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J. LAFAVE.

LIFE PRESERVING OR SAVING SYSTEM.

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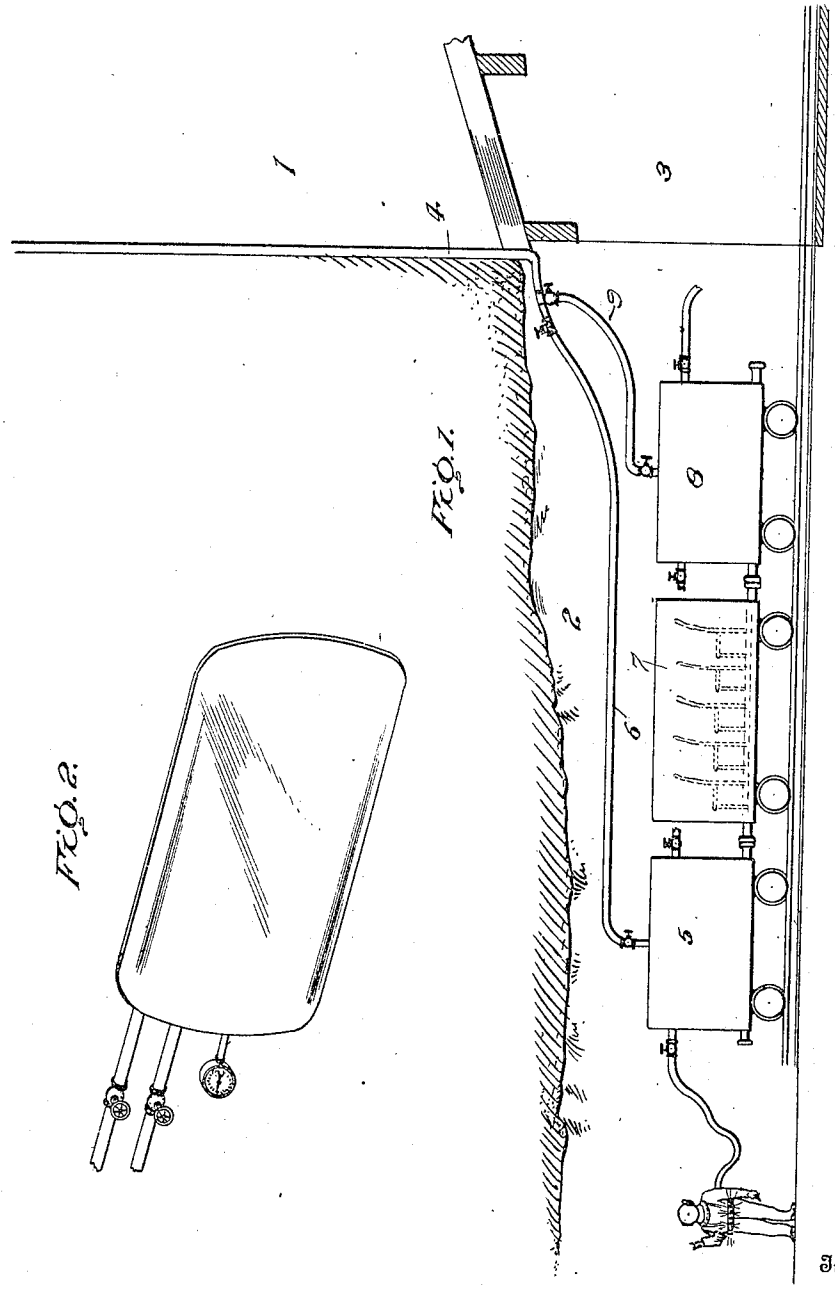


FIG. 1.

FIG. 2.

Witnesses

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LIFE PRESERVING OR SAVING SYSTEM.

No. 839,486. Specification of Letters Patent. Patented Dec. 25, 1906.

Application filed February 26, 1906. Serial No. 303,077.

To all whom it may concern:

Be it known that I, JOSEPH LAFAVE, a citizen of the United States, residing at Calumet, in the county of Houghton and State of Michigan, have invented certain new and useful Improvements in Life Preserving or Saving Systems, of which the following is a specification.

The object of this invention is to provide a novel system of apparatus for preservation of life, particularly for those who are engaged in occupations involving constant danger of loss of life—such as sailors, miners, and others.

In carrying out the invention an apparatus is provided which in its broad functions can be used in mines or submerged beneath the surface of a body of water in order to supply air and carry supplies of needful sort to those engaged in the work of saving life or the like.

In the drawings the invention is illustrated in its application for use in mines.

Figure 1 is a sectional view showing the general arrangement and construction of parts comprised in the apparatus such as may be used in the practical embodiment of the invention. Fig. 2 is a perspective view showing the form of rubber bag to contain air which may be used by the operators of the system.

Corresponding and like parts are referred to in the following description and indicated in both the views of the drawings by the same reference characters.

Specifically describing the adaptation of the invention as shown in the drawings, the numeral 1 indicates a vertical shaft of a mine, and leading off from the lower portion of the shaft in the customary way is a mine passage or cut 2. A suitable cage 3 of any conventional type is arranged in the shaft 1 and is designed for the usual purposes of conveying men and supplies from the surface of the ground to the interior of the mine. Leading down the shaft 1 is an air-supply pipe 4, which may terminate near the point where the shaft 1 joins the passage 2 or elsewhere, as found desirable in the practical use of the invention. The pipe 4 is designed to afford a means for supplying air under pressure to a suitable reservoir or reservoirs in the passage 2 or beneath the surface of the ground, the air in said reservoirs being in turn supplied to a number of operators or men who may be engaged in the work of saving lives. For instance, in the use of the invention it is frequent in mines that explosions take place from fire-damp or casualties of a similar nature happen, to which is incident an accumulation of gas or fire in the mine-passages, preventing entrance thereto on the part of those who might attempt at rescue of any one or more persons who may be imprisoned in said passages or made helpless due to injury or the like. Under such circumstances an apparatus such as constructed in accordance with this invention is particularly advantageous. It is preferred to use a main air-reservoir 5, which in this instance is portable, being mounted upon suitable trucks and adapted to travel upon a track in the mine over which the usual cars move. The main reservoir 5 may be provided with suitable pressure-gages and a number of valve connections and is adapted to be connected by means of a hose or pipe 6 with the main air-supply pipe 4 of the shaft 1. The reservoir 5 may be connected with a car or carrier 7, constructed so as to readily carry a number of men, supplies in the nature of hose or pipe, for medicinal purposes, or the like. The men who are engaged in the rescue work will of course be suitably clothed in a manner similar to divers, including an air-tight casing adapted to be connected by hose with the reservoir 5. Thus when the reservoir 5 and its connected car 7 travel into the passage 2, the men or operators in the car 7 when it reaches the desired point may get out of said car after quickly connecting a suitable length of hose attached to their head-gear with valves on the reservoir 5. The operators can thus travel in various directions from the reservoir 5, limited only by the length of the hose which supplies them with air, and can readily engage in rescue work as required by the actual conditions of service.

Under certain conditions it may be desirable to use an auxiliary reservoir 8, together with the main reservoir 5, and said reservoir 8 may also be carried upon suitable trucks, so as to be portable. The reservoir 8 may be connected by suitable hose 9 with the supply-pipe 4 when the apparatus is in actual operation, and by using said reservoir 8 it will be apparent that as the apparatus is being conveyed into the passage or passages 2 the car, including the reservoir 8, may be detached at a suitable point and left with operators to accomplish rescue work operating from such point, while the main reservoir 5 moves farther into the passage to accomplish rescue work at a different point. The advantages

of the use of the reservoir 8 are readily apparent, and said reservoir is preferably somewhat smaller than the reservoir 5, as its purposes are auxiliary or supplemental to the latter. The reservoir 8 may also be connected under some conditions to the reservoir 5 in order to be supplied with air to be used in the operation of the apparatus.

It is to be understood from the foregoing that the invention is not only applicable for use in mines, but the principle embodied therein may be carried out in operations upon rivers, lakes, and seas, requiring rescue work beneath the surface of the water. In other words, the main air-supply pipe may be connected with the shore or with a ship, and main and auxiliary reservoirs may be constructed so as to descend beneath the surface of the water and supply divers with air in a way somewhat similar to that hereinbefore set forth. The practical application of the invention is quite broad, therefore, and it affords a systematic way of accomplishing rescue work, as will be readily comprehended.

It is contemplated as a part of the apparatus which may carried by the car 7 that collapsible bags of rubber or like material shall be employed, said bags being adapted to be readily connected with either the main or auxiliary air-reservoirs so as to be filled with air. The air-tube of the armor or suit of each operator can be connected with the bag when fillled with air and the operator can move off into various portions of the mine or other place without being limited by the length of the tube connected with the reservoirs. The air-supply from the bags will be sufficient to permit him to move quite a distance, as will be obvious. The car 7 will have a suitable number of seats for the operators who may be carried therein.

Having thus described the invention, what is claimed as new is—

1. In a system of preserving or saving life, the combination of a main air-supply pipe, a main air-reservoir, means for connecting the air-reservoir with the main air-supply pipe and admitting of movement of the reservoir after connection thereof, a carrier for supplies and men connected with the main air-reservoir for the purpose specified, an auxiliary air-reservoir having detachable connection with the main air-reservoir, and means for connecting the auxiliary air-reservoir either with the main air-supply pipe or with the main air-reservoir.

2. In a system of preserving or saving life, the combination of a main air-supply pipe, a main air-reservoir, means for connecting the main air-reservoir with the supply-pipe and permitting travel of the reservoir after connection thereof, an auxiliary air-reservoir having detachable connection with the main air-reservoir whereby it may be disconnected therefrom to admit of further progress or movement of the main air-reservoir, and means for connecting the auxiliary reservoir with either the main reservoir or the main supply-pipe as specified.

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

JOSEPH LAFAVE. [L. S.]

Witnesses:
MARGARET ZIEHR,
ANNA O'BRIEN.