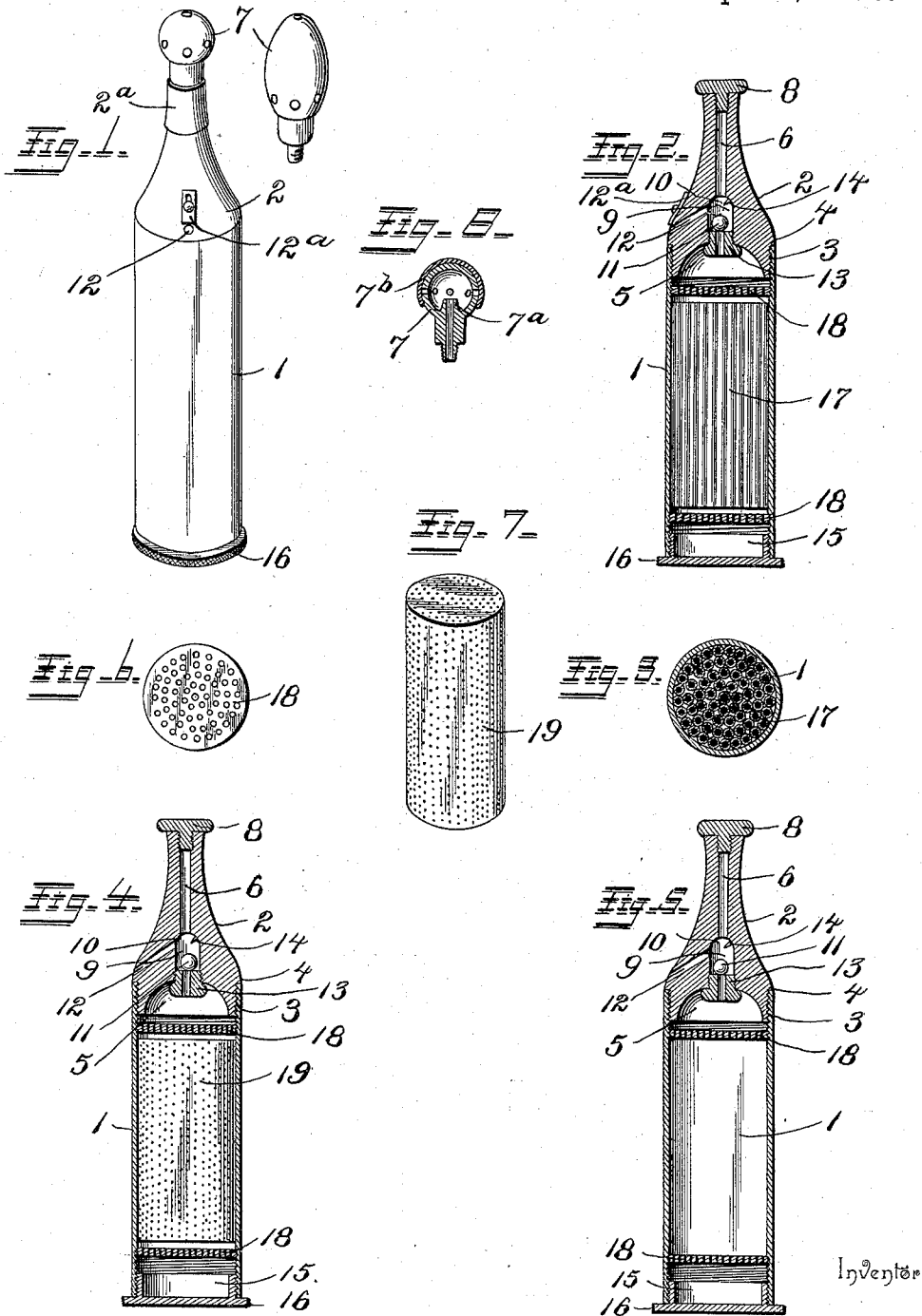


(No Model.)

F. L. WISEMAN.
INHALER.

No. 567,558.

Patented Sept. 8, 1896.



Witnesses

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FRANK LEONARD WISEMAN, OF GENOA, NEBRASKA.

INHALER.

SPECIFICATION forming part of Letters Patent No. 567,558, dated September 8, 1896.

Application filed April 30, 1895. Serial No. 547,658. (No model.)

To all whom it may concern:

Be it known that I, FRANK LEONARD WISEMAN, a citizen of the United States, residing at Genoa, in the county of Nance and State of Nebraska, have invented a new and useful Pocket-Inhaler, of which the following is a specification.

This invention relates to an improvement in portable inhalers designed to be manufactured of a size convenient to be carried in the pocket.

The object of the present invention is to provide a simple and efficient construction of magazine-inhaler which shall be adapted to be used for the treatment of nose, throat, and lung troubles, and which shall be of such form and construction that it may be used at any and all times without interfering with a person's work.

A further object of the invention is to construct an inhaler in such manner as to render the same adaptable to medicines of different characters.

In order to accomplish the above objects, the invention consists in certain novel details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the improved inhaler complete, showing different forms of nozzles. Fig. 2 is a longitudinal section through the barrel of the inhaler, showing a nest of absorbing-tubes located therein. Fig. 3 is a transverse section through the same. Fig. 4 is a longitudinal section through the barrel of the inhaler, showing a perforate sheet-metal cylinder and also perforate end disks located within said barrel. Fig. 5 is a similar view with the perforate cylinder omitted. Fig. 6 is a side view of one of the perforate end disks. Fig. 7 is a detail perspective view of the perforate sheet-metal cylinder. Fig. 8 is a sectional view through one of the nozzles.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

Referring to the drawings, the inhaler as a whole may be made from any usual or preferred material, such as hard rubber, celluloid, zinc, copper, brass, aluminium, &c., and may be ornamented with gold or silver mountings, according to the desire of the manufacturer. The inhaler comprises a barrel or case

1, which is shown in the form of a hollow cylinder, open at either end, and internally screw-threaded to provide for the insertion and engagement of the several parts of the inhaler hereinafter described. Within one end of the barrel is screwed a stem 2, which is externally screw-threaded, as indicated at 3, and shouldered at 4 to form a firm and neat junction with the barrel. At the inner end the stem 2 is concave or hollowed out, as shown at 5, and a longitudinal perforation 6 extends entirely through the stem, said perforation being internally screw-threaded at its outer end to receive a nozzle 7, which may be either in the form of a mouthpiece or nose-piece, both of which are shown in Fig. 1 and made interchangeable. When not in use, a screw plug or cap 8 is substituted for the nozzle, thus effectually sealing in the medical vapor and preventing waste thereof.

The longitudinal perforation 6 in the stem is enlarged in diameter for a short distance, thereby providing a valve-chamber 9 and shoulder or valve-seat 10. Within said valve-chamber 9 is located a self-acting valve, which may be of any usual or preferred construction, but which is shown in the form of a ball 11 of slightly less diameter than the valve-chamber. A perforation or exhalation-passage 12 leads from the inner end of the valve-chamber 9 to the exterior of the stem, and is adapted to be closed by said ball-valve during the act of inhaling. The passage 12 may, however, lead from any point of the longitudinal perforation 6 to the exterior of the stem. The outer end of the passage 12 may be closed by a cap 12^a, when desired. A threaded and perforated plug 13 is screwed into the outer end of the valve-chamber in the stem, thus preventing the escape of the ball-valve, while at the same time permitting the free passage of the medical vapor through the longitudinal perforation 6. A pin or projection 14 within the valve-chamber serves to direct the ball 11 to its seat for closing the passage 12 in the act of inhaling, and when the patient exhales the ball-valve seats itself against the adjacent end of the screw-plug 13, thereby closing the perforation in said screw-plug and preventing the breath from entering the barrel 1, causing it to pass out through the perforation 12. It will be apparent that the partitions, in the form of the plug 13, may be of any form and construction and secured to or

within and between the inhaler-barrel 1 and stem 2 in any usual or preferred manner, the perforations in said partitions being closed by a self-acting valve during the act of exhalation. The form and manner of supporting the valve may be varied in many ways, the essential purpose of said valve being to close the perforation or hole in said partition or plug to prevent the breath from passing back into and through the medicine and medical chamber, thus causing the breath to be forced out through the exhalation-passage or perforation 12, as shown in the drawings.

The barrel 1 is provided at its outer end with a screw-threaded cap or plug 15, which is preferably provided with a milled flange 16 for facilitating its insertion and removal. The stem may also be provided with a surrounding rubber band 2^a, Fig. 1, to better adapt the device to be held in the mouth.

The construction above described is common to the several forms of inhalers as shown in Figs. 2, 4, and 5. In Fig. 2 I have shown a nest of absorbing-tubes arranged within the barrel. Said tubes may be composed of any absorbent material, such as cotton, felt, or paper, or they may be composed of any material and filled with absorbent material such as above referred to. These tubes, indicated at 17, extend longitudinally within the barrel 1, are nested together so as to fill the space therein, and are held in place by means of perforated end disks 18, located at either end thereof and adjacent to the inner end of the stem 2 and the outer plug or cap 15, although it will be apparent that said end disks may be dispensed with. The end disks 18 may be secured within the barrel in any preferred manner, but are shown provided with peripheral screw-threads, adapting them to be screwed into place within the internally-threaded ends of the barrel. When the screw cap or plug 15 is removed, it will be apparent that the air may be drawn through the perforated end disks and absorbent tubes and into the mouth or nose. In Fig. 4 I have shown how a perforate sheet-metal cylinder may be substituted within the barrel 1 in place of the absorbent tubes. The cylinder, indicated at 19, is preferably made of finely-perforated thin sheet metal and provided with closed ends, as indicated in Fig. 7, but of course may be made from wire cloth or gauze, and is adapted to receive the medicine when in the form of salts or crystals or in any dry or powdered form. Under this arrangement the perforated end disks 18 may or may not be used, as preferred. In Fig. 5 the perforated sheet-metal cylinder 19 is omitted and the end disks 18 only employed, under which arrangement the medicine, in dry or granular form, is adapted to be contained within the barrel itself and between said end disks.

In Fig. 8 I have shown how the nozzle is formed with an internally-arranged flange 7^a, extending around the mouth in the neck of the nozzle and serving to prevent the saliva

or moisture from passing into the stem and medical chamber. When not in use, the nozzle or mouthpiece 7 may be covered by a rubber cap 7^b, as shown in Fig. 8, to exclude dirt and dust.

The construction of inhaler above described is very simple and inexpensive, and, as will be apparent from the foregoing description, is adapted to medicines of different kinds, whether in liquid or dry state. The device is adapted to be carried in the pocket, and is of such convenient size and form that it may be used almost continuously without in any way interfering with the work of the person using it. This continuous use is rendered possible by the particular construction of valve described, as the patient can breathe with perfect freedom without the necessity of removing the inhaler from the mouth after each inhalation in order to exhale.

It will be apparent that various 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.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In an inhaler, a hollow barrel or case for the reception of medicine in liquid or dry state, in combination with a stem detachably secured thereto and provided with a single longitudinal inhalation-passage and with an angularly-disposed exhalation-passage in communication with the longitudinal passage, a valve arranged in the inhalation-passage and normally closing the same, and means for automatically moving said valve so as to close the exhalation-passage, substantially as and for the purpose described.

2. In an inhaler, a hollow barrel or case internally screw-threaded at each end, a pair of oppositely-disposed perforated disks forming independently-removable partitions and threaded into the opposite ends of said barrel or case, and a plurality of absorbent tubes nested within said barrel and between the perforated disks and adapted to receive and hold by absorption the medicated liquid, in combination with a stem threaded into one end of said barrel and provided with a central longitudinal inhalation-passage, an independent and angularly-disposed exhalation-passage, a ball-valve arranged within and normally closing the inhalation-passage, and a pin for guiding and directing said ball-valve before the exhalation-passage so as to close the same, substantially as and for the purpose specified.

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

FRANK LEONARD WISEMAN.

Witnesses:

GEORGE A. WISEMAN,
L. F. SAXENBERGER.