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2,127,215

EXPANSIBLE RESPIRATORY AIRWAY

Filed March 27, 1937

FIG. 1.

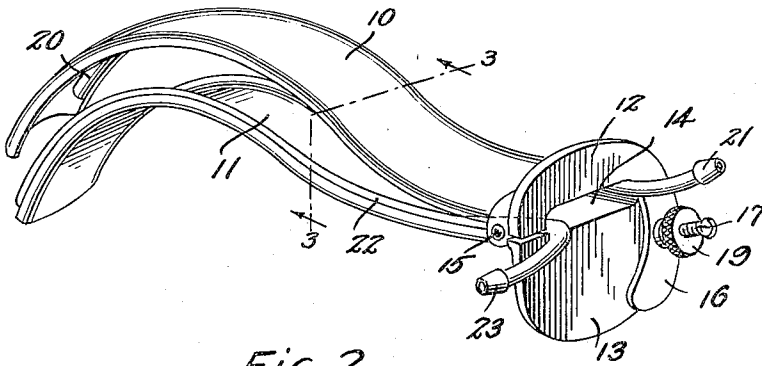


FIG. 2.

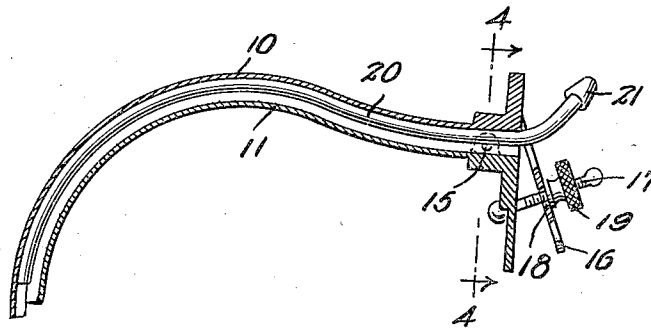


FIG. 3.

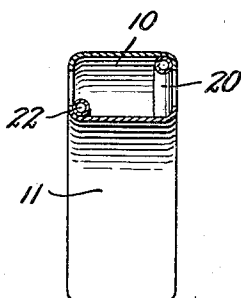
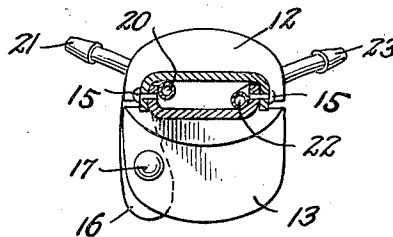


FIG. 4.



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EXPANSIBLE RESPIRATORY AIRWAY

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4 Claims. (Cl. 128—208)

This invention relates to surgical or medical appliances or accessories and has particular reference to an improved respiratory airway for insertion in the mouth and pharynx to provide a passageway extending from a point adjacent to the tracheal orifice through the mouth opening through which air may enter and be expelled in breathing during a surgical operation when the patient is under an anesthetic or when for any reason the pharynx is collapsed or obstructed so as to prevent natural respiration.

The invention primarily comprehends an airway adapted to be inserted in the mouth and pharynx and to maintain the mouth in partially opened condition so as to provide an unobstructed passageway from the tracheal orifice through the mouth opening and which permits of the administering of the anesthetic to the patient while admitting of the inhalation and exhalation of air so that the required amount of air may enter and be expelled from the lungs in the normal breathing operation and which prevents strangulation by the collapsing of the walls of the pharynx or the obstruction of the pharynx by the tongue which may occur when the patient is under the influence of the anesthetic.

The invention broadly contemplates an improved airway which is so constructed and arranged as to be capable of expansion after insertion for dilating the pharynx so as to provide an unobstructed passageway for facilitating respiration, administration of gases or vapors such as oxygen, carbon dioxide or the like and the removal of liquids, such as blood, mucus or other secretions.

The invention further provides an airway formed of oppositely disposed longitudinally extending sections which are connected together at their outer ends for movement from contracted condition to expanded separated relation to thereby provide a passageway of relatively large cross-sectional area therethrough extending from a point adjacent the tracheal orifice through the mouth opening.

The invention further includes, in an expansible sectional airway of the character set forth, conduits carried by the sections thereof providing means for respectively conveying gases or vapors to the pharynx and for withdrawing liquids therefrom.

With the foregoing and other objects in view, reference is now made to the following specification and accompanying drawing in which there is illustrated a preferred embodiment thereof, while the appended claims cover variations and

modifications which fall within the scope of the invention.

In the drawing:

Fig. 1 is a perspective view of the improved airway illustrating the same in expanded condition.

Fig. 2 is a longitudinal sectional view there-through illustrating the same in contracted condition.

Fig. 3 is a transverse sectional view taken approximately on the line 3—3 of Fig. 1.

Fig. 4 is a transverse sectional view taken approximately on the line 4—4 of Fig. 2.

Referring to the drawing by characters of reference, 10 and 11 designate respectively a pair of mating longitudinally curved sections, which in the instant embodiment are of cross sectional channel shape with their hollow faces in confronting relation to define a passageway therebetween, and of a length to extend from outside of the mouth inwardly over the tongue and downward into the pharynx to a point adjacent the tracheal orifice.

The sections 10 and 11 are provided at their outer ends with external heads or flanges 12 and 13, defining therebetween an opening 14 which communicates with the space or passageway between the sections 10 and 11. The sections are hingedly connected adjacent the heads or flanges by pivot pins 15 so that the inner end portions of the sections, beyond the hinged connection, are adapted to be moved from the contracted adjacent relation illustrated in Fig. 2, to the expanded opened or separated relation shown in Figs. 1 and 3, thereby providing a cross-sectionally expansible and contractible body defining an unobstructed passageway from the tracheal orifice through the mouth opening so as to insure the required supply of air for breathing, while preventing strangulation as a result of the collapsing of the walls of the pharynx or the obstruction of the pharynx by the tongue.

In order to provide means for moving the sections 10 and 11 to opened or expanded relation, and for retaining the same in said relation, the head 12 is provided with an angularly disposed finger 16 depending therefrom and overlying the head 13 and the head 13 is provided with a forwardly projecting threaded stud 17 extending through an opening 18 in the finger 16, a knurled nut 19 being mounted on the stud for moving the finger towards the head 13 and for retaining the finger in adjusted position.

The upper section 10 is provided with a longitudinally extending conduit 20 secured thereto

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and extending from a point adjacent the inner end thereof outwardly through the opening 14 and having a nipple 21 for connection with a supply of gas or vapor, such as oxygen, carbon dioxide or the like for the administration of the same to the patient. The lower section 11 is provided with a conduit 22 extending throughout its length from the inner end thereof through the opening 14 and is provided with a nipple 23 for connection with suitable means for producing a suction for withdrawing liquids, such as blood, or other secretions which tend to obstruct respiration.

What is claimed is:

1. In a respiratory airway for insertion in the mouth and pharynx, an elongated body consisting of a pair of mating longitudinally extending oppositely disposed curved sections, an outwardly projecting flange formed on the outer end of each section together defining a head for the airway, said sections throughout their length being of uniform channel shape in cross section providing a longitudinal passageway opening through said head, means pivotally connecting the sections together adjacent their flanged ends, and cooperating means carried by said flanges for moving the sections from adjacent relation to expanded separated relation and for maintaining the sections in adjusted expanded condition.

2. In a respiratory airway, an elongated body consisting of a pair of mating longitudinally extending oppositely disposed curved sections, a conduit extending longitudinally of each section, said conduits being respectively secured to the confronting faces of said sections and protruding beyond the outer ends thereof, means hingedly connecting the sections together at the outer ends thereof, and interengageable cooperating means carried by the sections for moving the sections from adjacent relation to expanded relation.

3. In a respiratory airway for insertion in the mouth and pharynx, an elongated body consist-

ing of a pair of mating longitudinally extending oppositely disposed sections, a flange at the outer end of each section together defining a head for the airway, said sections having flat longitudinally extending walls with inwardly curved flanged confronting side edges providing a longitudinal passageway opening through said head, said sections being correspondingly curved from the head to a point adjacent the longitudinal center thereof and reversely curved in an arc from said longitudinal center to the inner end thereof, one of said sections having a finger projecting from the flanged end thereof and overlying the flanged end of the opposite section, means hingedly connecting the sections together adjacent the flanged ends thereof, and means carried by one of said flanged ends and engaging the said finger for moving the sections from adjacent relation to expanded separated relation and for maintaining the sections in adjusted expanded condition.

4. In a respiratory airway for insertion in the mouth and pharynx, an elongated body consisting of a pair of mating longitudinally extending oppositely disposed sections, a flange at the outer end of each section together defining a head for the airway, said sections throughout their length being of uniform channel-shape in cross section providing a longitudinal passageway opening through said head, said sections being correspondingly curved from the head to a point adjacent the longitudinal center thereof and reversely curved in an arc from said longitudinal center to the inner end thereof, one of said sections having a finger projecting from the flanged end thereof and overlying the flanged end of the opposite section, means hingedly connecting the sections together adjacent the flanged ends thereof, and means carried by one of said flanged ends and engaging the said finger for moving the sections from adjacent relation to expanded separated relation and for maintaining the sections in adjusted expanded condition.

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