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W. OTTO
 APPARATUS FOR GENERATING AND APPLYING VAPORS FOR
 HYGIENIC OR COSMETIC PURPOSES
 Filed March 24, 1922

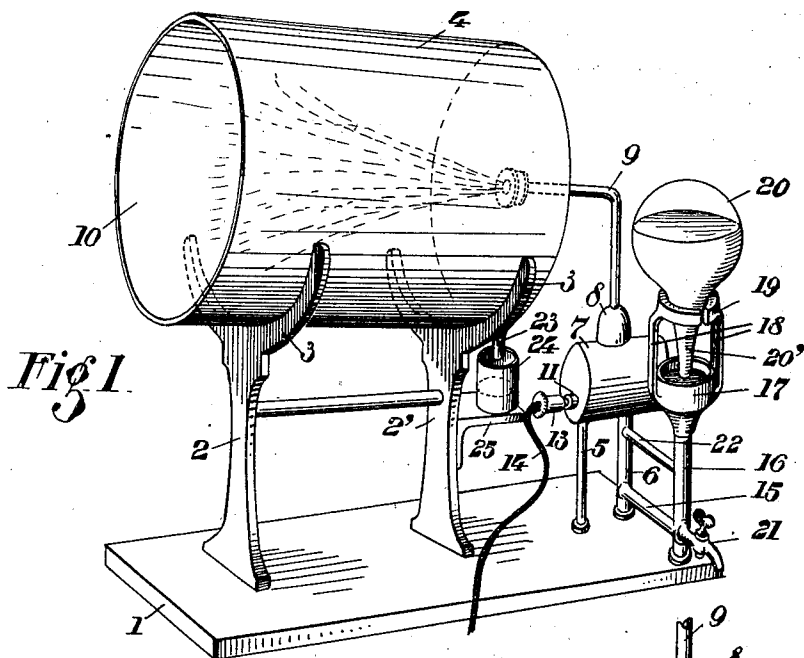


Fig. 1

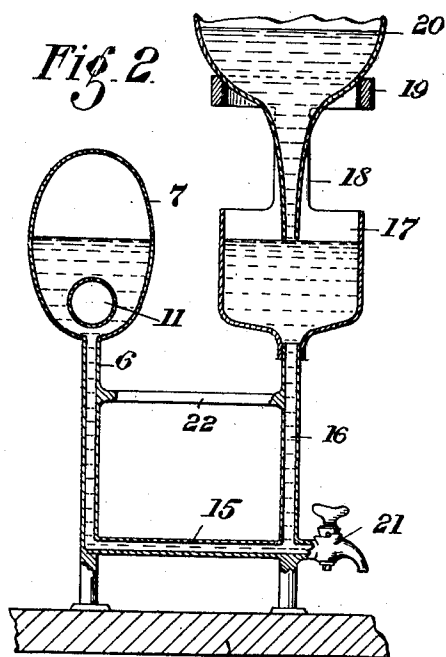


Fig. 2

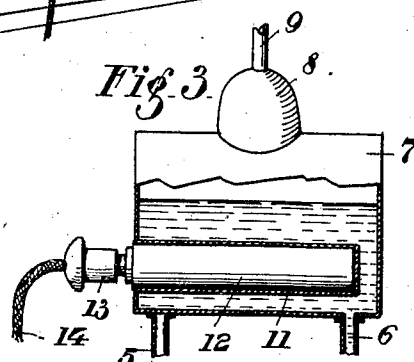


Fig. 3

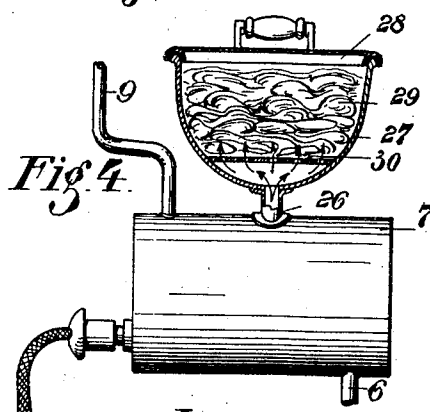


Fig. 4

Witnesses: 1

H. B. Badian
 H. D. Penner

Inventor:

Werner Otto,

By his Att'y W. Richard

UNITED STATES PATENT OFFICE.

WERNER OTTO, OF BERLIN, GERMANY.

APPARATUS FOR GENERATING AND APPLYING VAPORS FOR HYGIENIC OR COSMETIC PURPOSES.

Application filed March 24, 1922. Serial No. 546,496.

To all whom it may concern:

Be it known that I, WERNER OTTO, a citizen of Germany, residing at Berlin, Germany, have invented certain new and useful Improvements in Apparatus for Generating and Applying Vapors for Hygienic or Cosmetic Purposes, of which the following is a specification.

This invention has reference to improvements in apparatus for generating and applying vapor of water or medicinal substances for hygienic and cosmetic and similar purposes, thus for instance for inhalation, and for local vapor treatment of body parts, especially for face treatment and face massage and the like, and it is one of the important objects of this invention to provide an apparatus of this kind affording the greatest possible safety from all kinds of accidents and improper working, as are liable to occur, among other causes, in consequence of the burning through of the electric resistance or heating body employed in the absence of liquid in the vaporizer. With this end in view I provide means of keeping the liquid in the vaporizer always at a substantially constant level.

It is a further object of my invention to improve the general shape and arrangement of the bowl or bell employed for inhaling and face treating purposes, so as to prevent the condensed liquid from flowing out at the open end of said bell or bowl; and it is a further object of my invention to provide means in connection with the apparatus adapted for damping cloths and other fabrics and imparting to them a state of humid heat, so as to make them serviceable for cosmetic purposes, for instance by applying them to skin portions to be treated, or for other uses.

Other objects and advantages will appear from the specification and drawing.

In the drawing, showing by way of example some preferred embodiments of this invention without restricting the invention to such particular forms of construction, Fig. 1 is an elevation of an electrically heated apparatus according to this invention, particularly suitable for use with face vapor baths. Fig. 2 is a transverse section through the vaporizer with its feeding device. Fig. 3 is a side elevation of the vaporizer partly in section. Fig. 4 shows the

vaporizer combined with a device for heating and humidifying cloths with vapor.

The apparatus according to Figs. 1 to 3 of the drawing has a base plate 1 on which are mounted the supports 2, 2' the laterally extended, preferably yoke shaped upper ends of which are adapted for the reception of a horizontal bell-glass 4. Upon the base plate 1 a small boiler 7 is supported on standards 5, 6 for the vaporization of water or of some other suitable liquid in accordance with the particular purpose. The boiler 7 is provided with a dome 8 from which the steam is conducted by the pipe 9 to the bell 4 where it is introduced substantially in the center of the closed end of the ball, so as to cause the vapor generated in the boiler to enter the bell in the open end 10 of which a person may place the face for a steam treatment or for inhaling purposes.

As shown in the drawing the boiler is provided with electric heating means, and with this end in view it contains a casing 11 open at one end for the reception of an electric resistance or heating element or cartridge 12 which may be connected to an electric conductor 14 by means of an insertion contact piece 13.

The standard 6 may be hollow so as to serve as an admission pipe for the liquid to be vaporized. By means of a transverse tube 15 it is connected with the interior of the pipe shaped standard 16 supporting a liquid container 17 which is in communication with the said pipe. The pipes 6, 15 and 16 constitute a U-shaped tube connecting the container 17 with the boiler, and by this means the level of the liquid in the boiler may always be kept at the same horizontal level with the level of the liquid in the container 17. It is of importance to effect the connection between the two containers by means of a U-shaped tube connecting the bottom parts of the same, in order to prevent the transmission of heat from the liquid in the boiler 7 to the liquid in the container 17. The container 17 is provided with upwardly directed supports 18 on which an annulus 19 is mounted serving for the support of a bottle 20 which is arranged therein in inverted position, and is filled with a supply of liquid. The neck 20' of the bottle extends into the container 17, and by the vertical position of the mouth

of the neck 20' the height of the liquid in the container is controlled. The level will always be such that the neck of the bottle touches the surface of the liquid, thereby preventing the liquid from escaping from the bottle in view of its being sealed against the entrance of air. If the level of the liquid in the container 17 is slightly lowered, air may enter the bottle, causing a corresponding amount of liquid to escape until the mouth of the bottle has again been sealed by the rise of the level of the liquid that has meanwhile occurred. The level of the liquid in the container 17 and in the boiler 7 is subject to very slight alterations only in the operation of this device; and thus lack of liquid in the boiler is prevented in an absolutely reliable manner as long as there is still a supply of liquid in the bottle 20 which may easily be controlled.

From the foregoing it will be seen that the U-shaped tube formed by the connections 6, 15 and 16, extending downwardly from the evaporator 7 and the supply vessel 17, forms a trap to prevent the heat from the heater 12 from being transmitted to the liquid disposed in the vessel 17 and further to prevent the gases generated in the evaporator or boiler 7 from being conveyed back to the reserve liquid container or bottle 20. The latter feature is of particular importance since, if the liquid contained in the bottle 20 is medicated, heat transmitted thereto, would liberate the medicated gases in the bottle 20 and thus tend to so starve the liquid conveyed to the evaporator, that little if any gases would be left to properly effect a treatment. Furthermore, if the gases generated in the evaporator were free to pass back into the vessel 17, upon a lowering of the surface level in said vessel 17, the gases would be sucked in at the mouth of the bottle, and thus tend to overcharge the medication in the reserve liquid in the bottle 20.

A valve 21 provided upon the pipe 16 adjacent the point of connection with the pipe 15 serves for the emptying of the entire system. 22 is a stay between the pipes 6 and 16 for stiffening the same. In the device as represented in Fig. 1 the bell 4 is rearwardly inclined from its open end. By this means the condensing liquid is prevented from running out from the open end 10, thereby moistening the clothing of the person using the apparatus. In proximity to the closed end of the bell 4 a small pipe is arranged for the escape of the condensed liquid collecting there and which is conducted into a tumbler or vessel 24 mounted upon a bracket 25 on the support 2'.

In the modification shown in Fig. 4 of the drawing a kettle 27 with lid 28 is arranged above the boiler 7 and connected with the same by a nipple 26. It may serve

for the reception of cloths or fabrics 29. At a distance from the entrance opening of the nipple 26 a false bottom or sieve 30 is provided in the kettle 27 through which the vapors permeate the cloths 29 heating them and dampening them by partial condensation. The pipe 9 for connection with the bell or the like 4 is situated in this modification near one end of the boiler 7.

It is obvious that the invention is capable of a variety of other modifications and variations to suit the convenience of the user and the exigencies of the particular adaptations of the invention, and without deviating from the spirit of the invention as set forth in the claims hereunto annexed. Among the various other uses and applications of the invention I may mention its utilization for those kinds of apparatus in which the boiler is heated by other than electric means.

I claim:—

1. An apparatus for generating low tension vapors for hygienic or cosmetic purposes, comprising an evaporator having uncontrolled liquid supply and vapor escape passages, a liquid supply vessel under atmospheric pressure so arranged that the plane of the liquid level in the evaporator passes through it, an uncontrolled downwardly extending substantially U-shaped tubing connecting said liquid supply vessel with the supply passage of the evaporator, a heater in the lower part of said evaporator, but above said U-shaped tubing, and a closed reserve liquid container, there being an outlet at the bottom of said container adjacent to the surface level of the liquid in the supply vessel to permit the liquid in the container to be fed to the supply vessel by gravity, the U-shaped tubing serving as a trap to prevent the heat from the heater from being transmitted to the liquid in the supply vessel and reserve container and likewise to prevent the volatilized or vaporized gases generated by the heater being conveyed into the vessel and container.

2. An apparatus for generating low tension vapors for hygienic or cosmetic purposes, comprising an evaporator having uncontrolled liquid supply and vapor escape passages, a constant level liquid supply vessel under atmospheric pressure so arranged that the plane of the liquid level in the evaporator passes through it, an uncontrolled downwardly extending substantially U-shaped tubing connecting said liquid supply vessel with the supply passage of the evaporator, a heater in said evaporator and above said U-shaped tubing, and a reserve liquid containing bottle inverted with its mouth disposed adjacent to the surface level of the liquid in the supply vessel thereby to form a water seal in the closed bottom

end of the bottle to permit the liquid from the bottle to be conveyed to the supply vessel by gravity, the U-shaped tubing serving as a trap to prevent the heat from the evaporator from being transmitted to the supply vessel and to prevent the volatilized or vaporized gases in the evaporator from being conveyed into the bottle.

3. An apparatus for generating low tension vapors for hygienic or cosmetic purposes, comprising an evaporator having uncontrolled liquid supply and vapor escape passages, a liquid supply vessel under atmospheric pressure so arranged that the plane of the liquid level in the evaporator passes through it, air control means for maintaining a constant level within said supply vessel, an uncontrolled downwardly extending substantially U-shaped tubing connecting said liquid supply vessel with the supply passage of the evaporator, and a heater in said evaporator and disposed above the downwardly extending tubing, the tubing forming a trap to prevent the heat from the evaporator from being transmitted to the supply vessel and to prevent the gases there generated from being conveyed to the air control means.

In testimony whereof I affix my signature in the presence of two witnesses.

WERNER OTTO.

Witnesses:

C. HOLZEMAN,
LAURENCE A. HANSEN.