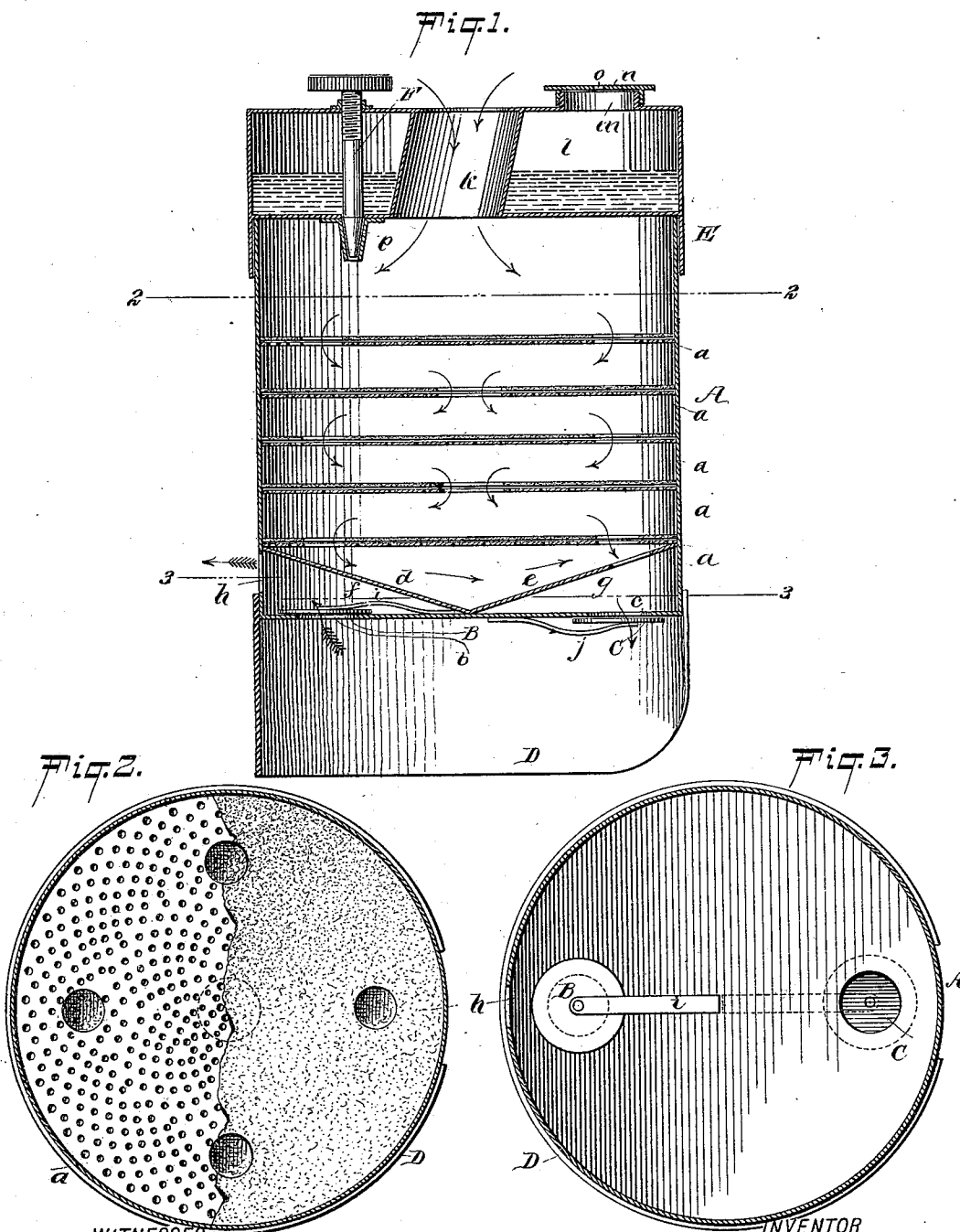


(No Model.)

A. M. ADSIT.
INHALER.

No. 514,298.

Patented Feb. 6, 1894.



WITNESSES:

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ALFRED M. ADSIT, OF HASTINGS, MINNESOTA.

INHALER.

SPECIFICATION forming part of Letters Patent No. 514,298, dated February 6, 1894.

Application filed May 19, 1893. Serial No. 474,800. (No model.)

To all whom it may concern:

Be it known that I, ALFRED M. ADSIT, of Hastings, in the county of Dakota and State of Minnesota, have invented a new and Improved Anaesthetizer, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a vertical transverse section of my improved anaesthetizer. Fig. 2 is a horizontal section taken on line 2—2 in Fig. 1; and Fig. 3 is a horizontal section taken on line 3—3 in Fig. 1.

Similar letters of reference indicate corresponding parts in all the views.

Anaesthetics, such as chloroform and ether, are commonly administered by saturating a towel with the anaesthetic and covering it with a cone of paper. This device is held tightly down over the face, almost wholly excluding the air. The patient is compelled to breathe vapor which is but slightly diluted with air. Administered in this way, the anaesthetic acts as an irritant to the mucous membrane, and the initial effect is the arrest of inspiration. It is generally admitted that death from ether is due to direct paralysis of the respiratory centers. Without doubt the respiratory centers are affected by ether, but it is believed that paralysis has a greater cause in the limited supply of air and in the hasty administration.

It is believed that the greatest danger in the inhalation of anaesthetics lies in the initial disturbance of inspiration, preventing the proper aeration of the blood, and the flushed face, the distended veins, coughing, the jerky catching inspiration, the increased flow of mucus, and the struggle for liberty result. To avoid these bad effects it is necessary to observe two rules; first, to begin the administration with air lightly charged with the anaesthetic; and second, to always allow all the air necessary to sustain life comfortably, that is to say, allow the patient as much air during the administration of the anaesthetic as would be required were he engaged in the usual pursuits of life.

Chloroform and ether are the most perfect anaesthetics known, both being capable of producing anaesthesia quickly when inhaled with abundance of air. After anaesthesia is

obtained, then the all-important point is to simply maintain the anaesthetic condition. This can be accomplished by adding only a sufficient quantity of the stupefying vapor to accurately balance or replace the amount being constantly eliminated. Elimination takes place quite slowly, therefore only a small quantity should be given each minute. The greatest danger lies in the over-saturation of the tissues. In the administration of ether, not more than fifteen drops should be used the first minute, or the equivalent of one drop to each inspiration. Of chloroform, not more than four drops should be given the first minute, and the quantity given at any time ought not to exceed fifteen drops. After the first fifteen drops of ether have been inhaled the patient will have become accustomed to the vapor, and all fear of impending danger removed from his mind. Now the quantity can be gradually increased from thirty to sixty drops per minute, or in the case of chloroform, from five to fifteen drops. As soon as anaesthesia is obtained, the quantity should be reduced to about fifteen drops of ether, or four drops of chloroform, which will quite accurately represent the elimination.

The object of my invention is to provide apparatus by means of which the principle above enunciated may be carried out, and to this end, my invention consists in an inhaler provided with a reservoir for the anaesthetic, a series of perforated septums of bibulous material, induction and eduction valves for air, and a hood for covering the mouth of the patient; also in the combination with the reservoir for the anaesthetic, of a valve for regulating the supply of the anaesthetic to the bibulous septums contained by the inhaler, all as will be hereinafter more fully described.

The body A, of the inhaler, is provided with horizontal partitions a, formed of perforated metal or wire cloth, and the said partitions are provided with large apertures arranged so that the apertures of the first partition do not coincide with those of the second, those of the second do not coincide with those of the third, and so on, this arrangement being made to insure a zigzag course of the air through the several partitions. Upon these partitions are placed disks of blotting paper or analogous bibulous material having open-

ings corresponding with the apertures of the perforated partitions upon which they rest. The lower end of the body of the inhaler is closed with the exception of the apertures *b*, *c*, and between the lower horizontal partition *a* and the bottom of the inhaler, are inserted inclined partitions *d*, *e*, the partitions *d*, *e*, forming compartments *f*, *g*. The inclined partition *e* is apertured to establish communication between the body of the inhaler and the compartment *g*, while in the side of the inhaler is formed an aperture *h*, for the escape of air. The valve *B*, which closes the aperture *b*, is attached to a light spring *i*, the said valve being arranged upon the inner surface of the bottom of the inhaler, and the valve *C* which closes the aperture *c* in the bottom of the inhaler is placed on the outside of the bottom of the inhaler and attached to one end of a light spring *j*, the other end of which is secured to the bottom of the inhaler.

A flexible hood *D*, is attached to the lower end of the inhaler and adapted to inclose the mouth and nose of the patient. Over the upper end of the inhaler is placed a hollow cover *E*, having a central opening *k* for the admission of air to the inhaler, and an annular space *l* for containing the anæsthetic. The top of the cover *E* is provided with a filling opening *m*, which is closed by a screw cap *n*, furnished with a small perforation *o* for admitting air to replace the liquid used in the inhaler. At one side of the cover *E* is secured a screw valve *F*, which fits the valve seat *p*, and is furnished with a screw-head by which it may be adjusted.

One or more thicknesses of blotting paper being placed on each of the perforated partitions, and the anæsthetic being placed in the annular chamber *l*, the operation of anæsthetizing the patient is begun by opening the valve *F* and allowing a few drops of the anæsthetic to drop upon the blotting paper, the supply being regulated in accordance with the principles set forth at the beginning of

this specification. The patient draws air charged with the anæsthetic through the aperture *c*, and exhales it through the aperture *b*, the valves *C*, *B*, automatically closing the apertures after each inhalation and exhalation.

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

1. An anæsthetizer comprising a hollow body having one or more septums, or partitions, provided with air openings of relatively large size, and numerous small perforations, bibulous material applied to said septums or partitions without obstructing the air openings, and valved openings *b* and *c*, as shown and described for the purpose specified.

2. An anæsthetizer consisting of a hollow body, having a liquid reservoir and liquid-discharge regulator, a series of minutely perforated septums, or partitions, having large air openings which are out of registration in contiguous portions, bibulous material supported by such partitions and having openings corresponding to said air openings, and a bottom partition having openings *b* and *c*, provided with spring-pressed valves opening in opposite directions, as shown and described.

3. The anæsthetizer consisting of the hollow body, the top air inlet, *k*, and liquid reservoir, the valve drop regulator, the series of wire gauze septums, and sheets of bibulous material resting on the latter and provided with coincident large air openings arranged to give a zigzag course to the air current, the perforate and imperforate inclined partitions *f*, *g*, and the bottom portion having openings *b*, *c*, with spring-pressed valves opening in opposite directions, all as shown and described.

ALFRED M. ADSIT.

Witnesses:

WILLIAM HODGSON,
ALBERT SCHALLER.