

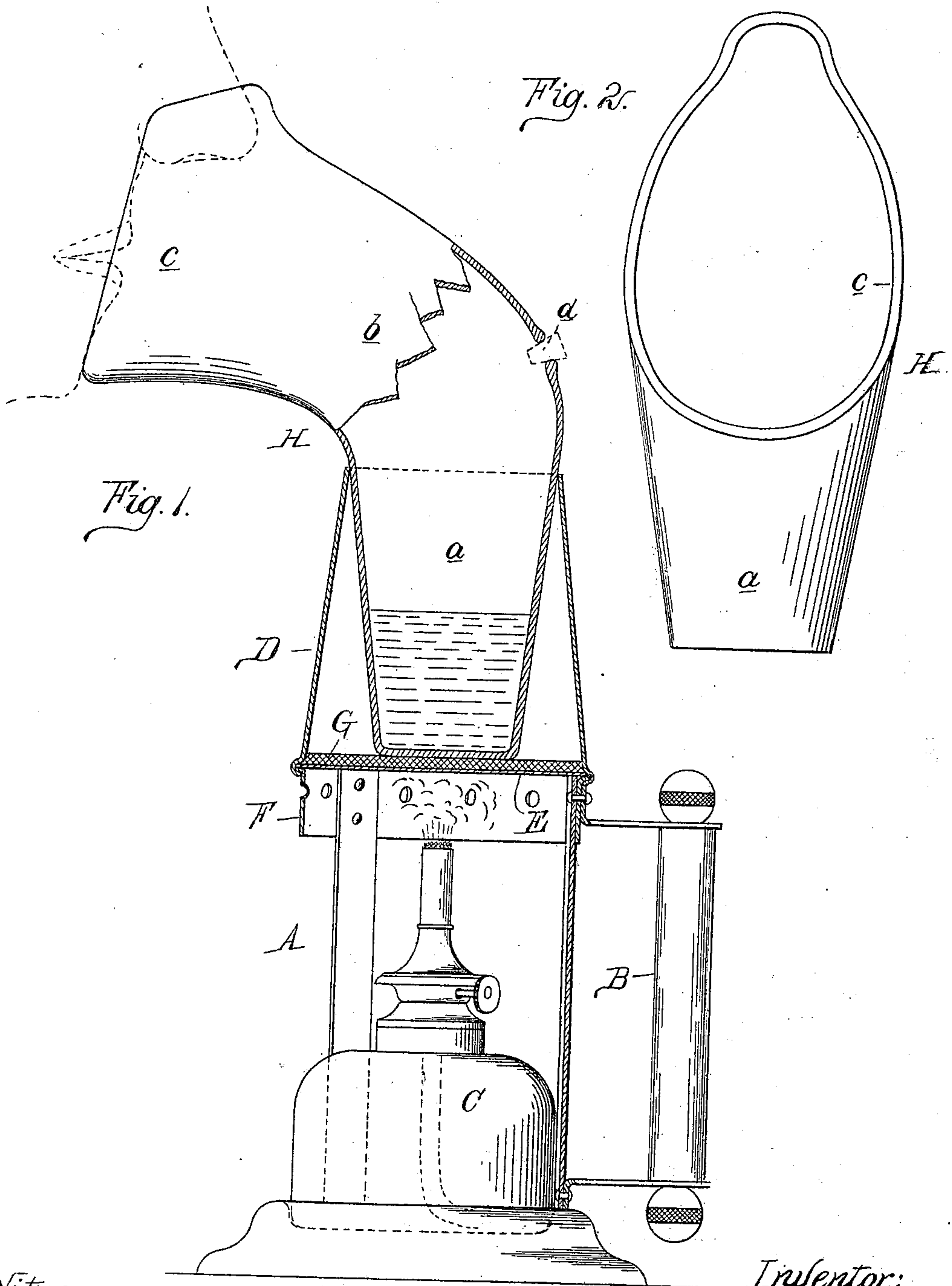
No. 670,084.

J. B. SLOANE.
INHALER.

Patented Mar. 19, 1901.

(No Model.)

(Application filed Oct. 13, 1899.)



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UNITED STATES PATENT OFFICE.

JOHN B. SLOANE, OF DETROIT, MICHIGAN.

INHALER.

SPECIFICATION forming part of Letters Patent No. 670,084, dated March 19, 1901

Application filed October 13, 1899. Serial No. 733,465. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. SLOANE, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Inhalers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to an improvement in inhaling apparatus of the kind in which the liquid medicaments are vaporized by means of heat and inhaled through a mask fitting over the mouth and nose.

15 With the increased knowledge we have acquired as to the contagious or communicable nature of certain catarrhal and pulmonary diseases it has become evident that the indiscriminate use of inhalers for the treatment of these and other diseases involves a serious danger unless the construction is based upon correct sanitary requirements, whereby with the exercise of ordinary precaution as to cleanliness all possible danger of making the inhaler a vehicle of communicating disease is avoided. From this point of view the inhalers in present use are more or less objectionable, as it will be easily understood that the use of tubes, contracted or tortuous passages, nozzles, valves, joints, or other inaccessible hiding-places or the use of rubber or other porous materials or a general complication of parts should be avoided.

25 It is the object of my invention to make an inhaler in which none of these objectionable features are present, while at the same time it forms a perfect inhaler in all other respects.

30 To this end my invention consists in the peculiar and novel construction, arrangement, and operation of an inhaling vessel of glass forming a combined mask-receptacle and vaporizing-chamber all integrally formed in one piece, and in combining with the same a heater having a frame for supporting the inhaling vessel in position for use and to apply heat thereto indirectly for vaporizing the liquid, all as more fully hereinafter described, and shown in the accompanying drawings, in which—

50 Figure 1 is an elevation of my improved inhaler partly in section, and Fig. 2 is a front elevation of the inhaling vessel detached.

In the drawings, A represents a lamp-frame,

B a handle for carrying it, and C a spirit-lamp or equivalent heater.

55 The top of the lamp-frame is formed by a heating-drum composed of a shell D, open at the top and closed at the bottom by a plate E, the under side of which is exposed to the direct heat of the flame and is preferably screened by a perforated skirting F, depending from the outer edge of the bottom plate E. The heating-drum is preferably of conical shape, being wider at the base than at the top; but it may be cylindrical or of any other suitable shape, and on the inside it is lined on the bottom (or on the sides as well) with asbestos G or other slow heat-conducting medium.

60 H is the inhaling vessel, made of glass. It is formed with a body portion *a*, adapted to close the open mouth of the drum and support the inhaling vessel in position therein with its flat bottom in heating contact with the bottom of the drum and forming a hot-air chamber H around its sides. The upper end of the inhaling vessel is formed with an elbow portion *b*, and this terminates in the flaring end portions *c*, shaped upon lines so that it will constitute and form a mask over the mouth and nose of the person using the inhaler.

75 I prefer to have the inhaling vessel enlarge gradually from the bottom up, with the elbow at a convenient angle to bring the mask in easy contact with the face without tipping the lamp. In the rear side of the elbow, at a point where the same may be easily grasped with the hand, I provide an opening *d*, preferably of a size so that it may be closed by placing a finger upon it.

80 In practice the liquid medicament to be used having been poured into the inhaling vessel, the latter is placed in the drum, which acts as a holder, and the lamp is lighted. The heat being thus indirectly applied will produce a constant slow vaporization, and as the air-space H being closed forms a hot-air chamber surrounding the body *a* the latter forms a vaporizing-chamber in which a constant volume of heated vapor is maintained, while the exposed upper portion projecting above the drum prevents it from becoming too hot for inhaling. The amount of vapor can be regulated by regulating the flame; but it will be seen that aside from that the pa-

tient having one hand upon the elbow of the vessel easily feels the heat, and as the inhaler is only loosely stuck into the drum he can vary the heating contact at the bottom of the vessel by lifting it up or pressing it down.

The opening *d* admits air into the vessel above the vaporizing-chamber, and the quantity thus admitted may be regulated by using the finger as a controlling-valve, and before it is inhaled it becomes hot and dry and mixes with the vapor. If the patient desires to exhale freely through the vessel, the opening *d* is left uncovered, and it will be understood that under such condition of use the breathing is always easy, as there is a relatively large volume of air contained in the vessel.

My construction fully attains the objects of the invention. The inhaling vessel combining the mask, vaporizing-chamber, air-mixing, heating, and drying vessel, vaporizing-chamber, and receptacle for the medicament, all integrally in one, may be made of glass, porcelain, or other like material, and answers in the highest degree to all sanitary requirements, as it may be cleaned and disinfected as easy as any ordinary tumbler.

Other advantages are that its operation is so simple and obvious that anybody will easily understand its manipulation and use. Further, it is economical, as it does not require a large quantity of medicament as many other inhalers; but the smallest quantity will produce results. In an emergency the inhaling vessel may be used without the lamp by setting it in a tumbler or other suitable vessel containing hot water.

What I claim as my invention is—

1. In an inhaler, the combination of an elbow-shaped inhaling vessel formed with a lower standing portion constituting the receptacle for the medicament to be vaporized and adapted to hold the same over a heating device and an upper laterally-extending integral portion constituting a face-mask, a supporting-frame to receive the standing portion of the inhaler and support it with its mask in position for inhaling, and means for heating the medicament.

2. In an inhaler, the combination of an elbow-shaped inhaling vessel integrally composed of a standing body portion forming a receptacle for the medicament to be vaporized and a vaporizing-chamber for the medicament to be vaporized, and an upper portion extending laterally beyond the body portion and forming the face-mask of the inhaler, and a lamp having a frame formed with a supporting-base upon which the lamp is mounted and with a holder above the lamp adapted to receive the body portion of the inhaler, and form an air-heating chamber around the same, said lamp-frame supporting the inhaling vessel with its face-mask in position for inhaling.

3. In an inhaler, the combination of an elbow-shaped inhaling vessel integrally composed of a substantially vertical body portion

adapted to receive a liquid medicament for vaporizing and of an upper portion extending laterally beyond the body portion and constituting a face-mask, said vessel having an opening for admitting air into the vessel directly above the body portion, a lamp-frame having a supporting-base upon which the lamp is supported and a drum above said base adapted to receive and inclose the body portion of the inhaling vessel below said air-opening and support it in standing position with the face-mask in position for inhaling, said drum forming an inclosed air-space around the body portion of the inhaler and having its bottom exposed to the heat of the lamp.

4. In an inhaler, the combination of an elbow-shaped inhaling vessel integrally formed of vitreous material with a cup-shaped body portion adapted to receive the liquid medicament and with a laterally-extending upper portion enlarging into and constituting a face-mask, said vessel having an opening for admitting air thereto directly above the body portion under control of a finger in holding the inhaler in position for inhaling, and a heating device adapted to support the inhaler with the cup-shaped portion thereof in standing position and exposed to the heat and with the upper portion extending laterally beyond the heater in position for inhaling.

5. In an inhaler, the combination of the elbow-shaped inhaling vessel formed of vitreous material and composed of the cup-shaped tapering body portion *a* and the laterally-extending upper portion integral therewith and terminating into a face-mask *c*, said vessel having an opening *d* for admitting air into said vessel, the lamp *C*, the lamp-frame having a supporting-base upon which the lamp is mounted, the drum *D* of the lamp-frame above the lamp forming an inclosed air-space around the body of the lamp and supporting the inhaler in position for inhaling, and the lining *G* at the bottom of the drum with which the bottom of the inhaler is in heating contact.

6. In an inhaler, a combined medicament-holder and mask comprising a standing cup-shaped portion adapted to hold a medicament or the like, and a laterally-projecting mask integral therewith, said mask at or near its juncture with the cup-shaped portion being provided with a hole, substantially as described.

7. In an inhaler, a combined medicament-holder and face-mask comprising a standing cup-shaped portion having a flat bottom and adapted to hold a medicament or the like, and a laterally-projecting face-mask integral therewith, substantially as described.

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

JOHN B. SLOANE.

Witnesses:

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