Morton & Gould,

Inhaler.

No. 5365. Patented Nov. 13, 1847.

Fig: 1.

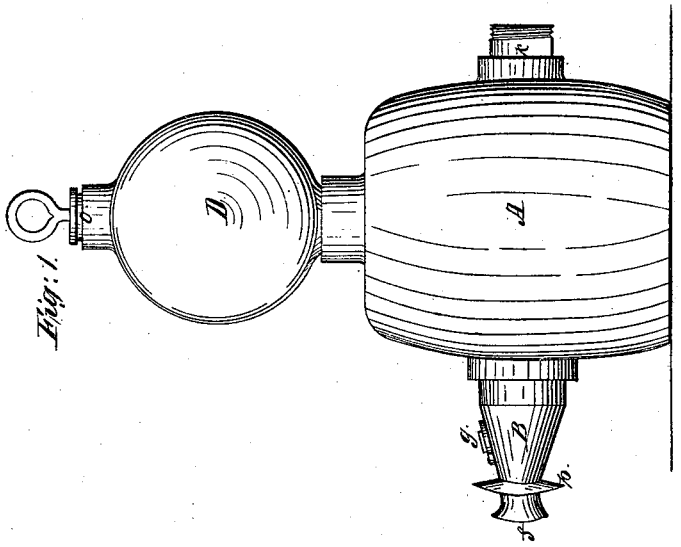


Fig: 5.

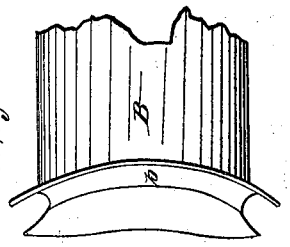


Fig: 4.

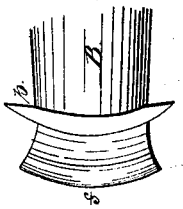


Fig: 2.

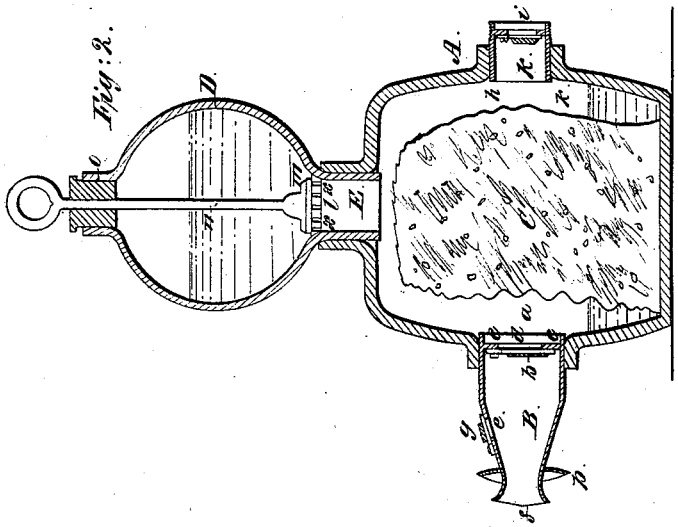
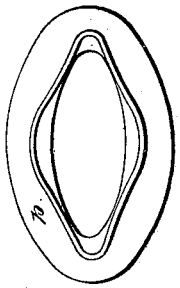


Fig: 3.



UNITED STATES PATENT OFFICE.

AUGUSTUS A. GOULD AND WM. T. G. MORTON, OF BOSTON, MASSACHUSETTS; SAID GOULD ASSIGNOR TO SAID MORTON.

APPARATUS FOR INHALING ETHER, &c.

Specification of Letters Patent No. 5,365, dated November 13, 1847.

To all whom it may concern:

Be it known that we, AUGUSTUS A. GOULD and WILLIAM T. G. MORTON, of Boston, in the county of Suffolk and State of Massachusetts, have invented an inhalation apparatus to be used for the purpose of administering to persons or introducing into their lungs the vapors of ether or various other chemical matters; and we do hereby declare that the same is fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawings Figure 1 denotes an external side elevation of our said apparatus. Fig. 2 is a central and vertical section of it.

A, Figs. 1 and 2, exhibits a receiver or vessel, made of glass or other suitable material, and shaped as seen in the drawings, or in any other convenient and proper manner. It has a mouth or opening (*a*) formed in one side of it, into which mouth or opening a tube B is inserted and closely fitted, as seen in Fig. 2. The said tube B is formed at its opposite end, and in any proper manner to enable a person to place and hold it in or to his mouth. A valve *b* is adapted to and arranged within the tube B, and at or near its inner end. This valve should be made to open toward the mouth piece or that end of the tube B which is to be inserted in the mouth as aforesaid. The said valve is hinged to a partition *c*, *c*, which is inserted in and fixed across the tube and has a hole *d* made through it, over which the valve closes, and rests on the partition as a seat. Another hole or passage *e* is bored or made through the top or other proper part of the tube B, and between the valve *b* and end *f* of the tube. The said hole *e* is provided with a valve or flap *g* which is hinged to the outer surface of the tube, and closes over the hole *e*. The valve *b* may be termed the induction valve and the valve *g* the eduction valve of the mouth tube B. Through the opposite side or any other proper part of the vessel A we make another passage or opening *h h* which is intended to admit atmospheric air into the interior of the vessel A. This last opening may be provided with a valve opening inward or toward the interior of the vessel.

In the drawing *i* denotes the valve as applied to a tube *k* which is fitted into the opening *h*, *h*. The object of the valve *i* is to prevent the vapor within the vessel A from escaping through the opening *h*, *h*. Into the vessel A we insert a sponge C which on being wet with any volatile fluid, such as ether for instance exposes a large evaporating surface to the action of the current of air, made to pass through the vessel A while the person is in the act of using the apparatus. As a convenient addition to the vessel A we provide it with a supplying reservoir D which consists of a fountain or vessel of glass or other suitable material placed on the top of the vessel A, and secured or affixed to it in any proper manner.

For the sake of convenience we terminate the lower end of the vessel D in a short tube or neck E which we insert in the top of the vessel A (which top is suitably formed to receive it) in the same manner as a cork is fitted into the neck of a bottle. A horizontal partition *l* is made to extend across the tube E and to have a series of small holes *x*, *x*, *x*, bored or made downward through it. A small piston or valve *m* sustained on the lower end of a wire *n* is arranged over the holes of the said partition *l* and should be of such size as when forced down closely upon the partition to cover all the holes through it and prevent any liquid which may be in the vessel D from escaping into the vessel A. The rod *n* and valve *m* are supported by a cork or plug *o* inserted in an opening suitably formed through the top of the vessel D. If the supplying reservoir D contains any liquid, by raising the valve *m* above its seat the said liquid will thickle or pass through the opening of the partition *l* and fall on the sponge C or into the vessel A. The quantity of liquid required to keep up the necessary supply in the vessel A during inhalation may be regulated by raising the valve *m* to such height above the seat *l* as circumstances may require. The tube B may be made wholly or in part of a flexible material and of such length as circumstances may require, and for the purpose of more readily evaporating ether or any chemical material in the vessel A, heat may be applied to the said vessel in any convenient manner. It (the vessel) may be surrounded partially or wholly by a vessel of hot water, if desirable, but as a general rule it will not be necessary when sulfuric ether is to be evaporated in the vessel A.

The manner of using the apparatus is as follows: Sulfuric ether or other material to be vaporized is poured into the vessel A and the apparatus is carried toward the patient and the outer end *f* of the tube B placed in his mouth. By closing his nostrils and causing him to make an inhalation through his mouth, air charged with vapor will pass from the vessel A through the opening *d* of the induction valve *b* and thence into the mouth and lungs of the patient. When he expels air or the mixture of air and etheric or other vapor from the lungs it will pass into the tube B out of the opening *e* of the valve *g* the valve *b* closing upon its seat and preventing the vapor and expelled air from passing back into the vessel A. At each inhalation of the patient the valve *i* will open and admit air to rush into the bottle or vessel A.

Fig. 3 represents on an enlarged scale a front view of the mouth piece or end of the tube B which is introduced into the mouth. Fig. 4 is a side elevation, and Fig. 5 is a top view of the same. By inspection of these figures it will be seen that the said end is provided with a curved flanch *p* which is made to extend partially or entirely around the tube and to project from it as seen in the figures. Such a curved form or shape should be given to the flanch as will not only cause it to fit closely to the lips, and prevent the apparatus from being forced too far into the mouth, but prevent as far as practicable the passage of external air between it and the lips during respiration.

We do not intend to limit ourselves to the peculiar shape or configuration of any or all the parts of our improved inhalation apparatus, as we have exhibited in the drawings, nor do we intend always to employ the supplying reservoir D, or the tube *k*, and its valve, but we intend to make one of such shapes and forms, and such portions of our improvement as occasion may require, while we do not change the inventional character of the mechanism which may be considered as of our discovery and as peculiarly applicable to the inhalation and exhalation of etheric or other vapors in the manner as above set forth.

Having thus described our improved inhalation apparatus, that which we claim therein is—

1. The system of induction and eduction valves (*b* and *g*) and openings (*d* and *e*) of the mouth tube B, (or any mechanical equivalent for such valves and openings), in combination with said tube and the vessel A, and made to operate therewith in the manner, and for the purpose substantially as specified.

2. We also claim the supplying reservoir D, or apparatus in combination with the evaporating vessel A, the same being arranged and made to operate together substantially as specified.

3. We also claim the supporting or lip flanch *p*, as combined with or applied to the mouth piece of the tube B, and operating therewith in the manner and for the purpose, as above set forth.

4. And, for the purpose of inhaling a due portion of atmospheric air, while breathing the etheric vapors, and preventing the escape of the vapors when the apparatus is not in use, we claim, in combination with the reservoir A an air inlet or tube *k*, and its valve *i*, the whole being combined and operating together substantially as specified.

5. And we also claim, in combination with the vessel A and its air inlet and exhaustion pipes or contrivances, a sponge C, or other equivalent operating by capillary attraction or otherwise, to expose an extensive surface of liquid to the evaporative action of the air passing through the vessel A.

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W. T. G. MORTON.

Witnesses:
R. H. EDDY,
D. P. WILSON.