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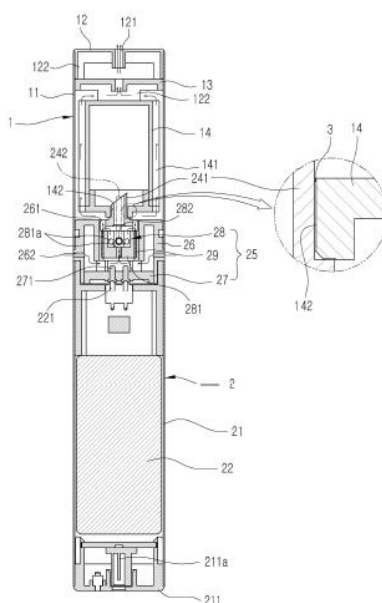
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## (54) ELECTRONIC CIGARETTE

### (57) Abstract

The present design relates to an electronic cigarette capable of preventing liquid from leaking from the storage unit without using a piece of cotton or sponge, storing a large amount of liquid, and easily filling or replacing the liquid, more specifically, is achieved by an electronic cigarette comprising a liquid receiving unit comprising a case with an intake portion formed at one end, and a storage unit with an injection portion corresponding to the viscosity of the liquid formed so as to inject a liquid having a predetermined viscosity at one end and prevent the injected liquid from flowing out, wherein a passage is formed to allow the storage unit to be inserted into the case and be connected with the intake portion between the case and the storage unit; and an atomizer comprising a power supply unit comprising a battery for supplying power and a switch for connecting or disconnecting the power of the battery, an absorption unit having one end formed with an outer diameter smaller than the injection portion and fitted into the injection portion to absorb the liquid received in the liquid receiving unit, and a combustion unit for receiving power from the battery to vaporize the liquid absorbed in the absorption unit, wherein the atomizer has an inlet portion formed to be connected to a passage in one part to inhale air and is installed between the liquid receiving unit and the power supply unit; wherein a gap through which air flows in is formed between the injection portion and the absorption unit when the absorption unit is fitted into the injection portion while the liquid is filled inside the liquid receiving unit, and the absorption unit absorbs the liquid received in the liquid receiving unit as air flows in through the gap, and when the absorbed liquid is vaporized in the atomizer to produce smoke and the smoke is inhaled through the intake portion, the outside air is inhaled through the inlet portion and the vaporized smoke and the inhaled outside air are discharged through the intake portion. Accordingly, the present design has the advantage of being able to store a large amount of liquid and easily fill or replace the liquid while preventing liquid from leaking from the storage unit, preventing liquid from being supplied excessively or only a small amount under a set amount, and preventing the wick of the combustion unit from burning.

*Representative figure* – FIG. 3



*Scope of claims of utility model***Claim 1**

An electronic cigarette comprising a liquid receiving unit comprising a case with an intake portion is formed at one end, and a storage unit with an injection portion corresponding to the viscosity of the liquid formed so as to inject a liquid having a predetermined viscosity at one end and prevent the injected liquid from flowing out, wherein a passage is formed to allow the storage unit to be inserted into the case and be connected with the intake portion between the case and the storage unit; and

an atomizer comprising a power supply unit comprising a battery for supplying power and a switch for connecting or disconnecting the power of the battery, an absorption unit comprising an inlet unit having one end formed to have a tubular structure with an outer diameter smaller than the injection portion to be fitted inside the injection portion and an absorbing member inserted into the inlet portion to absorb the liquid stored in the storage unit, and a combustion unit for receiving power from the battery to vaporize the liquid absorbed in the absorption unit, wherein the atomizer has an inlet portion formed to be connected to the passage to inhale air and is coupled to the case;

wherein the absorbing member passes through the combustion unit, and when one end of the inlet unit is fitted into the injection portion while the inside of the storage unit is filled with the liquid, a gap through which air flows in is formed between the injection portion and one end of the inlet unit, the absorption unit absorbs the liquid received in the liquid receiving unit as air flows into the storage unit through the gap, and the combustion unit vaporizes the absorbed liquid to produce smoke.

**Claim 2**

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**Claim 3**

The electronic cigarette of claim 1,

wherein one end of the inlet unit is formed to be inclined to more easily absorb the liquid received from the liquid receiving unit.

**Claim 4**

The electronic cigarette of claim 1,

further comprising a mesh for absorbing and retaining the liquid around the perimeter of the combustion unit to prevent the liquid absorbed in the absorption unit from leaking into the inlet portion and to prevent the liquid from blocking the inlet portion.

**Claim 5**

The electronic cigarette of claim 1,

further comprising a charging terminal connected to the battery on one part of the atomizer to charge the battery.

*Specification**Technical Field*

[0001] The present design relates to an electronic cigarette in which a user inhales smoke produced by combusting a liquid containing nicotine like a cigarette, and more specifically, to an electronic cigarette capable of preventing liquid from leaking from the storage unit without using a piece of cotton or sponge, storing a large amount of liquid, and easily filling or replacing the liquid.

*Background Art*

- [0002] The conventional electronic cigarette consists of a storage unit for the nicotine containing liquid and an atomizer that combusts the liquid and produces smoke.
- [0003] Here, a piece of cotton or a sponge is inserted into the storage unit to prevent the liquid from running down, but the viscosity of the liquid prevents it from being absorbed evenly. As a result, the liquid concentrates in one place, which causes a problem of excessive liquid supply when supplying the liquid. This delays the time it takes for the liquid in the upper portion of the cotton or sponge to descend and decreases the amount that can be consumed. In particular, if a large amount of liquid is put into the storage unit, it can leak outside the electronic cigarette or concentrate in the atomizer and reduce the amount that can be combusted. Additionally, because a piece of cotton or a sponge must be inserted into the storage unit, there is not enough space to store the liquid, so it has to be refilled frequently.
- [0004] To solve this problem, the electronic cigarette of the previously filed Unexamined Utility Model No. 2009-9075 omitted the cotton or sponge and the storage unit combined the cylinder and piston by screwing them together. However, to vape with an electronic cigarette, the mouthpiece needs to be rotated to move the piston forward, which presents the inconvenience of having to rotate it for every use. In particular, because the piston is disk-shaped, a problem may arise where the liquid fails to be sprayed when the piston is rotated.

*Details of design**Problem to be solved*

- [0005] The present design has been devised to solve the above problems, and its purpose is to provide an electronic cigarette capable of storing a large amount of liquid and easily filling or replacing the liquid while preventing liquid from leaking from the storage unit by forming the injection portion of the storage unit to correspond to the viscosity of the liquid, preventing liquid from being supplied excessively or only a small amount under a set amount, and preventing the wick of the combustion unit from burning.

*Means to solve the problem*

- [0006] The purpose of the present design is achieved by an electronic cigarette comprising a liquid receiving unit comprising a case with an intake portion is formed at one end, and a storage unit with an injection portion corresponding to the viscosity of the liquid formed so as to inject a liquid having a predetermined viscosity at one end and prevent the injected liquid from flowing out, wherein a passage is formed to allow the storage unit to be inserted into the case and be connected with the intake portion between the case and the storage unit; and an atomizer comprising a power supply unit comprising a battery for supplying power and a switch for connecting or disconnecting the power of the battery, an absorption unit having one end formed with an outer diameter smaller than the injection portion and fitted into the injection portion to absorb the liquid received in the liquid receiving unit, and a combustion unit for receiving power from the battery to vaporize the liquid absorbed in the absorption unit, wherein the atomizer has an inlet portion formed to be connected to a passage in one part to inhale air and is coupled to the case; wherein a gap through which air flows in is formed between the injection portion and the absorption unit when the absorption unit is fitted into the injection portion while the liquid is filled inside the liquid receiving unit, and the absorption unit absorbs the liquid received in the liquid receiving unit as air flows in through the gap, and when the absorbed liquid is vaporized in the atomizer to produce smoke and the smoke is inhaled through the intake portion, the outside air is inhaled through the inlet portion and the vaporized smoke and the inhaled outside air are discharged through the intake portion.
- [0007] Additionally, it may further comprise an absorbing member that penetrates the combustion unit and is fitted into the absorption unit to facilitate the better absorption of liquid in the absorption unit and to facilitate better vaporization of the absorbed liquid in the combustion unit.
- [0008] Additionally, one end of the absorption unit may be formed to be inclined to more easily absorb the liquid received from the liquid receiving unit.
- [0009] Additionally, it may further comprise a mesh for absorbing and retaining the liquid around the perimeter of the combustion unit to prevent the liquid absorbed in the absorption unit from leaking into the inlet portion and to prevent the liquid from blocking the inlet portion.
- [0010] Additionally, it may further comprise a charging terminal connected to the battery on one part of the atomizer to charge the battery.

*Effect of the design*

- [0011] The present design has the effect of preventing liquid from leaking from the storage unit where the liquid is stored without using a piece of cotton or sponge, and because the liquid does not leak, there is an advantage that it is easy to combine the liquid receiving unit with the atomizer, and because it does not use cotton or sponge, there is an advantage that a larger amount of liquid can be stored. Additionally, because there is no phenomenon of liquid clumping up in one part of the cotton or sponge when refilling the liquid as in the prior art, there is an effect of preventing liquid from being supplied excessively or below a set amount when supplying liquid to the combustion unit. In particular, the liquid can always be supplied at a constant speed

and in a constant amount, which has the effect of preventing the wick installed in the combustion unit from burning while easily producing smoke from combusting a certain amount of liquid.

*Brief description of the drawings*

[0012] FIG. 1 is a perspective view of an electronic cigarette according to an embodiment of the present design.

FIG. 2 is an exploded perspective view of an electronic cigarette according to an embodiment of the present design.

FIG. 3 is a front cross-sectional view of an electronic cigarette according to an embodiment of the present design.

FIG. 4 is a side cross-sectional view of an electronic cigarette according to an embodiment of the present design.

*Detailed description of the embodiments*

[0013] To briefly describe the present design, the present design is achieved by an electronic cigarette comprising a liquid receiving unit (1) comprising a case (11) with an intake portion (121) is formed at one end, and a storage unit (14) with an injection portion (142) corresponding to the viscosity of the liquid formed so as to inject a liquid having a predetermined viscosity at one end and prevent the injected liquid from flowing out, wherein a passage is formed to allow the storage unit (14) to be inserted into the case (11) and be connected with the intake portion (121) between the case (11) and the storage unit (14); and an atomizer (2) comprising a power supply unit (20) comprising a battery (22) for supplying power and a switch (23) for connecting or disconnecting the power of the battery (22), an absorption unit (24) comprising an inlet unit (241) having one end formed to have a tubular structure with an outer diameter smaller than the injection portion (142) to be fitted inside the injection portion (142) and an absorbing member (242) inserted into the inlet portion (241) to absorb the liquid stored in the storage unit (14), and a combustion unit (25) for receiving power from the battery (22) to vaporize the liquid absorbed in the absorption unit (24), wherein the atomizer has an inlet portion (262) formed to be connected to the passage to inhale air and is coupled to the case (11); wherein the absorbing member (242) passes through the combustion unit (25), and when one end of the inlet unit (241) is fitted into the injection portion (142) while the inside of the storage unit (14) is filled with the liquid, a gap (3) through which air flows in is formed between the injection portion (142) and one end of the inlet unit (241), the absorption unit (24) absorbs the liquid received in the liquid receiving unit (1) as air flows into the storage unit (14) through the gap (3), and the combustion unit (25) vaporizes the absorbed liquid to produce smoke.

[0014] Deleted.

[0015] Additionally, one end of the absorption unit (24) may be formed to be inclined to more easily absorb the liquid received from the liquid receiving unit (1).

[0016] Additionally, it may further comprise a mesh (29) for absorbing and retaining the liquid around the perimeter of the combustion unit (25) to prevent the liquid absorbed in the absorption unit (24) from leaking into the inlet portion (262) and to prevent the liquid from blocking the inlet portion (262).

[0017] Additionally, it may further comprise a charging terminal (211a) connected to the battery (22) on one part of the atomizer (2) to charge the battery (22).

[0018] FIG. 1 is a perspective view of an electronic cigarette according to an embodiment of the present design.

[0019] FIG. 2 is an exploded perspective view of an electronic cigarette according to an embodiment of the present design.

[0020] FIG. 3 is a front cross-sectional view of an electronic cigarette according to an embodiment of the present design.

[0021] FIG. 4 is a side cross-sectional view of an electronic cigarette according to an embodiment of the present design.

[0022] Hereinafter, embodiments according to the present design will be described in detail with reference to the attached figures.

[0023] As shown in FIGS. 1 to 4, the electronic cigarette according to an embodiment of the present design comprises a liquid receiving unit (1) and an atomizer (2).

- [0024] The liquid receiving unit (1) is a place for receiving a liquid containing nicotine and comprises a case (11) and a storage unit (14).
- [0025] The case (11) is roughly in the shape of a cylinder with openings at both ends and an elliptical cross-section, and a cap (12) where an intake portion (121) formed thereon is fitted into the upper portion of the case (11), and a protrusion (122) is formed on the inside of the cap (12) to separate the cap (12) and the storage unit (14). A regulator piece (13) having a structure similar to the cap (12) may be further installed between the cap (12) and the storage unit (14) to reduce the inhalation rate. This prevents the inhalation rate from being too fast when the user brings the intake portion (121) to the mouth and inhales and is installed to be similar to the inhalation rate of a cigarette when smoking a typical cigarette. It is apparent that, to control the inhalation rate, the regulator piece (13) may be omitted in the intake portion (121) of the cap (12) may be formed in a different shape. Because the regulator piece (13) corresponds to the structure of the cap (12), a detailed description will be omitted.
- [0026] The storage unit (14) has a cylindrical shape with a roughly elliptical cross-section, has an intake portion (142) formed on one end, has grooves (141) recessed inward on both sides formed in the longitudinal direction, and is inserted into the case (11) with the injection portion (142) directed in the opposite direction to the intake portion (121), that is, in the downward direction. Additionally, when the storage unit (14) is fitted into the case (11), the storage unit (14) gets caught on the protrusion (122) of the regulator piece (13), creating a space by separating the regulator piece (13) and the storage unit (14), and the grooves (141) recessed on both sides of the storage unit (14) gets connected to the space, forming a passage through which air passes between the case (11) and the storage unit (14). The description for this will be provided later.
- [0027] In the above-described storage unit (14), a liquid having a certain viscosity and containing nicotine is stored. In this case, the storage unit (14) has a liquid stored therein, and the injection portion (142) is formed to correspond to the viscosity of the liquid such that the liquid stored inside the storage unit (14) does not spill out even if the injection portion (142) is facing down. In other words, a liquid with a higher viscosity coefficient has a greater surface tension, and the lower the surface tension of the liquid, the smaller the entrance of the injection portion (142), and the higher the surface tension of the liquid, the larger the inner diameter of the injection portion (142) can be formed. Therefore, the inner diameter of the injection portion (142) is formed in consideration of the surface tension of the liquid to the extent that the liquid does not spill out, and the inner diameter of the injection portion (142) is formed with a diameter between 2.5 mm to 3.5 mm in consideration of the optimal amount of liquid supplied to the combustion unit (25). The description for this will also be provided later.
- [0028] The atomizer (2) produces smoke by vaporizing the liquid stored in the storage unit (14) and comprises a main body (21), a power supply unit (20), an absorption unit (24), and a combustion unit (25).
- [0029] The main body (21) is formed roughly the same as the case (11), only slightly longer in length, and has a cover (211) fitted at the end. Additionally, the cover (211) is provided with a charging terminal (211a) into which a charging adapter (not depicted) is inserted.
- [0030] The power supply unit (20) comprises a battery (22) and a switch (23).
- The battery (22) is connected to the charging terminal (211a) and installed inside the main body (21). Furthermore, a power terminal (221) is provided at the upper portion of the battery (22) to supply power to the combustion unit (25).
- [0031] The switch (23) is installed on one side of the main body (21) and turns the power of the battery (22) on or off. The switch (23) is a switch (23) made of a transparent material and an LED lamp (not depicted) is installed inside the switch (23) to indicate inside that the power is turned on. Accordingly, when the switch is pressed (23), the LED lamp receives power from the battery (22) and emits light, and the user can tell that the power is turned on by looking at the luminous state of the LED lamp, and when the pressed switch (23) is released, the LED lamp turns off and the user can tell that the power has been cut off.
- [0032] The combustion unit (25) receives power from the battery (22) and produces smoke by vaporizing the liquid and comprises a connector body (26) a connection unit (27), a heating unit (28), and a mesh (29).
- [0033] The connector body (26) is formed roughly the same in outer diameter as the case (11), is open at the lower end, and has a cylindrical insertion portion (261) formed to penetrate through the upper end and be connected to the opening at the lower end. Additionally, on both sides of the connector body (26), inlet portions (262) through which outside air is inhaled are formed to be connected to the opening of the connector body (26), wherein the upper end of the connector body (26) is fitted to the lower end of the case (11), and the lower end of the connector body (26) is fitted to the upper end of the main body (21).
- [0034] The connection unit (27) is formed in a manner that its outer shape corresponds to the opening of the connector body (26), and to supply power from the battery (22) to the heating piece (282), the connection unit (27) having a connection terminal (271) is fitted into the lower end of the connector body (26) for connection with the heating piece (282) and connection with the power terminal (221).
- [0035] The heating unit (28) comprises a hearing piece receiving unit (281) and a heating piece (282).
- [0036] The heating piece receiving unit (281) is roughly cylindrical with an opening at the upper end, has a through hole (281a) through which air flows in formed at the lower end and both sides, and is inserted into the insertion portion (261) of the connector body (26). In this case, a gap is formed between the heating piece receiving unit (281) and the insertion portion (261) of the connector body (26) to allow air to pass through.

- [0037] The heating piece (282) is a nichrome wire roughly in a coil shape and is disposed inside the heating piece receiving unit (281), and both ends of the heating piece (282) penetrate the lower end of the heating piece receiving unit (281) to connect with the connection terminal (271) of the connection unit (27). Accordingly, the heating piece (282) receives power from the battery (22) and generates heat to vaporize the liquid. The description for this will be provided later.
- [0038] The mesh (29) is roughly in the form of a fine steel scrubber, surrounds the perimeter of the connector body (26), and is disposed between the heating piece receiving unit (281) and the insertion portion (261). When liquid flows into the heating piece (282), the liquid may block the through hole (281a) of the heating piece receiving unit (281) and block the outside air flowing in from the connector body (26), such that the mesh (29) is wrapped around the connector body (26) to allow the mesh (29) to absorb the liquid flowing into the connector body (26) through the through hole (281a) formed on the side of the connector body (26), thereby preventing the through hole (281a) from being clogged. Additionally, because the mesh (29) traps liquid, it allows for continuous vaporization in the heating piece (282), and it also blocks heat generated from the heating piece (282) from being transferred to the connector body (26).
- [0039] The absorption unit (24) comprises an inlet portion (241) and an absorbing member (242).
- [0040] The inlet unit (241) is formed in a wedge-shaped cylindrical shape with an inclined upper end, with an outer diameter smaller than the inner diameter of the injection portion (142), the lower end is formed to be stepped and expanded compared to the upper end, the lower end is inserted into the insertion portion (261), and the upper end is inserted into the injection portion (142) of the storage unit (14). In this case, with the lower end of the inlet unit (241) fitted into the insertion portion (261), both sides of the lower end of the inlet unit (241) are cut and formed between the insertion portion (261) and the inlet unit (241) such that external air flowing in from the inlet portion (262) can pass through. Accordingly, a gap (3) is formed between the injection portion (142) and the inlet unit (241), and as air flows into the storage unit (14) through this gap (3), the liquid received in the storage unit (14) flows down the inlet unit (241). The reason for forming the upper end of the inlet unit (241) to be inclined is not only to form a large opening for suction to facilitate suctioning the liquid, but also to ensure that the liquid stored in the storage unit (14) is used up to the last drop. For example, if the upper end of the inlet unit (241) is formed horizontally rather than inclined, when the inlet unit (241) is fitted into the injection portion (142), the upper end of the inlet unit (241) will protrude above the upper end of the injection unit (142). In other words, the liquid remains in the storage unit (14) to the extent that the inlet unit (241) protrudes above the upper end of the injection unit (142), and not all the liquid can be used. However, in the present design, the upper end of the inlet unit (241) is fitted to protrude above the upper end of the injection unit (142), and the upper end of the inlet unit (241) is formed to be inclined such that the entrance at the upper end of the inlet unit (241) extends to the upper end of the injection unit (142), thereby facilitating suction of the liquid contained in the storage unit (14) and allowing the liquid to be used to the very last drop.
- [0041] Additionally, the tubular inlet unit (241) surrounding the absorbing member (242) simultaneously performs the function of combining with the storage unit (14). In the structure in which the tubular inlet unit (241) surrounds the absorbing member (242), the inlet unit (241) surrounds the upper portion of the absorbing member (242) when replacing the storage unit (14), which prevents the absorbing member (242) from being damaged by directly hitting the storage unit (14). Furthermore, the inlet unit (241) is fitted into the injection portion (142) of the storage unit (14) and simultaneously performs the role of fixing one end of the storage unit (14), thereby allowing the storage unit (14) to be securely fastened inside the case (11).
- [0042] The inlet unit (241) is formed to have one area on both sides of the bottom surface of the inlet unit (241) protrude to form a gap between the heating piece receiving unit (281) and the inlet unit (241). The description for this will be provided later.
- [0043] The absorbing member (242) is roughly in the form of a wick made of heat-resistant synthetic fiber or the like, is fitted into and penetrates the heating piece (282), and both ends are fitted into the lower end of the inlet unit (241), thereby being installed to protrude a predetermined amount above the upper end of the inlet unit (241). Accordingly, the absorbing member (242) more easily absorbs the viscous liquid received in the storage unit (14), and the absorbed liquid is transferred to the heating piece (282) where the heating piece (282) heats the liquid absorbed by the absorbing member (242) and vaporizes it to produce smoke.
- [0044] Hereinafter, the operating state of an electronic cigarette according to an embodiment of the present invention will be described in detail with reference to FIGS. 2 and 3.
- [0045] The case (11) is separated from the connector body (26), the liquid is injected into the storage unit (14), and then the injection portion (142) is fitted into the connector body (26) to be fitted into the upper end of the inlet unit (241).
- [0046] When the case (11) is fitted into the connector body (26), the absorbing member (242) absorbs the liquid contained in the storage unit (14) and transfers it to the heating piece (282). At this time, when the user presses the switch (23), the heat is generated in the heating piece (282) and vaporizes the liquid to produce smoke.
- [0047] When the user presses the switch (23) for a certain period of time, holds the upper end of the case (11) in his or her mouth, and inhales through the discharge hole, external air gets inhaled through the inlet portion (262) of the connector body (26), and the inhaled air flows in through the through hole (281a) formed at the lower end of the heating piece receiving unit (281). At this time, the smoke generated by the heating piece (282) gets mixed with the inhaled air and passes through the through hole (281a) formed on the side of the heating piece receiving portion (281) and through the mesh (29) and comes out through the gap



between the suction unit and the insertion portion (261). Also, the smoke coming out of the gap goes through the groove (141) of the storage unit (14) and exits through the intake portion (121). Additionally, the smoke generated by the heating piece (282) also exits through the gap formed between the suction unit and the heating piece receiving unit (281). Accordingly, the user experiences smoking as if it is burnt like a regular cigarette while inhaling the smoke discharged through the intake portion (121).

- [0048] When the user stops pressing the switch (23), the power supply to the heating piece (282) gets cut off and the heating piece (282) no longer produces smoke. In other words, because the heating piece (282) operates only when the switch is pressed (23), it is possible to prevent power from being continuously supplied to the heating piece (282) even if the user makes a mistake.
- [0049] Therefore, the present design can store a large amount of liquid in the storage unit (14), and in particular, because the flow of liquid is constant, liquid can be supplied to the heating piece (282) at a constant rate and a constant amount, making it possible to generate a constant amount of smoke. This is possible due to the structure in which the injection portion (142) of the storage unit (14) is formed to correspond to the viscosity coefficient of the liquid to prevent the liquid from pouring out of the storage unit (14) due to the surface tension of the liquid even when the injection portion (142) is pointed downward after storing the liquid in the storage unit (14).
- [0050] For example, when a piece of cotton or a sponge is used to store liquid as in the conventional electronic cigarette, it takes a while for the liquid stored at the upper end of the sponge or cotton to come down, so the liquid cannot be properly supplied to the heating piece (282), and in particular, there is a problem in that the liquid remaining in the storage unit (14) cannot be used to the very last drop. Additionally, if the sponge or cotton absorbs too much liquid to store a large amount of liquid, the liquid will drip down during the liquid refilling process, and furthermore, due to the excessive supply of liquid to the heating piece (282), there will be a problem where the liquid leaks into the inlet portion (262) through which external air gets inhaled, or the heating piece (282) fails to properly vaporize the liquid and does not produce smoke.
- [0051] However, the present invention can solve the above-described problem because it does not use a piece of cotton or a sponge, facilitates liquid refilling, and prevents excessive supply of liquid to the heating piece.
- [0052] Meanwhile, to smoothly wet the absorbing member (242) by standing up the storage unit (14), the absorbing member (242) needs to protrude into the interior of the storage unit (14) to facilitate wetting the absorbing member (242) with liquid. However, if the upper portion of the inlet portion (241) does not have an inclined cut structure, the liquid will not be properly supplied to the absorbing member (242) when the liquid level is lower than the height of the inlet unit (241) when the storage unit (14) is stood up. Accordingly, even if some liquid remains in the storage unit (14), the liquid cannot be supplied to the absorbing member (242), which will cause a problem of having to replace it with a new storage unit. Additionally, if the storage unit (14) is repeatedly tilted and stood up, air bubbles may be formed and remain inside the inlet unit (241). In other words, if air bubbles remain inside the inlet unit (241), they will interfere with the supply of liquid to the absorbing member (242), resulting in a supply of less amount of liquid than the intended amount or almost no supply of liquid.
- [0053] However, because the present design has a structure in which the upper end of the inlet unit (241) is inclined and cut, air bubbles can easily escape in a lateral or upward direction even when the storage unit (14) is stood up, preventing air bubbles from remaining inside the inlet unit (241). Additionally, the present design has a structure in which the inclined upper end entrance of the inlet unit (241) is installed in a manner that it starts from the upper end of the injection portion (142) and protrudes to the upper portion of the injection portion (142), and the absorbing member (242) is installed inside the inlet portion (241), so the absorbing member (242) can absorb the liquid stored in the storage unit (14) to the last drop, making it possible to completely consume the liquid received in the storage unit (14) to the very last drop. Accordingly, by using the liquid efficiently, it can be used for a long time, the refill cycle of the liquid can be reduced, and the hassle of refilling can be eliminated. Furthermore, because the inlet unit (241) is cut at an angle, the exposed area of the absorbing member (242) is large, which allows the liquid to be sufficiently kept in the absorbing member (242) even when the time for standing up the storage unit (14) is minimized. Additionally, the constant supply of liquid can prevent the absorbing member (242) from getting burnt, thereby preventing the user from inhaling the odor generated by the burnt absorbing member (242) and preventing the user from having an unpleasant experience due to the burning odor.
- [0054] Because the present design forms a slight gap between the tubular inlet unit (241) and the absorbing member (242), the space between the inner wall of the absorbing member (242) and the inlet unit (241) can be filled with liquid (tobacco liquid). The smoking tool gets tilted because people generally smoke with the smoking tool in their mouth, and when the storage unit (14) is only half filled with liquid, the absorbing member (242) may not be immersed in the liquid when the storage unit (14) is tilted. In other words, if the liquid that has permeated the absorbing member (242) is completely vaporized while the absorbing member (242) is not immersed in the liquid, the liquid will not be supplied to the absorbing member (242) thereafter, which causes the inconvenience of having to stand up the smoking tool and soak the absorbing member (242) to smoke again. However, in the present design, the upper portion of the inlet unit (241) is formed in a tubular structure and surrounds the absorbing member (242), so the space between the absorbing member (242) and the inner wall of the inlet unit (241) can be filled with liquid. Accordingly, even if the present design is tilted while smoking and the liquid that has permeated the absorbing member (242) is completely exhausted while the absorbing member (242) is not immersed in the liquid, the liquid filled in the inner wall of the inlet unit (241) gets supplied to the absorbing member (242), which provides the convenience of being able to extend the smoking time without having to set the present design upright again.

[0055] In describing the present design described above, even if the embodiments are different, the same reference numerals have been used for the same configurations, and the description thereof may be omitted as necessary.

[0056] As described above, the specific description of the present design has been provided by way of embodiments with reference to the accompanying figures, but the present design should not be understood as being limited to the above embodiments, as the above embodiments are illustrated by way of preferred examples of the present design. Therefore, in addition to what has been described above, a person having ordinary skill in the art to which the present design pertains will be able to easily implement the present design in other forms within the same category as the above-described embodiments or implement a design in an equivalent field to the present design based on just the description of the embodiments of the present design.

*Description of the reference numerals*

[0057] 1; Liquid receiving unit

11; Case

12; Cap

121; Intake portion

122; Protrusion

13; Regulator piece

14; Storage unit

141; Groove

142; Injection portion

2; Atomizer

20; Power supply unit

21; Main body

211; Cover

211a; Charging terminal

22; Battery

221; Power terminal

23; Switch

24; Absorption unit

241; Inlet unit

242; Absorbing member

25; Combustion unit

26; Connector body

261; Insertion portion

262; Inlet portion

27; Connection unit

271; Connection terminal

28; Heating unit



281; Heating piece receiving unit

281a; Through hole

282; Heating piece

29; Mesh

3; Gap

*Figures*

*FIG. 1*

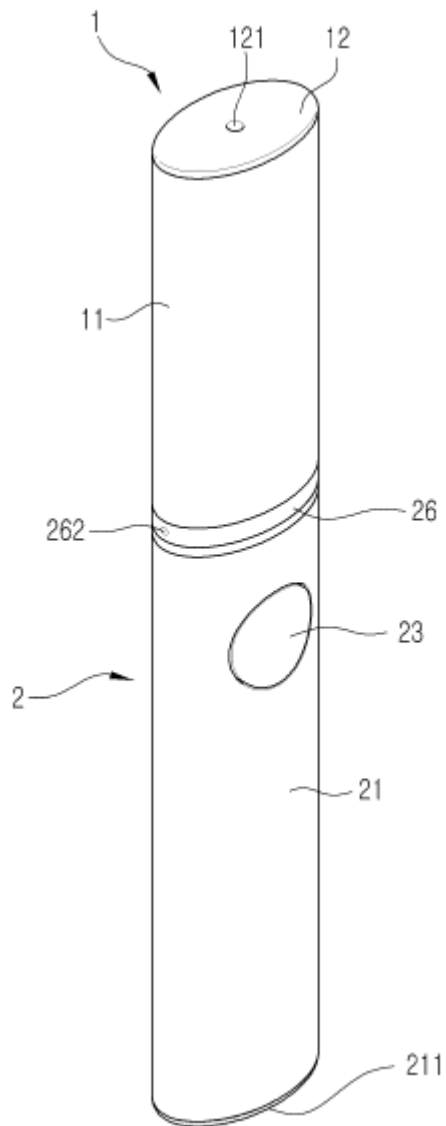
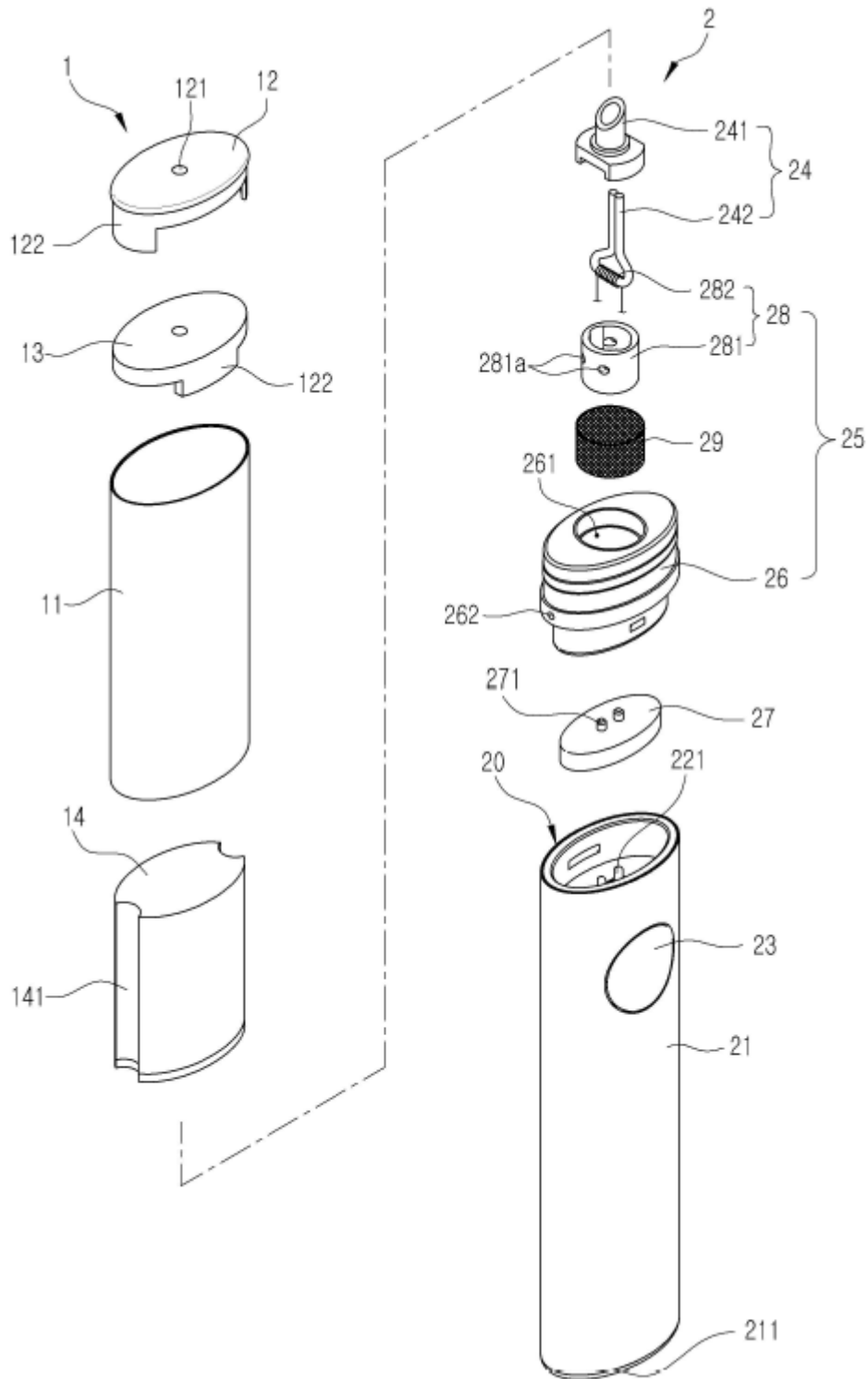


FIG. 2



*FIG. 3*

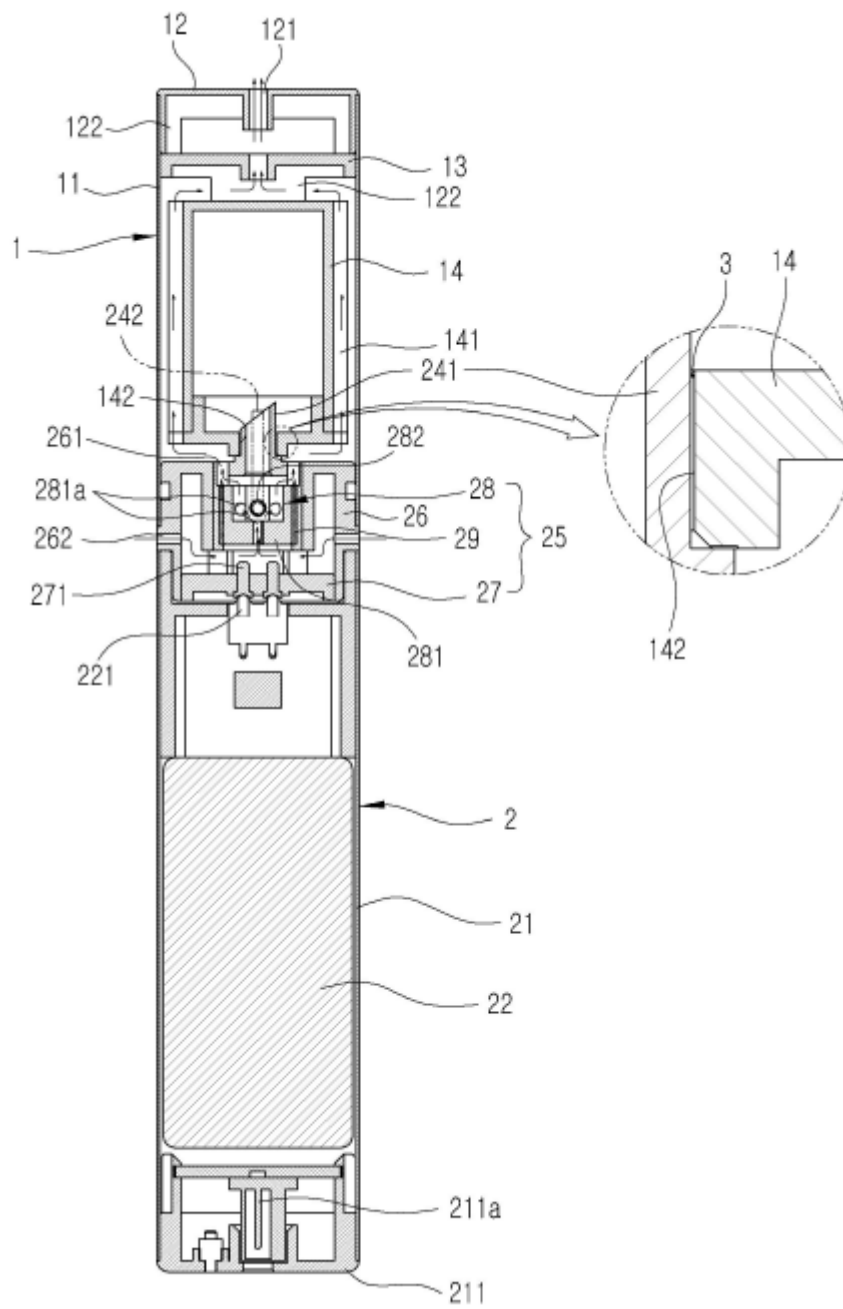


FIG. 4

