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A. B. DRÄGER

DEVICE FOR FEEDING ADDITIONAL OXYGEN IN FREELY PORTABLE RESPIRATORY APPARATUS

Filed Feb. 6, 1926

Fig. 1.

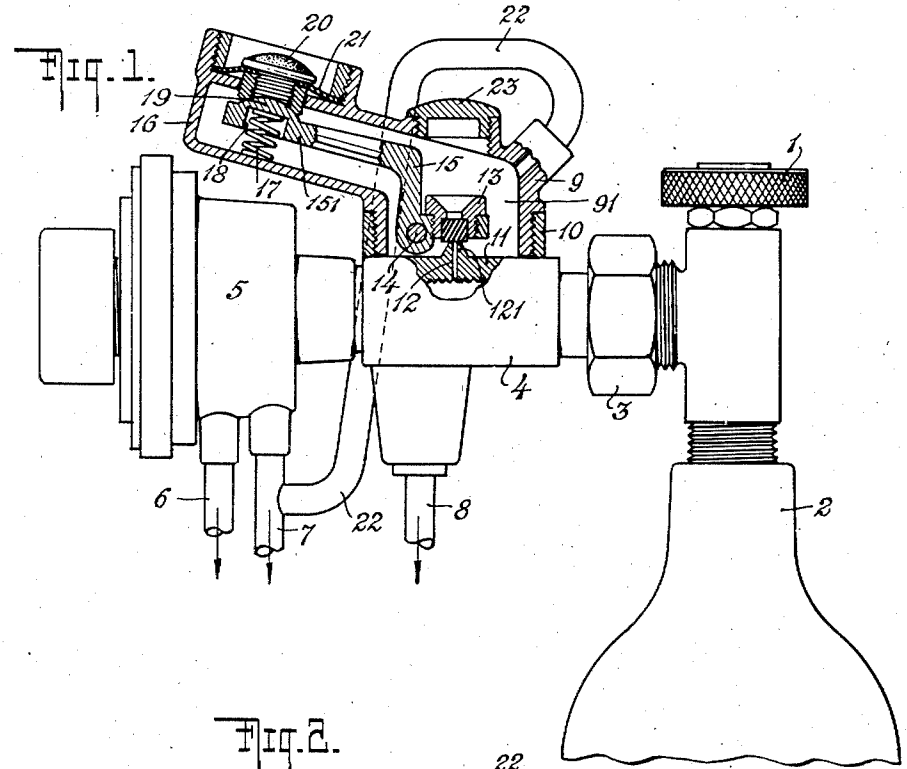


Fig. 2.

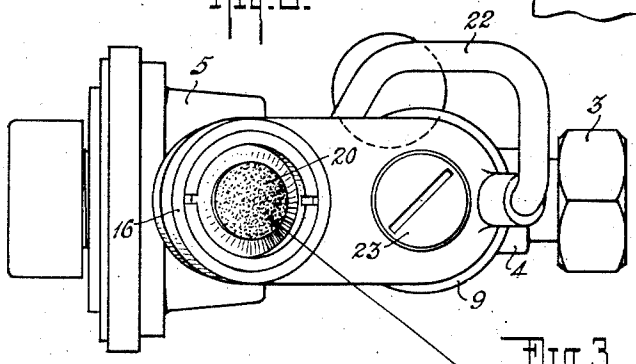
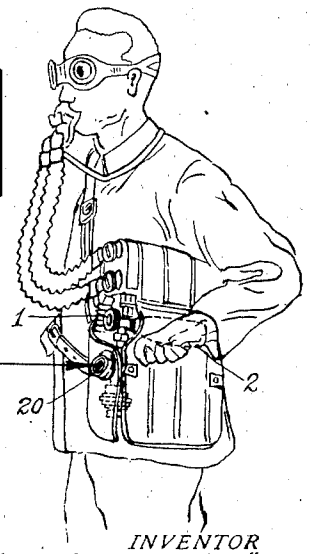


Fig. 3.



WITNESS

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UNITED STATES PATENT OFFICE.

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DEVICE FOR FEEDING ADDITIONAL OXYGEN IN FREELY-PORTABLE RESPIRATORY APPARATUS.

Application filed February 6, 1926, Serial No. 86,500, and in Germany February 9, 1925.

The invention relates to a device for feeding additional oxygen in freely portable respiratory apparatus comprising a by-pass for the pressure reducing valve and a self-closing valve which can be opened from outside by a push-button. The object of the present invention is to provide a device of this kind which both in construction and in operation is materially simplified. With this object in view the multiway connecting piece for connecting the oxygen bottle, cylinder or other reservoir is made to communicate by a valve controlled port directly with a low pressure chamber arranged at one side of the multiway connecting piece and connected with the said by-pass, which port is normally or automatically closed by a flap valve adapted to be opened by the push button.

The apparatus illustrated in the drawing is shown by way of example.

Fig. 1 is a sectional side view of the apparatus, the oxygen reservoir being shown broken off.

Fig. 2 is a view at right angles to that of Fig. 1, and

Fig. 3 is a perspective view of the respiratory apparatus carried by a person.

The apparatus illustrated in the drawing is a pulmonary automatic contrivance having means for a constant dosing of oxygen, the invention, however being also applicable to other breathing or respiratory apparatus, in which an additional amount of oxygen is fed to the breathing channels or members.

The cylinder or bottle 2 constituting the oxygen reservoir can be closed in the usual manner by a valve handle 1 which projects forwardly when the device is carried as shown in Fig. 3 so that the handle may be easily operated. The oxygen bottle is connected by the screw nut 3 with the multiway connecting piece 4 leading to the usual pressure reducing valve 5 and extending transversely to the oxygen bottle. Two pipes 6 and 7 connect the latter with the breathing bag (not shown). One pipe 6 serves for constantly feeding or dosing oxygen and the other 7 for a pulmonary automatic dosing. A pipe 8 connects the multiway connecting piece 4 which has a substantially cylindrical shape with a pressure indicating device.

Laterally to the piece 4 is arranged the low pressure chamber 91 the housing 9 of which may either be fastened to the pipe 4 by suitable means or may be integral therewith. In the construction shown the housing 9 is screwed to a socket 10 mounted on the piece 4. The wall 11 of the multiway connecting piece has a perforation or port 12, the mouth of which protrudes to form a seat 121 for the valve member 13 for closing the port. This valve member is mounted on a bell crank lever 15 pivoted to the housing by a pin 14. The housing 9 has an angular elongated shape so as to form a prolongation 16. Into this prolongation the arm 151 of the lever 15 projects. A spring 17 pressing against the arm 151 from below is inserted between the same and the housing, thus tending to press the valve member 13 on the seat 121. In the construction shown the arm 151 is perforated and provided with a knob 19 on top of this perforation, through which the spring 17 projects to engage said knob, which may be attached to the arm by any convenient means, for instance by soldering or welding or it may be integral therewith by being made of one piece. A push button 20 is provided to engage the knob 19 and held in position by a curved diaphragm 21, which bends downwardly, when pressure is applied to the button. Thus by pushing against the button 20 the valve 13 will be opened to allow oxygen to be fed from the multiway connecting piece 4 into the low pressure chamber 91 by way of the port 12. The chamber 91 communicates with the pipe 7 by the by-pass pipe 22 shunted across the reducing valve thus forming a by-pass for allowing a pulmonary automatic dosing of the oxygen fed to the breathing bag without passing the reducing valve 5. The housing 9 has an opening opposite to the port 12, which opening is closed by the removable cover 23. Thus the chamber 91 and the valve 13 are accessible.

In the position of the apparatus shown in Fig. 3 the direction and position of the low

pressure chamber 91 on the apparatus is so chosen, that the wearer may conveniently operate the push-button by his hand or thumb. The housing 9 projects substantially in the same direction as the handle 1 of the oxygen bottle and, consequently the push-button faces in this direction also.

I claim:

1. In a self-supporting respiratory apparatus, the combination comprising an oxygen bottle with a projecting valve handle for the oxygen control, a pressure reducing valve, a multiway connecting piece of substantially cylindrical shape having one end connected with said oxygen bottle and the other end with said reducing valve, said piece extending transversely to the axis of said oxygen bottle and having a port with a protruding mouth, a valve housing removably attached to said connecting piece, so as to project laterally thereof in substantially the same direction as said handle and so as to cover said mouth, a valve controlling lever pivoted to said housing within the same, a valve member carried by said lever in a position opposite said mouth, resilient means tending to press said valve member against said protruding mouth, a push-button operatively associated with said lever and so inserted in said housing as to face in substantially the above mentioned direction, and a by-pass conduit, connected to said housing and shunted across said reducing valve.

2. The combination set forth in claim 1 in which said housing has an elongated angular shape and is coextensive with said lever in an axial plane of said multiway connecting piece.

In testimony whereof I have signed my name to this specification.

ALEXANDER BERNHARD DRÄGER.