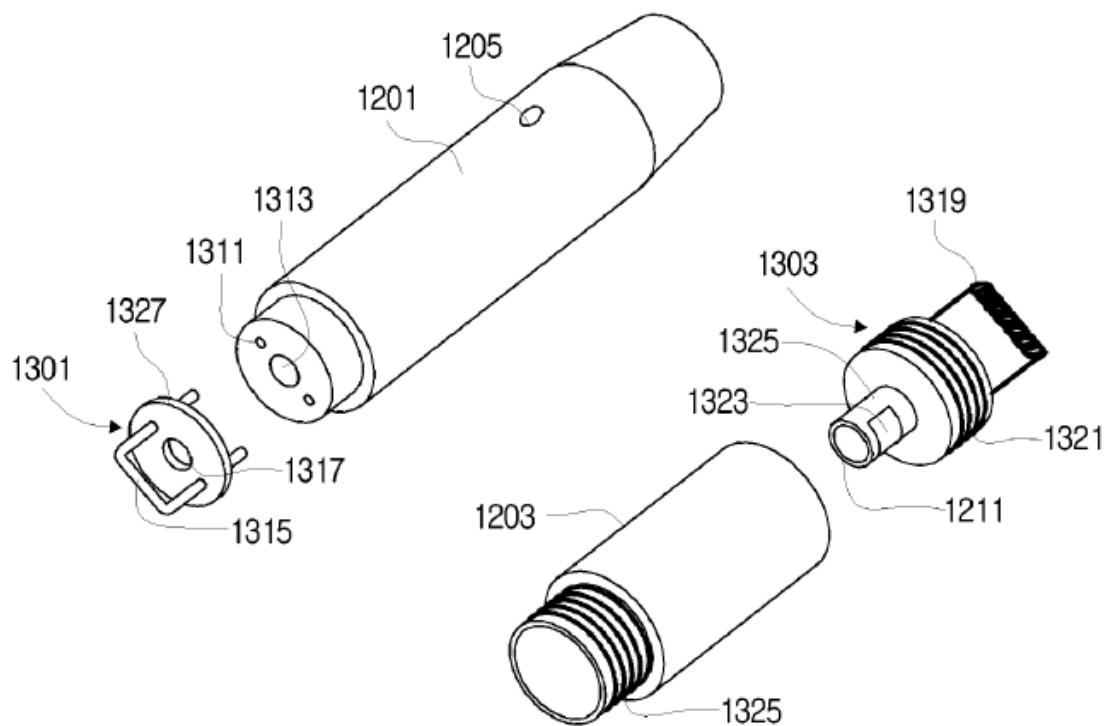
[Fig. 6]



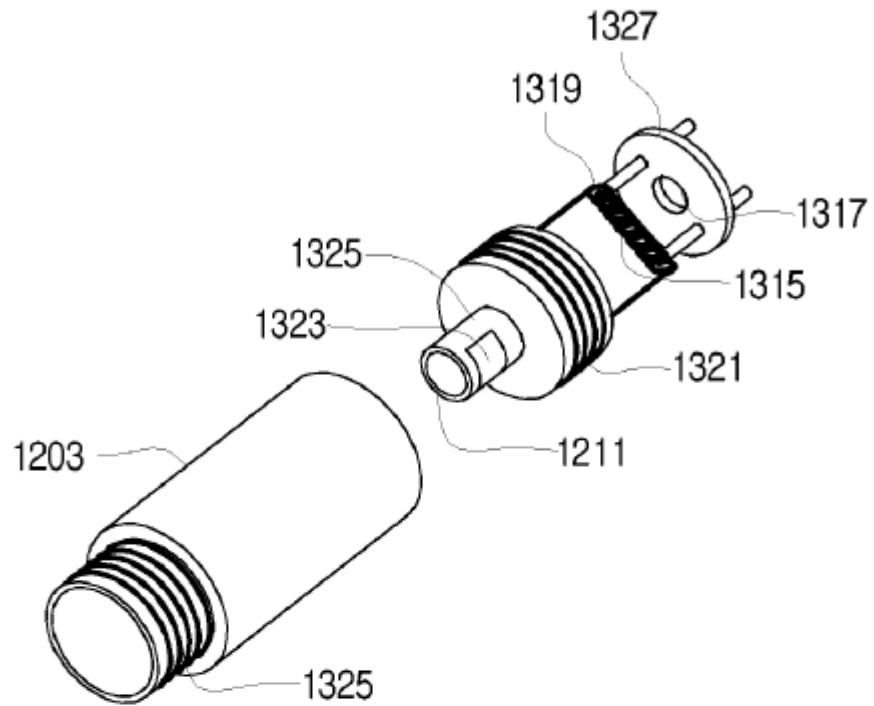
[Fig. 7]



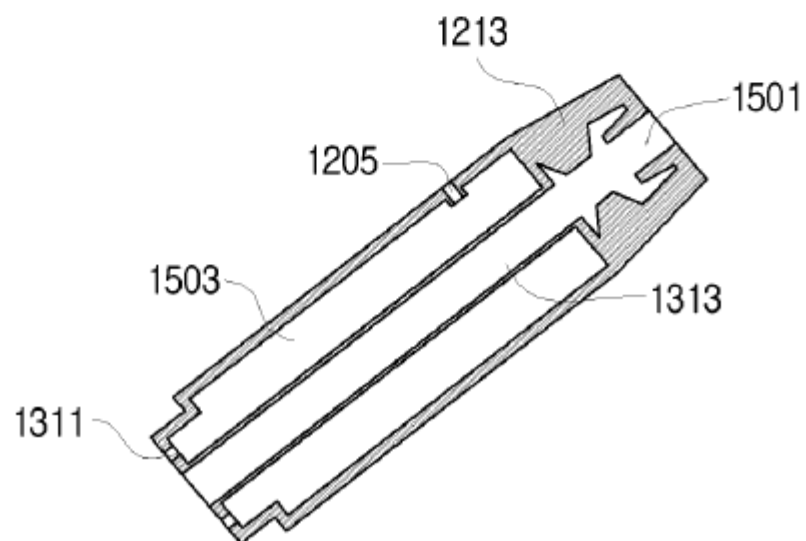
[Fig. 8]



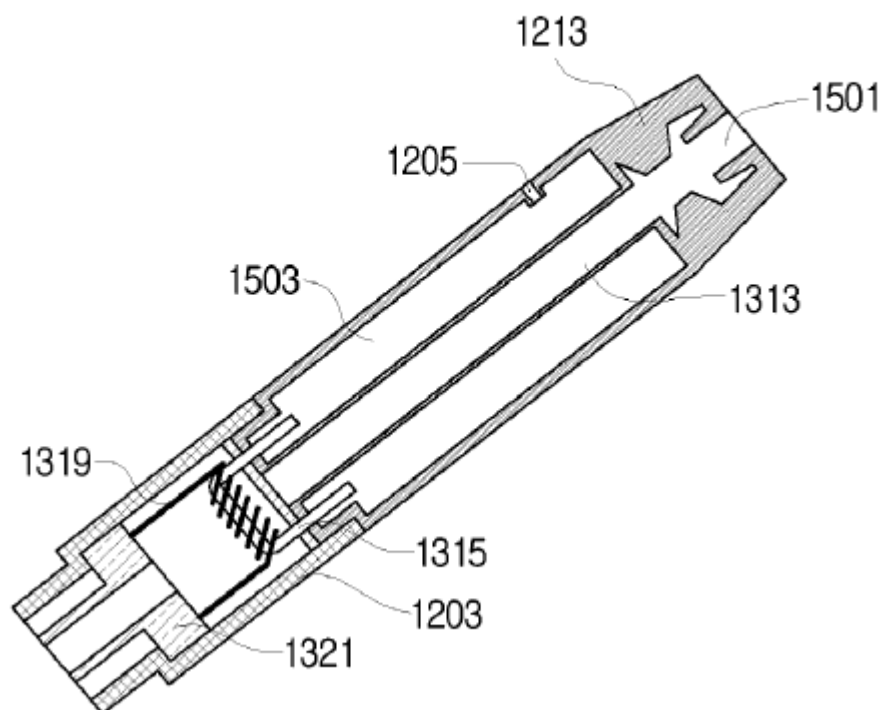
[Fig. 9]



[Fig. 10]



[Fig. 11]





August 21, 2023

Certification

Welocalize Translations

TRANSLATOR'S DECLARATION:

I, [Chulhoon Cho], hereby declare:

That I possess advanced knowledge of the Korean and English languages. The attached Korean into English translation has been translated by me and to the best of my knowledge and belief, it is a true and accurate translation of:
WO2011065754A2 -- Cho.pdf

A handwritten signature in black ink, appearing to read "Chulhoon Cho", written over a horizontal line.

Project Number: WGM_2308_P0065

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