

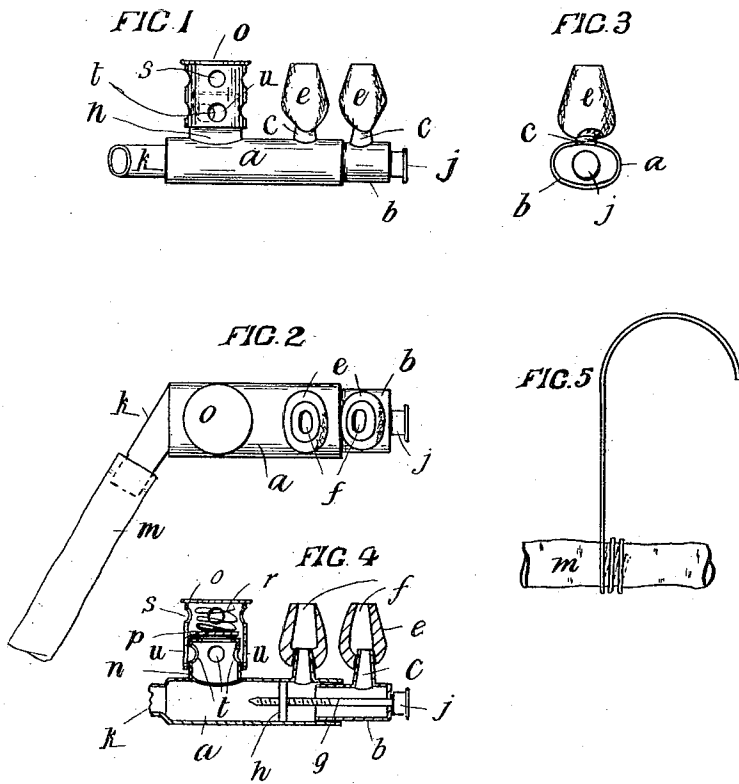
A. HUMPHRIES.

APPARATUS FOR USE IN ADMINISTERING ANESTHETICS.

APPLICATION FILED MAR. 11, 1914.

1,125,542.

Patented Jan. 19, 1915.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR USE IN ADMINISTERING ANESTHETICS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, AUBREY HUMPHRIES, subject of the King of Great Britain, residing at Napier, in the Dominion of New Zealand, have invented a new and useful Improved Apparatus for use in Administering Anesthetics; and I do hereby declare the following to be a full, clear, and exact description of the same.

This invention relates to improved means that have been devised principally for use by dentists in the administration of anesthetics to their patients but which also may be used by doctors and others for similar purposes. The means devised are such as to provide for apparatus that when in use will be entirely out of the operator's way while attending to the teeth of the patient and by which also the strength of the anesthetic may be readily controlled to produce the required condition of analgesia or anesthesia, and air supplied for the respiration of the patient when so required.

The invention consists in a novel construction of nose piece having plugs thereon adapted to be inserted into the patient's nostrils and having means whereby it may be caused to grip the nose so as to be held in place, combined with a special construction of valve designed to permit of the expiration of the patient and to also allow of the inspiration of regulatable quantities of air when so desired.

The invention is illustrated in the accompanying drawings, in which:—

Figure 1 is an inside elevation, Fig. 2 a plan, Fig. 3 an end elevation, and Fig. 4 a sectional elevation of the appliance. Fig. 5 is an elevation of a suitable form of ear hanger support for the tube leading to the appliance.

The appliance is composed of a tube *a* preferably of elliptical cross section capable of being elongated or shortened by having one end telescopic, as at *b* which end is closed. This tube is provided with a pair of nipples *c* extending from its top side one being arranged in the main portion *a* and the other upon the telescopic portion *b*. These nipples form seats for the nose plugs *e* each of which has a central bore passage *f* and fits closely over the nipple. These plugs are made of suitable size and shape to adapt them for fitting closely within the patient's nostrils and are arranged in pairs to correspond with the two nostrils of the patient.

They are also made removable so that smaller or larger ones may be substituted whenever desired and also to permit of their cleansing after use. The tube being telescopic at its end *b* provides for the distance apart of the two plugs being regulated so that they may be adjusted to varying widths of noses. The outer plug is adapted to be moved inward toward the inner plug by means of the screw *g* that passes in through the end *b* of the tube and screws through a bridge piece *h* across the inside of the tube *a*. This screw has a head *j* upon its outer end, which engages the closed end of the tube *b* and forces it inward when the screw is turned in one direction while, when turned in the other direction, allowing such portion to be moved out. When therefore the plugs have been placed in the nostrils they may be caused to grip on to the cartilage between the nostrils by screwing up the screw *g*. The appliance will thus be held in position on the patient, the tube extending horizontally across beneath the nose and free connection being made between the tube, through the nipples and plugs, into the nostrils.

The reverse end of the tube *a* is extended to form a nipple *k* on to which the end of the rubber tube *m* employed in conveying the anesthetic is placed. This nipple is arranged at such an angle as to direct the tube back along the cheek of the patient and in use it is found convenient to carry the tube back behind the head, by supporting it in the ear hanging bracket shown in Fig. 5.

The combined air admission and expiration valve consists in a cylinder *n* opening upward from the tube *a* and covered by a cylindrical cap *o* fitting neatly over it but leaving room between its top and the top end of the cylinder. This cylinder end is formed as a valve seat and upon it rests a light diaphragm valve *p* adapted to close the entry into the top of the cylinder and which is kept normally on its seat by means of a light spring *r* in compression between it and the inside top of the cap *o*. Apertures *s* are made in the wall of the cap above the level of the valve so that as the patient exhales through the nostrils the exhalations will lift the valve and escape through the apertures. Immediately the exhalation ceases the valve will reseal itself and prevent the entry of air through it. Thus in the administration of the anesthetic pro-

vision is made for the escape of the exhalations and for the free expiration of the patient.

The wall of the cylinder *n* and the wall of the cap *o* are respectively formed with ports *t* and *u* therein at points beneath the valve *p*. These ports are so arranged that they may be made more or less coincident with one another by the rotation of the cap, or those in the cap may be turned over solid portions of the cylinder wall. Thus by adjusting the cap, the entry of air to the tube and consequently to the patient may be allowed to any desired extent or may be completely shut off. This special form of valve is so arranged as to extend upward on one side of the nose and being so situated is conveniently positioned to allow of the operator regulating the strength of the anesthetic or for supplying the necessary air for breathing after the required state of analgesia or anesthesia has been produced. The special form of valve employed and the provision of the air admission ports will allow of the operator so controlling the supply of air as to prolong the state of analgesia in the patient to any required period.

What I do claim as my invention, and desire to secure by Letters Patent is:—

1. Means for the administration of anesthetics, comprising in combination a tube, adapted to be connected with the supply of the anesthetic, a pair of upwardly projecting hollow nostril plugs therefor, and positive means whereby said plugs may be forced toward each other thereby gripping the nose therebetween, substantially as described.

2. Means for the administration of anesthetics consisting of a tube adapted to be connected at one end with the supply of the anesthetic, a telescopically sliding piece in the other end of the tube, a screw for regulating the position of such piece, a pair of hollow nostril plugs projecting upward respectively from the tube and the telescopic piece, and a valve upon the tube constructed to allow for the egress of exhalations and for the admission of regulatable quantities of air to the tube, substantially as specified.

3. In means for the administration of anesthetics the combination with a tube having means for the connection of the anes-

thetic supply thereto and provided with a pair of hollow nostril plugs opening upward therefrom and with means for adjusting their distance apart, of a valve comprised by a cylinder projecting from the tube and having port openings in its wall and a valve seat in its outer end, a cap fitting over the cylinder and having port openings in its wall below the level of the cylinder and apertures in it above the level of such cylinder end, a diaphragm valve fitting on the said valve seat and a spring in compression between the diaphragm and the inside of the cap, substantially as specified.

4. A device for the administration of anesthetics, comprising in combination a tube, adapted to be connected with the supply of the anesthetic, a pair of upwardly projecting hollow bulbous shaped nostril plugs therefor, and means whereby said plugs may be positively forced toward each other thereby gripping the septum of the nose therebetween and affording the entire support for the device, substantially as described.

5. A device for the administration of anesthetics comprising in combination, a tube, a flexible connection adapted to connect said tube to the supply of anesthetics, a hollow bulbous like nostril plug secured to said tube, a member slidably mounted in said tube, a hollow bulbous like nostril plug secured to said member and means for gradually and positively forcing said member into said tube thereby lessening the distance between said plugs, said plugs gripping the septum of the nostril therebetween and serving as the sole support of the device, substantially as described.

6. A device of the class described, the combination with a pair of adjustable hollow tubes, bulbous like hollow plugs secured to said tubes and means coacting with said tubes to gradually and positively force said plugs in one of two directions substantially as described.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

AUBREY HUMPHRIES.

Witnesses:

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