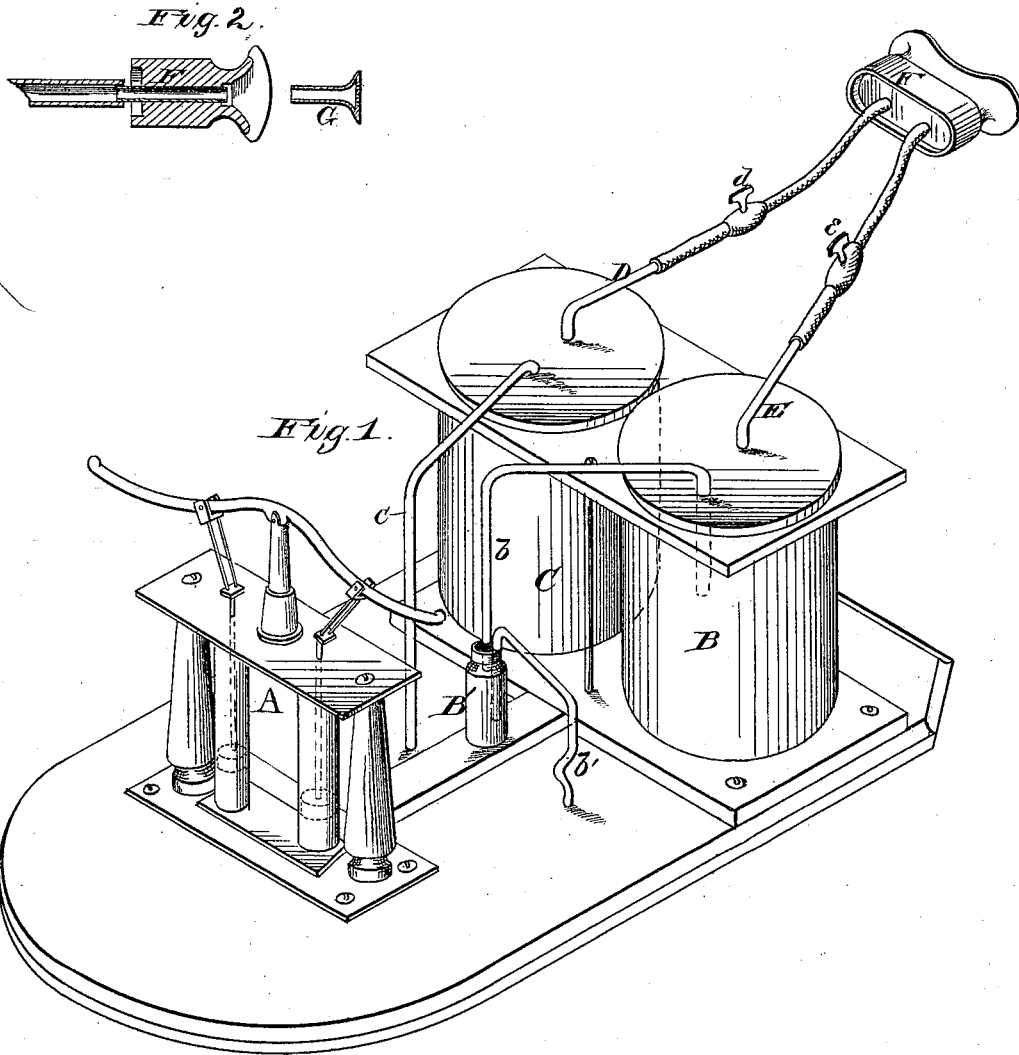


I. S. EMERY.
Inhaler and Respirator.

No. 196,206.

Patented Oct. 16, 1877.



WITNESSES
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ISALIAH S. EMERY, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN INHALERS AND RESPIRATORS.

Specification forming part of Letters Patent No. **196,206**, dated October 16, 1877; application filed August 27, 1877.

To all whom it may concern:

Be it known that I, ISALIAH S. EMERY, of New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Inhalers or Respiratory Devices, of which the following is a specification:

Figure 1 is a perspective view, showing a device in which is embodied my invention; Fig. 2, a detail to show the sprayer as applied to the mouth-piece.

The aim and intent of this invention are to produce a device that is adapted to treat weak or diseased lungs, or any disease requiring the purification of the blood by aeration, or for the resuscitation of drowned persons, or for any like or analogous purpose; and to this end it consists more particularly in providing a receptacle of compressed air and a vacuum-chamber, so adapted and constructed and furnished that they can be easily managed by means of a pump, and, by connecting-pipes and mouth-pieces, the user may be able with one tube to inflate and expand the lungs with compressed air, and with the other tube to contract them, by exhaling the air from them through the agency of the vacuum-chamber; and also in combining with my device, and in connection with the compressed-air chamber, a vessel or chamber filled with any medicated compound or medicine, liquid or gaseous, or any liquid; and also in a spraying device that may, if desired, be used in combination with the mouth-piece and pipe or tube from the compressed-air chamber, all as I will now more in detail set out and explain.

In the accompanying drawings, A denotes an air-pump, now represented as a double-acting pump, and to this, by suitable pipes *b*, *b'*, and *c*, are connected the chambers or receptacles B and C. That one designated as B is designed to contain compressed air, supplied or filled by means of said pump and the connecting-tubes. The other (marked C) is intended for the vacuum-chamber, whence the air is drawn off by said pump. Intermediately between the said pump and the chamber B is the chamber or vessel B', which is adapted to hold fresh water, medicated liquid, gas, or any suitable or proper material, substance, or com-

pound wherewith to saturate or charge the air in the chamber B, if so it shall at any time be desired. The pipes *b* and *b'* can be easily arranged for such result; or these may be employed simply to carry fresh air, the chamber B' being otherwise wholly empty.

From the chambers or receptacles B and C the pipes or tubes D and E, preferably flexible, and at proper places supplied with cut-offs or cocks *d* and *e*, connect with the mouth-piece F; or each may have a separate mouth-piece.

If desired for any use or purpose, a spraying device (now shown at G) can be attached and used in connection with the tube or pipe D, by adjusting it in the mouth-piece in any easy and convenient way or manner.

It may be of advantage to use such a device sometimes to minutely diffuse the liquid contents coming from the receptacle or vessel B'.

The operation of my device is very simple. The compressed-air chamber having been charged or filled, and the vacuum-chamber duly exhausted, the mouth-piece is applied to the patient's mouth. The cock in the compressed-air tube or pipe E is then opened, and the patient inhales compressed air, which thoroughly fills the lungs and expands them. The cock in this pipe or tube is then closed, and that in the pipe or tube D opened. Thereupon, by means of the vacuum-chamber, the patient will exhale almost all the air from his lungs, and thus a complete contraction of them will be produced. The process can be continued as long as desirable.

An apparatus or device constructed according to my invention will be of great advantage in resuscitating drowned persons, and in restoring animation in other instances where, for any cause, the vital power has become low, or the power of expanding or contracting the lungs has, for any reason, become weakened.

My device can be made of any desired shape, style, or size, and of such materials and under such arrangement of the several parts as may, for any reason, tend to render the same more efficient in operation, or to cheapen its manufacture, or aid in packing, or for any like cause or reason.

Having thus described my invention, what

I consider new, and desire to secure by Letters Patent, is—

1. In a respiratory or inhaling device, substantially as herein described, the combination of the condensed air chamber or receptacle with a vacuum chamber and air-pump, and with a mouth piece or pieces and connecting pipes or tubes, substantially as and for the purposes set forth.

2. The combination of a vessel, B', with pipes *b* and *b'*, and the air-pump, and the chamber B, and mouth piece F, and pipe or tube *d*, substantially as described.

3. In a respiratory or inhaling device, substantially as herein described, the combination, with its mouth-piece, of the sprayer G, substantially as set forth.

In testimony that I do claim the foregoing as my own I now affix my signature in presence of two witnesses.

ISALAH S. EMERY.

Witnesses:

JNO. S. CANNON,

HORACE P. HOADLEY.