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Author.

A NEW APPARATUS FOR ADMINISTER- ING ANESTHETICS.

IN FACE AND MOUTH OPERATIONS.

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SOUCHON'S ANESTHETIZER.

GEO. TIEMAN & CO. MANUFACTURERS
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A NEW APPARATUS FOR ADMINISTERING ANESTHETICS IN FACE AND MOUTH OPERATIONS.

THE ANESTHETIZER.

This new apparatus has for its object *to force the vapor alone* of anesthetics into the pharynx through a tube passed into the nose or mouth, or to force the vapor into a cone. I call this apparatus by the newly coined word, "anesthetizer," because such a device requires really a new word to express its mode of action, which is active, since the vapor is *forced* out of the receptacle into the patient by an agent which is outside of the patient, who is himself passive; whereas inhalers are passive and require the exposure to the air of the anesthetic for their proper working, and require also an active co-operation from the patient.

The apparatus consists of a receptacle or bottle of suitable size with a stopper traversed by two tubes, an inlet and an outlet tube, *neither of which dips into the liquid anesthetic, but stop close to the stopper.* The two tubes are of the same diameter throughout and at both extremities, about one-quarter of an inch more or less. Stop-cocks may be fitted to them to prevent the spilling or the evaporation of the anesthetic when the apparatus is not used. The inlet tube is connected with a compressible bulb which is fixed at *both ends* to the receptacle by a simple metallic frame, so that the apparatus can be readily held and worked with one hand, leaving the other hand free to take care of the pulse. A ring adapted to the frame on the side opposite to the bulb, and through which a finger is passed, assists in the working. A hook with or without a chain may be adapted to the



frame so as to hook the apparatus to the vest or coat, as is used in some inhalers. The outlet tube from the stopper is provided with a rubber tube of suitable sized length which is connected with a cone, or is introduced through the nose or through the mouth, into the pharynx.



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The receptacle or bottle is filled or emptied by simply removing the cork, or through a funnel.

To guard against any possibility of forcing the liquid anesthetic through the outlet tube, and also to guard against any spilling, so as to enable the anesthetist to lay the bottle on the bed or table without any apprehensions as to the consequences, it may be well to fill loosely the bottle with sufficient absorbent cotton to imbibe and hold the anesthetic; a sponge or any absorbent material will do as well. This, however, *may* diminish somewhat the strength or quantity of the vapor at each pressure of the bulb. After the operation is over the anesthetic unused keeps in the bottle and cotton as well as in a separate bottle, provided the tubes are disconnected and the holes plugged tightly.

The bulb is detachable and can be renewed whenever this becomes necessary.

The advantages of this apparatus over inhalers of a more or less similar kind consist: (1) in that neither the inlet or the outlet tubes dip down into the liquid anesthetic or come near to it, thus preventing the *liquid anesthetic* from being driven into the outlet tube, thence into the face or pharynx; (2) the absorbent cotton prevents also against this same accident and against the spilling of the anesthetic when the bottle is laid on the side or inverted; (3) in the fixation of the bulb at *both ends*, making the fastening of the bulb more secure and the bulb more easy to work with the same hand that holds the apparatus; (4) the ring which assists in holding it; (5) its small size, about five inches in height by two in diameter; (6) its cheapness; (7) the facility with which one can be constructed *ad hoc*; (8) the thorough manner in which it does its work; (9) the impossibility of its getting out of order.

NASAL-TUBO ANESTHESIA.

Without such an efficient and simple apparatus it is impossible to make a *daily practical success* of maintaining the anesthesia through the nose or mouth in all operations on the face or its orifices, when otherwise the cone or wire mask has to be removed every few minutes to uncover the field of the operation to enable the operator to proceed with the operation. Soon after the inhaler is removed, the patient recovers from the effects of the anesthetic and the operator has to stop operating to allow the cone or mask to be applied over the face, and so on during the whole of the operation. With this anesthetizer, anesthesia is maintained uninterruptedly.

It is a great saving of time, pain, bleeding and shock to the patient, thereby contributing materially to the saving of life in operations which for the most part are long and bloody, and often bring the patient

to death's door. It is also a great saving of mental strain to the surgeon, who can proceed rapidly and uninterruptedly with the operation.

The patient is first fully anesthetized by the ordinary method; then the bottle is filled one-third full of chloroform, or of ether and chloroform if the anesthesia is to be prolonged; the nasal tube should be introduced down into the *lower pharynx*, about two-fifths the length of the tube, otherwise the patient breathing through the mouth may not inhale sufficiently of the anesthetic.

By compressing the bulb at the onset of an inspiration is best; this rule compels a closer watch over the respiration. By compressing the bulb more or less rapidly and thoroughly, the amount of the anesthetic is regulated; this must be borne in mind lest too much anesthetic be given. It does not require much anesthetic to maintain the anesthesia after the *patient has been well anesthetized*.

Any soft tube of whatever material will perhaps answer, but an ordinary soft red rubber catheter is the best, and is easily obtainable; this tube should be as large as the nasal cavity will admit.

It is also important that all connections should be air-tight for obvious reasons. Care should be taken that no bends or kinks form on any part of the tubes, as this will interfere with the proper working of the apparatus.

The one who administers the anesthetic can place himself in any position where he will be best out of the way of the operator, even at the head of the table or sitting, without interfering with the proper working of the apparatus.

In case of emergency any powder blower with a bottle will answer. Care should be taken that the long stopper-tube should not dip down into the anesthetic lest liquid anesthetic be thrown in, even upon modern pressure of the bulb, unless the absorbent cotton be used. The ends of both tubes *should lie in the vapor only of the upper part of the*

bottle. Any atomizer will do also, provided the tube that dips down into the fluid be removed, otherwise the liquid anesthetic will be driven through the outlet tube; cotton may also be used in the bottle or not.

It is easy for any one to construct an apparatus *ad hoc* out of any bottle of suitable size. The two holes through the cork are quickly burned through with a red hot piece of large wire or nail; any pieces of tubing, glass or metal, or two goose quills can answer; the bulb of a Davidson syringe or any other obtainable bulb may be adapted; it requires little anesthetic to maintain the anesthesia after the patient has been well anesthetized by the ordinary method.

This apparatus was first employed throughout a whole operation by the author in a case of tumor of the superior maxilla which was operated upon by Dr. A. W. de Roaldes, in presence of Drs. R. Matas, A. McShane, F. Landfried, P. Delaup and several others. It was the case of a boy 11 years old, where a portion of the right superior maxilla had to be gouged for a most interesting case of odontoma. The patient was anesthetized by the ordinary method; but from the moment the operation began the anesthesia was kept up by the above means for over an hour, to the thorough satisfaction of all present. The operator did not stop one minute during the operation until it was completed. The anesthesia was complete all the time. At one time the head had been lowered (Rose's position), and kept in that position quite a long time without interfering with the administration of the anesthetic. Barely three-quarters of an ounce of chloroform was used.

The apparatus was also used in the amphitheatre of the Charity Hospital on a patient from the service of the author (Ward Two). It was the case of a mulatto adult whose chin and lower jaw had been shot off, leaving a large gap which had to be closed by a plastic operation. Dr. Matas was kind enough to operate, while the author administered the anes-

thetic with his apparatus. The operation was performed before the class of Tulane Medical College and of the members of the Polyclinic. The anesthesia lasted one hour and three-quarters with perfect satisfaction.

No bad effects followed in *either* of the two cases. The secretions were not more abundant than usual. The apparatus was later on used in other cases with equal satisfaction.

BUCCAL TUBO-ANESTHESIA.

Should the operation be on the nose itself, where the tube might be in the way, the tube could be introduced through the mouth into the lower pharynx, care being taken to prevent the tube being bitten, by using a wedge or a gag, or by connecting the end of the tube with a metallic tube, or, best, with a disinfecting male metallic catheter which the teeth could not mash.

FACIAL TUBO-ANESTHESIA.

The apparatus may also be used to replace the ordinary way of administering anesthetics for operating in general, by pinning the extremity of an outlet or discharging *long* rubber tube to the interior of the apex of a cone, made of a towel of several ply of paper; fasten the cone with strings tied by a bow knot around the head of the patient. Apply the base of the cone close and tight around the nose and mouth so as to exclude the air; enough air is thrown in coming from the bulb with the anesthetic. For that reason the wire mask does not answer well, as it allows too much air. Dr. A. L. Metz, Demonstrator of Practical Chemistry in the Tulane Medical College, says that there are eight parts of air to one of chloroform forced out of the receptacle at each compression of the bulb. By pressing the bulb properly, anesthesia was duly produced and kept up in the cases where we employed it. There was no burning

of the lips and nose. The motions of the head of the patient are unheeded because of the length of the tube and of the fastening of the cone. In case of vomiting, the strings are readily untied and the cone removed.

If the operation is to be on the face or its orifices, the facial process is abandoned as soon as the patient is anesthetized, and the tube is introduced through the nose or mouth into the pharynx as described above.

OBSTETRICAL TUBO-ANESTHESIA.

The apparatus is useful also in administering anesthetics during labor, using a cone and perhaps a longer tube than above described. As soon as a pain is about to commence, the quick compression of the bulb throws in all the vapor needed. The accoucheur has one hand free to make his examinations. He may trust the apparatus to any one present, who will press the bulb only when directed by the accoucheur.

The accoucheur is also relieved of the painful position of stooping over the patient to manage the cone and the anesthetic.

The patient may safely administer the anesthetic to herself by compressing the bulb herself, since when unconsciousness is produced she can no more work the bulb and take too much anesthetic.

There is no danger of spilling the anesthetic, if the absorbent cotton has been properly arranged in the bottle.

