May 16, 1950 A. S. VALENTE 2,508,050

DEVICE FOR ADMINISTERING OXYGEN

Filed June 26, 1947

Fig. 1.

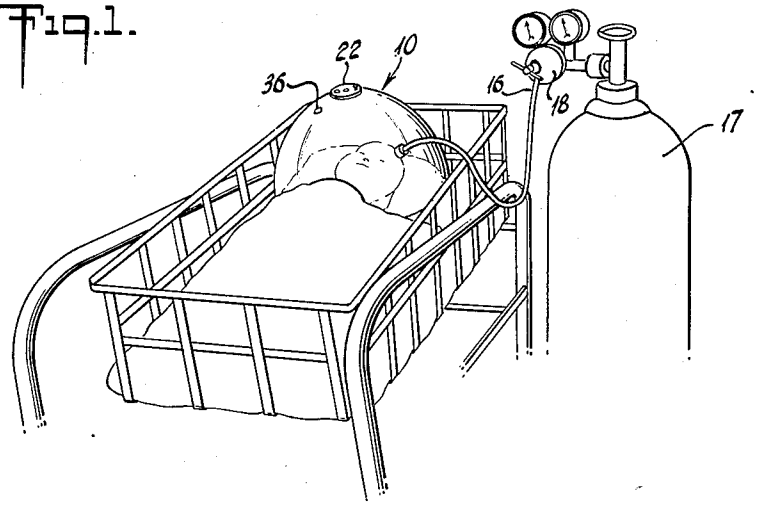


Fig. 2.

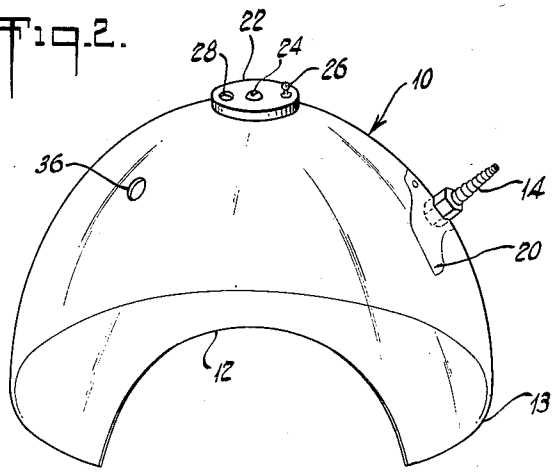


Fig. 3.

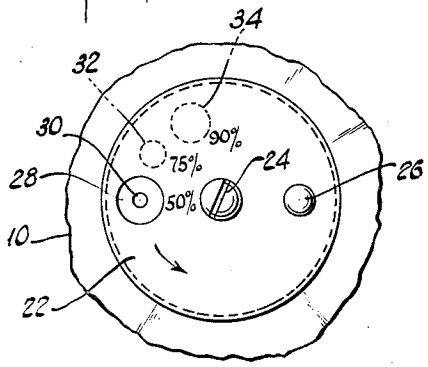
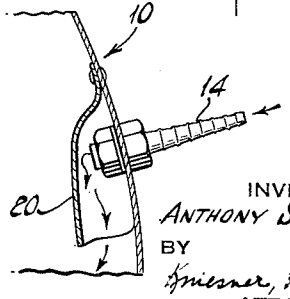


Fig. 4.



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Patented May 16, 1950 2,508,050

UNITED STATES PATENT OFFICE

2,508,050

DEVICE FOR ADMINISTERING OXYGEN

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Application June 26, 1947, Serial No. 757,161

1 Claim. (Cl. 128—205)

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This invention relates to a device for administering oxygen, particularly to infants. Heretofore it has been customary in using oxygen therapy on infants to place a mask or funnel over the infant's mouth and nose and supply oxygen to the mask or funnel. This method has been very unsatisfactory both because it is difficult to maintain a steady concentration of oxygen in the region of the infant's nose and mouth, and because this so-called funnel method is very wasteful of oxygen as the infant frequently moves its head away from the mask or funnel.

It is the object of this invention to provide simple, practical and efficient means for administering oxygen to infants.

Another object of the invention is to provide apparatus of the above mentioned kind which will be substantially free from the disadvantages of the "funnel method."

Another object of the invention is to provide means of the above described kind wherein the concentration of the oxygen may be adjusted and controlled and higher concentrations may be obtained than were heretofore possible.

Another object of the invention is to provide an improved method and means for administering a desired concentration of oxygen to infants which is economical of oxygen.

Other objects of the invention will be in part obvious or in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements, arrangements of parts, and in the several steps and relation and order of each of said steps to one or more of the others thereof, all as will be pointed out in the following description, and the scope of the application of which will be indicated in the following claim.

The invention will best be understood if the following description is read in connection with the drawings, in which,

Figure 1 is a perspective view showing a device which embodies my invention in use;

Figure 2 is an elevational view of the device;

Figure 3 is a fragmentary view showing the valve mechanism for selectively controlling the amount of air which is mixed with the oxygen; and

Figure 4 is a fragmentary detail view of oxygen inlet nipple and its associated baffle means.

The numeral 10 indicates a transparent plastic member shaped like a dome and moulded into one piece. It is large enough to fit comfortably over and around an infant's head and is shaped to fit over the infant's neck. For this purpose a portion

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12 of the lower edge of the dome is made arch shaped. The lower edge 13 of the dome may be bevelled and cooperates with the mattress, table tops, or other support surface on which the infant is lying to provide an air seal.

In the wall of the dome a nipple 14 is provided to which one end of a hose 16 may be attached, the other end being connected to an oxygen tank 17 preferably through a metering valve 18 which may be of known kind and so is not described herein. Supported from the inside surface of member 10 is a baffle 20 which projects downwardly behind the inner end of nipple 14 and thus deflects downwardly and laterally around the inner surface of the member the incoming stream of oxygen and prevents it from flowing against the infant's head.

At the top of the member a valve 22 preferably of plastic is provided. As shown this valve is attached to the member 10 by, and is rotatable around, the pivot 24, and may have a protuberance or button 26 which serves as a handle in rotating the valve around pivot 24 as an axis. A circular port 28 is provided extending through the valve and positioned so that as the valve is rotated said port will be brought into concentricity successively with a number of ports in the member. Three ports 30, 32, and 34 are shown. They are of different diameters, not exceeding the diameter of port 28, and are adapted to introduce different amounts of air into the member so that the air-oxygen concentration therein may be varied according to which of said ports 30, 32 and 34 is in register with said valve port 28.

Also provided in the wall of member 10 is a port 36 through which the patient's exhalations are exhausted and Aersol, penicillin and other inhalation drugs and chemicals may be administered.

Oxygen, being heavier than air, will settle into the lower portion of the member 10 around the infant's head and so will be continuously inhaled by the infant regardless of movements of the infant's head. As indicated in Figure 1 the device rests on the mattress of the infant's crib. A towel or the like may be placed around the infant's neck if there is substantial space between the infant's neck and the arch-shaped portion 12 of the edge of the dome but it is preferred to leave the infant's head and neck free and unrestricted.

The device described above provides simple, inexpensive means for supplying oxygen continuously to infants instead of intermittently as is the case where the funnel method is employed. Because the infant is breathing oxygen continuously regardless of and during movements of the

head the supply of oxygen is thus efficiently and effectively used, and the infant is not excited and disturbed as is the case when a mask or the like is applied to its face and may breathe naturally and without restraint.

It will thus be seen that there has been provided by this invention a method and apparatus in which the various objects hereinabove set forth together with many thoroughly practical advantages are successfully achieved. As various possible embodiments might be made of the mechanical features of the above invention and as the art herein described might be varied in various parts, all without departing from the scope of the invention, it is to be understood that all matter hereinbefore set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

What I claim is:

A device for use in administering oxygen therapy which comprises a transparent plastic member adapted to extend over and around a patient's head and neck and, together with the surface on which it is supported, to form a closure adapted

to serve as a container for a mixture of air and oxygen and to make said mixture continuously available for inhalation by the patient, said device including a port for the admission of oxygen, a plurality of ports for the admission of air, and slide valve means for opening one or the other of said air ports for controlling the concentration as desired.

ANTHONY S. VALENTE.

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