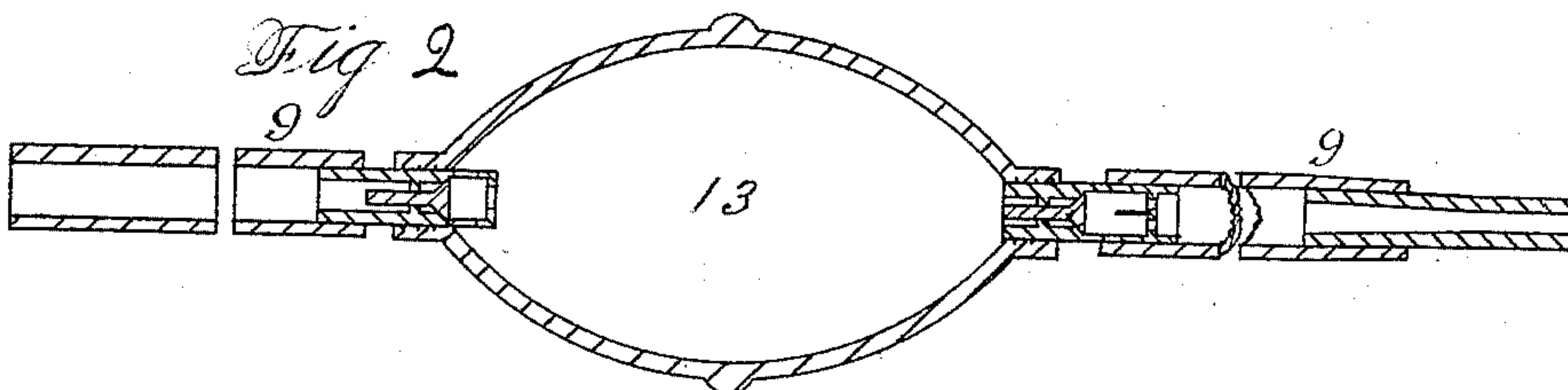
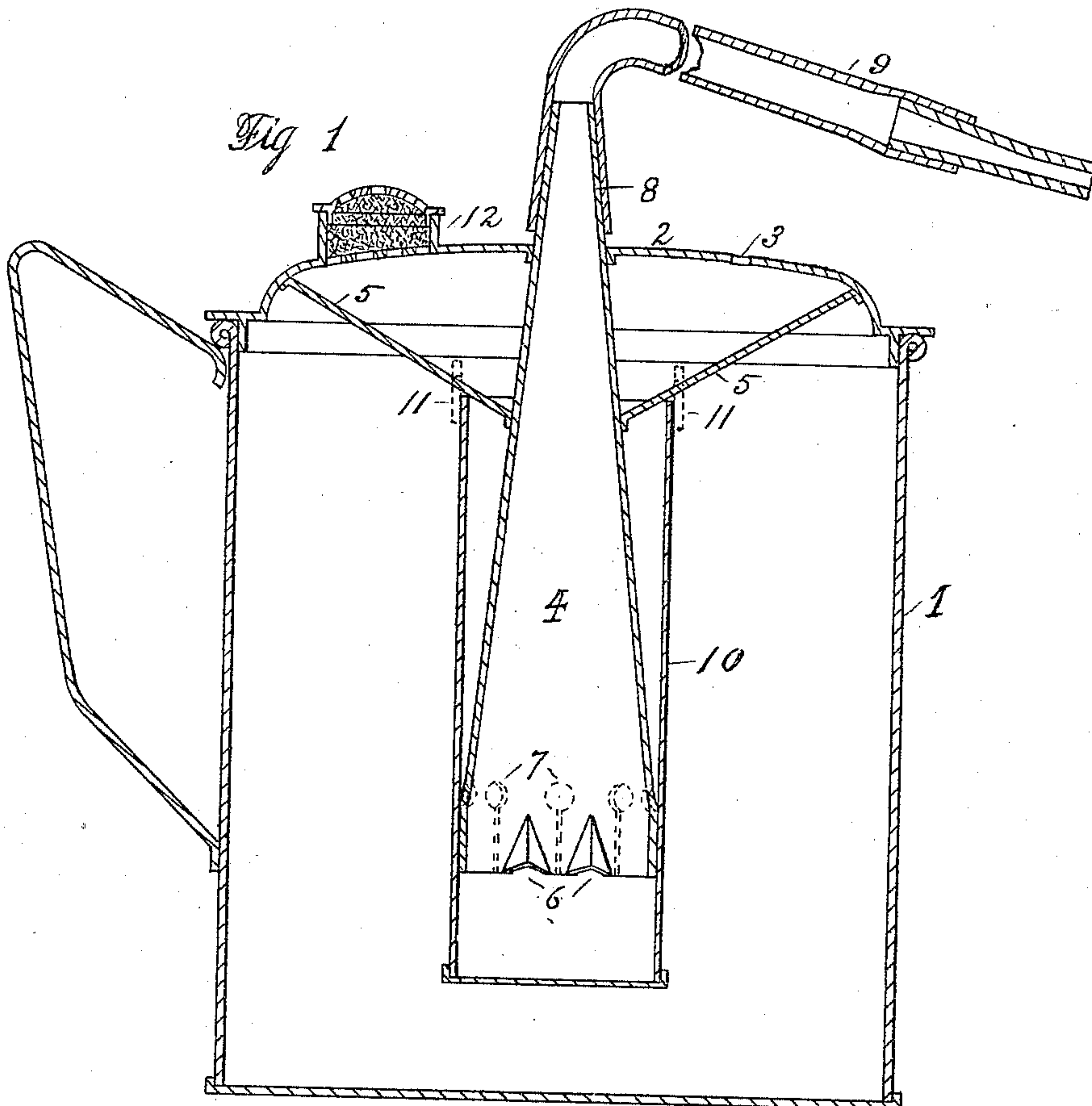


(No Model.)

W. J. FAIRFIELD.  
INHALER.

No. 412,881.

Patented Oct. 15, 1889.



WITNESSES:

*A. S. Smith*

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# UNITED STATES PATENT OFFICE.

WILLIAM J. FAIRFIELD, OF DENVER, COLORADO, ASSIGNOR TO ELIZA J. HARDING, OF SAME PLACE.

## INHALER.

SPECIFICATION forming part of Letters Patent No. 412,881, dated October 15, 1889.

Application filed March 23, 1889. Serial No. 304,536. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM J. FAIRFIELD, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Inhalers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to a new and improved form of inhaler designed for the administration of indicated medicinal remedies in the form of vapor; and its objects are to furnish a vaporizer, atomizer, and inhaler for such use of simple construction, cheap and economical, efficient in operation, and readily and safely used and controlled; to which ends it consists in the features, constructions, and arrangements more particularly hereinafter described and claimed.

In practicing my invention I make use of a vessel for containing a liquid that may be heated to aid in the vaporization or volatilization of the indicated remedy or remedies, such vessel being provided with a cover fitting thereupon and having apertures permitting the access of air from the exterior to the interior of the vessel. Such apertures may be simply plain unguarded holes; or they may be incased and covered with a porous filtering material, itself adapted to hold or retain medicinal remedies, so that the air drawn there-through may be impregnated with such remedies to a greater or less extent. Through such cover passes the inhalation-tube or an extension thereof, the same ending on the interior of the vessel in an open-ended tube depending from the cover, and around which is suspended or sustained the medicine-containing vessel or receptacle, so as to be subject, when deemed necessary, to the influence of the heated liquid contained in the main vessel. In use such medicine vessel or receptacle is also suspended from the cover, and such suspension may be by forming the inner end of the inhalation-tube and the medicine-receptacle relatively to each other, so that the latter slips upon and is held frictionally on the former, the end of the inhalation-tube being also so formed or arranged that air may pass therearound or therethrough over the surface

or through the body of the remedies in the medicine-receptacle and take therefrom and convey to the lungs of the patient such portion or portions of the remedy or remedies as are volatilizable by the degree of heat applied. In the mouth-tube, or tube leading from the medicine-receptacle to the mouth of the patient, may be placed or inserted an air forcing or pumping device—similar, for instance, to the pumping-bulb of a Davidson syringe—so that air medicated and warmed by its passage through the main vessel and the medicine-receptacle may be administered to children and others so weak, infirm, or unskillful as to be unable themselves to inhale such air or vapor.

The simple construction thus generally set out may be better understood by reference to the drawings, wherein is illustrated an embodiment of the invention, and in which—

Figure 1 is a vertical central section of such embodiment, and Fig. 2 a central longitudinal section of an air-forcing device which may be used therewith.

In the drawings, the reference-numeral 1 indicates a vessel of any suitable size and material, so constructed, however, that heat may be applied thereto, or the contents thereof heated to any reasonable degree. Such vessel, which may be termed the "main" vessel or "body" of the apparatus, is fitted with a cover 2, provided with one or more perforations 3, forming inlets to the interior of the vessel for the exterior air. Seated in such cover is a part of the inhalation-tube, there being thereof a depending portion 4 upon the interior of the cover and of such size that it may extend some distance down within the vessel 1 when the cover 2 is in position thereon, while a part extends to the exterior of the cover or from the top thereof as a nipple 8, on which may be secured a tube 9 of any suitable material, although for ease of use a flexible rubber or other flexible tube is preferable therefor.

Surrounding the end 4 of the inhalation tube or pipe is the medicine vessel or receptacle 10, herein shown in full lines as gripping the same, so as to be held thereon frictionally, although it may be suspended from the cover by any other means—as, for instance, by the spring-catch 11 shown in dotted



lines. This interiorly-depending end 4 of the inhalation-tube should be so formed that air may pass therearound or therethrough into the medicine-vessel, to which end the extreme  
 5 edge of the vessel is shown as corrugated, as seen in full lines at 6, or the same object may be accomplished by the apertures 7 shown in dotted lines.

To limit the upward movement of the medicine-vessel 10 upon the end 4 of the inhaling-tube, stops or braces 5 may be used, though the same are not a vital or necessary part of the construction.

In practice the remedies indicated are  
 15 placed in the vessel 10, which is then secured around the depending end 4 of the inhalation-tube. Then, if the nature of the remedy to be used indicates it, water or other fluid heat absorbing and conveying medium is placed  
 20 in the vessel 1 to partially surround the medicine-receptacle 10 and the necessary or desired heat applied thereto. Suction being then applied by means of the tube 9, air is drawn into the vessel through the apertures 3, thence  
 25 *via* the corrugations 6 or the openings 7 into or over the medicine, and, being there warmed and impregnated with the remedial elements of the material in the vessel or receptacle 10, it passes to the mouth and lungs of the user.

30 Instead of using merely plain perforations 3 for the inlet of air to the vessel 1, one or a group of perforations having a surrounding-case 12 may be used, such incasement being filled with a porous absorbent material, as cotton, which, when such course is indicated,  
 35 may be moistened with some remedial or chemical agent. Suppose, for example, that muriate of ammonia vapor be indicated. A

small amount of muriatic acid may be placed in the receptacle 10 and the cotton, sponge, 40 or other material in the aperture-case 12 be moistened or saturated with spirits of ammonia, so that ammoniaized air shall be drawn over or through the muriatic acid.

When deemed necessary from the condition 45 of the patient, an air-forcing device, as the properly-valved bulb 13, may be used in connection with the inhalation-tube, so that medicated vapor may be forcibly administered to patients unable or unwilling to personally op- 50 erate the inhaler.

This forms a very simple and reliable and easily-operated atomizer, vaporizer, and inhaler, in the use of which the only skill and care necessary are those of the trained physi- 55 cian to correctly diagnose the disease and indicate the proper remedies, the correct, efficient, and proper use and inhalation then being within the intelligence of persons possessed of little or even of no technical or medi- 60 cal skill.

Having thus described my invention, what I claim is—

An inhaler consisting of a main vessel, a cover therefor having apertures for the pas- 65 sage of air therethrough, and having a depending inhalation-tube secured thereto, and a medicine-receptacle adapted to slide over and be held by such inhalation-tube, substantially as set forth. 70

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

WILLIAM J. FAIRFIELD.

Witnesses:

L. F. WILBER,  
 CHAS. G. HARDING.