

[72] Inventor **Victor H. Raimo**
214 Ballentine Parkway, Newark, N.J.
07104
 [21] Appl. No. **765,215**
 [22] Filed **Oct. 4, 1968**
 [45] Patented **Mar. 9, 1971**

3,013,554 12/1961 Safar et al. 128/145.5
 3,398,747 8/1968 Raimo 128/351

Primary Examiner—Richard A. Gaudet
Assistant Examiner—J. Yasko
Attorney—Cifelli and Behr

[54] **OROPHARYNGEAL AIRWAY**
1 Claim, 6 Drawing Figs.

[52] U.S. Cl. **128/351,**
128/208
 [51] Int. Cl. **A61m 25/00**
 [50] Field of Search **128/351,**
208, 240, 195, 201, 28, 145.5

[56] **References Cited**
UNITED STATES PATENTS
 2,599,521 6/1952 Berman 128/208

ABSTRACT: An oropharyngeal airway for use during surgery comprises a contoured portion in the shape of the pharyngeal contour, and includes a pair of passageways formed by a pair of curved substantially planar members connected in spaced substantially parallel relation by an internal generally central web portion. The planar members are each provided with a plurality of spaced holes distributed along their contoured portions and providing communication between the outer surfaces of the airway and the passageways to aid in preventing clogging or blockage of the airway due to the accumulation of fluids in the mouth and pharynx.

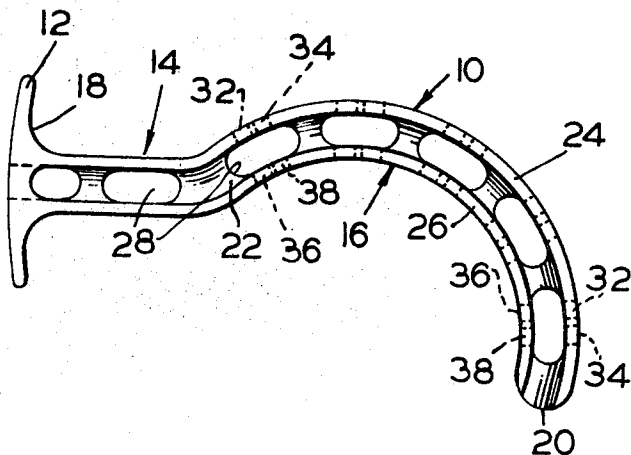


FIG. 1

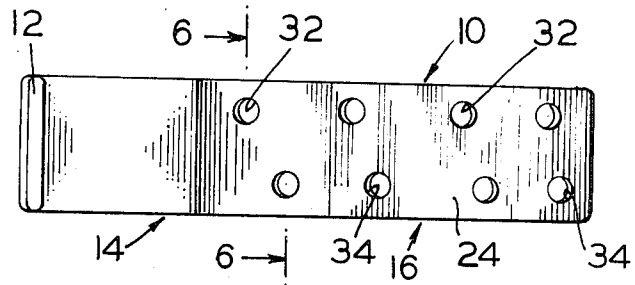


FIG. 2

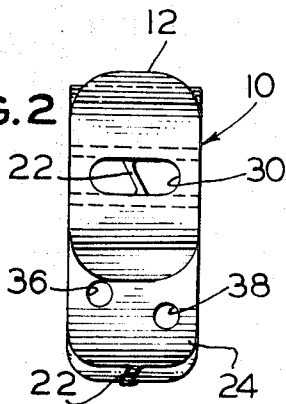


FIG. 3

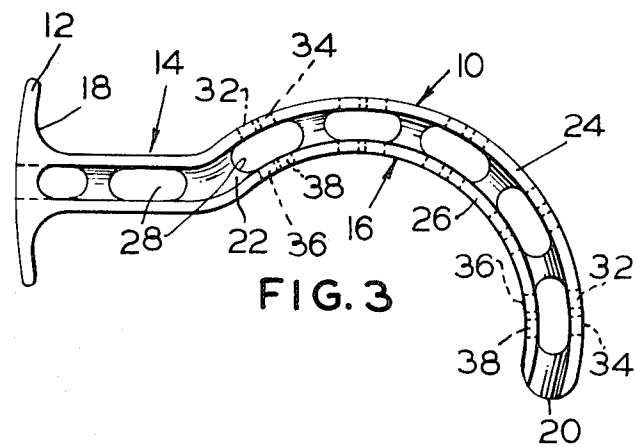


FIG. 4

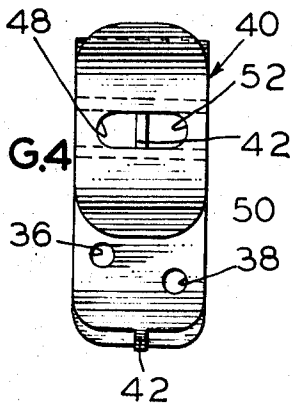


FIG. 5

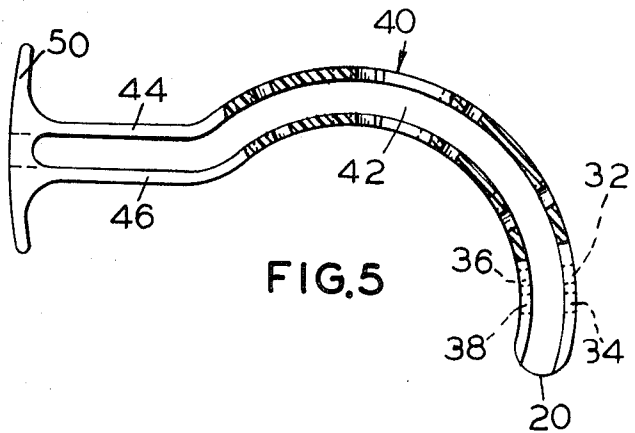
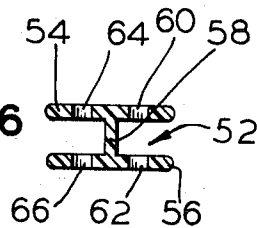


FIG. 6



INVENTOR
VICTOR H. RAIMO
BY *Richards & Cifelli*
ATTORNEY

OROPHARYNGEAL AIRWAY

OF THE INVENTION

This invention relates to oropharyngeal airways for use during surgery and in the recovery room to insure adequate breathing of a patient under anesthesia. Oropharyngeal airways for use during surgery are well known as evidenced by U.S. Pat. Nos. 2,599,521 and 2,705,959.

Oropharyngeal airways of the type having a contoured portion in the shape of the pharyngeal contour have long been used in the art. The contoured portion of such airways may comprise a pair of passageways formed by a pair of curved but substantially planar members connected in spaced substantially parallel relation by an internal generally central web portion. Though airways of this type have been used successfully, problems have been encountered where they have been partially or completely blocked due to the accumulation of fluids in the mouth and pharynx.

SUMMARY OF THE INVENTION

This invention provides an improved airway of the type described by providing a plurality of spaced holes distributed along the contoured portion of at least one of the planar members which connect an outer surface of the airway to at least one passageway to provide means for the egress of fluid or lodged particles and thus to prevent or alleviate clogging or blockage of the airway. The holes are distributed in spaced relation along at least one longitudinal side of one of the planar members; the longitudinal sides of the member being defined by the connection of the member with the internal web portion. Preferably, bolt longitudinal sides of each planar member are provided with holes spaced along their contoured portions and each hole in one of the members is coaxially disposed with respect to a hole in the other member.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view of a first embodiment of an oropharyngeal airway in accordance with the invention;

FIG. 2 is a front elevational view of the airway of FIG. 1;

FIG. 3 is a side elevational view of the airway of FIG. 1;

FIG. 4 is a front elevational view of a second embodiment of an oropharyngeal airway in accordance with the invention;

FIG. 5 is a side elevational view of the embodiment of FIG. 4 partially broken away to more clearly illustrate the holes formed in the spaced planar members; and,

FIG. 6 is a cross-sectional view of a portion of a third embodiment of an oropharyngeal airway in accordance with the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIGS. 1, 2 and 3, there is shown an oropharyngeal airway 10 in accordance with the invention. Oropharyngeal airways for use during surgery and recovery therefrom, such as the airway 10, are inserted in an anesthetized patient's mouth and pharynx to provide passageways through which air may enter and be expelled.

The airway 10 comprises a lip-engaging or flanged end portion 12, an intermediate or bite portion 14, and an elongated body portion 16 in the general shape of the normal pharyngeal contour. The airway is of a size and length such that with the flanged end portion 12 placed with the inner surface 18 thereof abutting a patient's lips the extremity 20 of the body portion 16 will extend into the patient's pharynx. Appropriate sizes and configurations may be provided, for example for use by adults, children and infants. The foregoing features and characteristics are all well known in the art and a further discussion thereof is not deemed necessary to a clear understanding of the present invention.

It is also well known in the art that airways must be made of a material or materials which are not brittle or toxic and that the bite portions must have sufficient strength to withstand substantial biting pressure without occlusion of the

passageways. The structural strength of the bite portion may, for example, be provided by the use of a sturdy internal central web portion such as the generally central internal web portion 22 of the airway 10. Satisfactory constructions and materials for attaining the foregoing characteristics are also well known in the art and elaboration thereof for the purposes of the present invention is not deemed necessary, although it is noted in passing that airways made of polyethylene have been found to be particularly desirable.

Airway 10 comprises an upper substantially planar member 24 and a lower substantially planar member 26 joined in substantially parallel spaced relation by the web portion 22. The planar members 24 and 26 are substantially flat throughout the bite portion 14 and are curved to conform to the normal pharyngeal contour throughout the body portion 16. It will be noted that the sides of the airway between the upper and lower planar members are open.

The web portion 22 has a plurality of apertures 28 therethrough which facilitate drainage and aid in preventing clogging of the airway as is well known in the art. The passageways or channels formed by the cooperation of the members 24 and 26 and the web portion 22 communicate with an opening 30 in the flanged end portion 12 permitting air to enter the pharynx and be expelled.

The present invention resides in the provision of a plurality of holes designated 32, 34, 36 and 38 which extend through the planar members 24 and 26, respectively, and lead from the outer surfaces of the airway to the passageways. Each group of holes 32, 34, 36 and 38 is disposed on one longitudinal side of its respective planar member with respect to the juncture of the member with the web portion 22. Also, each group of holes is distributed in spaced relation along substantially the entire body portion 16. Further, each hole 32 is preferably positioned in coaxial relation with one of the holes 36 and vice versa, and each hole 34 is preferably positioned in coaxial relation with one of the holes 38 and vice versa. Finally, the holes 32 and 36 on one side of the web portion 22 are positioned in staggered relation with respect to the holes 34 and 38 on the other side of the web portion 22, although as seen in FIG. 6, these holes may also be in side-by-side relationship.

Although four groups of holes are provided in the airway 10, it will be appreciated that the benefits of the invention, to varying degrees, can be obtained by using only one, two or three of the groups of holes 32, 34, 36 and 38. The holes provide means through which fluid may be expelled from the passageways due to the pressure of air passing through the passageways. Thus, the holes function to prevent or alleviate clogging of the passageways due to the portion of the accumulation of fluids in the mouth and/or pharynx which enter the passageways via the open sides of the airway.

An oropharyngeal 40 in accordance with a second embodiment of the invention is shown in FIGS. 4 and 5. The airway 40 is similar in all respects to the airway 10 except for the construction of the generally central internal web portion 42. It will be noted that the generally central web portion 22 of the first embodiment is disposed at an angle with respect to the planar surfaces of the members 24 and 26.

The web portion 42 is disposed perpendicularly to the planar surfaces of the planar members 44 and 46 of the airway 40. The web portion 42 further differs from the web portion 22 in that the web portion 42 is solid providing two distinct and separate passageways through the airway 40 which communicate with the central opening 48 of the flanged end portion 50 of the airway 40.

A cross-sectional view of the contoured portion of an oropharyngeal airway 52 in accordance with a third embodiment of the invention is shown in FIG. 6. The contoured portion is formed by substantially planar members 54 and 56 joined by a generally central internal web portion 58. This embodiment differs from the first and second embodiments in that the coaxially disposed holes 60 and 62 (only one of each being shown) on one side of the central web portion 58 are positioned in side by side relation with respect to the coaxially

3

4

disposed holes 64 and 66 (only one of each being shown) on the other side of the central web portion 58.

While the principles of the invention have been described in connection with specific embodiments, it will be understood that this description is only by way of example and not intended as a limitation to the scope of the invention.

I claim:

1. In an oropharyngeal airway for surgical use having a contoured portion in the shape of the pharyngeal contour, said contour portion including a pair of longitudinal passageways formed by a pair of curved substantially planar members connected in spaced substantially parallel relation by an internal

generally central web portion and having at least one aperture adjacent the inner end of the airway to provide communication with the patient's pharynx, the improvement which comprises: a plurality of apertures in at least one of said planar members, said apertures being distributed in spaced relation along substantially the entire length of the contoured portion thereof, said apertures providing communication between the outer surfaces of the airway and said longitudinal passageways to aid in preventing clogging of the airway and suffocation of a patient in use due to the accumulation of fluids in the patient's mouth and pharynx subsequent to surgery.

15

20

25

30

35

40

45

50

55

60

65

70

75