

No. 717,411.

Patented Dec. 30, 1902.

O. A. JOHNSTON.  
VAPORIZER.

(Application filed Sept. 24, 1901.)

(No Model.)

Fig. 1.

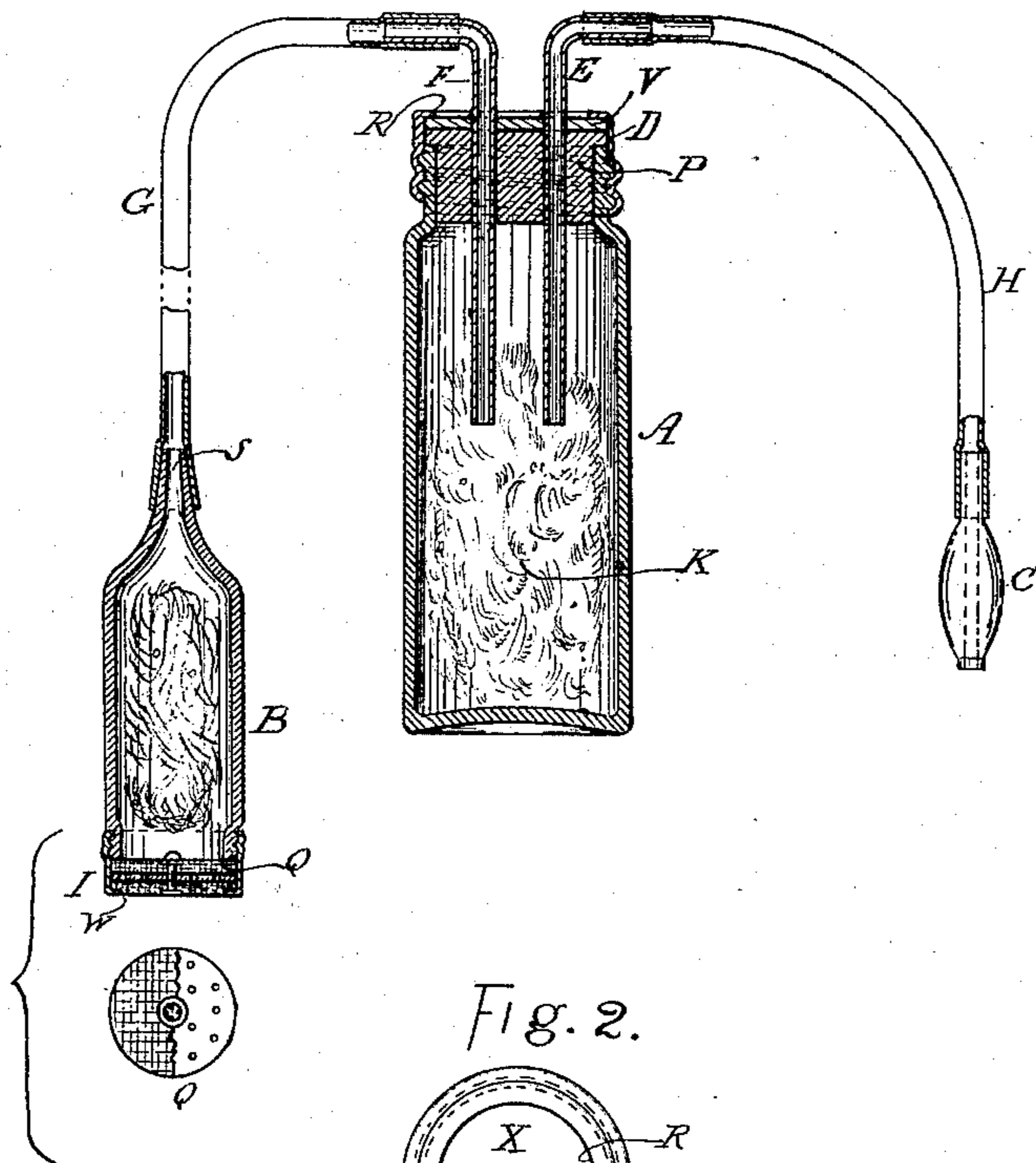


Fig. 2.

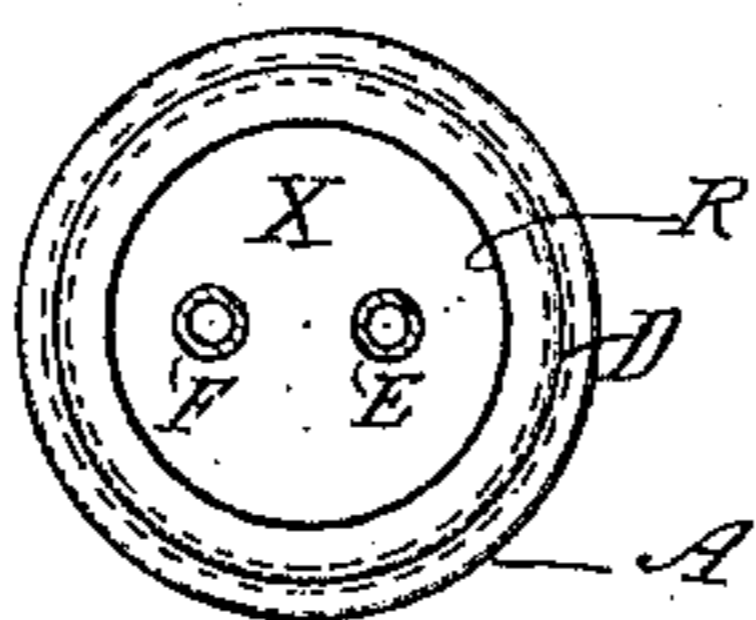
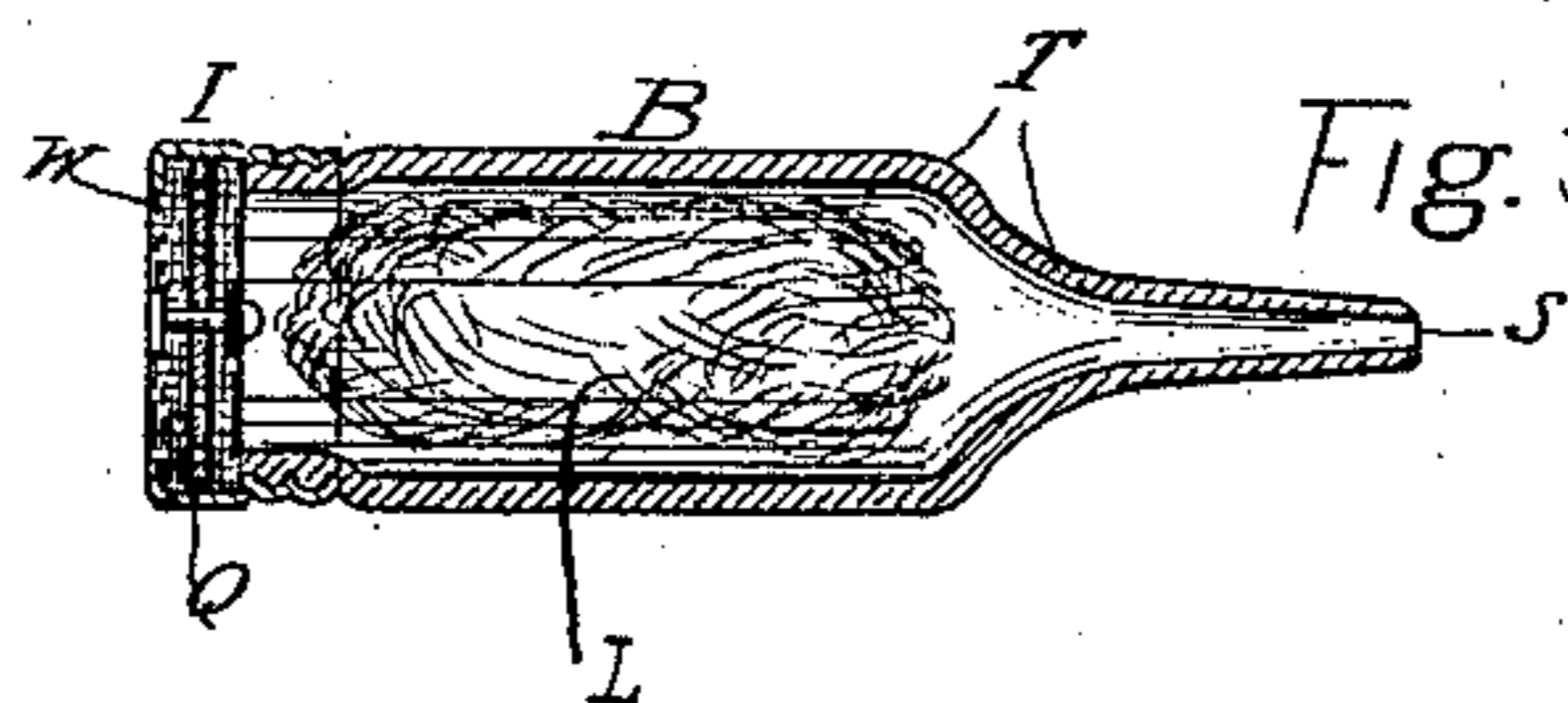


Fig. 3.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

OLIN A. JOHNSTON, OF PHILADELPHIA, PENNSYLVANIA.

## VAPORIZER.

SPECIFICATION forming part of Letters Patent No. 717,411, dated December 30, 1902.

Application filed September 24, 1901. Serial No. 76,392. (No model.)

*To all whom it may concern:*

Be it known that I, OLIN A. JOHNSTON, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented new and useful Improvements in Vaporizers, of which the following is a specification.

My invention relates to a new and useful improved medical device, which I call a "distributor" and which is used in combination to form an improved complete vaporizing apparatus, the object of this improved vaporizing apparatus being to provide a simple, inexpensive, and efficient device of this character wherein volatile remedial liquids may be placed in sufficient quantity to render frequent recharging or refilling unnecessary and whereby the liquid may be uniformly applied in aeriform condition to any exposed part of the human body and the intensity of the application regulated at the will of the user according to the requirements of each particular case.

My invention consists in the novel construction, combination, and arrangement of the several parts, as herein described, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view showing my improved vaporizer. Fig. 2 is a plan view of the receptacle. Fig. 3 is a sectional view of distributor adapted to use as an inhaler.

In the practice of my invention I employ a receptacle A, (preferably cylindrical in form,) made of glass, rubber, or metal, (preferably of glass,) having one end closed and the other end open. The open end or mouth is threaded on the outer surface to receive a screw-cap D and has a smooth inner surface, which receives a perforated stopper P. Stopper P (preferably of cork or rubber) has two perforations placed slightly apart near the center and extending entirely through it parallel to the axis of receptacle A. Stopper P fits tightly into the mouth or open end of receptacle A.

V is a circular elastic disk, preferably of sheet-rubber, the periphery of which measures the same as the outer periphery of the mouth of receptacle A and has two perforations in line with the perforations in stopper P.

Inlet-tube E and outlet-tube F (preferably of glass) each pass through one of the perforations in disk V and through the corresponding perforation in stopper P. The openings, which extend the full length through these tubes E and F, form, respectively, the only means of ingress and egress to and from receptacle A, which is rendered otherwise airtight and liquid-tight when stopper P and disk V are placed in position.

Tubes E and F are of sufficient length and project well into the body of receptacle A and, passing through the perforations in stopper P and disk V, extend far enough above and outward from disk V to admit of having fixed to them each a flexible tube.

Metal screw-cap D is adapted to the mouth of receptacle A and is screwed on after the stopper P has been fitted into the mouth of receptacle A and after the disk V has been placed flatly upon stopper P. A circular opening X, large enough to encircle both tubes E and F when in position, is left in the center of the top of cap D. Lip r, which forms a part of cap D, holds disk V and also the stopper P firmly in position.

B is a distributor and consists of a hollow cylindrical body (preferably of glass) having a conoidal tapering termination at one end and at the other end a circular opening or mouth, which is screw-threaded on its outer surface to receive a screw-cap I.

S is an opening at the point or apex of the tapered end T.

The conoidal tapered end T is sufficiently elongated to receive a flexible tube, which is fixed to it.

The foregoing description of screw-cap D also adequately describes the construction of screw-cap I, which fits the screw-threads at the mouth of distributor B and has a circular opening in the top analogous to opening X in cap D. Lip W on cap I is analogous to lip R on cap D. The width of lip W and the thickness of the circular wall of distributor B are approximately the same.

Q is a circular pad composed of a circular piece of wire mesh or perforated sheet metal placed between two circular pieces of felt or cloth or other suitable fiber, all of the same diameter, concentrically arranged and riveted together at the center or stitched to-

gether with thread. If the felt or cloth employed possesses sufficient rigidity, the wire mesh or perforated sheet metal may be omitted from pad Q, or the one inner piece of felt  
 5 may be omitted, if desired, without departing from the scope of my invention. The periphery of pad Q measures the same as the outer periphery of the threaded end of distributor B, to which it is fixed by placing it  
 10 flatly on over the open end and then screwing the cap I tightly onto the threaded end of distributor B. The entire outer edge of pad Q is thus gripped tightly and held in proper position between lip W and the end of the circular wall of distributor B.

C is an ordinary mouthpiece, which has an opening extending entirely through it longitudinally and adapted at one end to receive a flexible tube.

20 When desired, mouthpiece C may be removed, and in its stead an ordinary air-forcing bulb, having inlet and outlet valves and well known commercially as an "atomizer-bulb," is fitted to the outward end of tube H.

25 H is a flexible tube one end of which is fixed to mouthpiece C and the other end of which is fixed to inlet-tube E and completes a direct air-passage communicating with the inside of receptacle A from without.

30 G is another flexible tube, (of any desired length,) one end of which is fixed to outlet-tube F and the other end of which is fixed to the tapered end of distributor B and envelops the opening S, thus establishing a direct air-passage between the inside of cylinder A and the inside of distributor B.

In the operation of my invention the volatile liquid to be administered is placed within the receptacle A, which is supplied with a  
 40 sponge K (or other absorbent material) to absorb and expose an increased surface of the liquid to the action of the air. The liquid may be introduced directly through the mouth of cylinder A by removing cap D, stopper P, and disk V or through distributor B by removing cap I and pad Q and pouring the liquid into the open distributor B (as a funnel) and allowing the liquid to run downward through hose G and outlet-tube F and into the  
 50 receptacle A. The liquid being introduced, all parts of the device are then securely and properly adjusted as above specified. The user then places the pad Q flatly upon the surface of any part of his or another person's  
 55 body to be treated. A current of air is then introduced by blowing into the mouthpiece. It will be readily seen that a current of air thus introduced is forced through the flexible tube H and inlet-tube E into the cylinder  
 60 A, where it agitates and becomes thoroughly impregnated with the volatile portion of the liquid used and in this impregnated condition is driven outwardly through outlet-tube F, flexible tube G, and into distributor B, whence  
 65 its only avenue of escape is through the porous surface of pad Q, which evenly distributes the liquid in its minutely-atomized or

aeriform condition over as great a surface of the body as is desired by simply sliding the felt pad from spot to spot, the intensity of  
 70 the application being regulated by the amount of air-pressure given through mouthpiece C. When desired, the same practical results are obtained by employing the before-mentioned ordinary air-forcing bulb instead of mouth-  
 75 piece C to provide the necessary current of air.

Distributor B, fitted with cap I and pad Q, may be detached from the remainder of the device and used independently thereof as an  
 80 inhaler by placing the open port S to the nostrils, proper vent being given through the felt pad Q at the other end of the distributor.

Distributor B is adapted when used as an inhaler to receive the desired medicament either in liquid form or solids, (such as menthol.) In case a liquid is used distributor B  
 85 has fitted into it a sponge L (or other suitable absorbent material) for the purpose of absorbing, retaining, and rendering more readily volatile the liquid used.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a vaporizer the combination of a receptacle A having an externally-screw-threaded  
 95 mouth, absorbent material placed within receptacle A, a perforated stopper P fitted in the mouth of receptacle A, a perforated elastic disk V, inlet-tube E and outlet-tube F which pass through the perforations in stopper P and disk V and project inwardly and  
 100 outwardly and form the only means of ingress and egress to and from receptacle A; a screw-cap D adapted to the mouth of receptacle A and having a circular opening X which en-  
 105 circles the outward projections of tubes E and F; a lip R which forms a part of cap D and serves to hold stopper P and disk V in position; a vapor-distributor B consisting of a hollow cylindrical body tapered at one end  
 110 to an opening S and the other end having a mouth externally screw-threaded; a cap I adapted to the mouth of distributor B and having a circular opening in the top with a  
 115 lip W extending all around it; a circular felt pad Q which covers the opening at the threaded end of distributor B and is retained in position by lip W of cap I; a flexible tube G,  
 120 one end of which is fixed to the tapered end of distributor B and the other end of which is fixed to outlet-tube F; a mouthpiece C; a flexible tube H one end of which is fixed to inlet-tube E and the other end fixed to mouth-  
 125 piece C, substantially as shown and described.

2. In a vaporizer, the combination of a receptacle A, a sponge K, a stopper P, a disk V, a cap D with openings X and a lip R, an  
 130 air-inlet tube E, an outlet-tube F, a distributor B, a pad Q, a cap I having a circular opening in the top and a lip W, and a flexible tube G connecting the distributor with the tube F, substantially as described.

3. In a vaporizer, a distributor consisting of a hollow body open at both ends, a flat dis-

tributing-pad secured to one end of the hollow body and exposed so that it can be placed in contact with the surface of the body to be treated, substantially as described.

5 4. In a vaporizer, a distributor consisting of a cylindrical body tapered at one end and shaped to be attached to a supply-tube, an open cap secured to the opposite end of the said body, a distributing-pad secured between  
10 the cap and the tube and exposed so that it

can be placed in contact with the surface of the body to be treated, substantially as described.

In testimony whereof I have hereunto affixed my signature in the presence of two witnesses. 15

OLIN A. JOHNSTON.

Witnesses:

RAYMOND W. PEIRCE,  
J. MARTIN.