

No. 648,374.

Patented May 1, 1900.

T. N. BARNES.
INHALER.

(Application filed Oct. 19, 1898.)

(No Model.)

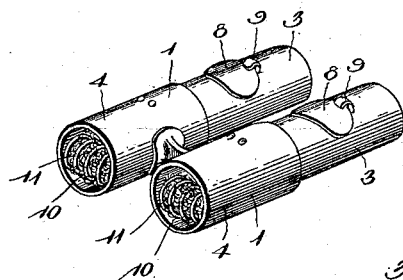


Fig. 1.

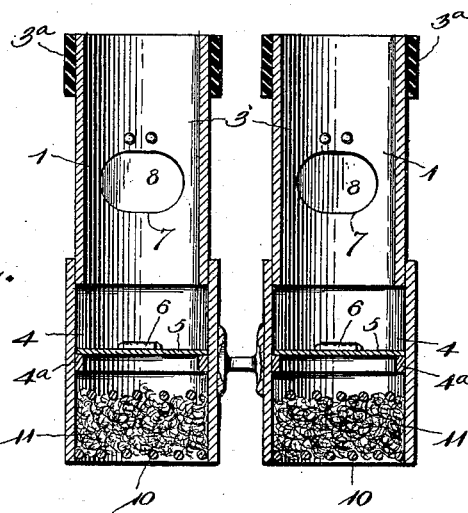


Fig. 2.

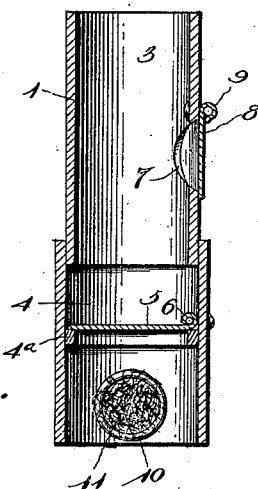


Fig. 3.

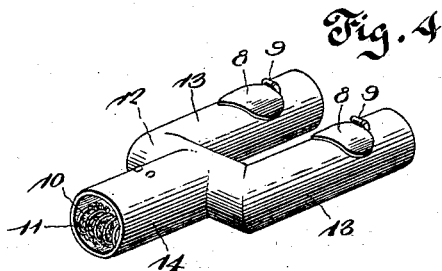


Fig. 4.

Witnesses

Kaufman & Co.

J. G. Riley

By his

Attorneys,

Thomas N. Barnes, Inventor.

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

THOMAS NORVAL BARNES, OF WESTON, WEST VIRGINIA.

INHALER.

SPECIFICATION forming part of Letters Patent No. 648,374, dated May 1, 1900.

Application filed October 19, 1898. Serial No. 693,988. (No model.)

To all whom it may concern:

Be it known that I, THOMAS NORVAL BARNES, a citizen of the United States, residing at Weston, in the county of Lewis and State of West Virginia, have invented a new and useful Inhaler, of which the following is a specification.

The invention relates to improvements in inhalers.

One object of the present invention is to improve the construction of inhalers and to provide a simple, inexpensive, and efficient device adapted to clamp the septum of the nose slightly and with sufficient force to enable the device to be conveniently carried by a patient without interfering with any of his vocations, so that a healing-balm may be constantly applied to a diseased membrane for curing chronic catarrh, hay-fever, colds, asthma, and bronchial affections.

A further object of the invention is to provide a device adapted to contain a suitable drug and capable of causing the inhaled air to pass through the medicine-chamber and be medicated and also capable of leading the exhaled air to the atmosphere without passing through the medicine-chamber, so that the contents thereof will not be unnecessarily consumed or become contaminated with foul air.

The invention consists in the construction and novel combination and arrangement of parts, as hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of an inhaler constructed in accordance with this invention. Fig. 2 is a sectional view taken longitudinally of both of the tubes. Fig. 3 is a longitudinal sectional view taken at right angles to Fig. 2. Fig. 4 is a detail view illustrating a modification of the invention.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 1 designate a pair of similar tubes designed to be constructed either of metal, such as aluminium, or composition, such as celluloid or zylonite, or a material such as gutta-percha; but any other metal or material may be employed, if desired. The tubes, which are arranged substantially parallel, are composed

of upper and lower sections 3 and 4, telescoping into each other a short distance, and the lower sections are united by any suitable means which will enable the upper sections to be spread slightly for causing them to clamp the septum of the nose of the patient sufficiently to retain the device in position to obviate the necessity of a patient holding it to his nose. The upper sections 3 of the tubes are provided with bands 3^a, of soft rubber, which increases the size of the tubes and which are adapted to be readily removed when desired. These bands, which are adapted to enter the nose of a patient, enable the size of the device to be readily varied to fit the openings of different noses. Each lower section is provided with an annular flange 4^a, above which is arranged an inwardly-opening valve 5, consisting of a thin diaphragm of metal or other suitable material and connected at one side of the tube by a hinge 6. The hinge, which may be of any desired construction, can be conveniently formed of an eye on the diaphragm or valve and a piece of wire or other material extending through the eye to form a pintle and having its terminals passing through the perforations of the tube. The inwardly-opening valve normally rests upon and is supported by the annular flange, and when air from the lungs is exhaled through the device the inwardly-opening valve closes upon its seat and prevents the air from entering the lower tubular section 4, which constitutes a medicine-chamber.

The upper tubular section 3 is provided with an opening 7 and has an outwardly-opening valve 8 hinged to it and normally covering the opening. The valve 8, which is curved to conform to the configuration of the tube, is hinged at its upper edge at 9 to the same and is adapted to close by gravity when the pressure on the interior of the inhaler will permit. The valves open and close automatically and do not in any manner interfere with or retard the natural breathing of a patient.

The lower tubular section of each tube is provided with an interior coil 10, extending transversely of the device and adapted to contain absorbent material 11, such as cotton or the like, and this absorbent material may be saturated with any desired drug adapted for treating the membrane of a patient. Instead

of providing a spring-coil the lower tubular sections may be threaded and receive a perforated cap for holding medicated absorbent material in the device. The spring-coil 10, which contains the cotton or other absorbent material, is retained within the device by frictionally engaging the walls thereof, and it may be readily removed when it is desired to renew the medicine.

10 The device may be constructed as illustrated in Fig. 4 of the accompanying drawings, and consists of a substantially Y-shaped casing 12, having its upper arms or tubular portions 13 adapted to be inserted in the nose of a patient, and the lower arm 14 constitutes a single medicine-chamber. This construction dispenses with one of the valves of the device.

20 The invention has the following advantages: The device, which is simple and comparatively inexpensive in construction, is adapted for treating various diseases—such as colds, catarrh, hay-fever, asthma, bronchial affections, and the like—and the medicine-chambers are also adapted to be provided with a soft sponge or loose raw cotton to exclude dust from the nostrils and protect persons working in dusty places or the like. It will enable the diseased membrane of a patient to be constantly subjected to the vapor or fumes of drugs for several hours daily without inconvenience. It is light, easily inserted into the nostrils, and retained there without trouble or inconvenience and without interfering with the usual vocations of a person, and the patient may read, study, write, lie down, or assume any other position.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What is claimed is—

1. A device of the class described comprising a pair of tubes yieldingly connected and adapted to have their upper ends introduced

into the nose of a patient and capable of clamping the septum of the same, said tubes being open at their lower ends and provided at their upper ends with removable bands, inwardly-opening valves mounted within the tubes between the ends thereof, outwardly-opening valves located above the said valves, and the transverse springs located within the open lower portions of the tubes and having their ends frictionally engaging the walls thereof, said springs being adapted to support absorbent material and being readily removable and replaceable through the open lower ends of the tubes, substantially as described.

2. A device of the class described comprising a pair of tubes adapted to be introduced into the nostrils, and provided with a medicine-chamber, and having valves, and the soft elastic bands removably arranged on the upper ends of the tubes so that bands of different thickness may be employed to vary the diameter of the nosepiece, substantially as described.

3. A device of the class described provided with a medicine-chamber open at its lower end, absorbent material arranged within the medicine-chamber, and the coiled spring extending across the open bottom of the medicine-chamber and supporting the absorbent material, the ends of the spring frictionally engaging the walls of the medicine-chamber and detachably retaining the spring in position and enabling the same to be readily removed and replaced through the open bottom, substantially as and for the purpose described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

THOMAS NORVAL BARNES.

Witnesses:

R. THOMAS LILLY,
ROBERT L. BLAND.