

(No Model.)

L. B. HILBORN.
INHALER AND VAPORIZER.

No. 473,225.

Patented Apr. 19, 1892.

Fig. 4.

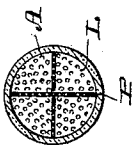


Fig. 3.

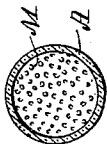
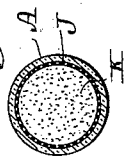
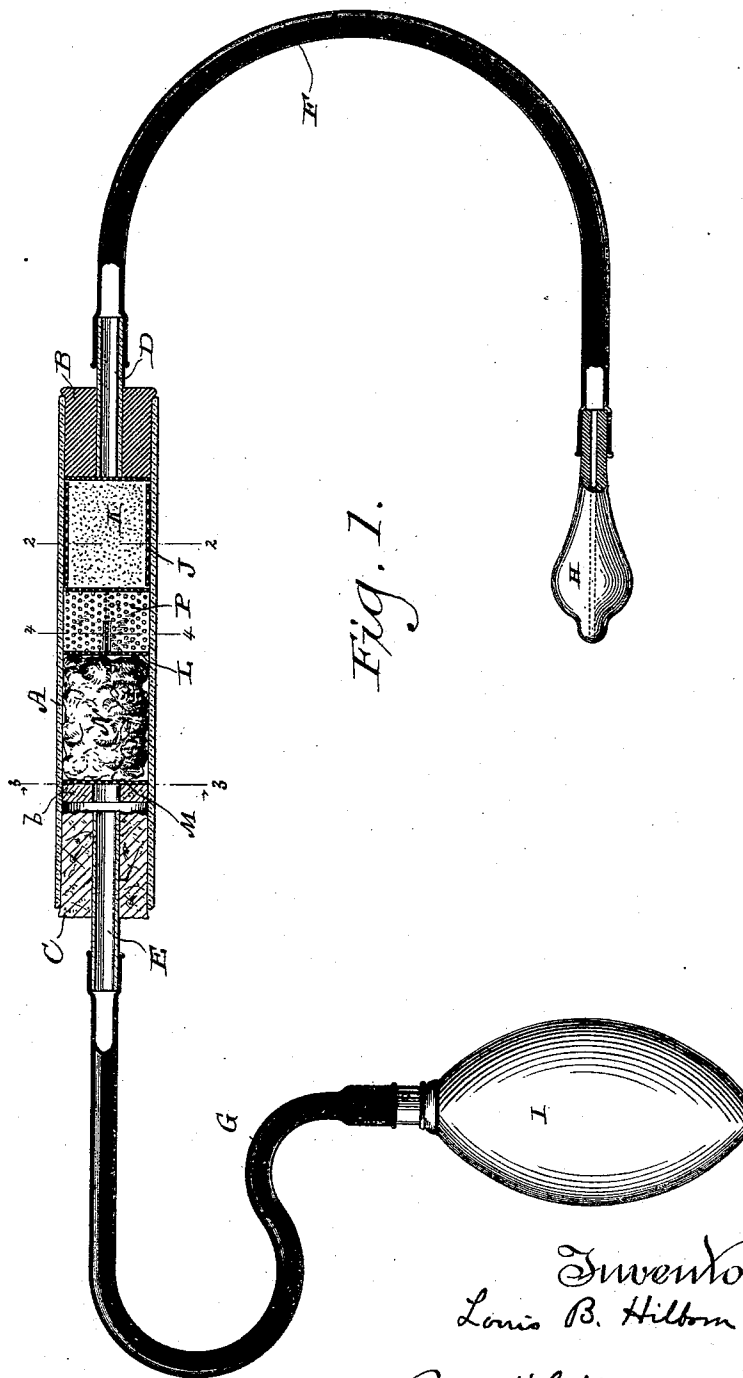


Fig. 2.



Witnesses
Chas. W. Young.
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Fig. 1.



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UNITED STATES PATENT OFFICE.

LOUIS B. HILBORN, OF MILWAUKEE, WISCONSIN, ASSIGNOR OF ONE-HALF
TO HAROLD G. UNDERWOOD, OF SAME PLACE.

INHALER AND VAPORIZER.

SPECIFICATION forming part of Letters Patent No. 473,225, dated April 19, 1892.

Application filed July 11, 1891. Serial No. 399,160. (No model.)

To all whom it may concern:

Be it known that I, LOUIS B. HILBORN, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Medicament Vaporizers; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide a simple economical apparatus for the treatment of mucous surfaces by vaporized medication; and it consists in certain peculiarities of construction and combination of parts, to be hereinafter described with reference to the accompanying drawings, and subsequently claimed.

In the drawings, Figure 1 represents my vaporizer, partly in longitudinal section; and Figs. 2 to 4, inclusive, transverse sections respectively taken on lines 2 2, 3 3, and 4 4 of Fig. 1.

Referring by letter to the drawings, A represents a casing, preferably in the form of a tube of glass or other suitable material, having end caps or stoppers B C, and extended outward from these caps or stoppers are nipples or tubes D E, that communicate with the bore of said casing. In that form of my device herewith shown the casing is a tube of glass having its ends closed by rubber or cork stoppers that are centrally pierced by small tubes of glass; but in practice this construction may be considerably varied as to material and connection of parts without departure from the spirit of my invention.

Fitted to the nipples or tubes D E are tubes F G, and these latter tubes are preferably of flexible material, such as rubber. The outer end of the tube F is provided with a tip H, and I prefer to fit the outer end of the tube G to an ordinary compressible bulb I, having inlet and outlet valves, the latter device being well known by the trade title "atomizer-bulb."

As shown, a cell J is formed in the casing A adjacent to the cap or stopper B, this cell being preferably of foraminous sheet metal and designed for the purpose of holding solid but pervious medicament K—such, for instance, as menthol. As a matter of convenience in manufacture the cell J preferably

comprises a body-piece of foraminous metal bent into tubular form and diaphragms of like material arranged at the ends of said body-piece, as is clearly illustrated in Fig. 1.

Below the cell J and above a perforated supporting-disk b foraminous diaphragms L M are arranged in the casing A at a suitable distance apart to thus form a compartment in which an absorbent or porous material N is placed, this material being sponge, mineral wool, or such other substance as practice may determine is best suited for saturation with a liquid medicament, the latter being preferably of an antiseptic character.

Because of the volatile and soluble character of menthol and certain other medicaments that may be confined within the cell J, it is best to have an air-space between said cell and the diaphragm L, and to that end I have shown a cross P, comprising two pieces of foraminous sheet metal notched and fitted one upon the other and arranged intermediate of the aforesaid cell and diaphragm. By means of the construction and arrangement of parts just described the medicament in the cell J is far enough away from the material between the diaphragms L M to be but slightly affected by the moisture or heat of said material.

If the apparatus above described is to be employed for nasal treatment, the tip H on the tube F is placed in one nostril or both, according as said tip is single or bifurcate, and atmospheric air pumped through the previously-saturated material N and medicament K by means of the bulb I, whereby both medicaments are vaporized and the vapor forced upon the mucous surfaces accessible through the nose of the operator.

The bulb above described forms a convenient means for obtaining a forced current of atmospheric air, and the best results are obtained by having this air pass through the medicaments in a straight line, and it will be appreciated that the use of atmospheric air is in every way healthier and cleaner than the use of air breathed by the lungs of the operator and blown through the casing containing the medicaments, as is common with many devices for nasal treatment.

The apparatus above described is also

adapted for auricular treatment in a manner similar to that above specified; but, if preferred, the bulb I may be detached from the tube G, so that the latter may be placed in the mouth of the operator and blown through, the air from the lungs being warmer than atmospheric air and possibly better on this account for treatment of the mucous surfaces accessible through the ears.

10 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

15 The combination of the casing A, inclosing a cell J, designed to contain a solid medicament, said cell being constructed of foraminous sheet metal having perforated dia-

phragms at the ends thereof, with the intermediately-placed air-chamber formed by the cross P and the absorbent chamber formed by the perforated diaphragms L and M, all within said casing, the perforated stoppers B and C, with the air ingress and egress tubes, all substantially as described. 20

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses. 25

LOUIS B. HILBORN.

Witnesses:

N. E. OLIPHANT,

H. G. UNDERWOOD.