

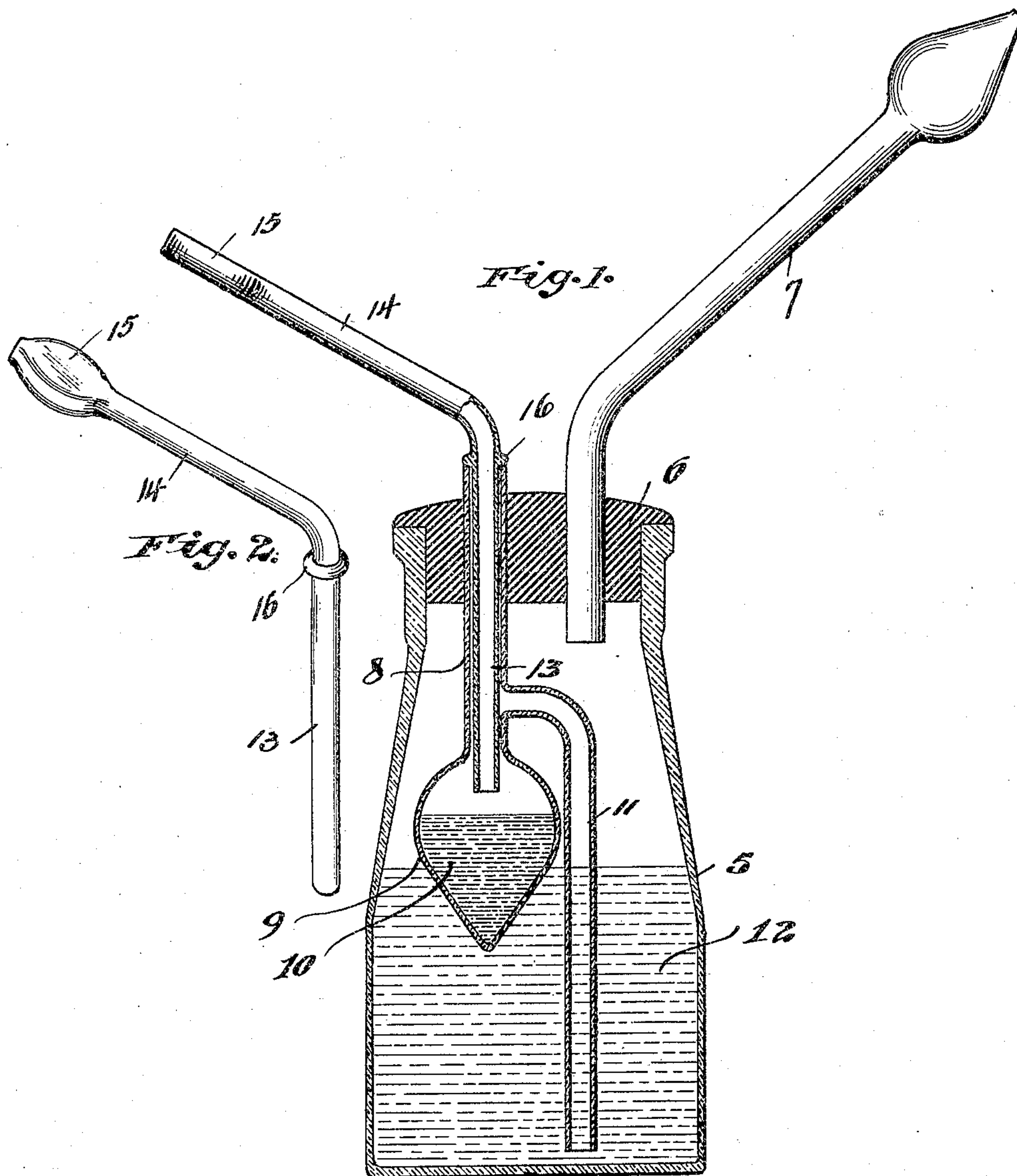
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E. W. BALLENTINE.

VAPORIZER.

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Witnesses,
J. D. Mann,
S. N. Ford.

Inventor,
Edmund W. Ballentine
By Offield, Fowler & Smith
Attys.

UNITED STATES PATENT OFFICE.

EDMUND W. BALLENTINE, OF CHICAGO, ILLINOIS, ASSIGNOR TO CHICAGO VAPORIZER COMPANY, OF PIERRE, SOUTH DAKOTA, A CORPORATION OF SOUTH DAKOTA.

VAPORIZER.

SPECIFICATION forming part of Letters Patent No. 794,387, dated July 11, 1905.

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To all whom it may concern:

Be it known that I, EDMUND W. BALLENTINE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Vaporizers, of which the following is a specification.

This invention relates to improvements in medical appliances of that general class known as "vaporizers," the purpose or object of which is to effect the thorough application to diseased parts or organs, such as the nasal passages, of a medicated vapor for healing and curative purposes. Numerous devices of this general character which operate by a process of inhalation on the part of the patient have been devised and used, an instance of which is shown in Letters Patent No. 349,085, granted September 14, 1886, to James F. Chesebro.

The present improvement has for its principal object to effect a superior and more extended use of such a device through an attachment in the nature of an air-forcing pipe or tube having a mouthpiece which dispenses with the necessity of the inhaling operation on the part of the patient and enables the medicated vapor to be positively forced into contact with the diseased parts.

To this end the invention consists in a vaporizer for the purpose stated constructed and operated substantially in the manner hereinafter described, and more particularly pointed out in the claim.

A device embodying the invention in an improved form is illustrated in the accompanying drawings, wherein—

Figure 1 is a central vertical section through the main receptacle and its contents, and Fig. 2 is a detail perspective view of the detachable and removable blowpipe constituting the chief novel feature of the present invention.

In the drawings, 5 designates the main receptacle, which may be formed of any suitable material and in any convenient size and shape, the receptacle being preferably of glass in order to afford at all times a view of the contents and to enable the user to readily ascertain the amount of medicated liquid therein and to know when recharging is required.

The upper end of the receptacle may be closed by a suitable stopper 6, which is apertured for the insertion therethrough of a vapor-discharge tube 7 and for the hollow stem 8 of a bulb 9, adapted for the reception of some usual acid for a medicated vapor, such as hydrochloric acid 10, which may be poured therein through the open upper end of the stem 8. A tube 11 branches laterally from the hollow stem 8 at a point between the bulb and the stopper and extends nearly to the lower end of the receptacle through a body of medicinal liquid 12, contained in the receptacle 5, which may contain the usual alkali, such as ammonia.

The device as thus far described corresponds substantially with the vaporizing-inhaler disclosed in the Letters Patent to Chesebro hereinabove referred to, such device having heretofore been capable of use solely as an inhaler by utilizing the tube 7 as a mouthpiece through which air drawn from the outside through the hollow stem 8, over the liquid 10, through the branch tube 11, and up through the liquid 12 and impregnated by the vapors of the medicinal liquids has been inhaled by the patient. Experience has demonstrated that numerous situations arise wherein the application of the medicated vapor by the process of inhalation is impractical or impossible, such as in the cases of children too young to use the vaporizer through the regular plan of inhalation or of elderly people too sick or otherwise incapable of using the vaporizer in such a way. In order to enlarge the scope of the device and enable it to be successfully used in such cases, I have provided in lieu of the funnel G shown in said patent an attachment or appurtenance in the nature of an air-supply pipe adapted to conduct a current of air blown there-through, whereby a physician, nurse, or attendant may readily force the medicated vapor through the discharge-pipe 7 not only to such parts as are ordinarily reached by the inhalation process, but also to parts that would be incapable of treatment through the latter. This air-pressure-supply pipe in the preferred form herein shown consists of a bent glass

tube comprising a straight vertical lower portion 13, adapted for insertion through the stem 8 into the bulb 9, and an outer inclined portion 14, terminating in a flattened and enlarged mouthpiece 15. This supply pipe or tube is preferably made of glass throughout and is provided with an integral collar 16 at or near the upper end of its lower vertical member, which collar sits on the upper end of the stem 8.

In practice when the device is to be charged the stopper 6 and the parts carried thereby are first removed and the medicinal liquid 12 introduced to the receptacle 5 to about the height illustrated. The stopper and the parts carried thereby being then replaced, the air-pressure-supply pipe is withdrawn and the acid 10 introduced to the bulb 9 through the open upper end of the hollow stem 8. The air-pressure-supply pipe being then inserted in the position shown in Fig. 1, the device is ready for use. The attendant directs the enlarged bulbous end of the discharge-tube 7 against the part or parts to be treated and applying the lips to the mouthpiece 15 blows therethrough, thus forcing a current of air through and in contact with the acid and alkaline liquids carried by the receptacle, whence the air-current, heavily charged with the vapors of said liquids and associated medicines, is discharged through the tube 7 into intimate and thorough contact with the parts or organs to be treated thereby.

The particular construction of air-pressure-supply pipe herein illustrated and described possesses several advantages, among which may be mentioned the following: Being loosely pivoted in the hollow stem 8, the mouthpiece is capable of being turned to any given angle relatively to the discharge-tube 7. Being removable by simply lifting it out of the hollow stem 8, it does not interfere with the charging of the bulb 9 and at the same time may itself be readily cleansed, and having the

form of a single integral tube it requires no attaching or joint-forming parts to place it in operative relation to the other parts of the device. Furthermore, the air-pressure-supply pipe enables the device to be used as an ordinary inhaler when desired by serving as a conduit for the air drawn into the bulb 9.

From the foregoing it will be seen that the above-described invention greatly enlarges the scope of the ordinary vaporizing-inhaler, making it possible to treat patients who are incapable of using the device itself as an inhaler and also rendering possible the treatment of parts incapable of being reached by the inhaling method.

The efficiency of the device as a disinfecting, fumigating, and sterilizing apparatus for sick-rooms is also enhanced by reason of the greatly-increased volume of the medicated vapor which may be discharged therefrom.

I claim—

The combination with a receptacle adapted to contain a body of medicated liquid and a stopper therefor, of a bulb suspended within said receptacle by a hollow stem passed through the stopper thereof and adapted to contain a body of medicinal acid, a branch tube leading from said hollow stem into the liquid in said receptacle, a vapor-discharge tube passed through said stopper, and a removable air-pressure-supply pipe comprising a vertical portion interiorly telescoping said hollow stem and entering said bulb, a collar on said vertical portion adapted to seat on the upper end of said hollow stem, an outer inclined branch, and a flattened and widened mouthpiece at the end of said branch, all of said parts being made integral, substantially as and for the purposes described.

EDMUND W. BALLENTINE.

Witnesses:

SAMUEL N. POND,
JENNIE NORBY.