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APPARATUS FOR MOISTENING, DEODORIZING, DISINFECTING, PERFUMING, AND COOLING AIR.

APPLICATION FILED MAR. 28, 1913.

1,068,064. Patented July 22, 1913.

Fig. 1.

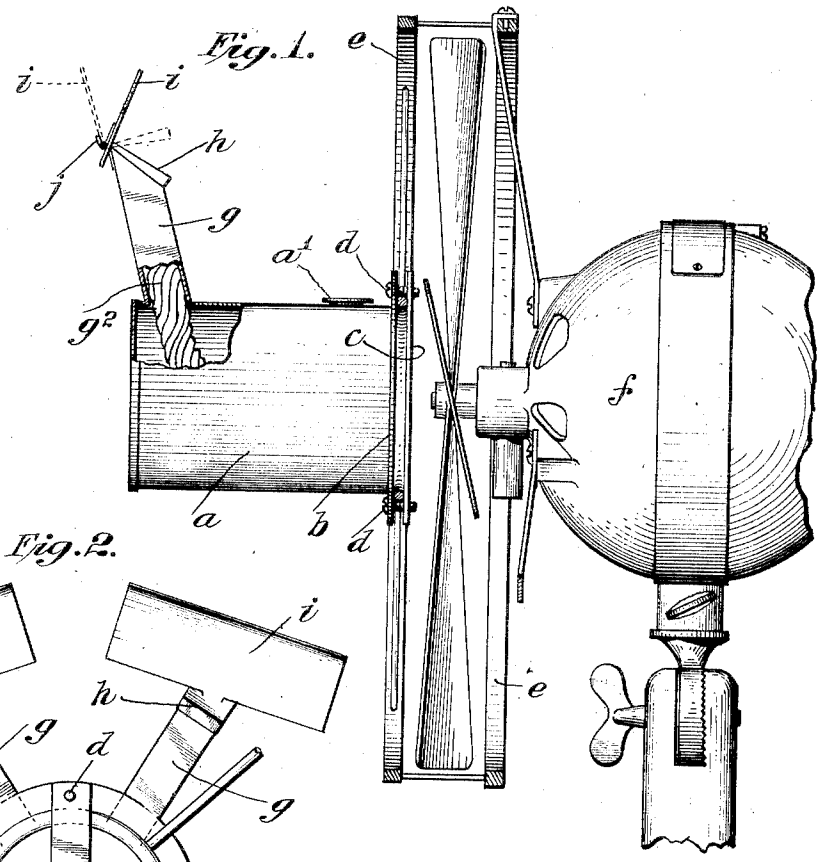


Fig. 2.

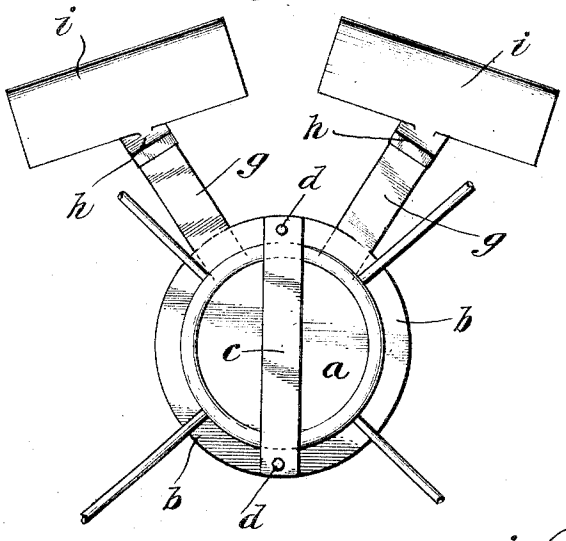
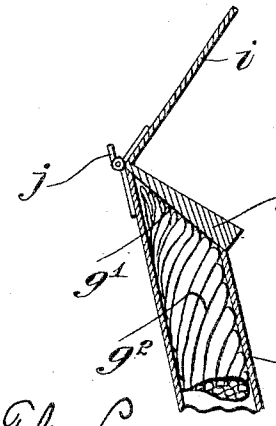


Fig. 3.



Attest:

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UNITED STATES PATENT OFFICE.

FELIX LESSER AND ARTHUR H. AVERY, OF NEW YORK, N. Y., ASSIGNORS TO SPRAY OZONE COMPANY, A CORPORATION OF NEW YORK.

APPARATUS FOR MOISTENING, DEODORIZING, DISINFECTING, PERFUMING, AND COOLING AIR.

1,068,064. Specification of Letters Patent. Patented July 22, 1913.

Application filed March 28, 1913. Serial No. 757,282.

To all whom it may concern:

Be it known that we, FELIX LESSER and ARTHUR H. AVERY, both citizens of the United States, and residing, respectively, in the borough of Manhattan, in the city, county, and State of New York, and in the borough of Brooklyn, in the city of New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Apparatus for Moistening, Deodorizing, Disinfecting, Perfuming, and Cooling Air, of which the following is a specification, reference being had therein to the accompanying drawings, which form a part thereof.

Our invention relates to apparatus for moistening, deodorizing, disinfecting, perfuming (if desired) and cooling air, and more particularly to an apparatus adapted to introduce the vapor of a volatile fluid to a current of air, or a moving column of air.

The main object of our invention is to effectively introduce to a moving column of air, or air current, the vapor of a volatile fluid in a manner to insure the cooling of the surrounding air in a room, and to purify and render it less noxious.

A further object is to provide an apparatus of this character wherein the supply of vapor will be automatically controlled by the moving air, thus insuring economy in the operation of the apparatus and certainty as to the treatment of the air.

A still further object is to provide an apparatus which may, if desired, be readily applied to an ordinary electric fan, and when applied will require no further attention than the occasional renewal of the supply of the volatile fluid.

A still further object is to provide an apparatus of this character wherein a sufficient surface of the volatile fluid is exposed to insure the introduction of as great a volume of the vapor to the air column or current as is practicable.

A still further object is to provide such an apparatus wherein the volatile fluid will be fed in a manner to avoid the impingement of the air current thereon in a manner to splash the fluid or remove it from its container in the form of spray. And a still further object is to provide an apparatus of this character which may be economically produced and effectively applied to a fan or other means for projecting a current of air across the vapor feed outlet.

The invention consists primarily in an apparatus of the character described embodying therein a fluid container, an outlet opening therein for the vapors rising from the fluid contents of said container, closure means for said outlet, and an air vane controlling said closure means whereby the passing of a current of air across said outlet will automatically open said closure means and said closure means will be automatically returned to normal when said current ceases; and in such other novel features of construction and combination of parts as are hereinafter set forth and described, and more particularly pointed out in the claims hereto appended.

Referring to the drawings:—Figure 1 is a side view of our improved apparatus applied to an ordinary electric fan, a portion of the apparatus and of the fan shield being broken away; Fig. 2 is a rear elevation of our apparatus; and Fig. 3 is a detail view of one of the outlets and the closure means therefor.

Like letters refer to like parts throughout the several views.

In the accompanying drawings, we have shown the form of our invention especially adapted for use upon an ordinary electric fan, in which connection our invention will have the greatest utility. The device, however, may be used in connection with any means for creating a current of air, the essential characteristics of our invention relating to the introduction into a column of air of the vapors from a volatile fluid, the effect of which vapors will be to cool the air through evaporation and condensation of the fluid, and impart to the air such properties as will render conditions in the room wherein our apparatus is used more hygienic.

Our invention may be advantageously used in halls, where people congregate in large numbers, as well as in smaller rooms.

In the embodiment of our invention shown in the drawings, *a* indicates a reservoir or tank having an end flange *b* by means of which and the bar *c* and screws *d*, it may be attached in the desired relation, as to the protective frame *e* of an electric fan *f*.

Projecting upwardly from the tank *a* is a plurality of spouts *g*, the upper end of each

of which is provided with an opening g' extending obliquely across the spout so as to provide the maximum effective surface for the outlet opening for the vapors formed at the discharge end of said spouts. To insure uniform conditions at the discharge end, we provide each said spout with a wick g^2 adapted, through capillary attraction, to raise the entire contents of the reservoir or tank a to the discharge point of said spouts at which point the volatile fluid is vaporized and conveyed from adjacent thereto by the column of air developed by the fan f.

The tank a is provided with a filling opening closed by the screw cap a'. As the vapors from the volatile fluid contained in the tank a may be used effectively only while the air current is being projected across the spouts g, we provide means normally closing the outlets of said spouts, as the hinged caps h, the actuation of which caps is preferably automatic, under the control of the air current, thus insuring a continuous exposure of the outlets of said spouts at all times while the air current is being projected thereacross, and insuring the automatic closing of said outlets immediately when the said current ceases. This controlling means for the closure for each said spout comprises an air vane i, attached to and projecting angularly from each cap h so as to have movement upon the hinge of said cap.

In order to insure the automatic closure of the cap h, we provide the stop j for limiting the movement of the said vanes, and the said cap, said caps being weighted so as to close by gravity excepting when encountering the resistance of the air current impinging against said vanes. This construction, furthermore, serves to deflect the air currents passing across the spouts, thus more thoroughly distributing the vapors and insuring a more thorough admixture thereof with the entire air current passing about said spouts.

When the fan f or other means developing the air current is not in operation, the caps h will seat under gravity upon the open ends of the spouts g forming a substantially air tight joint and preventing the escape of any vapor formed within the tank a or said spouts.

In the operation of our apparatus it is merely necessary to project an air current across the tops of the spouts g which current impinging upon the vanes i will raise the caps h and expose the open tops of the spouts g. The continued flow of air will hold these spouts open, thus permitting vapors to escape therefrom and combine with the air to impart thereto the desired qualities. The wicks g^2 will provide a substantially constant, uniform supply of the fluid adjacent the discharge opening of the said spouts, and will gradually raise the fluid from the tank a so as to maintain the supply of vapors at this point. The air current striking the vanes i and the raised caps h, will be retarded and deflected in a manner to permit a thorough absorption of the vapors thereby and a thorough admixture thereof with portions of the air not contacting directly with the wicks g^2.

The arrangement of the caps h and vanes i, and the construction of the spouts g, are such that the air current as a whole will not be materially reduced, thus permitting the application of our improved apparatus to various types of mechanisms for producing air currents, without reducing the efficiency of such mechanisms.

The supply of fluid in the tank a may be renewed from time to time by removing the cap a'. By using wicks g^2, for supplying the fluid to adjacent the outlet opening of the spouts g we are enabled to introduce the fluid into the air in a manner which will eliminate any possibility of objectionable spray being carried in suspension, by the current or column, thus adapting the device for use in places of amusement where the air currents are projected over the heads of the audience.

It is not our intention to limit our invention to the details of construction shown in the accompanying drawings, it being apparent that the design of the apparatus may be varied to accommodate it to different conditions of use, or use with various types of apparatus for developing air currents, without departing from the spirit and scope of the invention.

Having described our invention, what we claim as new and desire to have protected by Letters Patent, is:—

1. An apparatus of the character described, embodying therein a fluid container, an outlet opening therein for the vapors rising from the fluid contents of said container, closure means for said outlet, and an air vane controlling said closure means, whereby the passing of a current of air across said outlet will automatically open said closure means, and said closure means will automatically return to normal when said current ceases.

2. An apparatus of the character described embodying therein a fluid container, a constricted spout projecting upwardly therefrom and open at its outer end, oscillatory closure means for said spout, and an air vane carried by and movable with said closure means.

3. An apparatus of the character described embodying therein a fluid container, a constricted spout projecting upwardly therefrom and open at its outer end, a wick carried by said spout whereby the fluid contents of said container is lifted to adjacent said opening, oscillatory closure means for

said spout, and an air vane carried by and movable with said closure means.

4. An apparatus of the character described embodying therein a fluid container, a constricted spout projecting upwardly therefrom and open at its outer end, said open end extending obliquely across said spout and substantially parallel with the direction of movement of the air current to be passed thereover, oscillatory closure means for said spout, and an air vane carried by and movable with said closure means.

5. An apparatus of the character described embodying therein a fluid container, a plurality of divergently projecting, constricted spouts extending upwardly from said container and open at their outer ends, oscillatory closure means for each said spout, and an air vane carried by and movable with said closure means.

6. An apparatus of the character described, embodying therein a fluid container, an outlet opening therein for the vapors rising from the fluid contents of said container, weighted closure means for said outlet, an air vane controlling said closure means, whereby the passing of a current of air across said outlet will automatically open said closure means, and said closure means will automatically return to normal when said current ceases, and means limiting the movement of said vanes.

7. An apparatus of the character described, embodying therein a fluid container, an outlet opening therein for the vapors rising from the fluid contents of said container, closure means hinged adjacent to one edge of said outlet opening, an air vane controlling said closure means, whereby the passing of a current of air across said outlet will automatically open said closure means, and said closure means will automatically return to normal when said current ceases, and a stop limiting the movement of said vanes.

8. An apparatus of the character described, embodying therein a fluid container, an outlet opening therein for the vapors rising from the fluid contents of said container, weighted closure means hinged adjacent to one edge of said outlet opening, an air vane controlling said closure means, whereby the passing of a current of air across said outlet will automatically open said closure means, and said closure means will automatically return to normal when said current ceases, and a stop limiting the movement of said vanes.

9. An apparatus of the character described embodying therein a fluid container, means delivering the fluid therein contained in the path of a moving column or current of air, and automatically acting closure means adapted to be actuated by the column of air whereby said means are permitted to deliver said fluid contents only while the air current is being directed adjacent thereto.

In witness whereof, we have hereunto affixed our respective signatures, each in the presence of two subscribing witnesses, this 26th day of March, 1913.

FELIX LESSER.
ARTHUR H. AVERY.

Witnesses:
EUGENE WENING,
OTTO MUNK.