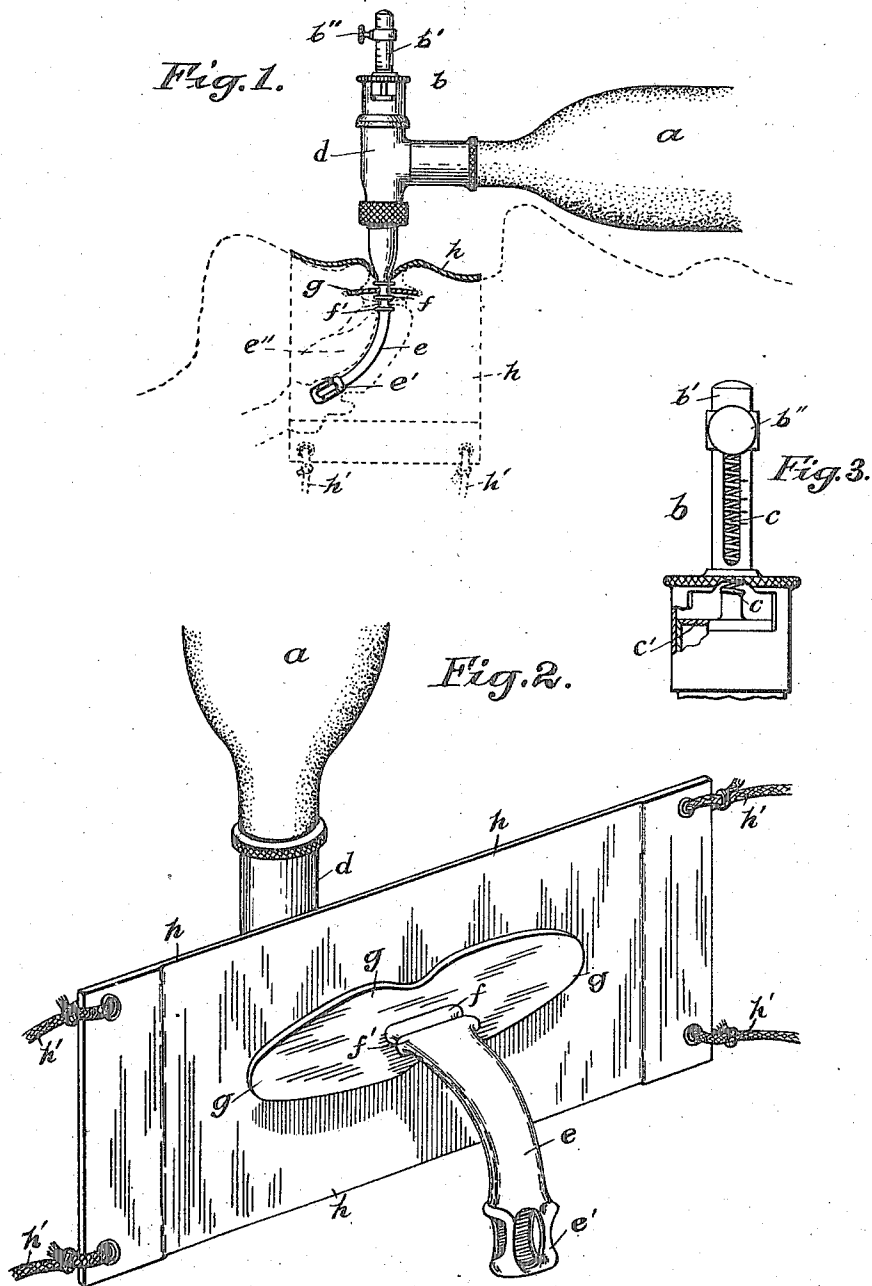


C. K. TETER.
 PHARYNGEAL INHALER.
 APPLICATION FILED OCT. 17, 1914.

1,270,565.

Patented June 25, 1918.



Witnesses
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UNITED STATES PATENT OFFICE.

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1,270,565.

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To all whom it may concern:

Be it known that I, CHARLES K. TETER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Pharyngeal Inhalers, of which the following is a specification.

My invention relates to improvements in pharyngeal inhalers, and has for its object the provision of simple and efficient inhaling apparatus for conveniently continuing the anesthesia of a patient indefinitely, without the loss or dilution of the anesthetizing reagents, while insuring the normal breathing functions of said patient.

One of the most common difficulties experienced during continued anesthesia is the closing of the patient's throat, by reason of the tongue sliding back and thereby restricting or checking the breathing. Furthermore, it is found that the ordinary facial or nasal inhaler is likely to permit the leakage of air, as well as the escape and loss of gas, which are conditions that should be carefully avoided during continued anesthesia.

Accordingly, I have provided an appliance which is adapted to be substituted for the ordinary inhaler, as soon as the patient is under the influence of the anesthetic, and said appliance serves positively to hold the tongue in position, maintain normal breathing conditions under a definite pressure of gas, and prevent the escape or waste of the anesthetic. To this end, I have provided a curved and flattened pharyngeal tube terminating in suitably positioned openings to prevent their obstruction in the patient's throat. Associated with said tube there is provided a positive pressure valve adapted to insure a definite gaseous pressure, a contiguous gas-bag or reservoir, an interior or labial shield for the patient's mouth, and an exterior apron adapted to be strapped tightly about the patient's mouth and serve to hold the device in proper position, during anesthesia. The details and further functions of the appliance may best be explained by making reference to the accompanying drawings wherein:

Figure 1 is a view of the appliance in side

elevation, showing the gas-bag rearwardly broken away and the inhaler properly positioned in the pharynx of the patient, as indicated by dotted lines.

Fig. 2 is an enlarged perspective view of the device, and Fig. 3 is a side view of the positive pressure valve.

In each figure of the drawings I have employed the same character of reference to indicate similar parts.

It will be understood that my improved inhaler is adapted and designed to be used in connection with any suitable anesthetizing apparatus, and more particularly one adapted for administering nitrous oxid and oxygen, such as shown in Letters Patent No. 883,987, April 7th, 1908. This constitutes an anesthetizing gas pressure supply line, with which my inhaler is used. It is unnecessary to describe such apparatus, but I may state that the gas-bag *a* terminates a supply tube through which the anesthetizing gases are adapted to be admitted by suitable controlling valves. This gas-bag or reservoir *a* is attached at the extremity of the anesthetizing-gas pressure supply line, and ordinarily is positioned in close proximity to the patient, preferably resting upon the forehead, so that there need be no fluctuation in the flow of gases through the supply line, and the breathing of the patient will not affect the definite pressure insured by the positive pressure valve *b*, through which the exhalations of the patient are directed. This valve is provided with a graduated stem *b'* whereon the adjustable collar and set screw *b''* may be secured in any desired position for effecting the corresponding compression of a weak spring *c*. The valve part *c'* and spring are of such light weight as to be operated by the breathing of the patient, yet the spring is capable of sufficient tension to insure a positive gas pressure of the anesthetic within the lungs of the patient.

In order to increase the absorption by the blood of the anesthetizing gases, or vapors, such as ether, the positive pressure valve serves to insure a constant adjustable, gaseous pressure within the respiratory organs of the patient, sufficient to prevent any collapse of the lungs. Ordinarily such gas

pressure ranges between two and twenty-four millimeters, whereby actual distension of the lungs may be effected.

Attached to the T-connection *d* is the pharyngeal tube *e*, which is terminally flattened as best shown in Fig. 2 and is adapted to be inserted through the mouth of the patient, as soon as anesthesia has been induced. This tube *e* serves to fit beneath, and hold the tongue *e''* in position, while a terminal boss *e'* upon the tube, preferably formed of lead, is provided with openings upon three sides and the bottom, in order to prevent any obstruction of the patient's breathing. This lead boss serves to prevent lacerations of the mouth, tongue and pharynx, which might be caused by the sharper edges of the tube.

Additional bosses or enlargements, *f* *f'*, also of lead or a relatively soft alloy, are forwardly positioned upon the tube *e* and are respectively adapted for the attachment of the spatulate, labial, inner shield *g*, while the relatively soft material of the enlargement *f'* engages and prevents the breakage or the chipping of the patient's teeth. This labial shield *g* affords an air-tight seal for the patient's mouth, when said shield is slipped between the lips and gums; the former being depressed by the rubber apron *h*, which is secured at the back of the patient's head and neck by cords *h'*.

In practice, it is of course necessary to check the breathing of the patient through the nose, by applying an ordinary nasal clamp, so that the inhalations must come entirely through the rubber gas bag or reservoir *a*, which affords sufficient reserve supply to prevent any lowering of the adjusted gas pressure, even with deep breathing. Accordingly, the operator may regulate the flow of the anesthetic to suit the varying requirements of the patient, with the full knowledge that the mixture of nitrous oxid and oxygen or other anesthetizing reagents in correct proportions, is not subject to dilution or diminution from loss. Furthermore, the positive pressure valve *b* may be adjusted from time to time, in order to meet the varying conditions of the patient, and insure a sufficient pressure of the gas within his respiratory organs. Because of its curved and flattened form, my pharyngeal inhaler is best adapted to keep the tongue in proper position and fits without danger of becoming clogged, into the throat of the patient. This last feature is materially contributed to by the construction of the boss *e'*, which guards the three lateral openings by encircling flanges, while the bottom opening communicates directly with the patient's throat. It is practically impossible for all of these openings to become restricted sufficiently to impair the breathing of the patient.

Having now set forth the preferred embodiment of my invention, I claim as new and desire to secure by Letters Patent the following:—

1. In an inhaling appliance, the combination with a curved tube adapted to fit into the pharynx of the patient, of means for preventing mouth breathing associated therewith, and an outwardly-opening valve associated with said tube and adapted to permit the exhalations from the patient's lungs, substantially as set forth.

2. In an inhaling appliance of the class described, the combination with a flattened curved tube adapted to fit within the pharynx of the patient, of means for preventing mouth breathing, and an adjustable exteriorly-opening valve associated with said tube, substantially as set forth.

3. In an inhaler of the class described, the combination with a curved tube fitting within the pharynx of the patient, of an enlarged terminal thereon having a plurality of openings from different sides, and means associated with said tube for preventing mouth breathing, substantially as set forth.

4. In an inhaler of the class described, the combination with a tube curved and flattened to fit within the mouth and pharynx of the patient, of an abutment thereon formed of relatively soft material for engagement with the teeth of the patient, and means for preventing mouth-breathing, substantially as set forth.

5. In an inhaling device, the combination with means for directing anesthetizing gases to the respiratory organs of the patient, of an exhaling valve, an anesthetizing-gas pressure supply line, and a gas bag or reservoir positioned immediately adjacent to said inhaler, substantially as set forth.

6. In an inhaling device, the combination with a member adapted to direct a gaseous anesthetic to the respiratory organs of the patient, of a positive-pressure valve, an anesthetizing-gas pressure supply line, and a distensible gas bag or reservoir positioned immediately adjacent to, said member, through which the gas-supply is adapted to be furnished to said inhaling device, substantially as set forth.

7. In an inhaling device, the combination with a tubular member terminally curved and flattened to fit within the pharynx of the patient, of an associated labial shield adapted to fit interiorly of the lips of the patient, and an exhaling valve, substantially as set forth.

8. In an inhaling device, the combination with a pharyngeal tubular member terminally curved and flattened to fit within the pharynx of the patient, of an apron fitting exteriorly about the patient's mouth, and an adjustable exhaling valve, substantially as set forth.

9. A pharyngeal inhaling appliance comprising a flattened tube shaped to fit within the mouth and pharynx of the patient, an inner labial shield and a depressing apron for the lips of the patient, an adjustable ex-
 5 haling valve, and a gas bag positioned immediately adjacent to said tube through which the gas-supply is adapted to be directed, substantially as set forth.

10. A pharyngeal inhaling appliance comprising a curved tubular member shaped to fit within the mouth and pharynx of the patient, a spatulate inner labial shield, a de-
 10 pressing apron for covering the mouth of the patient, an exhaling valve, and a gas-supply reservoir, substantially as set forth.

11. In an inhaling appliance, the combination with a member adapted to direct the
 15 anesthetizing reagents to the respiratory organs of the patient, of an adjustable positive-pressure valve, an anesthetizing-gas pressure supply line, and a distensible reservoir positioned immediately adjacent to said
 20 member, substantially as set forth.

12. In an inhaling device of the class described, the combination with a tubular
 25 pharyngeal member shaped to fit within the mouth and pharynx of the patient, of an as-

sociated inner labial shield fitting between the lips and gums of the patient, an apron
 30 fitting exteriorly about and covering the patient's mouth, means for securing the same in place and an exhaling valve, substantially as set forth.

13. In an anesthetizing inhaler, the combination with a curved tubular member fitting
 35 within the pharynx provided with lateral openings terminally thereof, and projections or ribs guarding said openings, of means for preventing mouth breathing and an out-
 40 wardly opening valve associated with said tube, substantially as set forth.

14. In an anesthetizing inhaler, the combination with a pharyngeal inhaler tube, of
 45 means for supplying gas thereto, an outwardly opening valve associated with said tube, and a mouth-covering through which said tube extends, equipped with means for
 50 positively fastening said covering to the face of the patient, substantially as set forth.

In testimony whereof I do now affix my signature in the presence of two witnesses.

CHARLES K. TETER.

Witnesses:

A. C. KNIGHT,

ALBERT LYNN LAWRENCE.

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