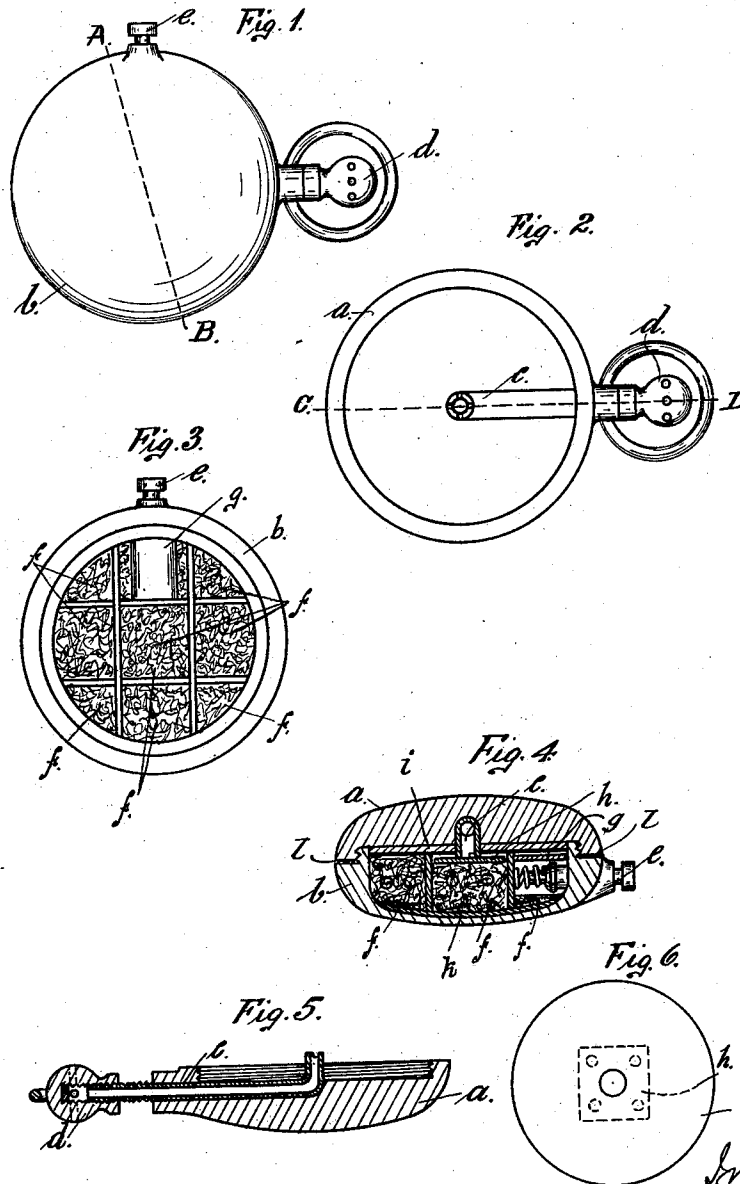


J. LEACH.
MEDICAL INHALER.
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1,028,890.

Patented June 11, 1912.



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UNITED STATES PATENT OFFICE.

JOHN LEACH, OF BLACKBURN, ENGLAND.

MEDICAL INHALER.

1,028,890.

Specification of Letters Patent.

Patented June 11, 1912.

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To all whom it may concern:

Be it known that I, JOHN LEACH, subject of the King of Great Britain, residing at 15 and 17 Great Bolton street, Blackburn, in the county of Lancaster, England, have invented certain new and useful Improvements in Medical Inhalers, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to inhalers in which the air is medicinally impregnated with curative properties, and which are in the form of an air-tight receptacle in parts and are charged with an absorbent, and in which valve-controlled air inlet and outlet tubes are provided.

My invention consists in certain improvements in the construction and arrangement of the several parts to be charged with the absorbent, and the arrangement of the air inlet and outlet tubes relatively to the same, all as hereinafter particularly set forth.

In carrying this invention into effect I form the apparatus of an air-tight box in two sections screwed or otherwise fastened together, to resemble a "Hunter" watch. In the one section or half I fix an outlet tube which passes from the center of such section or half to the exterior of the same where it terminates in a perforated screw attachment which is used as a mouthpiece and acts as a valve to control the outflow of the chemical mixture.

In the side of the other section or half of the device is an aperture serving as an air inlet which is controlled by a small spring valve provided, and operated from the outside of the apparatus. This latter section or half of the device I divide into a number of small chambers, the walls of which are perforated to permit of the air circulating therethrough when the inlet valve is opened and the suction is caused at the perforated mouthpiece. The bottom edge of these dividing walls are made air-tight by fixing underneath a thin pad of cotton wadding or some other similar material.

I fill each of the chambers aforesaid with pieces of sponge or similar material saturated with a chemical mixture of curative or medical ingredients through which the air is drawn as required, and medicinally impregnated with curative properties; while the apparatus forms an inhaler certain in

action, inexpensive in manufacture, compact in size (being easily carried in the pocket) and may be made of an ornamental appearance.

I will now describe my invention with reference to the accompanying drawings and figures and letters of reference marked thereon.

Figure 1 is an external view of the inhaler shown closed and ready for use, Fig. 2 is a plan of the inside of the top section or half of the device, Fig. 3 is a similar view of the bottom section or half, Fig. 4 is a section through the line A B Fig. 1, Fig. 5 is a section through line C D Fig. 2, and Fig. 6 is a plan of a plate or covering placed upon the sponge in the center compartment of the box and of a disk placed over said plate or covering and over all the compartments of said box.

Similar letters of reference indicate like parts in each of the figures where occurring.

Now, in accordance with this invention I make an air-tight box of a suitable metal or material in two sections or halves, the one section or half *a* forming a lid or cover to the other section or half *b* serving as a box or receptacle for a chemical mixture of curative or medical ingredients. These two sections or halves are screwed or otherwise fastened one upon the other and when so fitted resemble a "Hunter" watch in appearance. (See particularly Fig. 1.)

In the center of the top section or lid *a* I fix the air outlet consisting of a tube *c* L shape extending from the center of the said lid *a* to the exterior thereof where it terminates in the perforated screw attachment or mouthpiece *d*, (see Figs. 2 and 5) which screw attachment serves as a valve to control the outflow of the chemical mixture. When screwed down as shown in Figs. 1 and 2, the end of the tube *c* passes the perforations in the attachment *d* and beds against a pad fixed in the end of a bore, and the outlet is closed while when unscrewed as shown in Fig. 5, a free exit through the tube *c* and the perforations in the attachment *d* is permitted. The inner end of this outlet tube *c* is grooved, (See Figs. 2, 4, and 5) to allow a free passage for air when closed, and it presses against the plate or covering *h* as shown in Fig. 4. The air inlet tube is formed in the side of the bottom section or box *b* and is controlled by the spring valve *e*, 110

which is pressed inwardly to allow air to be drawn through, and when released closes automatically. (See Figs. 3 and 4.)

g is a cover of a suitable metal or other material having perforations at each side and is arranged over the air inlet valve *e*. In the cavities between the sides of this cover *g* and the walls of the valve chamber is a lining of spongy material, which helps to prevent the aforesaid chemicals or curative ingredients coming in contact with the working parts of the air inlet valve *e*. The bottom section or box *b* of the device is divided into the small chambers *f*, the walls of which are perforated to allow the air to circulate therethrough. The bottom edge of these dividing walls are made air-tight by fixing underneath a thin pad of cotton wadding or some other similar material *k*. These chambers *f* are filled with small pieces of sponge or similar material which are, as aforesaid, saturated with the required chemical mixture.

Fig. 6 shows the perforated plate or covering *h* I place in the central chamber of the box *b* upon the top of the sponge therein, and on which the inner end of the outlet tube *c* rests, when the two parts of the device are screwed or otherwise fastened together. (See Fig. 4.) I then place a disk *i* (Figs. 4 and 6) of suitable material over the chambers *f* and after inserting an india-rubber band *l* (Fig. 4), or one of some other suitable material, between the two sections. I screw, or otherwise fasten, both sections together. Thus I make an air-tight instrument through which air can be drawn and, as so drawn, be impregnated medicinally with curative properties, the whole forming the inhaler constructed with the improvements constituting this my invention.

What I claim is:—

1. An inhaler for the purpose of medicinally impregnating air with curative properties, consisting of an air tight box or receptacle containing a suitable chemical mixture and having a lid or cover fastened thereon and provided with valve controlled air inlet and outlet tubes, and having the air outlet tube extending from the center of the lid or cover to the outside of the edge of the same where it terminates in a perforated mouthpiece which controls the outflow of the chemical mixture, substantially as described.

2. An inhaler for the purpose of medicinally impregnating air with curative properties comprising, in combination, a box or receptacle section divided into chambers communicating with one another, a lid or cover section secured to said box or receptacle section, pieces of sponge or similar material saturated with a chemical mixture of curative or medicinal ingredients and situated in said chambers, a suction tube fixed to said lid or cover section and communicating at its inner end with the interior of the box or receptacle section and having at its outer end a perforated screw attachment constituting a valve for controlling flow through the tube, an air inlet tube in connection with said box or receptacle section and controlled by a valve furnished with a spring automatically closing it and with a push-piece for opening it, and means for obtaining tightness between the parts, substantially as described.

JOHN LEACH.

Signed by the said JOHN LEACH in the presence of—

H. WILLIAMS,
F. NAYLOR.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."