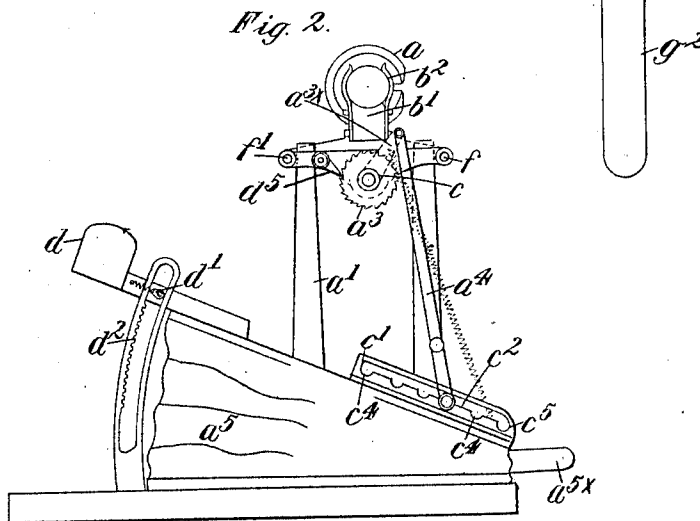
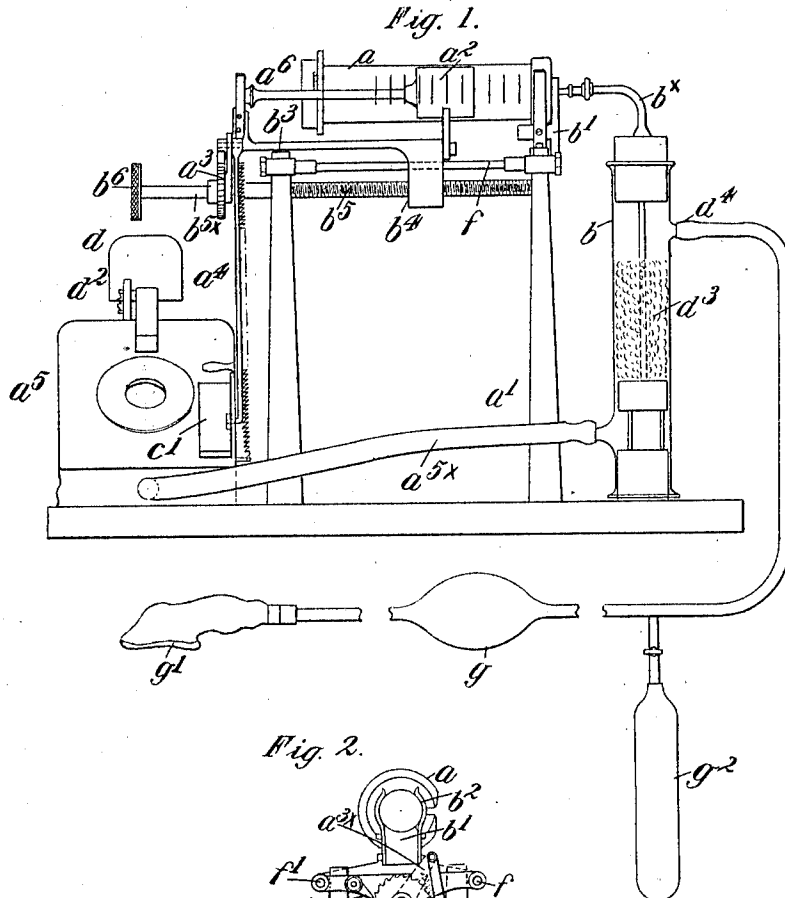


S. G. BROWN.
 APPARATUS FOR USE IN ADMINISTERING ANESTHETICS.
 APPLICATION FILED MAY 20, 1910.

1,061,161.

Patented May 6, 1913.



Witnesses:

[Signature]
[Signature]

Inventor
 Sidney G. Brown
 By *[Signature]*
 Atty.

UNITED STATES PATENT OFFICE.

SIDNEY GEORGE BROWN, OF LONDON, ENGLAND.

APPARATUS FOR USE IN ADMINISTERING ANESTHETICS.

1,061,161.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed May 26, 1910. Serial No. 563,630.

To all whom it may concern:

Be it known that I, SIDNEY GEORGE BROWN, a subject of the King of Great Britain, residing at 4 Great Winchester street, in the city of London, England, have invented certain new and useful Improvements in Apparatus for Use in Administering Anesthetics, of which the following is a specification.

This invention relates to apparatus for use in administering anesthetics, in which the proportions of the mixture of anesthetic and air to be administered to the patient, are capable of regulation, the object being to enable the desired mixture to be determined and regulated with mathematical precision and certainty.

According to the present invention, the apparatus is adapted to supply measured quantities of anesthetic and air, the desired anesthetic being thus administered with certainty and precision. At the same time a weaker or a stronger mixture or even air alone or a supply of oxygen to the patient is also rendered readily and expeditiously available during the working of the apparatus.

In order that the said invention may be clearly understood and readily carried into effect, I will proceed to describe the same with reference to the accompanying drawings, in which:—

Figure 1 is an elevation, and Fig. 2 an end view illustrating a form of apparatus embodying the present invention.

The apparatus comprises a container *a* in which the chloroform or other anesthetic is placed; the said container is suitably mounted upon a stand or support *a'* and contains a piston *a''* adapted for intermittent movement in a gradual manner by means of a ratchet or other appropriate mechanism. In the example illustrated, a ratchet mechanism is indicated at *a'''*, arranged for actuation by a suitable regulatable connection *a''''* with an air bellows or pump *a'''''*, the chloroform or other anesthetic being expelled from the container *a* into a mixing chamber or vaporizer *b* by way of a pipe or tubular connection *b''*. This latter chamber is in communication with the air bellows or pump *a'''''* by a tube *a''''''*, the air in its passage through this chamber absorbing or taking up the charge of chloroform expressed or forced from the container *a* on the aspiration stroke

of the bellows or pump. The container *a* is arranged in such a manner that, as regards one end thereof, it is carried in a fixed bearing *b'*, from which it may be rendered detachable by means of a spring clip *b''* or other convenient device. As regards the other end, the said container may be supported by means of the outer extremity of the piston rod *a''''*, the latter being carried in a cradle *b'''* formed or provided with an internally screw threaded lug or nut *b''''*, through which works a screw *b'''''*; suitable rods *f, f'* serving to guide the said cradle in its movements. The outer end of the screw *b'''''* is provided with a milled or other suitable head *b''''''* for use in turning the same by hand, but, for affording the aforesaid intermittent gradual movement of the piston *a''*, the spindle *b''''''* of the screw *b'''''* is provided with a ratchet or toothed wheel *a'''* which is adapted for operation by a pawl *a''''* carried by a spring controlled arm *c* connected with a regulator *c'* by means of a rod *a'''''*. The extremity of the rod *a'''''* remote from the arm *c* engages in a slot *c''* formed in the regulator *c'* on the bellows or pump *a'''''* the slot being provided with notches or stops *c''''* for arresting or holding the rod at predetermined points in the length of the slot so as to regulate the movement of the ratchet *a'''* and thereby the degree of movement of the piston *a''* with each movement of the bellows or pump *a'''''*. The arrangement is such that, when the rod *a'''''* occupies the position *c''''* in the slot *c''* no movement of the ratchet *a'''* will take place and therefore only air will be forced into and through the chamber or vaporizer *b*. The bellows *a'''''* or other air forcing appliance is provided with a "full stroke" device *d* which may consist of a pivoted spring-controlled pawl *d'* arranged to engage with a ratchet or other toothed slot *d''*, the arrangement being such that, when the bellows or air forcing appliance has been started in the one or the other direction, the movement in that direction must be completed before the direction of movement can be reversed.

The chamber or vaporizer *b* may be furnished with any suitable material *d'''* capable of retaining the anesthetic, such as balls or spheres of porcelain, glass, or the like, or shot; or the material may be of such a character as to take up or absorb the charge of chloroform or other anesthetic. The said

retaining medium may be supported upon gauze or other light perforated material. The chamber *b* is in communication, by way of a suitable pipe or tube *d*⁴, with a collapsible bag or container *g* for the mixture or air, whence the latter passes to the mask or appliance *g'* usually applied over the mouth and nose of the patient. Between the chamber or vaporizer *b* and the aforesaid bag *g* the tubular connection may be adapted for being put into communication with an oxygen gas container *g*² so that in an emergency the patient may be supplied with that gas or, as previously stated, the administration of the chloroform may be suspended and air alone be supplied to the patient by simply moving the rod *a*⁴ pertaining to the ratchet arm *c* into the lowest position in the slot *c*² of the regulator *c'* as hereinbefore described.

There may be provided in connection with the ratchet *a*³ a retaining pawl *d*⁵ for preventing any back movement or slipping of the ratchet wheel *a*³ and the actuating screw *b*⁵.

The container *a* for the chloroform may be graduated if required so that a definite quantity of anesthetic may be placed therein and the capacity of the air bellows or pump *a*⁵ may be arranged so as to accommodate the breathing capacity of the lungs. It will be readily understood that the piston *a*² pertaining to the container should be a perfect fit therein in order that there may be no leakage. If found necessary the discharge orifice of the container *a* may be provided

with a non-return valve of any suitable construction.

What I claim and desire to secure by Letters Patent of the United States is:—

1. Apparatus for administering anesthetics, comprising a container for the anesthetic, a piston working therein, a ratchet device, an air bellows, a notched regulator on said bellows, and means for connecting said regulator with the aforesaid ratchet device so as to impart an intermittent movement to the aforesaid piston.

2. Apparatus for administering anesthetics comprising a container for the anesthetic, a piston working therein, a ratchet device, an air bellows, a notched regulator on the said bellows, means for connecting said regulator with the aforesaid ratchet device, and a chamber for mixing the anesthetic and air.

3. Apparatus for administering anesthetics, comprising a container for the anesthetic, a piston working therein, a ratchet device, an air bellows, a notched regulator on the said bellows, means for connecting the said regulator with the aforesaid ratchet device, a chamber for mixing the anesthetic and air and means for delivering the said mixture to the patient.

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

SIDNEY GEORGE BROWN.

Witnesses:

T. SELBY WARDLE,
F. J. RAPSON.

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