



## UNITED STATES PATENT OFFICE

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## ELECTRIC VAPORIZER

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The invention relates to improvements in electric vaporizers adapted for use in producing medicinal vapors, and has for its primary object the provision of an improved construction of this character, capable of economical manufacture and highly efficient in use.

Another object of the invention is the provision of an improved construction of this character having special provisions for mounting the cover thereon to prevent breakage and cause return of any overflow liquid thereto.

Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which

Fig. 1 is a top plan view of a vaporizer embodying the invention;

Fig. 2 a section taken substantially on line 2—2 of Fig. 1;

Fig. 3 a section taken substantially on line 3—3 of Fig. 1, with the electrodes removed; and

Fig. 4 a partial section taken substantially on line 4—4 of Fig. 1 with the electrodes removed.

The embodiment of the invention illustrated in the drawings comprises a suitable vessel or container 10, preferably made of glass, porcelain or the like, and provided at its top with an outwardly and upwardly extending cup-shaped lip 11 as shown. The container 10 is provided with a removable cover member 12, which also preferably is made of glass, porcelain or other insulating material. This cover member 12 is provided with a plurality of radially extending supporting lugs 13 adapted and arranged to rest within the cup lip 11 and loosely support the cover member in place. The cover member is also provided with a central gas discharge spout 14 and the supporting lugs 13 provide entry flow spaces so that any overflow bubbling from the spout 14 will be returned to the interior of the container 10.

It is also to be noted that by this arrangement, the cover member 12 will rest loosely on the top of the container 10 so as to permit of different degrees of expansion, thereby preventing breakage when one or the other of said members becomes unduly heated in use.

The cover member 12 is also provided with a depending apron 15 projecting downwardly into the top of the container 10 and forming therein a gas chamber. The apron 15 is provided with a number of lateral openings 16, so as to permit of free access and circulation of the medicinal fluid or the like in the container 10.

The cover member 12 is also provided with two diametrically arranged electrode openings 17 adapted and arranged to receive threaded metal studs 18 at the upper ends of hollow metal electrodes 19. Nuts 20 on the studs 18 serve to secure the electrodes in place, rubber washers 21 being imposed as shown. Suitable caps 22 are threaded on the outer ends of the studs 18 and serve as suitable means for connecting electric wires 23 with said studs for supplying electric current to said electrodes.

In use, the container is provided with a suitable medicinal solution, as indicated in Figs. 2 and 3, which is capable of emitting medicinal vapors upon the passage of an electric current. Electric current is then supplied through the wires 23, thus forming one of the electrodes 19 into an anode and the other into a cathode of an electrolytic circuit. The passage of the current through the solution in the container 10 thus emits medicinal vapors which are discharged through the nozzle 14 and may be inhaled by the user with the usual medicinal results.

Inasmuch as considerable bubbling usually results from the passage of the electric current, if there is an excess of the medicinal solution in the container 10, this bubbling will cause an overflow through the nozzle 14, which overflow will flow downwardly into the cup 11 and thus be returned to the container 10 through the spaces between the lugs 13. There is also considerable heat generated by the passage of the electric current, and this

heat has a tendency to cause unequal expansions between the container and its cover, thereby breaking one or the other. This tendency to breakage is avoided by the loose mounting of the cover member, which will permit of free relative expansions or movements between the cover and the container.

The construction disclosed constitutes a simple and effective one for the purpose, which is capable of economical manufacture and will be found to be highly efficient in use.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I therefore do not wish to be limited to the precise details disclosed but desire to avail myself of such variations and modifications as fall within the scope of the appended claims.

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

1. A vaporizer comprising a container of insulating material, provided at the top with a cup-shaped lip; a cover of insulating material resting loosely in said lip and having an upwardly projecting central normally open discharge spout, said cover member being also provided with a depending apron forming a gas chamber in the upper portion of said container, said apron being provided with lateral openings in its sides; electrodes mounted on said cover and projecting downwardly into said chamber and container; and means for supplying electric current to said electrodes.

2. A vaporizer comprising a container of insulating material, provided at the top with a cup-shaped lip; a cover of insulating material resting loosely in said lip and having an upwardly projecting central normally open discharge spout, said cover member being also provided with a depending apron forming a gas chamber in the upper portion of said container, said apron being provided with lateral openings in its sides, there being two electrode openings in said cover at the sides of said spout; electrodes in said chamber having threaded studs protruding through said openings; nuts on said studs securing said electrodes in place; and means for connecting electric wires to said studs.

3. A vaporizer comprising a container provided at its top with a cup-shaped lip; a cover resting loosely in said lip and having an upwardly projecting discharge spout, whereby any overflow through said spout will be collected by said cup-shaped lip and returned to said container; electrodes arranged in said container to generate gases to be discharged through said spout; and means for supplying electric current to said electrodes.

4. A vaporizer comprising a container pro-

vided at its top with a cup-shaped lip; a cover having radially projecting lugs resting loosely in said lip and also provided with an upwardly projecting discharge spout, whereby any overflow through said spout will be collected by said cup-shaped lip and returned to said container; electrodes arranged in said container to generate gases to be discharged through said spout; and means for supplying electric current to said electrodes.

In witness whereof I have hereunto set my hand this 21st day of June, 1930.

LAWRENCE A. COLLINS.