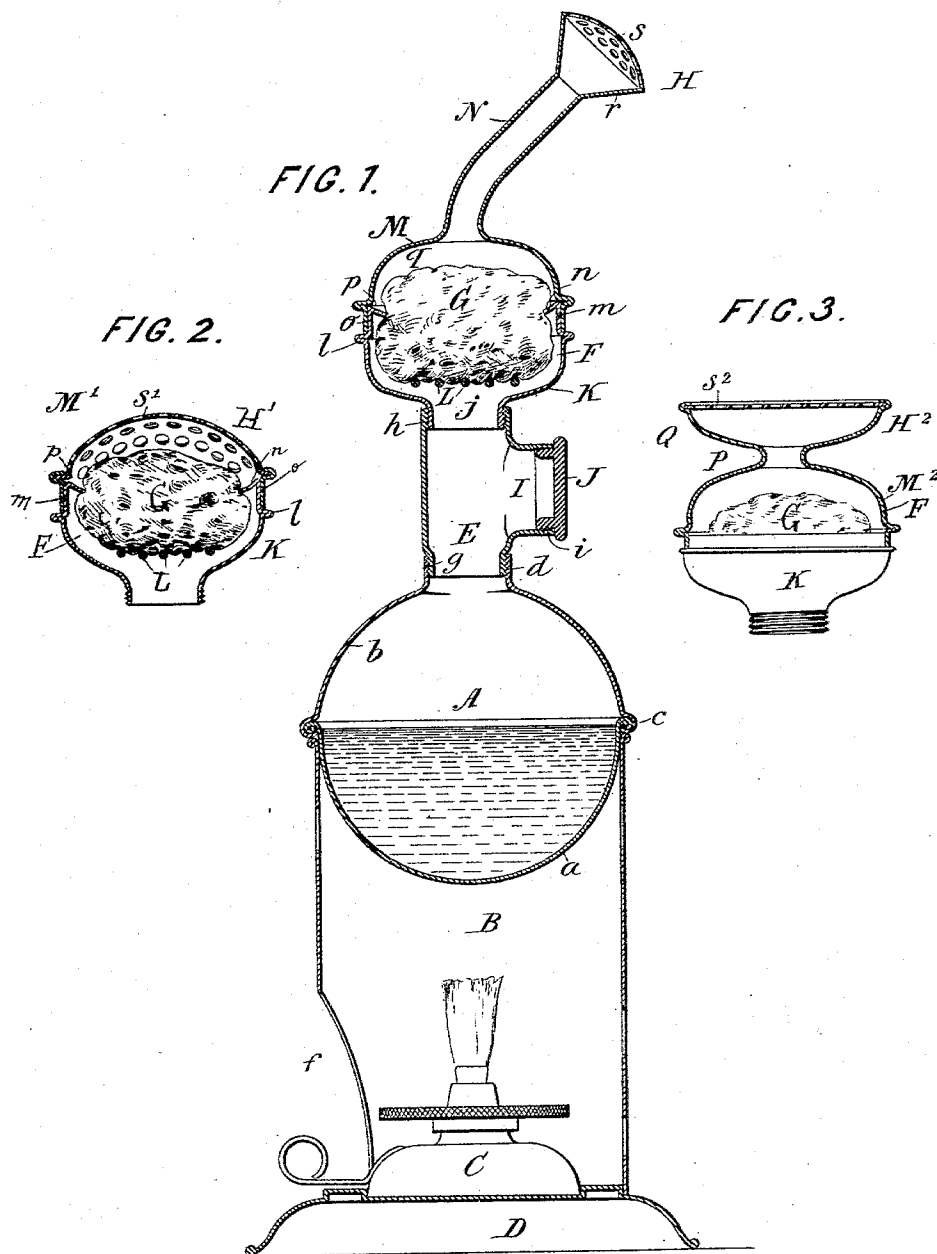


(No Model.)

J. H. VALENTINE.
VOLATILIZER.

No. 571,811.

Patented Nov. 24, 1896.



WITNESSES:
John A. Rennie
Fred White

INVENTOR:
James H. Valentine,
By his Attorneys,
Arthur C. Brasen & Co.

UNITED STATES PATENT OFFICE.

JAMES H. VALENTINE, OF CHATHAM, NEW JERSEY.

VOLATILIZER.

SPECIFICATION forming part of Letters Patent No. 571,811, dated November 24, 1896.

Application filed March 20, 1893. Serial No. 466,813. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. VALENTINE, a citizen of the United States, residing in Chatham, in the county of Morris and State of New Jersey, have invented certain new and useful Improvements in Volatilizers, of which the following is a specification.

This invention relates to volatilizers, vaporizers, and inhalers of the class used for volatilizing drugs, oils, and medicaments for inhalation, fumigation, and like purposes, and aims to provide improved apparatus of this character.

Heretofore such devices have been constructed with a water-boiler, heating-lamp, lamp-casing, and drug-containing vessel. Several examples of such apparatus are shown in my prior United States patents, No. 323,547, dated August 4, 1885, No. 374,720, dated December 13, 1887, and in my application for patent filed September 18, 1892, Serial No. 446,151.

According to my present invention I provide certain improvements in the features of construction and operation of volatilizers, which will be hereinafter set forth.

In the accompanying drawings, Figure 1 is a vertical mid-section of an apparatus constructed according to the preferred form of my invention. Fig. 2 shows a modified-form mouthpiece, and Fig. 3 a further modification of the mouthpiece.

Referring to the drawings, let A indicate the boiler; B, the shield supporting the latter; C, the lamp or source of heat within the shield; D, the base of the shield, on which the lamp rests; E, the neck leading from the boiler; F, the drug-reservoir; G, a sponge or other porous article therein for holding the drug to be volatilized, and H the discharge-head or mouthpiece through which the vapor is discharged.

The boiler A may be of any usual construction. That shown consists of a closed spherical sheet-metal vessel formed of cup-shaped halves *a* and *b*, united at the flange *c*, and the upper half having an internally-smooth or screw-threaded collar *d*.

The shield B is a sheet-metal casing of the usual cylindrical form, having perforated walls for the entrance and exit of air and opening *f* for the entrance of the lamp and

the usual diverging base D. The boiler sits within the upper end of the shield, the flange *c* resting on the top edge thereof.

According to my invention the boiler A is preferably a closed boiler, its only outlet being through the collar *d*, and I provide a contracted neck E, entering this collar, through the hollow interior of which communication exists from the boiler to the drug-reservoir F. Preferably the neck E is a short tubular member having lower screw-threaded end *g*, fitting into the collar *d*, and upper internally-screw-threaded end *h* for connection with the reservoir. Preferably it is constructed with a branch I, having an internally-screw-threaded end *i*, corresponding in size to the end *h* and normally closed by a cap J, upon the removal of which cap the reservoir can be connected to the branch I instead of to the upper end *h* of the neck, in which case the cap J will be screwed into the end *h* to close it. When the reservoir is applied at the branch I, the volatilizer can be utilized to direct the vapors laterally or upwardly or downwardly, as desired, which is convenient where the person inhaling is seated beside the apparatus, when the latter is on a table, or when the person treated is reclining. In the usual use with the reservoir at top the boiler can be conveniently filled through the branch by simply removing the cap J. The collar *d* and lower end of the neck E are preferably of the same size at their junction as the screw-threaded portion of the upper end *h* of the neck, whereby when desired the neck can be omitted and the reservoir F applied directly to the boiler.

According to my invention I provide a reservoir or compartment F in direct communication with the boiler A, and I provide within this reservoir an absorbent or porous material, as the sponge for holding the drug to be volatilized. The reservoir F is preferably a casing consisting of a body K of spun metal, having a throat *j* externally screw-threaded and engaging the neck E, from which point the body bulges outwardly and rises in hemispherical form, having a shoulder *l*, above which is a vertical circular flange *m*, at the top of which the metal is bent inwardly and downwardly, forming a lip *n*, projecting into the interior of the reservoir. Across the lower part of the body is a guard L, prefer-

ably consisting of a series of cross-wires soldered to the lower part of the body. The sponge G is pressed into the body K, resting on the guard L thereof, passing slightly under the lip *n*, and projecting at center above this lip. The lip serves to retain the sponge in position in the body and to direct inwardly onto the sponge any condensation which falls on the lip.

The remainder of the reservoir F need not essentially be employed; but I prefer to provide some protecting or inclosing provision beyond the sponge which shall carry a mouthpiece or discharge for the vapors. In Fig. 1 this consists of a cover M, having a circular flange *o*, fitting over the flange *m* of the body, a shoulder *p*, resting on the lip *n* thereof, and a dome-shaped top *q*, covering the sponge G, and from the center of which rises vertically a tube N, which slightly above the cover is bent and projects angularly, its upper end having a flaring flange *r*, which constitutes the mouthpiece H and is preferably protected by a screen or perforated guard *s*.

I preferably provide an auxiliary mouthpiece or discharge H', (shown in Fig. 2,) in which the cover (here lettered M') for the reservoir is constructed with a dome-shaped screen-cup *s'*, which rests on the body K directly over the sponge G.

Fig. 3 shows another modification of the mouthpiece or discharge especially designed for use when the apparatus is employed as a perfumer or deodorizer. In this attachment the cover (lettered M²) for the body K has a contracted neck P and a flaring mouth Q, across which is fixed a flat screen *s*², the whole constituting the discharge or mouthpiece, lettered H².)

In operation the reservoir will be applied to the boiler or to the neck, as desired, the boiler being first supplied with water and the lamp lighted. The drug to be used will be supplied to the sponge and the latter forced

into the reservoir. The cover M, M', or M² will be applied to the reservoir as circumstances dictate. Then as the steam or vapor rises from the boiler it will penetrate the sponge G and volatilize the drug contained therein, and the products will be discharged through the mouthpiece. Any condensation on the cover will flow down the walls onto the lip *n* and back into the sponge.

It will be seen that the invention provides an improved apparatus which can be conveniently and effectively used as a volatilizer, vaporizer, or inhaler for reducing drugs and oils to a gaseous state for purposes of medicinal deodorizing and disinfecting uses, and it will be understood that the invention is not limited to the exact details of construction described and shown as its preferred form, but that these can be modified to some extent without departing from the essential features of the invention.

The joints between the boiler, neck, reservoir, and its cover need not essentially be screw-threaded, as any other well-known joint will be within the scope of my invention.

What I claim is, in volatilizers and analogous apparatus, the following-defined novel features and combinations, substantially as hereinbefore set forth, namely:

In a volatilizer the boiler A and reservoir F in combination with the neck E connected to said boiler and having open end *h* and branch I for connection with said reservoir, and the cap J closing the open ends of said neck, whereby said reservoir can be applied to said neck at either the top or side thereof.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JAMES H. VALENTINE.

Witnesses:

GEORGE H. FRASER,
CHARLES K. FRASER.