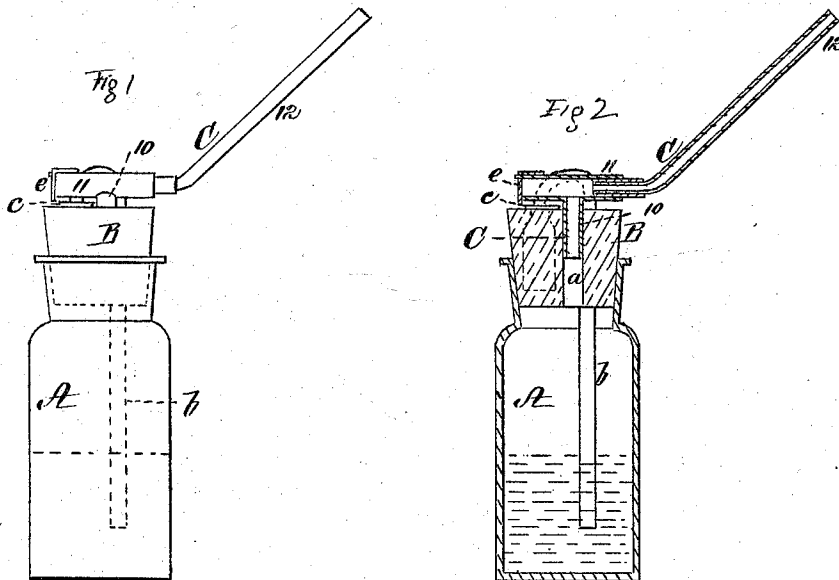


C. D. HUNTER & E. S. WOODS.

Inhalers.

No. 140,828.

Patented July 15, 1873.



Witnesses,
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UNITED STATES PATENT OFFICE.

CLIFTON D. HUNTER AND ERASTUS S. WOODS, OF MARLBOROUGH, MASS.

IMPROVEMENT IN INHALERS.

Specification forming part of Letters Patent No. **140,828**, dated July 15, 1873; application filed May 31, 1873.

To all whom it may concern:

Be it known that we, CLIFTON D. HUNTER and ERASTUS S. WOODS, of Marlborough, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Inhalers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a side elevation of an inhaler constructed in accordance with our invention. Fig. 2 is a vertical section through the same.

This invention has for its object to prevent the liquid contained in the main receptacle of an inhaler from rising in the inlet-tube and mixing with the contents of the acid-vessel in case a person should accidentally breathe or blow into the exhaust-tube; and consists in the application to a T-shaped tube of an inhaler of a valve so constructed and applied as to open outward on blowing or breathing into the exhaust-tube, thus allowing the air to escape, and preventing it from exerting a pressure upon the liquid in the main receptacle, which would cause the liquid to rise in the inlet-tube and mix with the contents of the acid-vessel.

To enable others skilled in the art to understand and use our invention, we will proceed to describe the manner in which we have carried it out.

In the said drawings, A represents the main receptacle for containing the medicated liquid. B is the stopper, of rubber or other suitable material, provided with a passage, *a*, for the reception of the exhaust or inhaling tube C, through which the vapor is inhaled. *b* is the inlet-tube, which passes through the stopper and nearly down to the bottom of the main receptacle, the upper end of this tube being bent, as seen, to receive the fumes of the muriatic acid in the vessel *c* placed in a cavity in the stopper B, and thus, as the air is exhausted from the receptacle A by the act of inhaling, the fumes of the acid are drawn down the inlet-tube *b*, and, passing through the medicated liquid containing a small quantity of concentrated aqua ammonia, combine therewith and form the vapor to be inhaled.

The vertical portion 10 of the exhaust-tube above the stopper is provided at its top with a horizontal branch, 11, at one end of which is a valve, *e*, opening outward, while to its opposite end is secured the mouth-piece 12,

through which the vapor is inhaled; and during this operation the valve *e* is tightly closed by the pressure of the external air, as a vacuum is created within the branch 11. Should, however, any one breathe or blow into the mouth-piece of the exhaust-tube, the valve *e* will be instantly opened, allowing the air to escape at this point, the current of air passing through the horizontal branch 11 over the mouth or upper open end of the vertical portion 10 of the exhaust-tube, producing an upward current therein, and, consequently, no portion of the air blown into the mouth-piece can, by any possibility, pass down into the main receptacle and exert a pressure upon the medicated liquid therein; and all liability is thus avoided of the liquid being forced up the inlet-tube into the acid-vessel, which mixture of the acid and medicated liquid destroys their power of generating vapor, and necessitates the emptying of the apparatus and a fresh supply of medicated liquid and acid, what is frequently required in inhalers as heretofore constructed, and which is a great objection to their use.

Instead of employing an exhaust-tube constructed as above described, and provided with a valve, an ordinary exhaust-tube might be used, and the stopper B or main receptacle provided with a valve opening outward into the external air, in which case, should a person breathe or blow into the exhaust-tube, the air would pass down into the main receptacle, but would instantly escape through the valve before it could exert any pressure upon the medicated liquid. This device is, however, but an equivalent of that first described, and either may be used, as preferred.

What we claim as our invention, and desire to secure by Letters Patent, is—

The T-shaped tube, the under portion 10 of which enters the stopper, while the horizontal portion 11 has at one end the elastic tube C and at the other end a valve, all constructed and arranged substantially as and for the purpose described.

Witness our hands this 27th day of May, A. D. 1873.

CLIFTON D. HUNTER.
ERASTUS S. WOODS.

In presence of—
WILLIE A. ONTHAUK,
HERMAN S. FAX.