

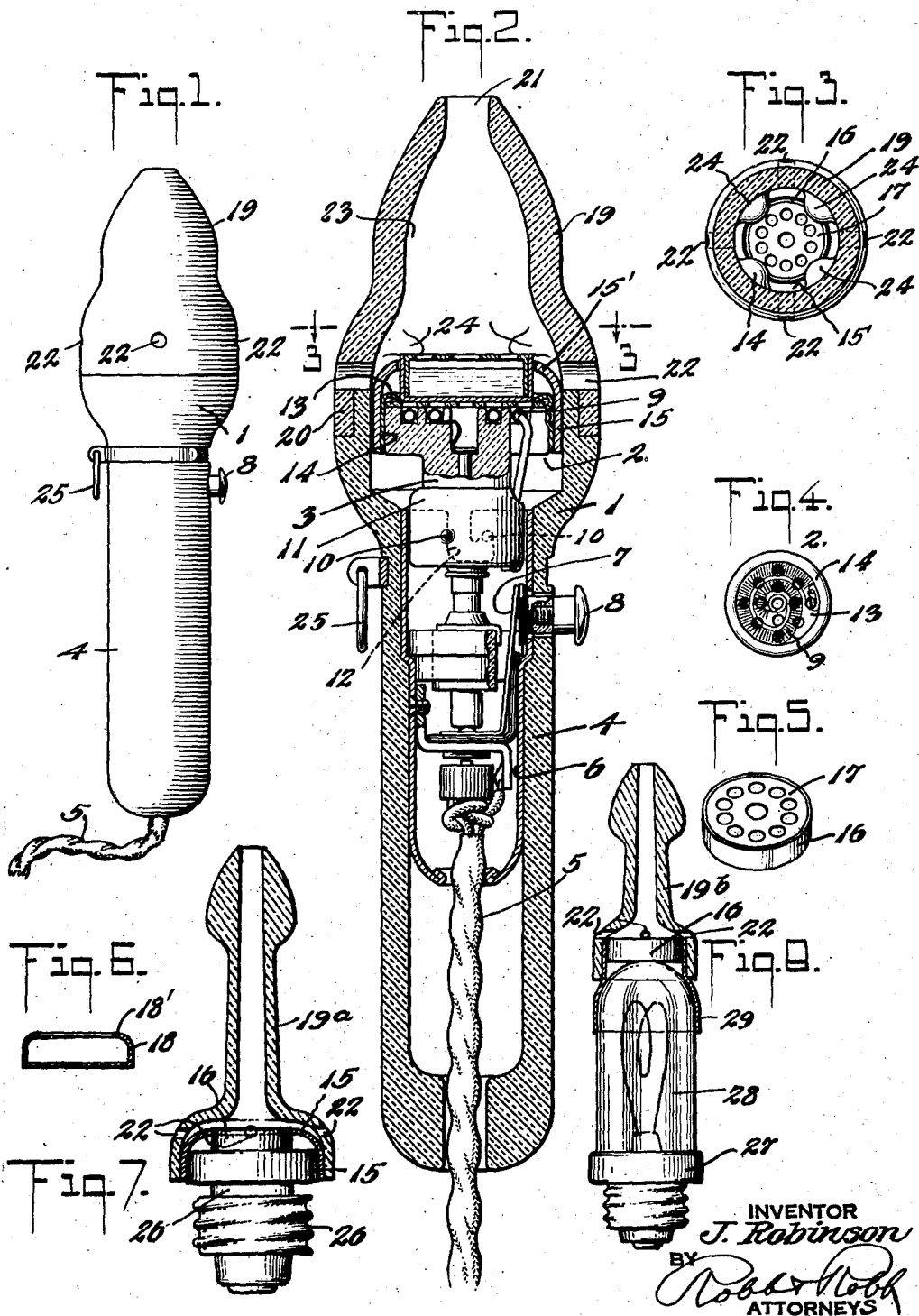
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ELECTRIC VAPORIZER

Original Filed Aug. 31, 1928



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1,934,887

ELECTRIC VAPORIZER

Joseph Robinson, New York, N. Y.

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1 Claim. (Cl. 128—192)

The present invention relates to improvements in vaporizers for the generation of fumes from volatile medicinal preparations or substances.

It is quite desirable that such vaporizers should be compact, neat in appearance, readily operable and easily cleaned or sanitary. It has, therefore, been my aim to provide a construction completely answering to these qualifications and of the electrical type so as to be easily and quickly controllable both as regards the heating instrumentalities and the quantities of vapors produced from the volatile substances.

The apparatus is primarily of the hand type, and by this I mean a device which may be readily manipulated by virtue of the use of a handle construction as a part of the support or base, but it is to be understood that I do not wish to be limited in respect to this form, as the handle may be dispensed with without in any wise affecting the functions of the device, a form without the handle being illustrated as one embodiment of such construction. In either case the device is so formed as to be easily carried in complete assembled condition, as desirable for travelling, and being electrically heated preferably, it requires only the insertion of a terminal plug in a socket with a short application of heat to produce the heated fumes, which may be inhaled through the nose or mouth for treatment of nasal, throat or lung troubles. This generation of the fumes is under the full control preferably of the operator in the preferred form of this device because of the provision of a switch, and for this reason no difficulty is experienced in applying the fumes in the desired heated condition to the affected parts.

Perhaps the most important feature of the invention resides in the use of a novel unit or holder of the substance to be vaporized. This unit consists of what I term for the purposes of convenience, a capsule or small container, into which a predetermined amount of the medicinal preparation is adapted to be placed, said container being readily slipped into and out of operative relation to the heater element so as to supply only just a sufficient amount of vapors for an individual treatment.

It is comprehended that a certain number of these capsules or units shall be put up in packages, each filled with an individual dose of the substance to be vaporized, and when heated in use in a manner before mentioned to be thereafter discarded. But it is to be understood that a receptacle may be employed which will enable a refilling of the same with the substance to be

vaporized where so desired. However, in the main, the cheapness of the unit makes it entirely practical to throw away the container after use, this being desirable in view of the fact that refilling of the unit would likely necessitate contact of the fingers with the medicinal substance, a disadvantage which it is desired to eliminate.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the drawing:

Fig. 1 is a side elevation of a vaporizer of the handle type constructed in accordance with this invention and of actual size;

Fig. 2 is a vertical sectional view through the vaporizer, considerably enlarged to show more clearly the details of construction of the parts;

Fig. 3 is a horizontal sectional view taken about on the plane 3—3 of Fig. 2 and showing in plan the retaining lugs formed upon the cover for holding the medicament unit against accidental displacement;

Fig. 4 is a top plan view of the heater element used in conjunction with this form of apparatus;

Fig. 5 is a perspective view of the medicament container or capsule;

Fig. 6 is a sectional view of a modified form of container;

Fig. 7 is a view partly of a modified form of vaporizer for application to the ordinary light socket; and

Fig. 8 is a similar view of still another modification of the device for use in conjunction with a lamp bulb type of heating element.

Like reference characters refer to like parts in the several figures of the drawing.

Referring to the drawing and specifically describing the preferred form of this vaporizer invention, 1 designates a base or support having a chamber 2 at its upper end to receive a heating unit 3, and at its other end, the container 1 is formed with a handle extension 4 which is also hollow to receive therein the socket unit to which the electric conductor 5 is connected from a suitable source of electric current. This unit last referred to is easily assembled in the vaporizer device by virtue of the use of the metal shell or housing 6 in which the electric contacts or terminals are mounted, it being deemed unnecessary to specifically refer to the details of these parts other than to mention that they include a switch member 7 with which a button 8 projecting through the side of the handle cooperates to en-

able closing of the electric circuit for the heating coil 9 mounted in the top of the heating unit 3.

The unit 3 is readily displaceable from the terminal socket so as to be renewed in the event the coil or heating element becomes inoperative for one reason or another. To this end the unit is provided with protuberances 10 formed on the metal collar 11 at the base of said unit to engage in a bayonet slot 12 formed in the shell 6 of the socket. Obviously this form of connection of the heating unit with the terminal socket may be modified within the purview of this invention. The heating unit is furthermore provided with a foraminous cover 13 of mica, or the like, which prevents direct contact with the heating element 9 of an object disposed upon the same, said cover member being held in place by a flange collar 14 fixed to the top of the unit in any desired manner.

Forming a part of the heating unit 3, so far as its function is concerned, there is provided an annular sleeve or holding device 15 which is snugly slipped about the top of the heating unit, as shown clearly in Fig. 2, so as to project upwardly therefrom a sufficient distance to provide retaining means for the medicament container hereinafter to be more specifically set forth. Preferably the retaining portion of this retaining device designated 15' extends inwardly so as to provide a rounded surface performing a deflecting function, as will be later described.

Adapted to be disposed upon the electric heating element and to be held against lateral displacement therefrom by the retaining device 15 just described, is a medicament container or capsule, shown clearly in Figs. 2 and 5, consisting of a shallow receptacle 16 of very thin metal or other material and including, insofar as the preferred form is concerned, a perforate cover member 17. This cover member may be so constructed as to tightly seat in the receptacle 16 in that form of the unit where it is desirable to prevent refilling of the same; that is to say, the medicament substance of a predetermined quantity having been introduced into the receptacle, the cover 17, having the perforations 17' therein, may be so applied to the receptacle thereafter as to prevent its ready displacement, which would necessarily involve discarding of the unit after the use of the same in the treatment operation. However, this cover member may be loosely seated in the receptacle where elimination of refilling is not a desideratum. Where the cover is loosely mounted in the receptacle, its further use is possible by displacing the cover and introducing into the receptacle a quantity of the substance to be vaporized. As a matter of fact the cover member may be dispensed with entirely by using an open shallow receptacle, such as shown in Fig. 6 and designated 18, the edges of the receptacle being flanged inwardly to form an overhanging lip 18' designed to prevent spilling of the contents when in liquid form.

It is to be understood that I believe I am the first to devise the idea of providing a medicament container or unit for use in conjunction with vaporizer devices and in which a predetermined amount of the treating substance is included as a part of the article of manufacture, thus enabling these units to be produced and marketed in charged condition ready to be slipped into place in association with a heating element by means of which vapors from the contained substance may be produced. By such an arrangement as herein referred to specified substances of different characters for different treatments and

in predetermined quantities sufficient for an individual treatment may be incorporated, and herein lies the particular advantage for this feature of my invention.

In the use of the device, as set forth above, the capsule so-called is slipped into position, resting upon perforate mica covering 13 of the heating unit, the projecting flange of the retaining device 15 engaging about the wall of said unit, thereby preventing lateral displacement. To displace the unit or capsule from this position requires only the manipulation of the support so as to "flip" the capsule from this position. It is, therefore, not necessary to wait until the container has cooled off to remove it from the heating element, nor is it necessary to touch the capsule with the fingers to produce the desired displacement.

In order to direct the fumes from the medicinal preparation to the parts to be treated, there is employed a hood or nozzle member 19 mounted over the heating element. Preferably, as shown in Figs. 1 and 2, this nozzle member is made to conform to the shape of the upper part of the support 1 on which a seat is provided to receive an annular flange 20 formed on the base of the hood. While a slip connection is shown in the drawing between these parts, it is to be understood that the nozzle member may be provided with a threaded connection, or with a bayonet slot connection, in lieu thereof. These are simple mechanical expedients and need not be illustrated to show equivalent connecting means. The nozzle member is provided with the vapor outlet 21 at the top thereof and at its base there are preferably formed one or more openings 22 constituting air inlets, and these inlets, as will be observed by reference to Fig. 2, are arranged in the plane of the deflecting surface 15' of the holding device 15 before referred to. The purpose of this arrangement will be apparent but it should be understood that in the operation of this device the holding ring or member 15 becomes heated to a certain degree owing to its proximity to the heating element and, therefore, as the air is drawn inwardly of the openings 22 it impinges upon the heated surface and becomes heated itself to a certain degree. Further than this, as the air impinges upon this rounded surface it has a tendency to be thrown in a manner to cause the air to be readily mixed with the vapors in the vapor chamber 23 of the nozzle. This air, however, owing to the arrangement of the perforations 17' of the medicament capsule, is drawn into the receptacle and acts to lift the heated vapors from the substance in said receptacle into the chamber 23 and out of the outlet 21 when inhaled by the user of the device.

The nozzle member 19 performs a further function in that it acts to hold the capsules 16 in position upon the heating unit, by virtue of the provision of a series of lugs 24 upon the interior wall, which lugs project inwardly sufficiently far to engage over the edge of the receptacle. Thus while the hood is in position upon the heating member it is held against accidental lateral or vertical displacement but the removal of the nozzle member 19 enables the capsule to be easily displaced in the manner hereinbefore described.

The body of the vaporizer device is preferably provided with a ring member 25 by means of which it may be suspended from a hook or other like support when not in use.

Passing now to that form of the invention which is shown in Fig. 7 of the drawing, 26 designates a heater unit constructed for application

to a standard lamp socket. To this end the lower portion thereof is threaded, as indicated at 26'; otherwise the heater unit conforms to the construction set forth in the preceding description embodying the holding means for the medicament unit. The nozzle member or hood 19a is modified insofar as its shape is concerned only, with reference to the construction shown in Figs. 1 and 2.

- 10 In Fig. 8 I have shown a further modification of this device to enable its adaptation to a different type of heating means. In this construction the heater unit consists of a standard socket plug 27 having mounted thereon a high power lamp bulb 28. Upon the upper end of this bulb a holder element 29 is slipped so as to dispose the medicament unit 16 in position over the bulb extremity. The nozzle member 19b is provided with a slip connection for the top of the holder so as to support this member in proper relation to the medicament unit.

I am aware that the invention may be embodied in other specific forms without departing

from the spirit or essential attributes thereof, and I, therefore, desire that these embodiments be considered in all respects as illustrative and not restrictive, reference being had to the appended claim rather than to the foregoing description to indicate the scope of the invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

An electric vaporizer comprising in combination, a heating element, a medicament unit removably associated with the heating element, retaining means of heat conductive material on said heating element and engageable with said medicament unit to prevent accidental displacement thereof, and nozzle means engaging about said retaining means and over the medicament unit, said nozzle means having an air inlet arranged to direct the air currents against the retaining means so as to be heated thereby and to cause the heated air to mingle with the vapors from the medicament container.

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