

March 24, 1931.

H. WEISS

1,797,457

ELECTRIC VAPORIZER

Original Filed Nov. 27, 1928

3 Sheets-Sheet 1

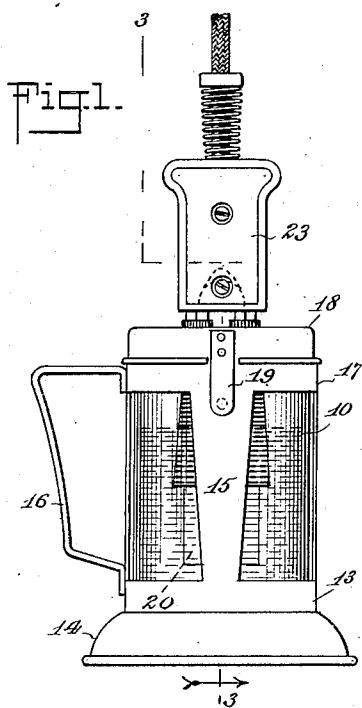
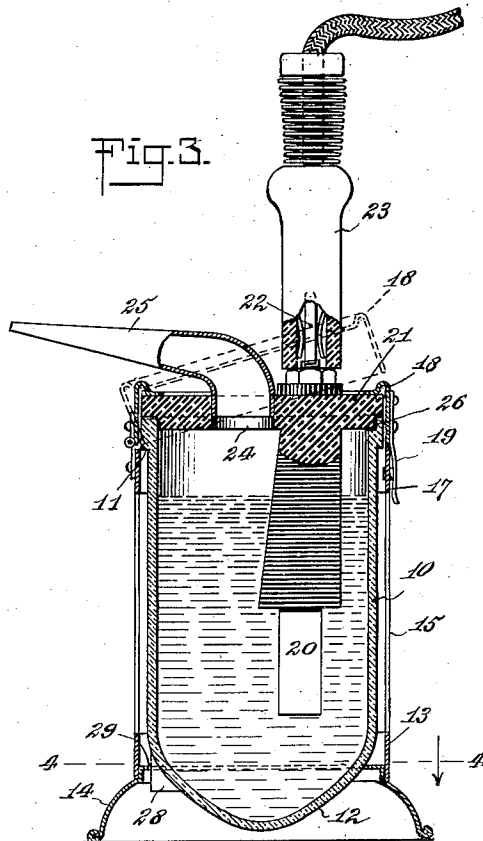
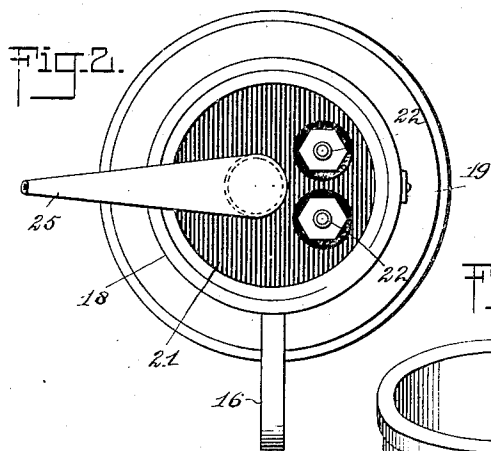


Fig. 6.

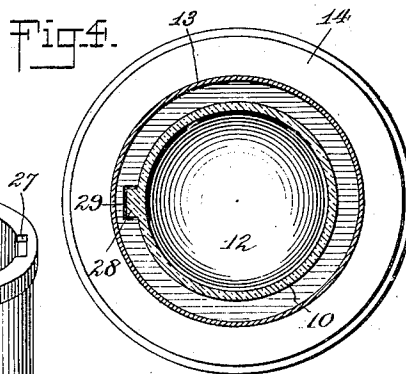
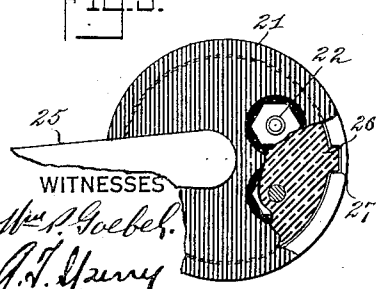
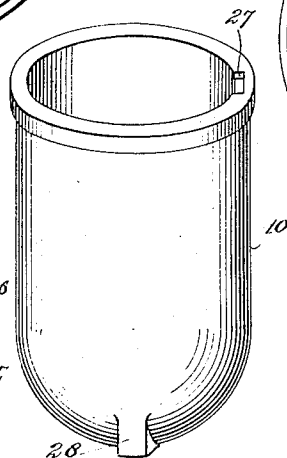


Fig. 5.



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Fig. 7.

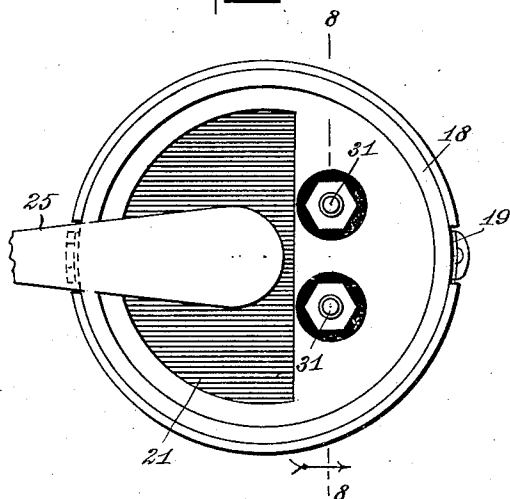


Fig. 8.

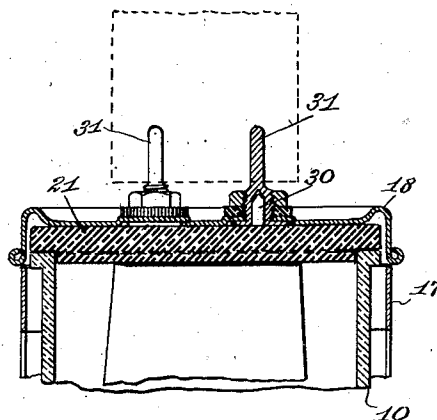


Fig. 9.

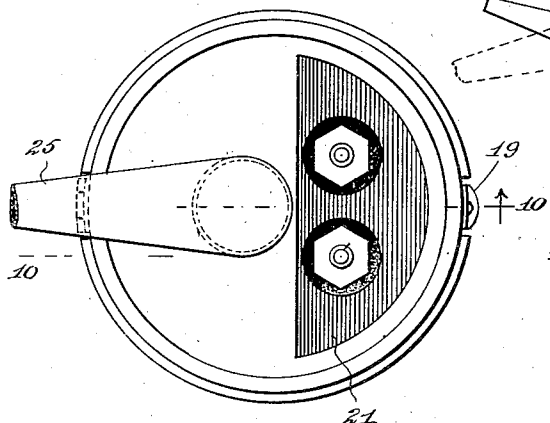
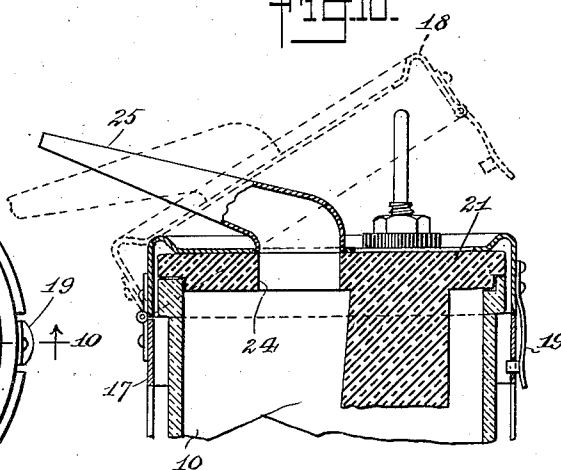


Fig. 10.



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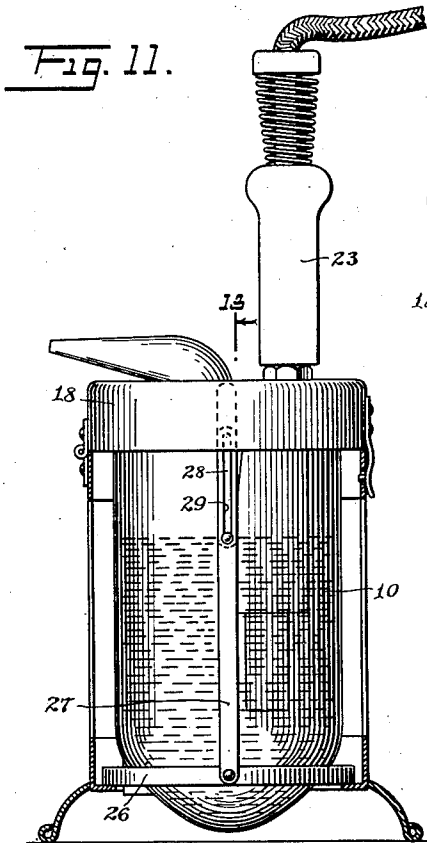
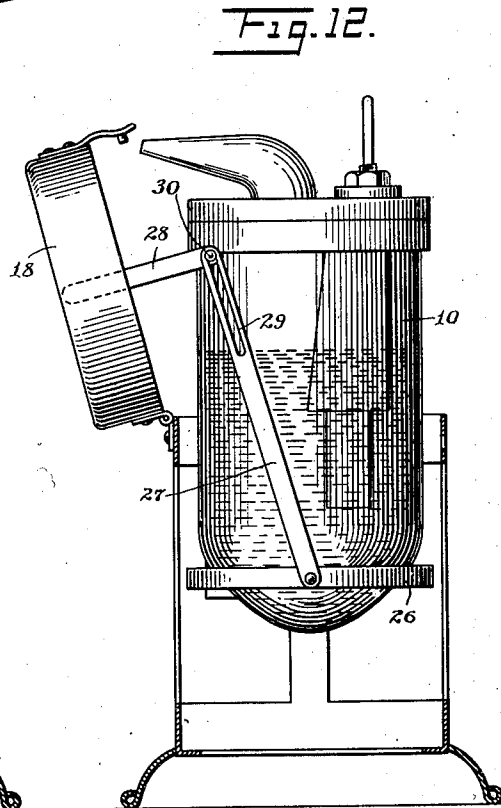
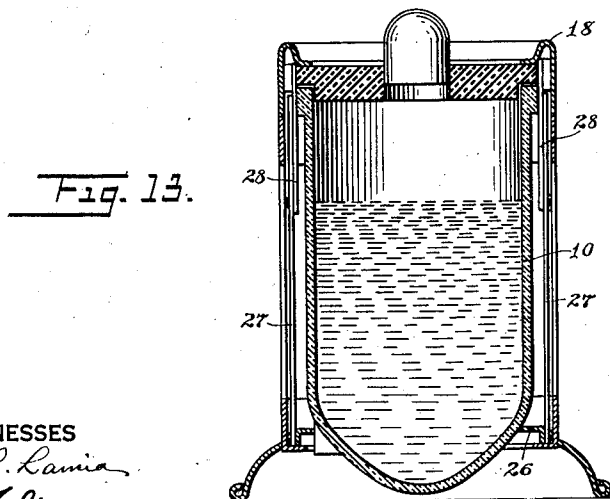
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ELECTRIC VAPORIZER

Original Filed Nov. 27, 1928 3 Sheets-Sheet 3



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ELECTRIC VAPORIZER

Application filed November 27, 1928, Serial No. 322,254. Renewed September 4, 1930.

This invention relates to electric vaporizers.

said receptacle is not received within its support.

Numerous other objects and features of the present invention will be apparent from a consideration of the following specification taken in connection with the accompanying drawings, in which

Figure 1 is a perspective view of one form of my present invention;

Fig. 2 is a top plan view of the same;

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 3;

Fig. 5 is a top plan view partly broken away, to illustrate the underlying association of the receptacle and its sealing cover;

Fig. 6 is a perspective view of the receptacle illustrated in Figs. 1 and 2;

Fig. 7 is a top plan view of a modified form of the present invention;

Fig. 8 is a sectional view taken on the line 8—8 of Fig. 7;

Fig. 9 is a top plan view of a further modification of the present invention;

Fig. 10 is a sectional view taken on the line 10—10 of Fig. 9;

Fig. 11 is a perspective view of a further modification of my invention, disclosing the vertically moving support for the receptacle body;

Fig. 12 is a view similar to Fig. 11, showing the receptacle in raised position;

Fig. 13 is a sectional view taken on the line 13—13 of Fig. 11.

Referring more particularly to that form of the invention illustrated in Figs. 1 to 6, inclusive, there is provided a receptacle 10, the upper open end of which is provided with a thickened peripheral rim 11, the lower closed end of which receptacle in the form shown is substantially convex, as at 12, or otherwise of configuration adapted to prevent the vertical position as illustrated in Figs. 1 and 2, except when the device is received within its associated support.

For receiving this particular receptacle 10, a skeleton frame 13 may be provided including a flaring base 14, side members 15, handle 16, and annularly extending upper rim 17,

Among the objects of the present invention is to provide an electrically heated vaporizer, which is adapted for use only in conjunction with its associated mounting and in which energization of the heating elements is prevented except when such elements are properly positioned within the receptacle.

A further object of the present invention is to provide in a vaporizer, a receptacle, the bottom of which is other than flat, whereby the use of the device without its receiving support is prevented.

Another object of the present invention is to provide in a device of the character set forth, means for preventing the energization of the heating element while said element is other than received within the receptacle, and also to provide for the preventing of the removal of the heating element from the receptacle while being energized from an outside source of power.

A further object of the present invention is to provide in a device of the character set forth, a guard or cover adapted for association with a seal for the receptacle, which guard or cover is adapted to retain the seal in airtight relation with the receptacle and to assist in controlling the energization of the heating element forming part of the present combination.

A still further object of the invention is to provide a device of the character set forth in which a portion of the stand is adapted to move vertically with the movement of the cover, whereby the receptacle is raised as the cover is lifted, such raising being adapted to disengage the receptacle from the stand, and thus to prevent operation of the device while the cover is open.

Other objects of the present invention include the combination and interrelation of parts, whereby the invention provides a novel and improved structure well adapted for the requirements of economical manufacture, and through the use of which accidents are prevented by the prevention of energization of the heating elements when said elements are not received within a receptacle or when

with which there is associated in hinged relation thereto, a skeleton guard or cover formed of a peripherally extending rim 18, opposite to the hinged portion of which there is provided a resilient catch 19 adapted for engagement through an aperture in one of the side members 15, substantially as disclosed.

For heating a liquid received within the receptacle 10, there is provided a pair of suitable electrical heating elements or electrodes 20 projecting downward from a sealing cover 21 into the receptacle 10. Projecting from the upper surface of the cover 21, electrical contacting fingers 22 are provided adapted for engagement with a suitable electrical plug 23 for energizing the elements 20, to heat and vaporize the liquid within the receptacle 10. The vaporized liquid is adapted to escape through an aperture 24 within the cover 21 and to pass therethrough to a conducting spout 25 for directing the flow of the vaporized gases in the desired direction.

In this form of the present invention, it will be readily seen that for removing the cover 21 and its associated electrodes 20, the hinged guard or cover 18 of the support 13 must be moved to release the cover 21 from the receptacle 10, the hinged movement required, however, being prevented by the association of the fingers 22 with the plug 23. Thus the removal of the plug 23 and consequent cessation of the energization of the elements 20, must become a prerequisite of the removal of the sealing cover 21. Referring to the drawings it will be noted that the fit of the cover 21 with respect to the receptacle 10, is loose and such that the engagement of the hinged cover 18 with the receptacle 13, as by means of the catch 19, is required to prevent leakage of the vaporized liquid from the device. Thus the receptacle 10 as shown must be received within the support 13 to properly operate the device. It will further be seen that the convex configuration of the lower end of the receptacle 10 is such that it cannot be properly supported other than in the support 13.

It will be understood that while I have shown my device as being supported in a support or frame, I do not care to be limited to such structure, as it is quite apparent that the bottom of the receptacle may be made flat so that it may be set upon any desired object without a supporting frame.

It will be further apparent that while I have designated the securing part for the lid as a cover, that its function is really a securing device and guard for the lid in that it not only secures the lid in a gas-tight position upon the receptacle, but it also provides a guarding means whereby the breaking of the connection must take place when this cover or guard is moved sufficiently to allow the lid to be opened.

To provide for the proper alinement of the

spout 25, whereby the hinged cover member 18 may be moved without interference therewith, the sealing cover 21 with which the spout is rigidly associated, is provided with a projecting portion 26, which must be received in a complementary depression 27 of the rim 11 of the receptacle 10, before the sealing cover 21 may be received to seal the receptacle 10 and thus before the hinged cover 18 may be closed to retain the cover member 21 in proper relation with the receptacle 10. The registration herein referred to must of necessity be in conjunction with a specific positioning of the receptacle 10, to provide for the proper relation of the spout 25. The specific positioning of the receptacle 10 is provided for by a projecting member 28 receivable within a cut-out portion 29 of the base 14, substantially as illustrated.

From the foregoing it will readily be seen that this form of the invention provides a device incapable of proper operation at any time other than when the receptacle is properly received and fitted within its support 13 and the sealing cover 21 properly received by the receptacle and the cover 18 closed. It will also be readily seen that energization of the sealing elements 20 will not be permitted at such times other than when the elements 20 are properly received within the receptacle 10. It will thus be apparent that the invention provides a device of the character set forth in which injury due to the energized elements or electrodes 20 coming in contact with the operator or with fixtures other than the associated fixtures of the apparatus. The invention thus provides a simple, safe and convenient structure.

Referring more particularly to Figs. 7 and 8 of the drawings in which there is illustrated a modification of the invention, the sealing cover 21 of the receptacle 10 is provided with projecting conducting fingers 30 which are adapted to be received within the lower end of associated conducting fingers 31 carried by the hinged cover member 18. The construction will be readily seen to be such that upon hinged movement of the cover member 18 with respect to the top 17 of the support 13, the electrical connection between the fingers 30 and 31 will be broken, thus providing for the automatic de-energization of the sealing elements 20 when the cover 18 is raised. It will also be readily understood that the form of the invention herein illustrated is but one specific embodiment of the structural features which may be utilized to carry out this form of the invention and that the invention is not limited to the specific structure herein shown.

Referring more particularly to Figs. 9 and 10, to insure the proper connection of the hinged cover 18 with the peripheral rim 17 and thus to retain the sealing cover 21 with respect to the receptacle 10, the spout 25 is

formed integral with the cover member 18, whereby when the cover 18 is firmly associated with the rim 17, by provision of the catch member 19, the spout 25 is aligned with the aperture 24 in the sealing cover 21. In this form of the invention it will be seen that movement of the hinged cover 18 with respect to the support 13 will release the association of the spout 25 with the aperture 24, thus permitting leakage of the vapors formed within the receptacle 10 and thus ensuring the proper relation of parts during all times that the device is in use.

Referring more particularly to Figs. 11, 12 and 13, this form of the invention provides for a vertically moving support 26, for receiving the receptacle 10, the support 26 being associated through a pivoted link 27 to a depending arm 28 carried by and movable with the hinged cover 18. The association of the link 27 and the arm 28 is adapted for limited lost motion by the provision of an elongated aperture 29 in the link 27, through which a connecting member 30 mounted upon the extremity of the arm 28 is adapted for partial free movement. The electrode-carrying cover and electrical connection therefore have in this instance been disclosed similar to that shown in Figs. 1, 2 and 3. It will be understood, however, that this form of the invention is adapted for cooperation with either the cover structure as disclosed or with the modification arrangements as shown in Figs. 7 to 10, inclusive. It will be readily seen that in this form of the invention, raising of the cover 18 automatically lifts the receptacle 10 from its support and retains it in a lifted unstaple position, thus preventing energization of the electrodes or other use of the device while the cover is raised. It will be understood that the raising of the cover is accompanied by the prerequisite of removing the electrical supply plug 23, as formerly discussed.

It will be understood that the present invention has been illustrated in specific structural features, but that numerous changes and modifications in the structural features of the device and the full use of equivalents may be properly resorted to without departing from the spirit or scope of the invention as outlined in the appended claims.

What is claimed is:

1. In an electric vaporizer, a receptacle for the liquid to be vaporized, heating electrodes in the receptacle, a sealing lid for the receptacle, an independently movable guard on the receptacle forcing the lid into gas tight connection therewith, a source of electricity, and electrical connections between the source of electricity and the electrodes and cooperatively related to the movable guard, the opening of the guard being prevented except as an accompaniment of the de-energizing of the electrodes.

2. In an electric vaporizer, a receptacle, electrodes within the receptacle, electrode conductors, a sealing lid for the receptacle, a guard for forcing the lid into gas tight connection with the receptacle, electrical connectors on the lid, and electric connectors on the guard contacting with the lid connectors, the energization of the electrodes being prevented when the guard is open.

3. In an electric vaporizer, a receptacle, electrodes in the receptacle having electric connectors, a current plug connected to the source of electricity, and an intermediate movable member between the connectors of the electrodes and the plug and having connectors for electrical contact with each, the energization of the electrodes being prevented when the intermediate member is open.

4. In an electrical vaporizer, a receptacle, a lid for said receptacle, heating electrodes carried by said lid, small conducting members for said electrodes extending through said lid, a movable guard for said lid, intermediate connecting members carried by said guard for electrical engagement with said small conducting members when the guard is closed, and an attaching plug having large electrical conducting sockets; applicable only to the intermediate connecting members.

5. In an electric vaporizer, a receptacle, a lid for the receptacle, heating electrodes carried by said lid, conducting members for said electrodes carried by said lid, a movable guard or cover for said lid, and connecting members carried by said guard for electrical engagement with said conducting members when the guard is closed, the energization of said electrodes being prevented when said guard is open.

6. In an electric vaporizer, a receptacle, a lid for said receptacle, heating electrodes carried by said lid, conducting members for said electrodes extending through said lid, a securing guard for said lid, connecting members carried by said guard for electrical engagement with said conducting members, said conducting members being receivable within said connecting members for electrical conduction therebetween when said guard is closed, the energization of said electrodes being prevented when the guard is open.

7. In an electric vaporizer, a receptacle, a lid for the receptacle, heating electrodes carried by the lid, conducting members for said electrodes extending through said lid, a securing cover for said lid, and connecting members carried by said cover for electrical engagement with said conducting members, said conducting members being receivable within said connecting members for electrical conduction therebetween when the cover is closed, said connecting members extending from said cover to be connected in a suitable manner to a source of current, the energiza-

tion of said electrodes being prevented when said cover is open.

8. In an electric vaporizer, a receptacle, a lid for said receptacle, heating electrodes carried by said lid, conducting members for said electrodes extending through said lid, a guard for the lid, a plug connector adapted to have electrical connection with the conducting members after the guard is closed or to have such electrical connection broken when the guard is moved to release the lid, a support, and slidable members in said support for ejecting said receptacle upon opening movement of the guard.

9. In an electric vaporizer, a receptacle, a lid for said receptacle, heating electrodes carried by said lid, conducting members for said electrodes extending through said lid, a cover for said lid, connecting members extending through said cover and adapted for electrical contact with said first-named conducting members when the cover is closed, and to be connected exteriorly of the latter to a suitable source of current supply, said cover being engageable in close position to seal said lid to said receptacle; the energization of said electrodes being prevented when said cover is moved to open position.

10. In an electric vaporizer, a receptacle, a lid for said receptacle, heating electrodes carried by said lid, conducting members for said electrodes extending through said lid, a cover for said lid, connecting members extending through said cover and adapted to have electrical connection with said first-named conducting members when the cover is closed, and to be connected exteriorly of the latter to a suitable source of current supply, said cover being engageable in close position to seal said lid to said receptacle, and means for maintaining a proper alignment of said lid with said cover; the energization of said electrodes being prevented when said cover is moved to open position.

11. In an electrical vaporizer, a receptacle, a lid for said receptacle, heating electrodes carried by said lid, conducting members for said electrodes carried by said lid, conducting members for said electrodes extending through said lid, a hinged cover for said lid, a plug connector adapted to have electrical connection with said conducting members exteriorly of said cover when the latter is disposed in closed position, said plug connector being also adapted to be removed from electrical connection with said conducting members when said cover is moved to open position.

12. In an electrical vaporizer, a receptacle, a lid for said receptacle, heating electrodes carried by said lid, conducting members for said electrodes extending through said lid, a hinged cover for said lid, a plug connector adapted to have electrical connection with said conducting members exteriorly of said

cover when the latter is disposed in closed position, said plug connector being also adapted to be removed from electrical connection with said conducting members when said cover is moved to open position, and a spout for discharging the contents of the receptacle.

13. In an electric vaporizer, a receptacle, a lid for said receptacle, heating electrodes carried by said lid, conducting members for said electrodes extending through said lid, a guard for said lid, connecting members carried by said guard for electrical engagement with said conducting members when the guard is closed and adapted to be disengaged therefrom when the guard is moved to open position in order to prevent the energization of said electrodes, and a spout connected to the interior of the receptacle.

14. In an electrical vaporizer, a receptacle, a lid for said receptacle, heating electrodes carried by said lid, conducting members for said electrodes extending through said lid, a cover for said lid, a discharge spout carried by the lid, said cover having an opening in the same for the passage of the spout when it is moved to closed position, and a current plug and connections adapted to be engaged with said conducting members exteriorly of said cover.

15. In an electrical vaporizer, a receptacle, a lid for said receptacle, heating electrodes carried by said lid, conducting members for said electrodes extending through said lid, a cover for securing the lid in position, said cover having an opening therein adapted to allow the passage of the electrode conductors freely therethrough, a plug conductor adapted to be engaged for said conducting members after said guard or cover has been closed and to be removed therefrom when the cover is to be moved to open position.

Signed at New York, in the county of New York and State of New York, this 23d day of November, A. D. 1928.

HERMAN WEISS.