C. McNAMEE.

AIR SUPPLY ARMOR.

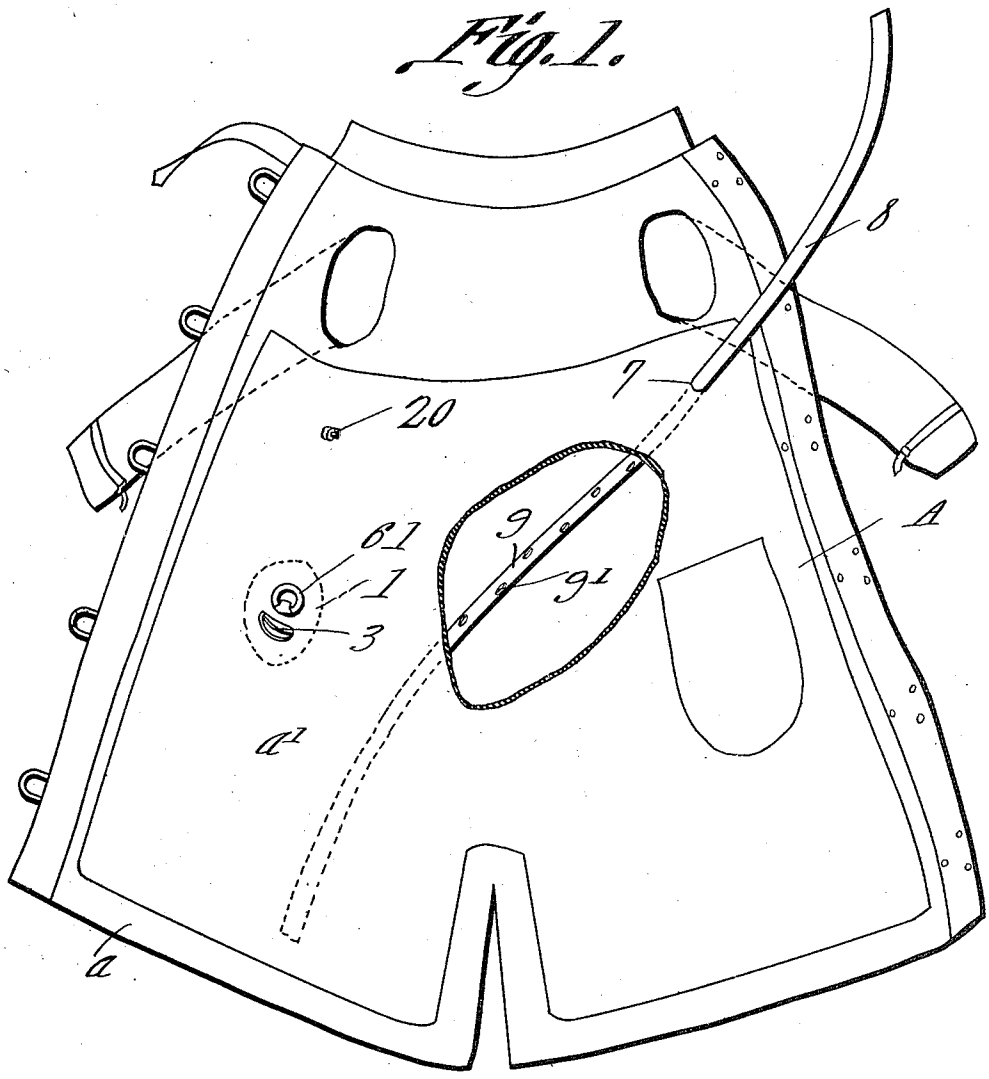
APPLICATION FILED MAY 5, 1911.

1,009,083.

Patented Nov. 21, 1911.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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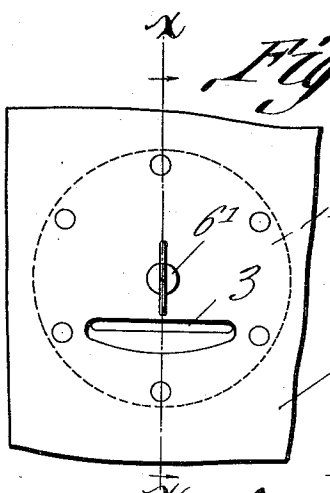
3 SHEETS—SHEET 2.

Fig. 2.



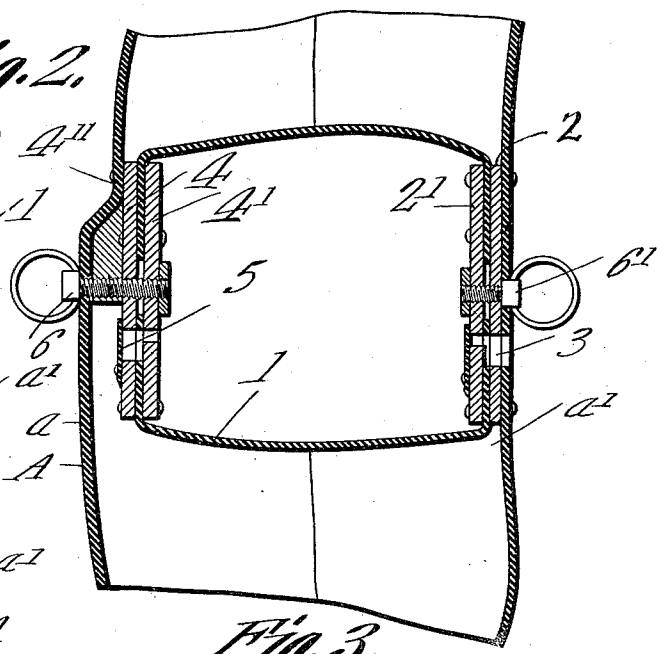


Fig. 3.

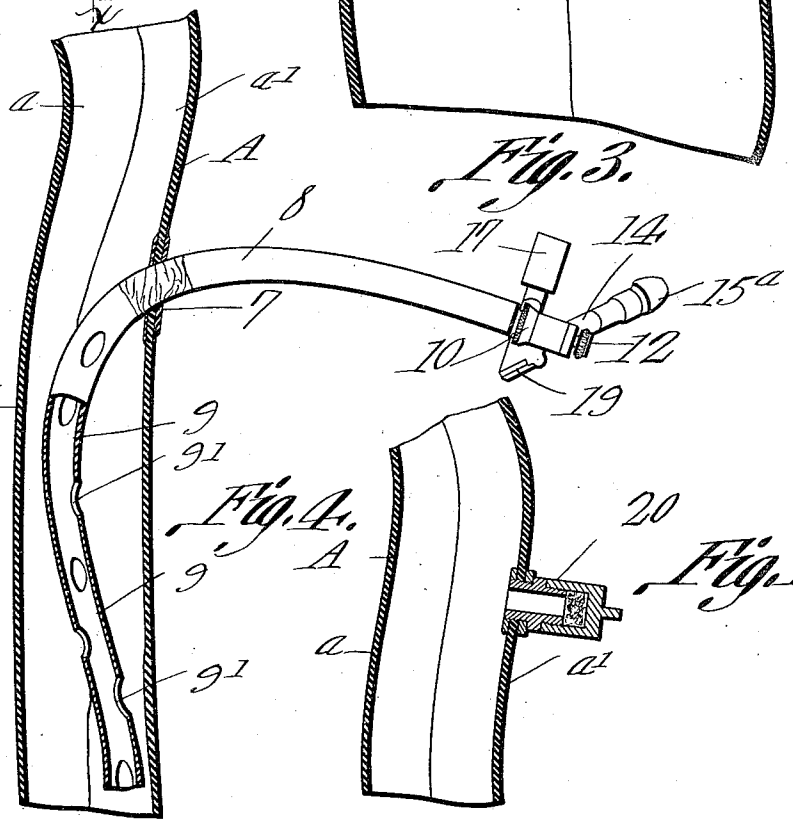


Fig. 4.

Fig. 10.

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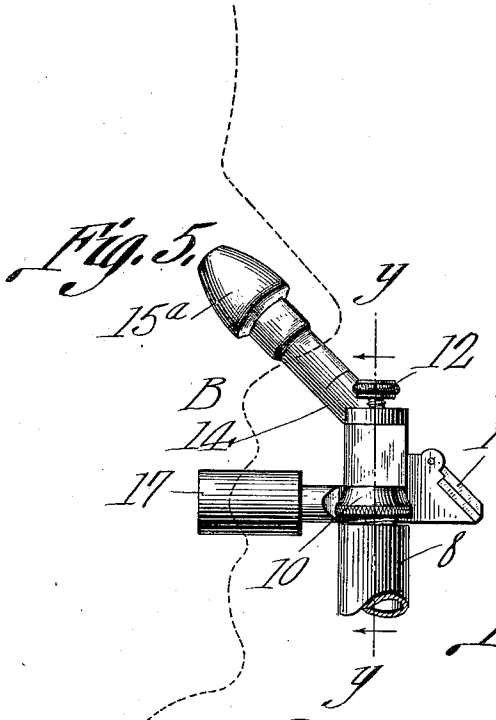
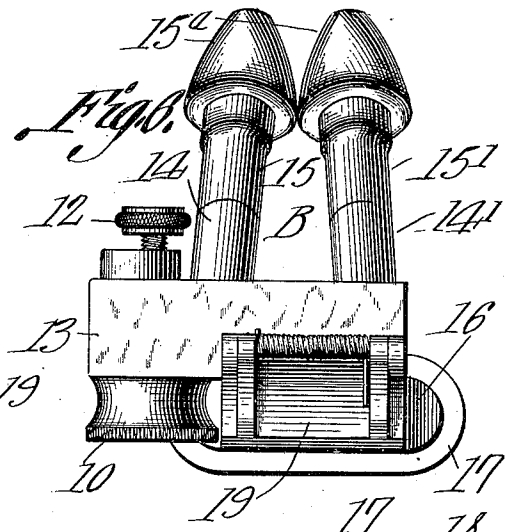
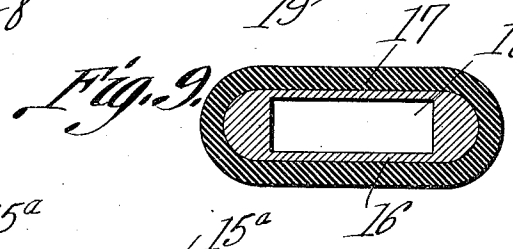
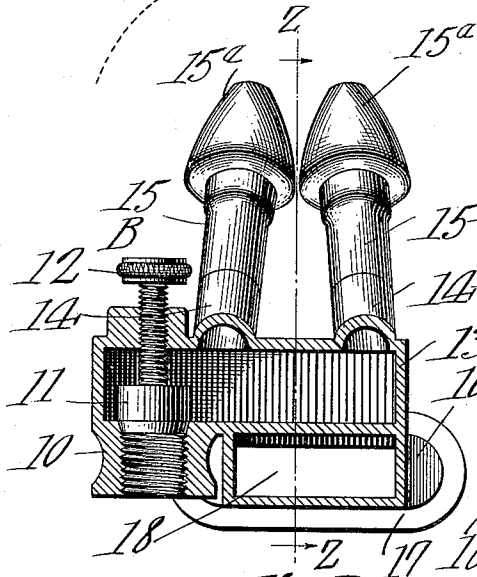
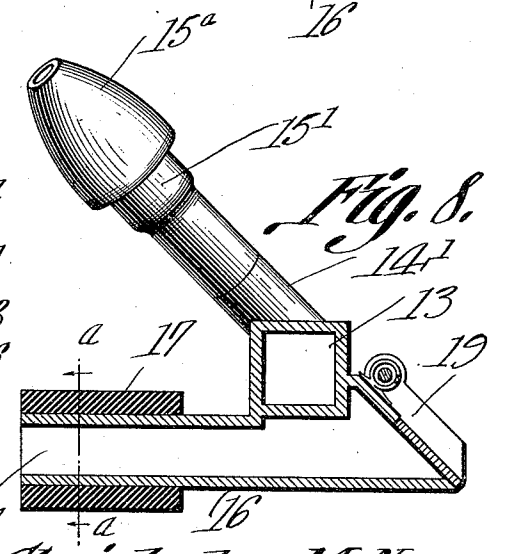
3 SHEETS—SHEET 3.











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UNITED STATES PATENT OFFICE.

CHRISTOPHER McNAMEE, OF NEW YORK, N. Y.

AIR-SUPPLY ARMOR.

1,009,083. Specification of Letters Patent. Patented Nov. 21, 1911.

Application filed May 5, 1911. Serial No. 625,385.

To all whom it may concern:

Be it known that I, CHRISTOPHER McNAMEE, a citizen of the United States, residing at New York city, in the county of Kings and State of New York, have invented a new and useful Air-Supply Armor, of which the following is a specification.

This invention relates to an improvement in air-supply armors, the primary object of the invention being the provision of body covering, provided with a collapsible air-chamber, having means to fill the same with air, and means to permit the wearer to respire or inhale the air from the air-chamber as needed, and with an exhaling device, which will prevent the inhaling of exterior or polluted air, this air-supplying armor being especially adapted for use in case of fires, mine disasters, or in fact in any place where noxious gases or smoke would prevent the entering thereof, without endangering the life of the fireman or rescuer.

A further object of the invention, is the provision of a coat whose surrounding body covering is made in two thicknesses of air-tight material, and connected to retain air, a bellows pump being mounted within the body to provide means for supplying air from the outside to the air-chamber and preventing the escape of air after supplying the same, said bellows pump being so disposed, as to permit the easy inflation of the garment by the wearer, and with an air-conducting and inhaling device so connected to the garment between the material that the collapse of the said garment at any place would not cut off the supply.

A further object of this invention is the provision of an inhaling and exhaling device adapted to have its inhaling conduits entering the nostrils in such close fit as to prevent any outside air entering the nostrils while the device is in operative position, and having an exhaling conduit adapted to fit in the mouth to assist in supporting the device in operative position, and provided with a valve to prevent the inhaling of outside air through the said exhaling conduit.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings:—Figure 1 is a plan view of the inside of the garment or armor. Fig. 2 is an enlarged detail view of the intake side of the bellows pump. Fig. 3 is a section taken on line X—X of Fig. 2. Fig. 4 is a sectional view through the garment adjacent to the respiration conduit. Fig. 5 is a side elevation of the respiratory device in operable position, the outline of the face of the wearer being in dotted lines. Fig. 6 is a front elevation of the device. Fig. 7 is a section taken on line Y—Y of Fig. 5. Fig. 8 is a section taken on line Z—Z of Fig. 7. Fig. 9 is a cross section on line *a*—*a* of Fig. 8. Fig. 10 is a detail sectional view of the nipple connection to the garment, which may be used to exhaust the air-chamber or to permit its filling from a compressed air apparatus.

Referring to the drawings, the garment or armor A, comprises the two layers of air-tight materials *a* and *a'*, respectively, which may form the outside and lining of a fireman's coat, or in fact any convenient garment to be worn by the operator. These layers *a* and *a'*, form the air-chamber or receptacle, and may be of varying sizes, or may include the entire garment if desired.

Mounted between the layers, in ready access for manipulation, is the bellows pump 1, which comprises the two inner heads 2 and 2', which are secured air-tight to the inner layer *a'*, of the garment and are provided with the valve-controlled inlet 3, which permits air to be drawn into the pump, but prevents the escape of air through the said inlet 3. At the other end of the bellows pump, are the two heads 4 and 4', the outer one of which is made fast at 4'', to the outer layer of the garment, and is provided with the valve-controlled outlet 5, which permits the air sucked into the bellows upon the pull stroke, to be expelled into the air-chamber of the garment upon the push stroke of the bellows. By means of the ring screws 6 and 6', the wearer may easily operate the bellows pump, and thereby fill or expand the air-chamber of the garment.

Connected at 7, to the inner wall of the garment and having terminals inside and outside of the air-chamber of the garment,

is the respiratory conduit 8, whose terminal 9, within the air-chamber is provided with a series of inlet openings 9′, throughout its length within the air-chamber, this terminal being of a non-collapsible rubber, so that there can be no kinking of the same, and whereby the collapse of the air-chamber upon the said terminal 9, will not effect the closure of all of the openings 9′, thus providing inlets at all times, when there still is air within the air-chamber, into the respiratory conduit. At the outer free end of this flexible respiratory conduit 8, is a respiratory device B, which consists of the inlet 10, which is connected to the conduit 8, the valve 11, having the milled thumb-screw 12, being provided to control the flow of air from the conduit 8 through the inlet 10 into the casing 13, of the device B. Leading from the chamber in the casing 13, are two hollow stems or pipes 14 and 14′, which incline rearwardly and slightly toward each other, so that the two nostril engaging tubes 15 and 15′, will have their heads 15ª, very close together, to provide a means to engage the separating wall or membrane of the nostrils of the wearer, and thus assist in holding the device B in place.

Formed integral with the casing 13 and below and at right-angles thereto is a casing or sleeve 16, provided with the conduit 18, and mouth piece 17, which as shown in Fig. 5, is adapted while the tubes 15 and 15′ are projected and held within the nostrils of the wearer, to be gripped between the wearer's front teeth and surrounded by his lips, so that no outside air can enter the mouth exterior of the mouth piece 17 and between it and the lips. At the outer end of the conduit or channel 18, is a spring closed hingedly mounted check valve 19, which permits the egress of exhaled air to pass out through the channel 18, but prevents the ingress of air therethrough, thus preventing or guarding against the wearer breathing through his mouth, and inhaling the outside or noxious air.

In order to permit the emptying of the air-chamber to store the garment, or to permit the air-chamber to be filled other than by the pump 1, the screw capped tube 20 is provided and is mounted conveniently to the garment and in communication with the air-chamber thereof.

It is evident from the foregoing that an air-supplying armor or garment for use by firemen, or in places where aid must be given in air permeated with smoke or noxous gases, is provided, and one which will permit the operator or wearer to fill the air-chamber thereof as the air is needed, and by means of the respiratory conduit and device, the delivering at all times of pure air to the operator is effected, thus permitting such operator to enter smoke or noxious gases, without endangering his person, and thus producing a very useful and simple device of this character.

What is claimed, is:—

1. In a device of this character, the combination of a body garment provided with an air-chamber, means for supplying air thereto, a conduit for conveying the air from the air-chamber, and a respiratory device connected to said conduit and comprising a casing, two nostril entering tubes carried thereby, and a valve controlled mouth-piece said mouth-piece and tubes being separate from each other and out of communication with each other.

2. In a device of this character, the combination with an air supplying means, of a respiratory device, comprising a casing in communication with said means, a valve to control the admission of air to said casing, two nostril entering conduits in communication with the casing, and a mouth-piece carried by the casing and forming the sole support for the device.

3. In a device of this character, the combination with an air containing and supplying garment, of a respiratory device in communication therewith, comprising valve controlled nostril entering tubes, and a mouth-piece adapted to be engaged by the mouth and form the sole support for the device in place.

4. In a device of this character, the combination with an air containing and supplying body garment, of a respiratory device in communication therewith, comprising a main support, provided with a valve controlled air inlet, two nostril entering tubes carried thereby, and a valve controlled mouth-piece adapted to enter the mouth and support the device in operative relation to the nostrils and mouth, the conduit of the mouth-piece being separable from the nostril tube.

5. In a device of this character, the combination with an air-supply, of a respiratory device in communication therewith, comprising a main support provided with a valve controlled air inlet, two nostril entering tubes carried thereby, enlarged ends to said tube for engaging the walls of the nostril and a valve controlled mouth-piece, the conduit of which is separate and apart from the tubes.

6. In a device of this character, the combination with an air-supply, of a respiratory device, comprising a mouth-piece forming the only support of the device, and having an outlet projecting therefrom a valve for preventing the ingress of air therein, and two nostril entering tubes in communication with the air-supply and separated from the outlet of the mouth-piece, said tubes being held in operative position while the mouth-piece is in place.

7. In a device of this character, the combination with an air-supply, of a respiratory device, comprising a body, two nostril entering tubes carried thereby, means mounted upon the end of each tube for engagement with the walls of the nostril, a mouth-piece connected to and forming a support for the device when in use, the conduit of the same being separate from the tubes, and a valve for said mouth piece to prevent the ingress of air to the mouth.

8. In a device of this character, the combination of a body garment having an air-chamber, a pump for supplying air thereto mounted within the air-chamber, a respiratory conduit in communication with the air-chamber, means for supplying the air through said conduit to the respiratory organs of the wearer, a conduit adapted to convey the exhalations to the outside air, and a valve to prevent the inhaling of the outside atmosphere, through said conduit.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CHRISTOPHER McNAMEE.

Witnesses:
HOWARD C. RUCH,
ABRAM A. VAN NAME.