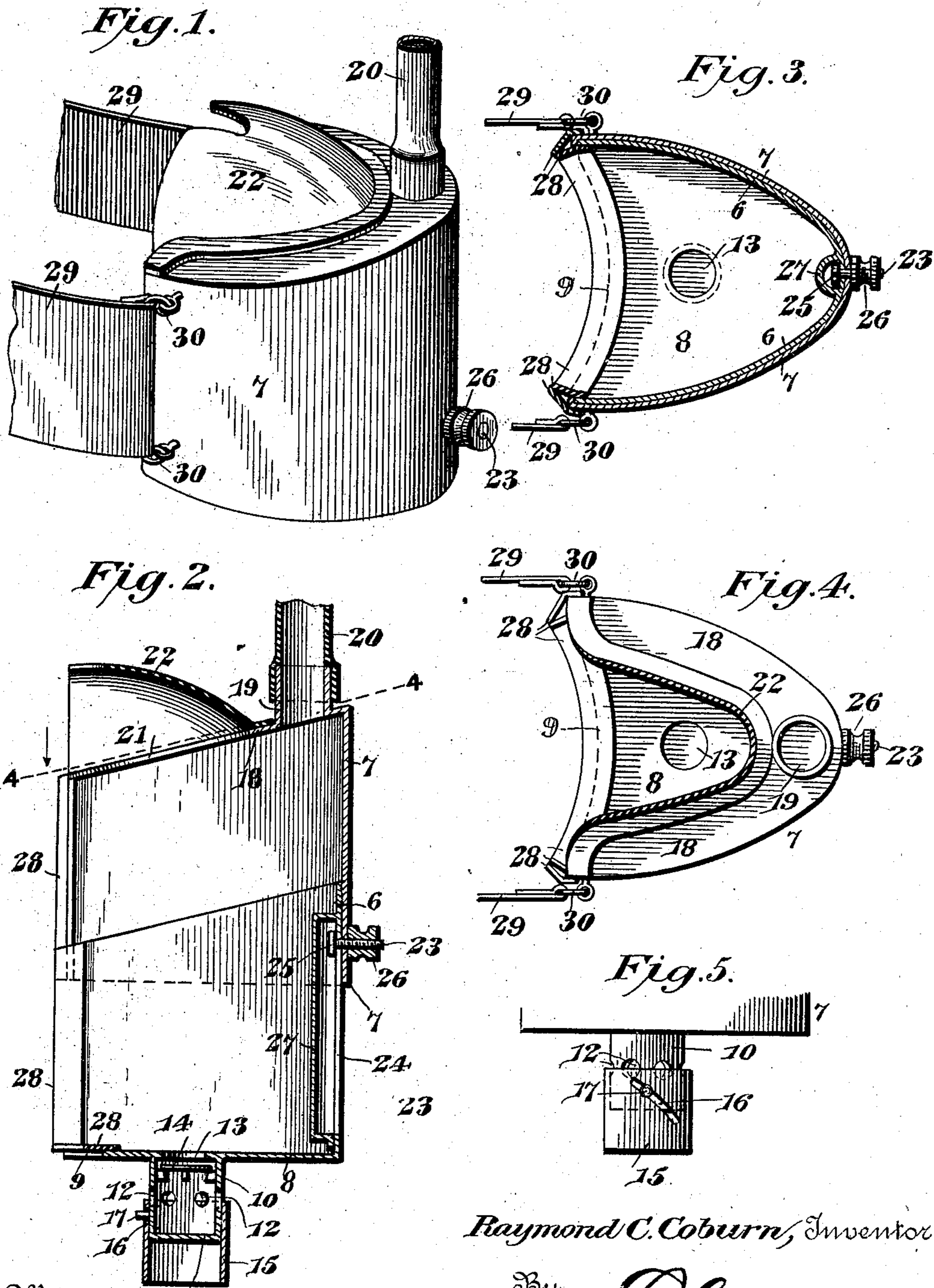


No. 815,510.

PATENTED MAR. 20, 1906.

R. C. COBURN.
INHALER.

APPLICATION FILED JUNE 14, 1904.



Witnesses
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RAYMOND C. COBURN, OF UPPER SANDUSKY, OHIO.

INHALER.

No. 815,510.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RAYMOND C. COBURN, a citizen of the United States, residing at Upper Sandusky, in the county of Wyandot and State of Ohio, have invented a new and useful Inhaler, of which the following is a specification.

This invention relates to improvements in that class of inhalers particularly useful for administering anesthetics.

As is well known, anesthetics are preferably administered through the nose; but as some patients are unable to thus take the same it is the ordinary practice in such cases to employ a different inhaler for the mouth. The use of two independent devices, however, is often inconvenient; and one of the objects of the present invention is to provide a structure that is adaptable for use either as a nasal or oral inhaler, the necessary changes being easily accomplished.

A further object is to provide an inhaler wherein the expirations of the patient are properly allowed to escape from the inhaler, while the atmospheric air is excluded during inspirations, the inhaler being adjustable to preclude the escape of the anesthetic agent after the patient is under the influence thereof.

The preferred embodiment of the invention is illustrated in the accompanying drawings and is described in the following specification. An inspection of the claims will show, however, that the invention is not limited to the particular structure set forth, but is open to various changes and modifications.

In the embodiment illustrated, Figure 1 is a perspective view of the inhaler. Fig. 2 is a vertical sectional view therethrough, but showing the lower section moved downwardly, or, in other words, illustrating the inhaler when extended. Fig. 3 is a horizontal sectional view. Fig. 4 is a sectional view taken on the line 4 4 of Fig. 2. Fig. 5 is a detail sectional view through the outlet-nipple. Similar reference-numerals indicate corresponding parts in all the figures of the drawings.

In the embodiment illustrated a cup is employed having an open face-receiving side and comprising sections 6 and 7, that are slidably telescoped, said sections and cup tapering from the open side toward the opposite side, as clearly illustrated in Figs. 3 and 4. The inner section 6 carries the bottom 8 of the cup and has contiguous to the open side a lip-receiving recess 9. It is

furthermore provided with a depending outlet-nipple 10, provided with a closed lower end 11, and having an annular series of openings 12 therethrough. Communication between the interior of the nipple and the interior of the cup is established through an opening 13, controlled by an automatically and outwardly opening valve 14, located within the nipple. The openings 12 are arranged to be covered by a sleeve 15, slidably fitted upon the nipple and having an inclined slot 16, through which passes a projection 17, carried by said nipple. It will thus be apparent that when the sleeve 15 is turned it will move spirally upon the nipple and across the openings thereof.

The outer section 7 carries the top 18 of the cup, said top having an upstanding inlet-nipple 19, to which is attached the gas-conducting tube 20. The top, furthermore, is provided with a nose-receiving recess 21, opening from the open side of the cup and covered by a flexible cap 22, constructed of rubber or other suitable material, said cap being suitably secured upon the top 18.

Means are provided for holding the sections against relative movement, said means consisting of a clamp-bolt 23, carried by the outer section 7 and passing through a slot 24, formed in the inner section. The bolt has a head 25 at its inner end and a thumb-nut 26 threaded on its outer end. The head 25 is located within a cap element 27, secured to the inner side of the inner section 6 and covering the slot 24. Suitable packing-strips 28, of rubber or other flexible material, are secured to the free upright margins of the sections and the bottom thereof at the open side of the cup. Head-straps 29 of any desirable form are connected to stirrups 30, pivotally attached to the opposite sides of the outer section 7.

If the device is to be employed as a nasal inhaler, the sections are telescoped, as illustrated in Figs. 1 and 2, and the cup is applied to the face with the nose covered by the cap 22 and received in the recess 21, the bottom 8 fitting against the upper lip, which is received in the recess 9. The inspiration of the patient raises the valve 14, and thereby closes the opening 13, so that gas only received through the conduit 20 passes into the lungs. Upon the expiration the valve 14 drops. Consequently the respired air will pass through the outlet and through the openings 12. As this outlet is located directly below the nostrils,

it will be apparent that the air will have a direct course between the two, and therefore there will be very little loss of the anesthetic agent. During the preliminary application
 5 of the device the openings 12 are left entirely open by moving the sleeve 15 downwardly; but as the patient becomes unconscious or is about anesthetized, so that deep breaths are no longer taken, the orifices are closed by
 10 turning the cap 15. Thus the gas is still forced through the nose into the lungs, while it cannot escape through the orifices.

If it is desired to administer the anesthetic through the mouth as well as through the
 15 nose, the cup is extended, as indicated in dotted lines in Fig. 2. The nose is still received within the cup 22 and in the recess 21, and the lower portion thereof is located below the mouth, or, in other words, the recess 9 re-
 20 ceives the lower lip. The operation of the device, however, is substantially the same as that already described.

This structure has a number of important advantages. In the first place, by providing
 25 the inlet through the top the conduit may be passed directly over the patient's head, where it is out of the way of the operator. The outlet, as already described, is directly in line with the patient's nostrils, so that the
 30 respired air has a direct passage thereto. The means for varying the size of this outlet is simple, can be adjusted with ease and expedition, and will maintain its adjusted rela-
 35 tion. As already shown, the device is capable of use either as a nasal or an oral inhaler, and thus has particular advantages over the use of two separate devices. At the same
 40 time there are features which are useful in connection with either of these separate devices and entirely independent of the adjustable or extensible feature of the cup.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will
 45 be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from
 50 the spirit or sacrificing any of the advantages of the invention.

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

55 1. An inhaler including an extensible cup formed of substantially inflexible walls, and having an open rear side to receive a patient's face, and edges which fit against the same.

2. An inhaler including an extensible cup
 60 comprising substantially inflexible walls, and provided with a rear open side to receive a patient's face, said cup also having a valved air-outlet and a gas-inlet.

3. An inhaler including an extensible cup
 65 comprising relatively adjustable face-cover-

ing sections said inhaler being provided with a face-receiving opening located partially in each section.

4. An inhaler including an extensible cup comprising telescoped face-covering sections,
 70 said inhaler being provided with a face-receiving opening located partially in each section.

5. An inhaler including an extensible cup comprising slidably-associated telescoped
 75 face-covering sections, said cup being provided with a valved air-outlet and a gas-inlet and a face-receiving opening located partially in each section.

6. An inhaler including an extensible cup
 80 comprising slidably-associated face-covering sections, and means for holding the same against their sliding movements.

7. An inhaler including an extensible cup comprising slidably-associated sections, and
 85 a clamping-bolt carried by one section and slidably engaging the other section, said clamping-bolt constituting means for holding the sections against relative movement.

8. An inhaler including an extensible cup
 90 comprising slidably-associated telescoped sections, one of said sections having a slot, and a clamping-bolt carried by the other section and slidably engaging in the slot, said
 95 clamping-bolt constituting means for holding the sections against relative movement.

9. An inhaler including an extensible cup comprising slidably-associated telescoped
 100 sections, the inner of said sections being provided with a slot, a cap element secured to the inner section and covering the slot, a clamping-bolt passing through the slot and having a head at its inner end located within
 105 the cap element, and an exposed thumb-nut threaded on the bolt.

10. An inhaler including a cup having an open face-receiving side and comprising tapering slidably-telescoped sections, one of
 110 said sections having a nose-receiving recess, the other having a lip-receiving recess.

11. An inhaler including a cup having an open face-receiving side and comprising slidably-associated sections, one of said sections
 115 having a nose-receiving recess, and a yielding cap covering the same.

12. An inhaler including a cup having an open face-receiving side, said cup tapering toward its opposite side and comprising slidably-telescoped sections, one of said sections
 120 having a top provided with a nose-receiving recess, the other of said sections having a bottom provided with a lip-receiving recess.

13. An inhaler including a cup comprising relatively adjustable sections, one of said
 125 sections having a valved air-outlet, the other having a gas-inlet.

14. An inhaler including a cup comprising slidably-telescoped sections, one of said sections having a top provided with a nose-receiving recess and a gas-inlet nipple, the
 130

other of said sections having a bottom provided with an outlet-nipple, and an outwardly-opening valve located therein.

5 15. An inhaler including a face-covering cup having a top, a bottom and a front wall defining a nose-receiving interior, a valved air-outlet in said bottom of the cup communicating with the lower portion of the interior and beneath a patient's nose placed
10 therein, and a gas-inlet connected to the top and communicating with the upper portion of the nose-receiving interior.

15 16. An inhaler including a face-covering cup having a top, a bottom and a front wall defining a nose-receiving interior, a nipple depending from the bottom and having an air-

outlet passage communicating with the nose-receiving interior, said passage being disposed beneath a patient's nose placed in said interior, an outwardly-opening valve in the nipple controlling the passage, and a gas-inlet nipple connected to the top of the cup in opposing relation to the outlet and communicating with the upper portion of the said interior.

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

RAYMOND C. COBURN.

Witnesses:

PORTER CULVER,
REXFORD STAUFFER.