

(No Model.)

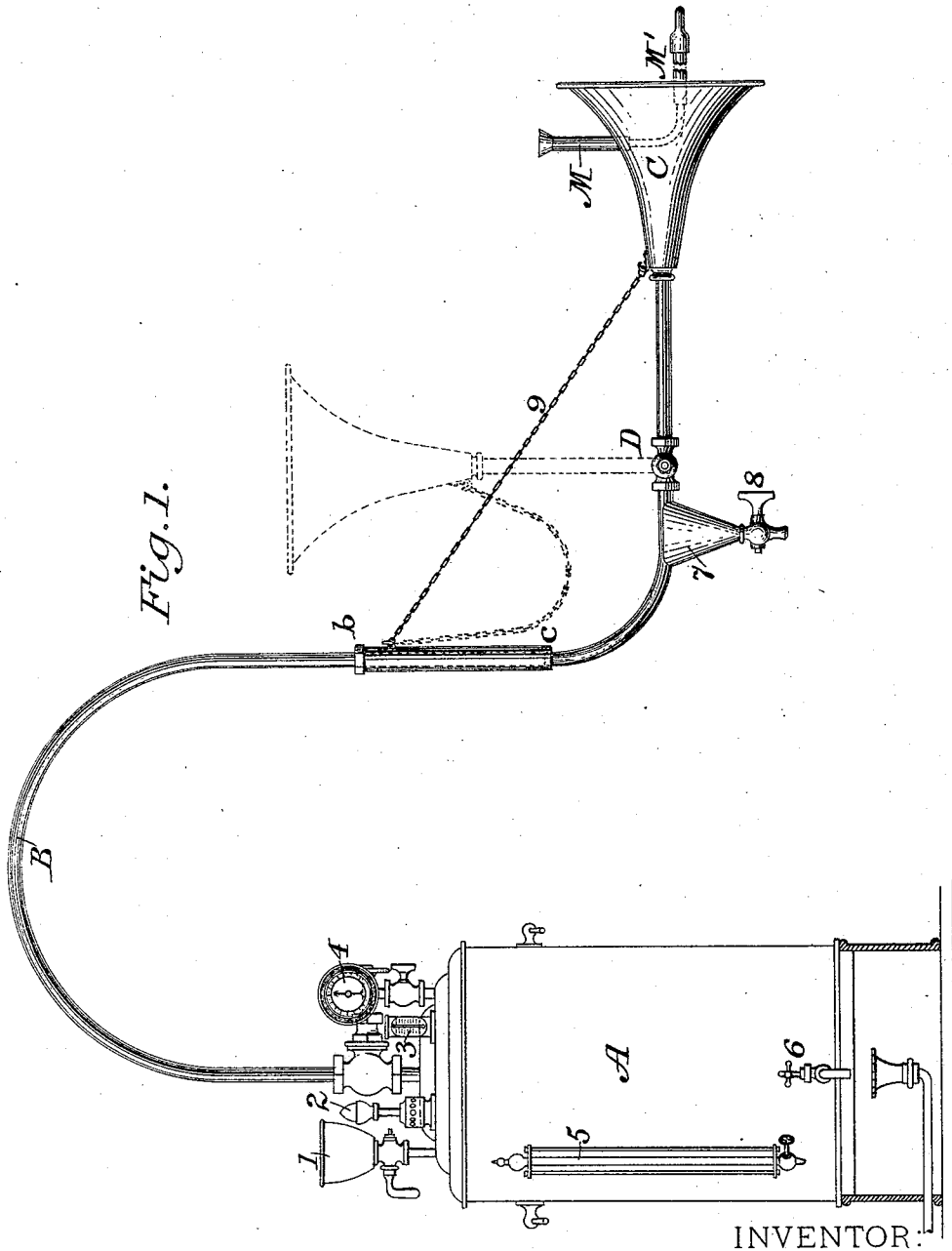
3 Sheets—Sheet 1.

W. G. FLANDERS.

COMBINED VAPORIZER, INHALER, AND ATOMIZER.

No. 475,274.

Patented May 17, 1892.



INVENTOR:

William G. Flanders

WITNESSES:

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A. Widdes

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William B. Greeley
Attorney.

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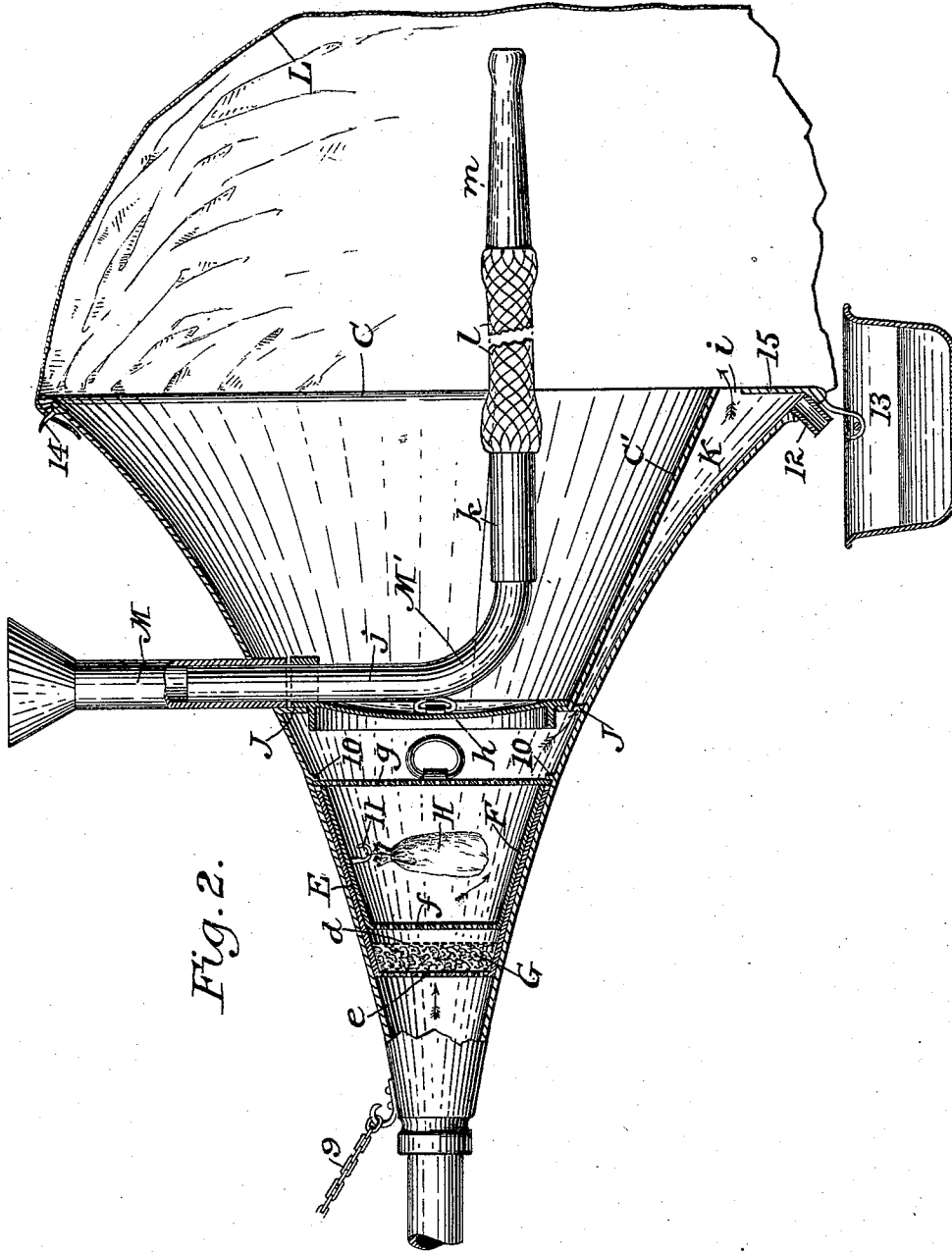


Fig. 2.

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(No Model.)

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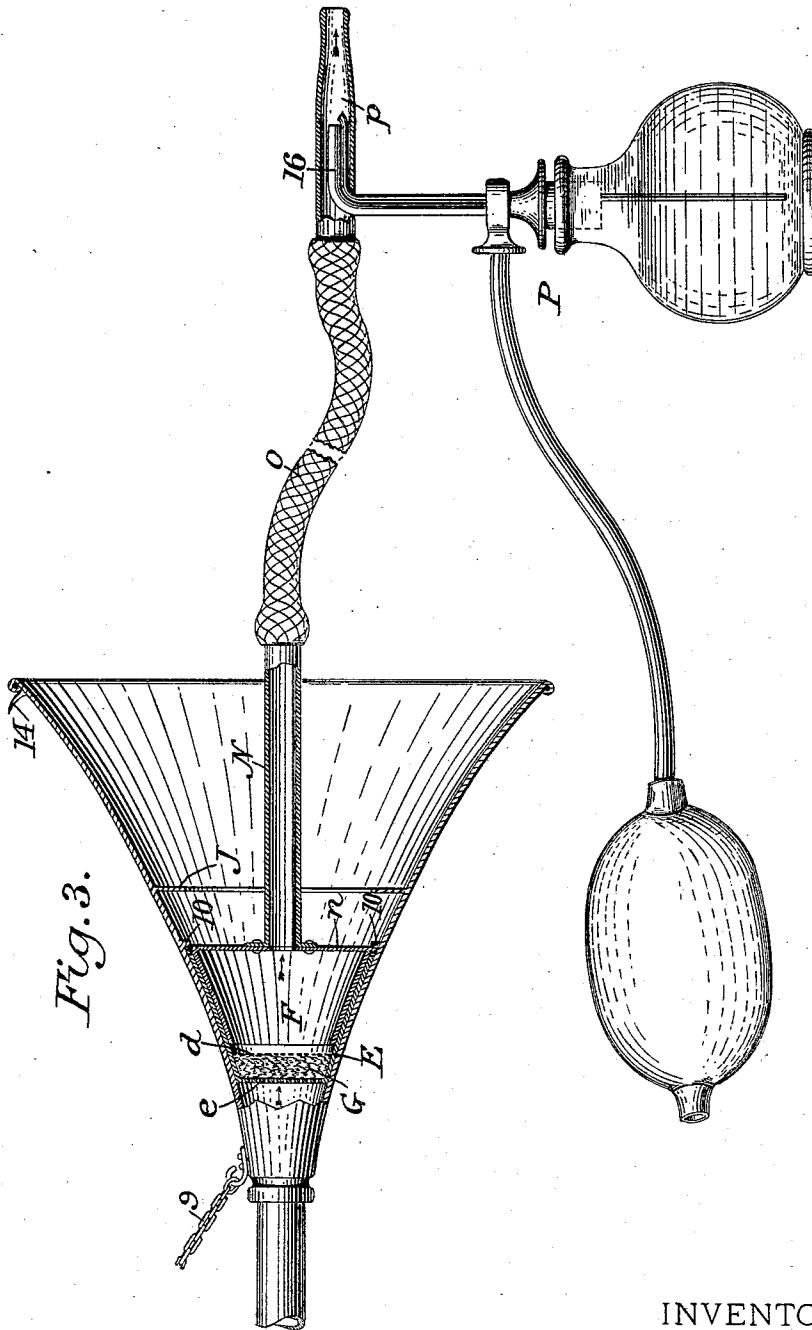


Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM G. FLANDERS, OF NEW YORK, N. Y.

COMBINED VAPORIZER, INHALER, AND ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 475,274, dated May 17, 1892.

Application filed November 19, 1891. Serial No. 412,380. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. FLANDERS, of New York, in the county and State of New York, have invented certain new and useful
5 Improvements in a Combined Vaporizer, Inhaler, and Atomizer; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters and
10 figures of reference marked thereon, making a part of this specification.

My invention is intended to provide an improved apparatus for charging heated vapor with perfumes or medicines and applying the
15 same to the skin of the face or internally to the throat and air-passages.

In the drawings, Figure 1 is a side view of the apparatus in position, including the generator attached thereto. Fig. 2 is a view,
20 partly in section, of the bell-mouth, showing the means employed to diffuse perfume and apply the vapor. Fig. 3 is a view, partly in section, of the bell-mouth and indicating apparatus as adapted for applying medicated
25 vapor to the throat and lungs.

In the embodiment of my invention shown in the drawings the devices employed to perfume or medicate vapor and apply the same to the face and to medicate vapor for application to the throat are connected with a
30 steam generator or boiler A, of ordinary construction, preferably furnished with a feed-cup 1, a safety-valve 2, a thermometer 3, steam and pressure gages 4 and 5, and a discharge-cock 6.

A pipe B connects the boiler A with a bell-mouth C, and is preferably curved or provided with a rotatable telescopic section *b c* to permit adjustment of the bell-mouth C to the height and position of the person using
40 it. At a convenient point on the pipe B, preferably in its lowest portion, is attached a drain-cup 7, furnished with a discharge-cock 8, to receive and discharge water produced
45 by condensation of vapor in the pipe. The pipe B is also furnished in its lowest portion with a hinged joint D to permit further adjustment of the bell-mouth C to the convenience of the user, and may carry a guard-chain 9, attached thereto and to the bell-

mouth C, to retain the latter in position. Within the bell-mouth C, near its smaller end, is fitted a removable cup E, having for its smaller end a perforated diaphragm *e*, adapted to permit vapor to pass freely through it. 55
Within the cup E is removably fitted a second cup F, having for its smaller end a diaphragm *f*, similarly perforated, the inner cup F being of such a depth as to leave a space between the perforated diaphragms *e* and *f*, 60
and within said space and attached to the cup E is a third perforated diaphragm *d*, forming with the diaphragm *e* a chamber G, which is intended to be filled with sponge, asbestos fiber, or other similar material, for 65
the purpose of reducing the pressure of the steam and diffusing the same. A perforated diaphragm *g* is adapted to cover both cups and retain them in place, and is removably secured within the bell-mouth by lugs 10 10, 70
the edge of the diaphragm being notched or cut away to permit its removal when turned to bring the notches in line with the lugs. A bag or porous receptacle H, containing the perfume or medical substance 75
with which the vapor is to be charged, is intended to be placed within the cup F and may be removably supported therein by suitable means, as by a hook 11. A flange J, perforated on its lower edge, is secured on the 80
inner surface of the bell-mouth C outside of the perforated diaphragm *g*, and within said flange is fitted a removable cover *h* in such a manner that when the cover *h* is in position it constitutes with the flange a diaphragm, and 85
that the bell-mouth C will be closed at that point, with the exception of the apertures in the perforated lower edge of the flange J. The cover *h* is of such dimensions that when it is removed an aperture is left of sufficient 90
size to permit the removal through it of the diaphragm *g* and the cups E and F. A shield C' is secured to said flange and to the interior of the bell-mouth C in such a manner as to leave between the said shield and bell-mouth 95
a space K, crescent-shaped in cross-section. A drain-tube 12 may be inserted in the edge of the bell-mouth C near the outer end of the space K, and a drip-cup 13 may be attached thereto to receive liquid produced by the con- 100

densation of vapor in the bell-mouth C. The edge of the bell-mouth C may be furnished with hooks, as 14, adapted to engage with the edge of a flexible cover L, which is itself adapted to inclose the head of the person treated and to retain the perfumed vapor in contact with the face. The crescent-shaped aperture at the outer end of the space K may be partially closed by a diaphragm 15, secured to the edge of the bell-mouth C, leaving a smaller crescent-shaped aperture *i* between said diaphragm and the edge of the shield C'. A vertical fixed tube M passes through the periphery of the bell-mouth C outside of the flange J and is secured therein. A removable breathing-tube M', having a vertical section *j*, a horizontal telescopic section *k*, a flexible section *l*, and a mouthpiece *m*, is telescopically fitted in said fixed tube at its vertical section for the purpose of furnishing atmospheric air to the person using the device.

In the use of my invention for the purpose of applying perfumed vapor to the face the bell-mouth C is adjusted to the height and position desired by means of the devices provided for that purpose. The heated vapor passes from the boiler A through the pipe B, diaphragm *e*, chamber G, where the pressure is checked and the vapor diffused, diaphragm *d*, diaphragm *f*, cup F, where the vapor is perfumed or medicated by partial volatilization of the perfumes or other substance contained in the porous receptacle H, diaphragm *g*, perforated flange J, space K, and aperture *i*, and rises from around the lower edges of the shield C' in a substantially vertical direction as a cloud of perfumed or medicated and heated vapor. Atmospheric air for breathing is supplied through the tube M', and by the use of the flexible cover L the vapor may be retained in the chamber formed by said cover and the shield C' and brought in close and continuous contact with the face.

In the adaptation of my improved apparatus to the purpose of medicating the vapor for inhaling, as employed in treatment of diseases of the throat and lungs, the breathing-tube M' and the cover *h* are removed and the perforated diaphragm *g* is replaced, as shown in Fig. 3, by a diaphragm *n*, which has attached thereto a tube N, having a flexible section *o* and a mouthpiece *p* and having connected therewith and secured within the mouthpiece *p* or in any other convenient part of the tube the end 16 of the atomizing or spraying apparatus P, of usual construction, containing the medicated fluid with which the vapor is to be charged. By these means the medicated fluid is injected into the current of heated vapor in the mouthpiece *p* in the manner indicated by the construction described.

The effect of the heated vapor of water is known to be beneficial to the skin and mucous

membrane in opening and cleansing the pores and stimulating the circulation. By the use of my improved apparatus a continuous current of such vapor is freed from the condensed moisture, diffused, continuously perfumed or medicated, and applied to the skin or air-passages in such a manner as to promote absorption, and the perfumes or medicinal substances, carried in a continuous current of heated vapor, enter the pores more readily and are brought in closer and more permanent contact with the skin or mucous membrane than when atomized at ordinary temperatures or volatilized with or without water in open vessels. Furthermore, by the construction and arrangement of the entire apparatus the patient while being treated may sit or recline at ease without being obliged to assume an uncomfortable position, the bell-mouth, through the services described, being adjustable to any desired position.

I claim as my invention—

1. The combination of a vapor-generator, an adjustable vapor-tube connected therewith, and a bell-mouth carried by the end of said tube, said tube being provided with a drain cup and cock, and said bell-mouth being provided with an internal diaphragm at its lower edge and with a drain-tube for the escape of the water of condensation from said tube and bell-mouth, substantially as shown and described.

2. The combination of a vapor-generator, a vapor-tube connected therewith, a bell-mouth carried at the end of said vapor-tube and adapted to cover the face of the person treated, a tube carried by said bell-mouth and opening to the external air, and a mouth-piece having a flexible connection with said tube, substantially as shown and described.

3. The combination of a vapor-generator, a vapor-tube connected therewith, a bell-mouth carried at the end of said tube, a cup fitted within said bell-mouth, and a hook carried by said cup and adapted to support a bag, substantially as shown and described.

4. The combination of a vapor-generator, a vapor-tube carried therewith, a bell-mouth carried by the end of said tube, a diaphragm closing said bell-mouth and perforated at its lower edge, and a shield secured within the lower portion of said bell-mouth and to said diaphragm above its perforated portion, substantially as shown and described.

5. The combination of a vapor-generator, a vapor-tube connected therewith, a bell-mouth carried at the end of said tube, a cup having a perforated end, and a perforated diaphragm adapted to engage with lugs on the inner surface of said bell-mouth and to retain said cup in position, substantially as shown and described.

6. The combination of a vapor-generator, a vapor-tube connected therewith, a cup fitted within the bell-mouth and having a perforated

rated end or bottom, a flange secured within
said bell-mouth and perforated at its lower
edge, and a cover engaging said flange and
closing the opening within the same, sub-
stantially as shown and described.

5 7. The combination of a vapor-generator, a
vapor-tube connected therewith and jointed
to permit movement in vertical and horizon-
tal planes, and a bell-mouth carried by the end

of said tube, substantially as shown and de- 10
scribed.

In testimony whereof I have signed my name
to this specification in the presence of two
subscribing witnesses.

WILLIAM G. FLANDERS.

Witnesses:

A. N. JESBERA,

A. WIDDER.