

[54] MARKED BREATHING BAG

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[51] Int. Cl. A61m 16/00

[58] Field of Search 128/202, 204;
116/114; 46/88, 87

[56] References Cited

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[57] ABSTRACT

A breathing bag used in the anesthetizing process during surgical or like operations consisting of an elongated flexible bag marked with markings of a color that contrasts with the color of the bag. The markings are so colored and arranged that the individual administering the anesthetic can easily tell by glancing at the bag whether or not the bag is expanding and contracting thereby easily ascertaining whether or not the anesthetized patient is breathing to the operator's satisfaction.

2 Claims, 4 Drawing Figures

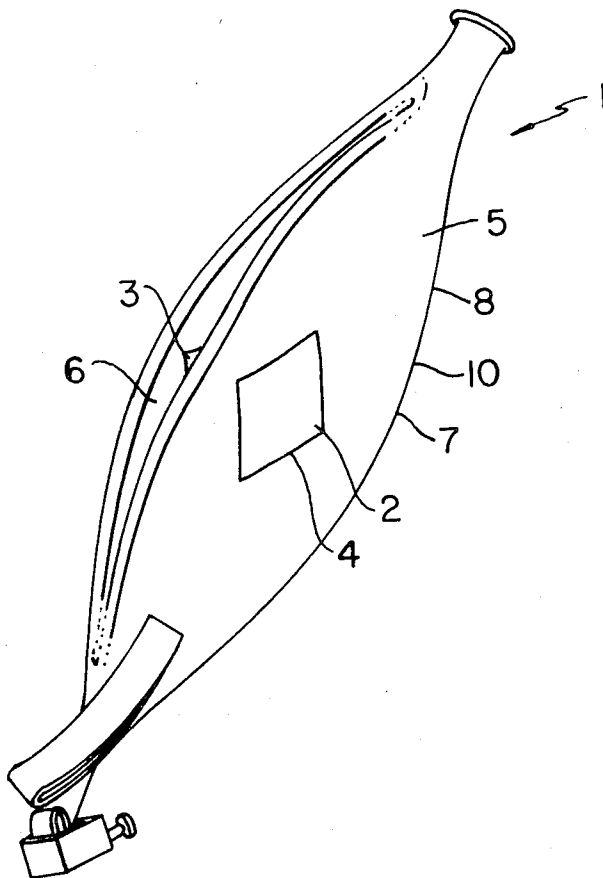


FIG. 1

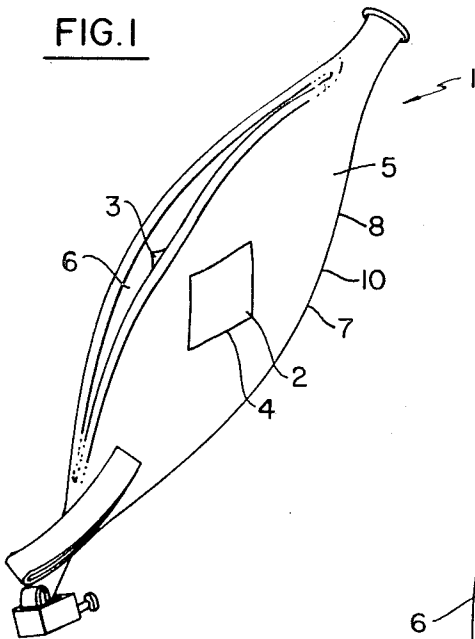


FIG. 2

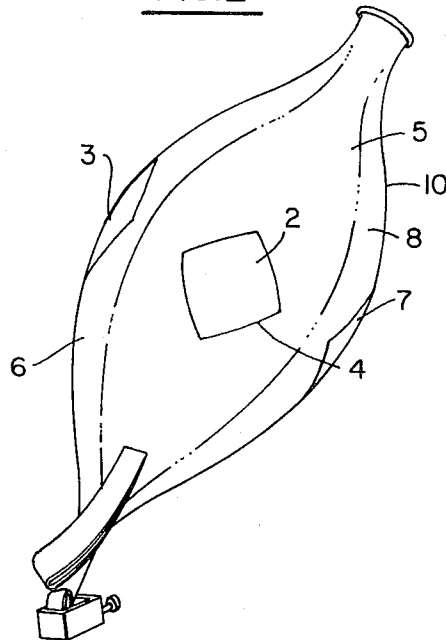


FIG. 3

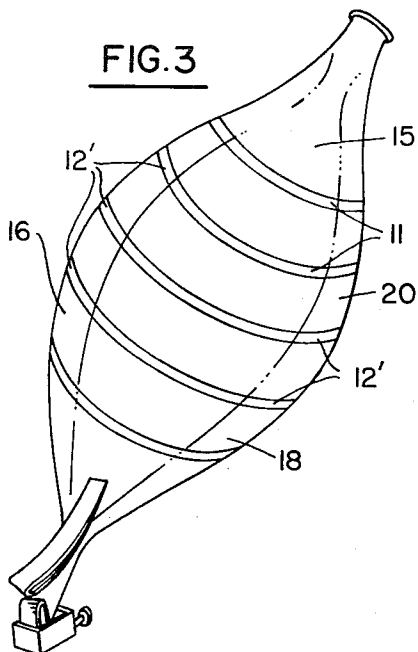
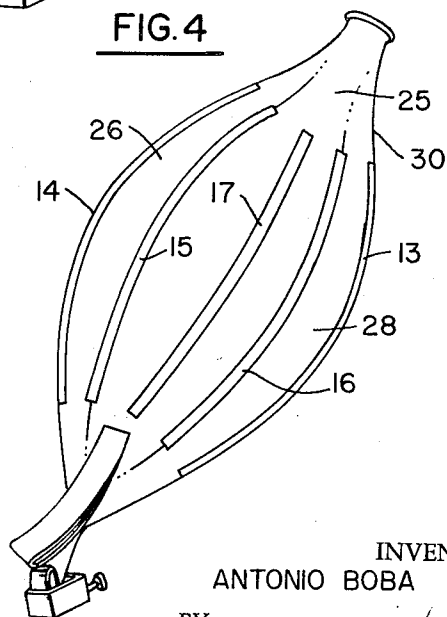


FIG. 4



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MARKED BREATHING BAG

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention relates to breathing bags which are used in conjunction with administering anesthesia to a patient and refers more specifically to a breathing bag marked with markings in a color which contrasts sharply with the color of the breathing bags. These colored markings are of a shape and arrangement such that it is easily ascertainable whether or not the breathing bag is expanding and contracting.

2. Description of the Prior Art

In the past, breathing bags have all been of one color, mostly black, and have not been provided with any distinguishing or contrasting markings. Because of their uniformly black coloration it has been quite difficult to determine by a cursory glance whether or not they are expanding and contracting, thereby indicating whether or not the patient is breathing. Although there are available highly sophisticated and precise tools for the measurements of the ventilatory motions and of the effects of these motions on the blood components these tools are seldom available in the operating room and when available their use is time consuming. Therefore, observation of the movements of the breathing bag has been and still is the simplest, most reliable and quickest means of estimating the adequacy of the patient's breathing during anesthesia. With the marked breathing bag of the present invention the operating physician, and other personnel in the operating room, can determine at a single glance whether the bag is in motion and thereby whether the patient is breathing to the operator's satisfaction.

SUMMARY OF THE INVENTION

In accordance with the invention a breathing bag made of rubber or like flexible material and usually of a black or dark color is marked with markings of a light color, preferably white. The markings are of a shape and arrangement such that the expansion and contraction of the bag, due to the anesthetized patient's exhalation and inhalation of the anesthesia mixture, is easily discernible. The markings may be an integral part of the breathing bag, that is to say they may be part of the bag itself and may be formed during the manufacture of the bag itself, or they may be separate from the bag and consist of paint applied to the bag or of material attached to the bag by adhesives or other means.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view of the marked breathing bag of my invention in a deflated state.

FIG. 2 is a perspective view of the marked breathing bag of FIG. 1 in an inflated state.

FIG. 3 is a perspective view of the marked breathing bag in an inflated state showing a different style and arrangement of markings.

FIG. 4 is a perspective view of the marked breathing bag of the present invention showing still another style and arrangement of markings.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The marked breathing bag structure 1 illustrated in FIG. 1 comprises an elongated bag generally elliptical in shape and made of an elastomeric material such as

rubber. The bag is usually of a dark color, most often black. The breathing bag of the present invention is a basic component of what is known in the art as the breathing circuit. The patient's airways are spliced into the circuit by means of a face mask or of proper endotracheal appliances. Once the splice is completed the patient inhales the contents of the bag, which is usually a mixture of oxygen and an anesthetic agent, and exhales again into the circuit. The presence of unidirectional valves and carbon dioxide absorbers within the circuit insures that the exhaled air is cleared of carbon dioxide and water vapor before being returned to the breathing bag, whence it will be inhaled again. The patient's inhalation and exhalation causes a corresponding deflation and inflation of the breathing bag.

Although there are available highly sophisticated and precise tools for the measurements of the ventilatory motions and of the effects of these motions on the blood components these tools are not always available in the operating room and when available their use is time consuming. Therefore, observation of the movements of the breathing bag has been and still is the simplest, most reliable and quickest means of estimating the adequacy of the patient's breathing during anesthesia. This is usually done by a quick glance at the breathing bag to see if it is rhythmically inflating and deflating. But because of the dark coloration of the bag, usually black, it is quite difficult to determine by a cursory glance whether there is a normal rhythmical inflation and deflation of the bag.

To overcome this difficulty and to make the inflation and deflation of the breathing bag more easily discernible the breathing bag 10 illustrated in FIG. 1 is marked on its exterior surface with markings 2 of a color, such as white, which contrasts with the dark or black color of the bag. As shown in FIG. 1, the bag in its deflated state has a flat elliptical shape. In this state only the markings 2 on the two opposite flat sides 5 are visible while the markings 3,7 on the inwardly folded sides 6,8 are hidden from view. Upon inflation of the bag, as illustrated in FIG. 2, the markings 3,7, hidden while the bag was deflated, come into prominent relief due to the expansion of the bag which forces sides 6,8 outwardly from their previously inwardly folded position.

As shown in FIGS. 1 and 2, the markings are polygonal in shape in FIGS. 1 and 2 they are generally rectangular or diamond shaped. The markings form clear and distinct demarcation lines or borders 4 with the bag. In one embodiment of the invention the markings 2, 3, 7 are formed of a separate material and are applied to the formed bag and fixedly attached thereto as by means of an adhesive, which might be either pressure or heat sensitive. The markings are of a white color to contrast with the dark or black bag and consist of a flexible or elastomeric material such as cloth, gauze, rubber, plastic, and the like. It will be understood that the markings may also be painted on integral with the bag itself.

FIG. 3 shows another embodiment of the invention wherein the white markings are painted on the outside of the dark bag 20. The markings are in the form of parallel circular strips 11 of a certain width which are spaced apart longitudinally of the bag and encircle the bag 20. The strips 11 have portions 11' on opposite sides 15 of the bag and portions 12' on the folding sides 16 and 18. When the bag is deflated the sides 16 and 18 are hidden from view by being inwardly folded and thus the strip portions 12' are also not visible. When

the bag 20 is inflated the strip portions 12' are brought into view due to the outward expansion of sides 16 and 18. Thus, when the bag is deflated only strip portions 11' on sides 15 are visible while when the bag is inflated both strips portions 11' and 12' are brought into the view of an observer. These markings may, if desired, be formed of separate material applied to the bag as in FIGS. 1 and 2, or be made integral with the bag.

FIG. 4 shows still another embodiment of the present invention. The markings in FIG. 4 comprise a plurality of elongated white strips 13-17 running longitudinally along the outer surface of the black bag and spaced laterally apart. When the bag is in a deflated state only the strips 17 on the flat side 25 are in view while the strips 14, 15 and 13, 16 on the sides 26 and 28 are hidden from view due to the inward folding of said sides. Upon inflation of the bag the hidden strips 14, 15 and 13, 16 come into view due to the outward expansion of sides 26 and 28. Furthermore, the greater the inflation of the bag, the greater the lateral spacing between its strips. Again, if desired, the strips 13-17 may be painted on, formed of separate material or integral with the bag.

In the preferred embodiments, the markings were described as white and the bag as black. It is also possible of course to make the markings a different color, for example yellow, red or orange. It is also possible to have the markings on the bag multi-colored, as for example to have one marking red, while another white and a third orange. It is also possible to have the mark-

ings circular in shape, such as dots or circles, or even irregularly shaped — the only criteria being that the color of the markings contrast with that of the bag to make it easily discernible that the bag is inflating or deflating.

The terms "breathing bag" and "rebreathing bag" are used interchangeably in the art and define the same type of bag. Thus, it is to be understood that whenever the term "breathing bag" is used in this specification and claims it also includes the synonymous term "rebreathing bag".

What I claim as my invention is:

1. A marked breathing bag comprising a flexible expansible and contractible elongated elliptical shaped black opaque breathing bag having two flat sides joined by two inwardly folding sides which is adapted to expand and contract in use having a plurality of external markings spaced apart from each other thereon, said markings being polygonal in shape and disposed on said flat sides and on said folding sides and being of a light color which contrasts with the color of the bag and disposed centrally of the two ends of the bag so as to indicate when said bag is contracting and expanding.

2. A marked breathing bag in accordance with claim 1, wherein said markings are individual, discrete white polygons having a distinct border and forming a sharp demarcation line with the bag, and wherein each marking is disposed wholly on one of the sides.

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