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3,021,836

RESUSCITATOR

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Fig. 1.

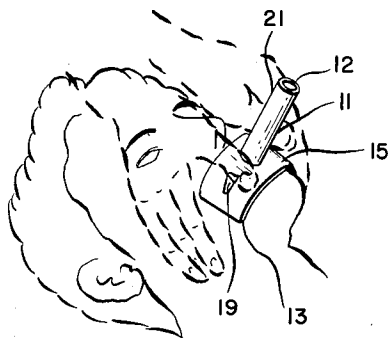


Fig. 2.

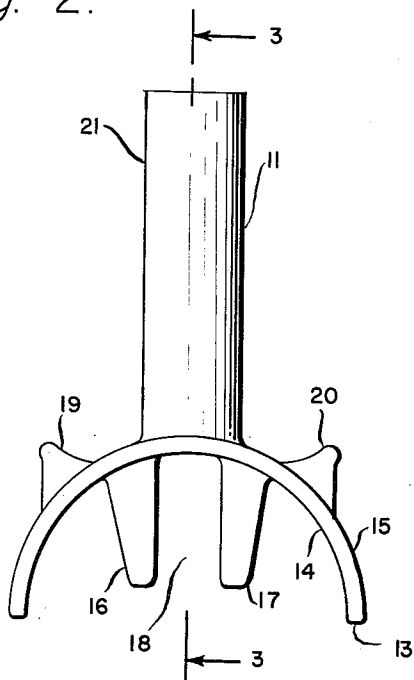
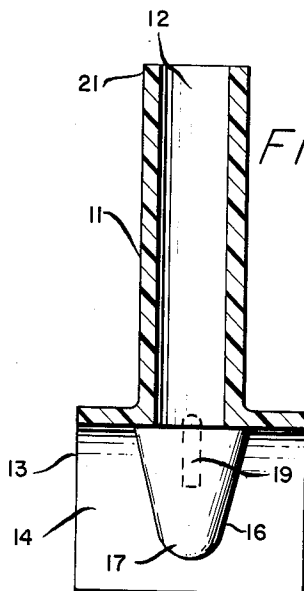


Fig. 3.



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1

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RESUSCITATOR

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1 Claim. (Cl. 128—29)

This invention relates generally to apparatus for performing artificial respiration, and more particularly to a resuscitator for applying mouth-to-mouth insufflation to a patient.

This application is a continuation-in-part of application Serial Number 750,982, filed July 25, 1958, entitled "Resuscitator" and now abandoned.

It has long been recognized in the prior art that mouth-to-mouth insufflation is one of the most effective means of reviving an asphyxiating person. This method of artificial respiration has, however, not been used to any great extent because of several disadvantages inherent therein.

One of the first disadvantages inherent in practicing mouth-to-mouth insufflation is the intimate contact which exists between the person applying the mouth-to-mouth insufflation and the patient. Most individuals are reluctant to place their mouth directly upon the mouth of a stranger, even for the purpose of reviving him because of the possibility of contracting some contagious disease, or the like.

Another disadvantage normally inherent in mouth-to-mouth insufflation is the difficulty encountered in keeping the throat of the victim open at all times in order to permit the free passage of air into the lungs and out of the lungs. This is normally accomplished by rotating the head and particularly the chin of the victim up and back, from the body, in order to straighten the neck, thus opening up the throat passage. This is normally quite difficult to do when one is practicing mouth-to-mouth insufflation as heretofore known in the prior art.

Another disadvantage of this well known method of resuscitation is the fear by the one practicing the mouth-to-mouth insufflation that the victim, or patient, will expel matter from his body which would have a tendency to be projected into the mouth of the one practicing the mouth-to-mouth insufflation.

Accordingly, it is an object of the present invention to provide a resuscitator which may be used in the practice of mouth-to-mouth insufflation while, at the same time, eliminating the intimate contact heretofore deemed necessary in order to practice this method of resuscitation.

It is another object of the present invention to provide a resuscitator for practicing mouth-to-mouth insufflation which is exceedingly simple to use.

It is still another object of the present invention to provide a resuscitator for practicing mouth-to-mouth insufflation which is small, rugged and fully portable.

It is a further object of the present invention to provide a resuscitator for practicing mouth-to-mouth insufflation which has no moving, adjustable, or renewal parts.

In accordance with one aspect of the present invention, a resuscitator is provided which may be readily inserted into the mouth of an asphyxiating victim and which has provided as a part thereof means for keeping the teeth of the victim apart and for permitting easy rotation of the jaw upwardly and outwardly from the body in order to at all times keep the throat passage open. Means is also provided as a part of the resuscitator for externally sealing the mouth cavity of the patient, or victim, thereby insuring that the air which is expelled by the one practicing the mouth-to-mouth insufflation enters the lungs of the victim, or patient. As a part

2

of the sealing means of the resuscitator, there is provided additional means for easily maintaining the seal about the external portion of the mouth cavity at all times, thus enabling persons of any age or size to practice mouth-to-mouth insufflation upon all persons irrespective of age or size.

In accordance with a specific embodiment of the present invention, there is provided an elongated tubular member having an opening therethrough. Affixed to one end of the tubular member is an arcuate member which is resilient and which has concave and convex surfaces. The resilient arcuate member also defines an opening therethrough which is coaxial with the opening through the tubular member. A pair of protrusions is affixed to the concave surface of the arcuate member and are spaced apart and disposed one upon each side of the opening provided through the tubular member and the arcuate member. An additional pair of protrusions project from the convex surface of the arcuate member thereby providing grips or finger holds for the one practicing the mouth-to-mouth insufflation.

The novel features of the present invention are set forth in the appended claims. Other and more specific objects of the present invention will become apparent from a consideration of the following description taken in conjunction with the accompanying drawing which is provided by way of example only and is not intended as a limitation upon the present invention and in which:

FIG. 1 is a perspective view illustrating the resuscitator of the present invention in use;

FIG. 2 is an elevational view of a resuscitator in accordance with the present invention; and

FIG. 3 is a view, partly in cross section, taken about lines 3—3 of FIG. 2.

Referring now to the various figures illustrated in the drawing, in which similar elements are designated by the same reference numeral, a resuscitator is shown in its preferred embodiment. As is illustrated therein, the resuscitator includes an elongated member 11 which is generally in the configuration of a tube having an opening 12 therethrough. Affixed to one end of the tube is an arcuate member 13 which is generally in the shape of an elongated rectangular piece of material that has been bent into a substantially semi-circular shape. The arcuate member 13 is preferably constructed of a resilient type material which may be spread apart and which, upon release, will resume the shape generally as illustrated in FIG. 2.

Arcuate member 13 has an opening provided therethrough which is continuous with opening 12 and also includes a concave surface 14 and a convex surface 15. A pair of spaced apart protrusions 16 and 17 are affixed to the concave surface 14 of the arcuate member 13. The protrusions 16 and 17 are disposed one on each side of the opening which is provided through the tubular member 11 and the arcuate member 13 and thereby form an unobstructed continuation of the opening as illustrated at 18.

As is illustrated in the drawing, the protrusions 16 and 17 are wide at the base and become more narrow at their terminus. This enables the one practicing the mouth-to-mouth insufflation to insert the resuscitator into the mouth of the patient more easily. It should be noted that the widest part of the protrusions 16 and 17 is disposed upon the concave surface 14 transverse of the arcuate member 13. This serves as a means to spread the mouth of the patient wide apart and as a fulcrum for rotation of the jaw.

The additional pair of protrusions 19 and 20 extend from the convex surface 15 of the arcuate member 13. The protrusions 19 and 20 are disposed one upon each side of and adjacent to the elongated tubular member 11,

3

and may be used as finger grips as described below. As can be seen more clearly in FIG. 3, the finger grips extend from the convex surface 15 and are disposed longitudinally on the arcuate member 13. As is illustrated by the cross-hatching in FIG. 3, the entire resuscitator as illustrated in the drawings may, for example only, be constructed of a plastic type material, such as polyethylene or the like.

In operation, the one practicing the mouth-to-mouth insufflation inserts the protrusions 16 and 17 into the mouth of the victim or patient in such a manner that the teeth are spread and retained apart. By inserting the protrusions 16 and 17 fully into the mouth of the patient, while at the same time holding the arcuate member 13 slightly spread apart, the mouth cavity of the patient or victim is externally thoroughly sealed upon release of the arcuate member 13 so that it once again assumes the position substantially as shown in FIG. 2. In this manner, the air which is blown through the tubular member 11 enters the mouth and lungs of the patient.

In order to insure that the air which is blown into the mouth of the patient does, in fact, enter the patient's lungs, the lower jaw of the patient is rotated upwardly and outwardly away from the body by pivoting the teeth of the patient upon the protrusions 16 and 17 which have been inserted fully into the patient's mouth. In this manner the one practicing the mouth-to-mouth insufflation may readily and easily open the throat passage of the victim, or patient, while at the same time easily practicing the mouth-to-mouth insufflation. The rotation of the jaw may be accomplished by hooking the fingers under the jaw of the patient and applying pressure in an upward direction.

In order to insure a perfect seal about the exterior of the patient's mouth cavity during the period of time that the mouth-to-mouth insufflation is being practiced, the one practicing the insufflation may place his thumbs upon the protrusions 19 and 20 in such a manner that the thumbs rest between the tubular member 11 and the edge of the protrusions 19 and 20. Slight pressure may be exerted by the thumbs in order to maintain the seal at all times. The upper portion of the thumbs may then be utilized to close the nose cavity of the patient in order to close all possible exits for the air as it is blown into the lungs of the patient. This position of the hands is illustrated in FIG. 1 in outline form.

If the one practicing the mouth-to-mouth insufflation has hands which are not large enough to enable him to use his thumbs for the dual purpose of maintaining this seal and closing the nose cavity, he may then use his index fingers upon the protrusions 19 and 20 as above described, and the tips of his thumbs to close the nose cavity of the patient. Such a position leaves the remaining fingers free to raise the jaw of the patient.

After the resuscitator of the present invention has been inserted into the mouth of the patient, and the above procedure taken, the one practicing the mouth-to-mouth in-

4

sufflation will place his mouth upon the end portion 21 of the tubular member 11 and will exhale his breath through the resuscitator and into the mouth, throat and lungs of the victim. He will then remove his mouth from the portion 21 of the resuscitator permitting the natural elasticity of the lungs and chest of the patient to expel the air through the tubular member 11 and to the atmosphere. The one practicing the mouth-to-mouth insufflation will then, in a regular manner, continue to exhale his breath into the lungs of the patient and permit the patient to exhale the air from his lungs through the resuscitator.

There has thus been disclosed an artificial respiration device which may be utilized for the practice of mouth-to-mouth insufflation which is simple, rugged, and may be utilized by any person while, at the same time, eliminating the inherent disadvantages of this method of practicing artificial respiration.

What is claimed is:

A resuscitator having no moving or adjustable parts for applying mouth-to-mouth insufflation to an asphyxiating patient while preventing direct contact between the patient and the one applying the insufflation, said resuscitator including a unitary, molded, plastic member having a hollow elongated tube portion, a substantially rectangular resilient member formed in a semicircular configuration and having a convex and a concave surface at one end of said tube portion for externally sealing the mouth cavity of said patient, said resilient member defining an opening therethrough continuous with the opening through said tube portion, a pair of flat protrusions each having a base and a terminal portion, said protrusions being affixed at their base portions to said concave surface and transverse of the longitudinal axis of said resilient sealing member one on each side of said opening, said base portion of said protrusions being wider than said terminal portion thereby to fit between the front teeth of said patient and allowing the lower jaw of said patient to be moved upwardly to open the throat passage of said patient to permit air to be forced into the lungs of said patient, and a substantially triangular member having an inwardly curved side extending upwardly from said convex surface of said sealing member on each side of said tube portion and spaced therefrom by an amount sufficient to provide, in conjunction with the exterior wall of said tube, a pair of finger grips for urging said rectangular resilient sealing member into sealing engagement about the exterior of said patient's mouth.

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