

No. 639,808.

Patented Dec. 26, 1899.

E. E. GARDNER & J. G. SMITH.

INHALER.

(Application filed May 4, 1899.)

(No Model.)

Fig. 1.



Fig. 2.

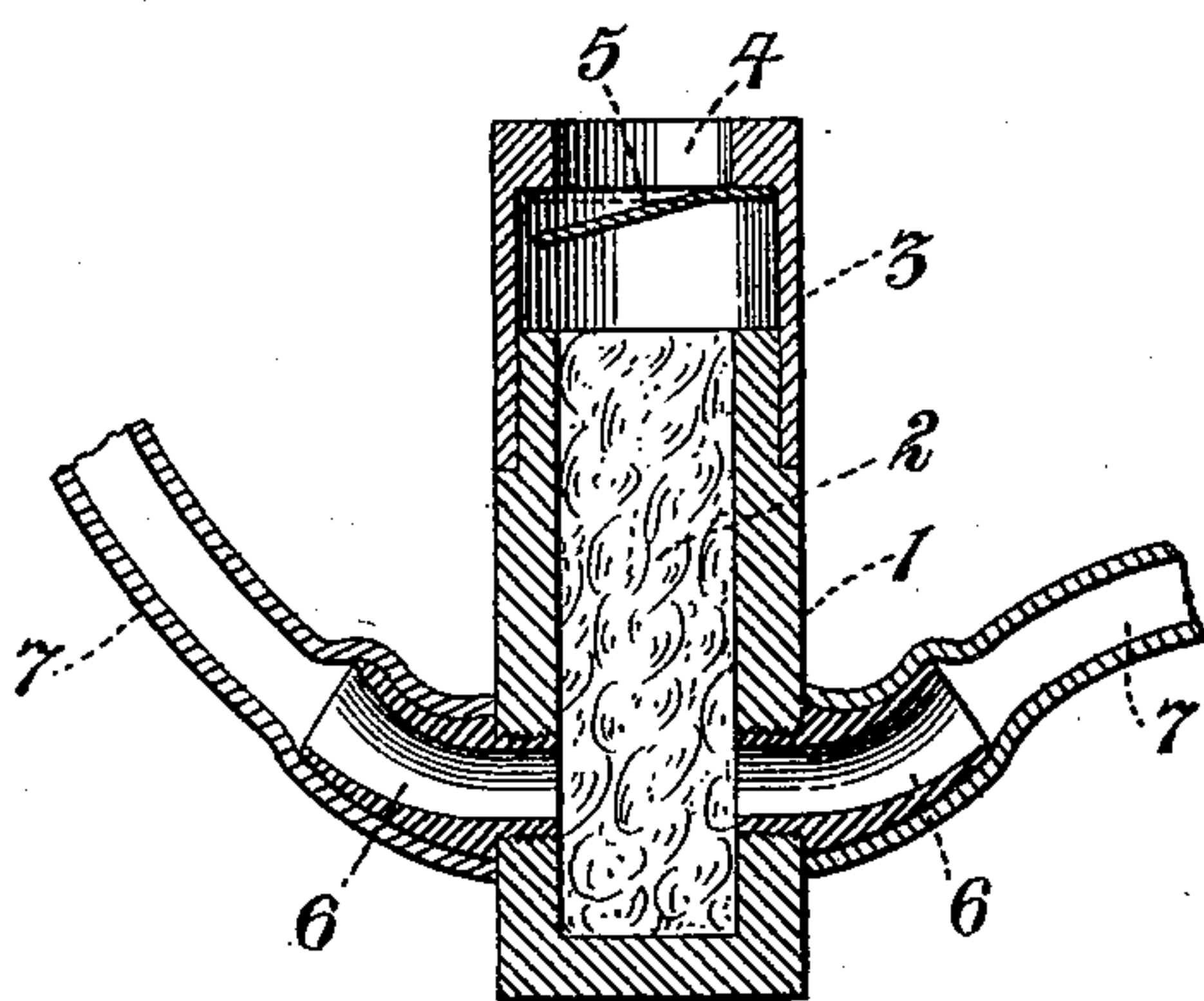
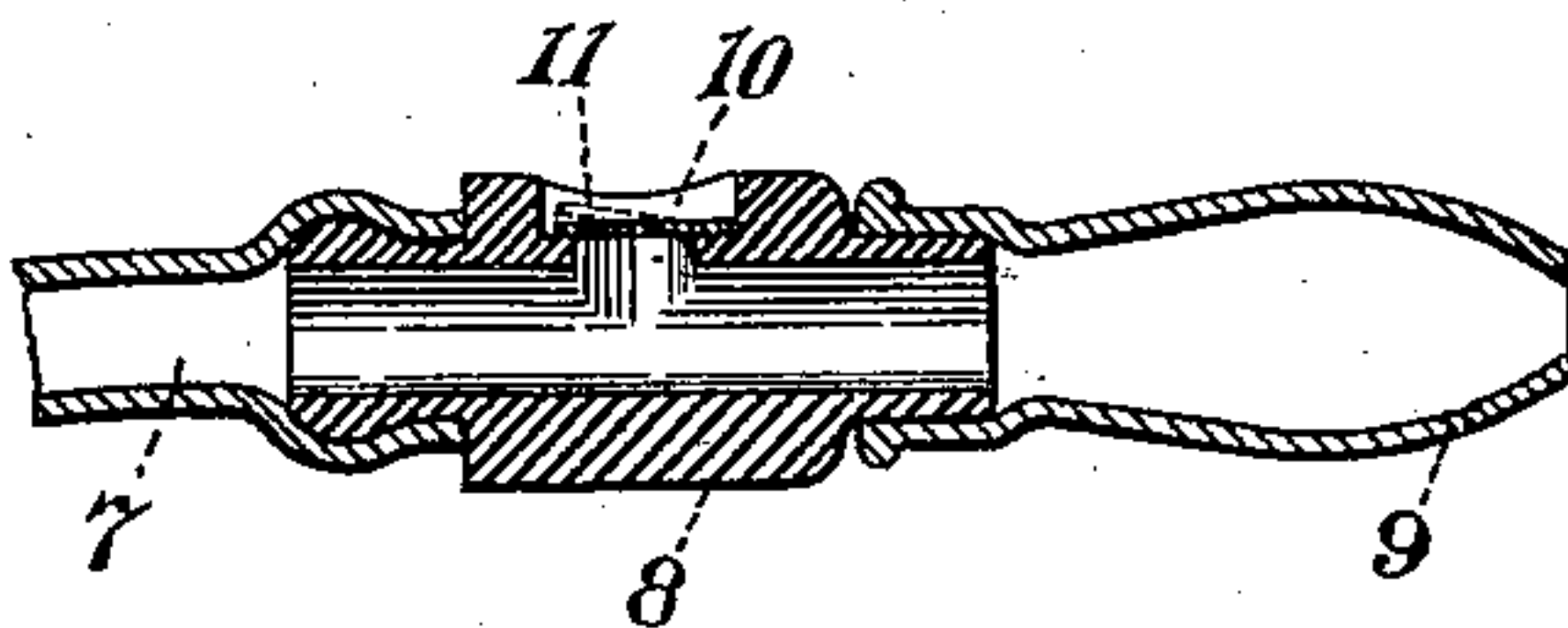


Fig. 3.



Witnesses:
Geo. W. Kaylor
M. L. Frost

Inventors
Edmund E. Gardner
J. Garrett Smith
By *Attorney* *Chas. E. Davis*

UNITED STATES PATENT OFFICE.

ELMER E. GARDNER AND JUNIUS GARNETT SMITH, OF NEW YORK, N. Y.

INHALER.

SPECIFICATION forming part of Letters Patent No. 639,808, dated December 26, 1899.

Application filed May 4, 1899. Serial No. 715,524. (No model.)

To all whom it may concern:

Be it known that we, ELMER E. GARDNER and JUNIUS GARNETT SMITH, citizens of the United States, and residents of New York, borough of Manhattan, in the county and State of New York, have invented certain new and useful Improvements in Inhalers, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

Our invention relates to improvements in inhalers used for medicating atmospheric air and inhaling the same as a remedy for throat, lung, and catarrhal affections, the object of our invention being to provide a simple, inexpensive, and effective device of this character that will be automatically operated by the respiration of the patient to permit the free inhalation and exhalation of the medicated air and so permitting the same to be used by the patient with equal effect and comfort when either asleep or awake. This object we secure by means of our novel construction and combination of parts, as hereinafter set forth in detail, and pointed out in the claims.

Referring to the drawings, Figure 1 represents a view of our improved inhaler as in use, and Figs. 2 and 3 represent enlarged detail views of portions of the same in section.

To explain in detail, 1 represents the receptacle for containing the sponge, cotton, or other absorbent adapted to be saturated with the medicine used, the same, as shown, being filled with an absorbent-cotton, (indicated at 2.) This receptacle 1, which for convenience of reference we will term the "medicine-receptacle," is fitted with a removable cap or cover 3 for the purpose of permitting ready access into the same, the said cap, as shown, being provided with an opening 4, through which the external or atmospheric air is drawn at the inhalation of the patient into the receptacle 1 and through the saturated absorbent contained therein. A flap-valve 5, having its seat against the inner end wall of the cover 3 and being secured at one side thereof, is adapted to be automatically operated to open at the inhalation of the patient and permit the external air to enter and pass through the medicine-receptacle and be closed at the ex-

halation of the patient to cause the exhaled air to pass out through certain outlet-openings, to be hereinafter described.

The receptacle 1 is provided with two tubular arms or extensions 6 6 at opposite sides thereof, having openings communicating with its medicine-containing chamber. Over these arms are fitted the ends of two flexible tubes 7 7, the opposite ends of which latter connect with two short tubular valve-containing sections 8 8. These sections 8 8 are preferably formed, as is also the receptacle 1, of hard rubber, each of the same at that end opposite its connection with the flexible tubes 7 7 having attached thereto a nipple 9, the latter being adapted to be placed adjacent to or in the patient's nostrils when the inhaler is being used.

The sections 8 8 are each provided at a point between their ends with a lateral opening 10, through which the air exhaled by the patient is adapted to pass. This opening 10, like the opening 4 in the medicine-receptacle, is closed by a flap-valve 11, the latter in this instance, however, having its seat at the exterior end of the opening, so as to swing outward instead of inward like the valve 5.

The action of our improved inhaler when in use, in brief, is as follows: The nipples 9 being placed close to or in the patient's nostrils, the inspiration of the patient simultaneously causes the valve 5 to open and the valves 11 to close, as indicated by full lines in Figs. 2 and 3, whereby the air will be drawn through the opening 4 into the medicine-receptacle and through the saturated absorbent contained therein and from thence through the tubes 7 into the nostrils of the patient. On the patient exhaling the valve 5 is closed and the valves 11 opened, as indicated by dotted lines in said Figs. 2 and 3, to permit the exhaled air to pass out through the openings 10. Such action and arrangement of the valves insure the free passage of the air through the inhaler and the discharge of the exhaled air at a point between the nipples and the medicine-chamber and distant from the latter, whereby other than the passage of pure air through the saturated absorbent is avoided.

In lieu of an absorbent being used as a

means for holding the medicine employed it will be obvious that medicine in any suitable form may be placed directly in the receptacle 1, an absorbent being shown as the most
5 usual and convenient way of holding the medicine.

Having thus set forth our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

- 10 1. An inhaler comprising a medicine-receptacle having an air-inlet opening, an inwardly-opening valve therefor, air-exit openings at opposite sides of the receptacle and between the exit-openings and the valve a space for
15 the medicine, tube-sections 8 provided with outwardly-opening valves, tubes connecting said sections with the exit-openings of said receptacle and supporting the latter at opposite sides of the same, and means for apply-

ing said sections to the nostrils, substantially 20 as set forth.

2. An inhaler, comprising a medicine-receptacle provided with a removable cover having an air-inlet opening, a valve secured within the cover for opening and closing said open- 25 ing, two flexible tubes connecting at one end with said medicine-receptacle and at their opposite end with two non-flexible tubular sections, said sections being provided with lateral air-discharge openings, valves for open- 30 ing and closing the latter, and nipples connected with said tubular sections, substantially as and for the purpose set forth.

ELMER E. GARDNER.
J. GARNETT SMITH.

Witnesses:

HENRY M. KLINK,
CHAS. F. DANE.