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ARTIFICIAL RESPIRATOR.

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1,337,225.

Patented Apr. 20, 1920.

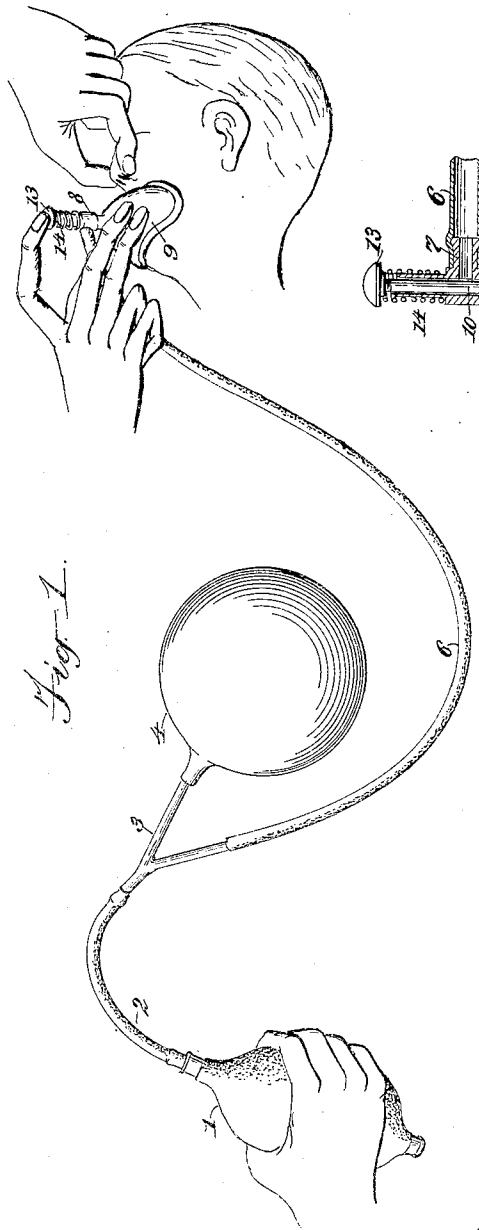


Fig. 2.

Fig. 1.

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ARTIFICIAL RESPIRATOR.

1,337,225. Specification of Letters Patent. Patented Apr. 20, 1920.

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To all whom it may concern:

Be it known that I, CLARENCE L. HEALD, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Artificial Respirators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to apparatus for inducing artificial respiration, with more especial reference to the resuscitation of infants asphyxiated at birth.

The nature of the invention is fully disclosed in the description and claim following, reference being had to the accompanying drawing, in which:

Figure 1 is a view of apparatus embodying my invention, as in use. Fig. 2 is a central section of the mouthpiece and connecting parts.

In the drawing, the numeral 1 denotes an air-forcing compression bulb, of a familiar type. This connects by a piece of flexible tubing 2 with a tubular Y, 3, to one branch of which is attached a tight bag or pouch 4, of thin, elastic material, preferably rubber, which when filled with air expands to form a bulb of larger or smaller dimensions, according to the pressure of air within.

It is of such thin material, however, that the air pressure can never be great before it would burst. To the other branch of the Y is connected a flexible tube 6, which at its other end connects by a nipple 7 with the stem 8 of a mouthpiece 9. Inside the stem or T of the mouthpiece is mounted the stem 10 of a valve, having an air-closing disk 11 between its head 12 and the inner face of the mouthpiece. The valve-stem extends through the upper end of the T, and is provided with a button 13 to receive the pressure of a finger of the operator. Between the button and the brauch of the T is placed a compression spring 14, tending to close the valve.

The mouthpiece is in the nature of an oblong bell, with a curved rim adapted to fit approximately to an infant's face over the mouth, as shown in Fig. 1.

The operation of the instrument is as indicated in Fig. 1. The mouthpiece is placed over the infant's mouth, and held in position by thumb and fingers, while one finger is free to manipulate the valve-button. The other hand intermittently closes the infant's nostrils. By the operation of the bulb 1 an attendant in the meantime keeps the bulb 4 distended with air. The operator now simultaneously opens the air-valve by pressing down on the button, and closes the nostrils by pinching. On the release of the pressure the valve closes and the nostrils open automatically. The action is continued until the natural action of the infant's heart and lungs is established, if the case is one which admits of such restoration.

The device, as will be seen, is very simple, light and portable, and available for instant operation in an emergency. Its construction is such also, as has been explained, that no excessive air-pressure can be supplied, even by the most unskilled attendant, the only requirement being that the auxiliary bulb be kept distended.

The device is now used to a considerable extent in obstetrical practice, and in many cases has proved completely efficacious, where death must otherwise have ensued.

It is obvious that as above noted the auxiliary bulb prevents excessive air-pressures, and also serves to produce a steady and uniform flow of air, instead of a succession of puffs, varying in time and intensity.

Having thus described my invention, I claim:

In an artificial respirator, and in combination with air-supplying means, substantially as described, a bell-shaped mouthpiece provided with an air-receiving T, a valve-stem mounted slidably therein, and provided with a valve-closing head, a push-button at the other end of the stem, and a compression spring between the button and a fixed part of the T.

In testimony whereof I affix my signature in presence of two witnesses.

CLARENCE L. HEALD.

Witnesses:
E. W. WINTER,
CHAS. A. WINTER.