

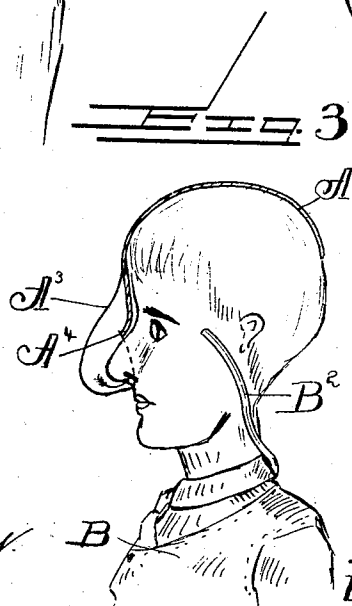
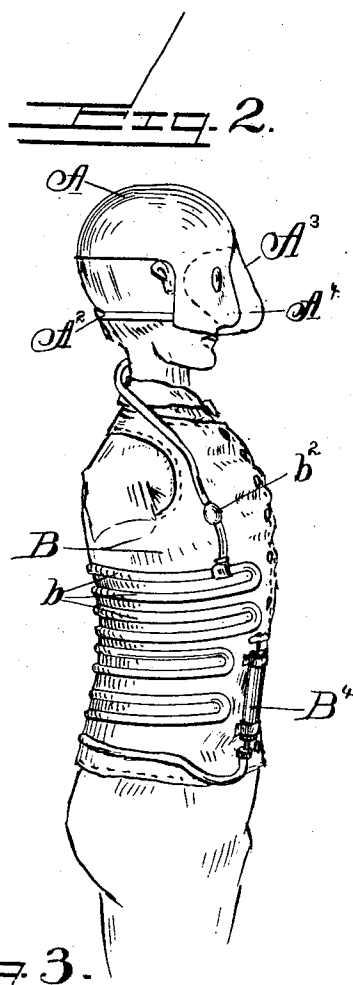
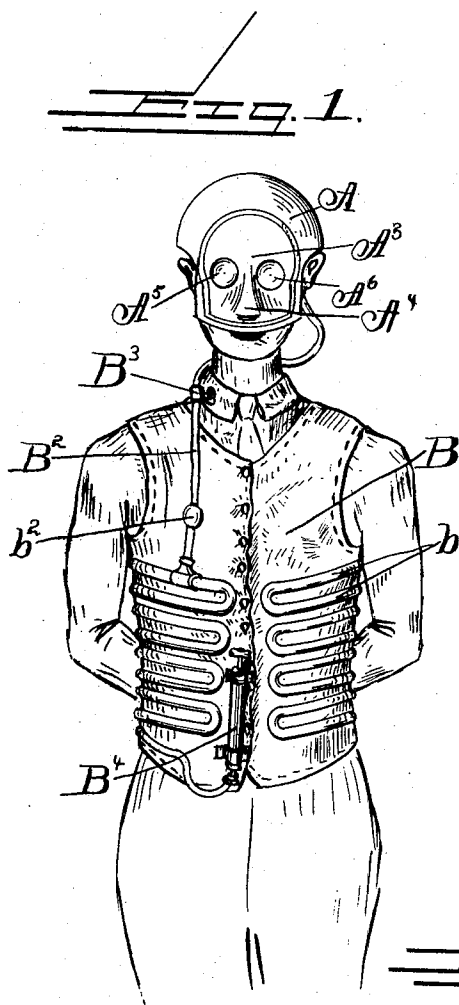
No. 771,801.

PATENTED OCT. 11, 1904.

W. E. ANDREW.  
SMOKE PROTECTOR.

APPLICATION FILED MAR. 25, 1903.

NO MODEL.



WITNESSES:

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his attorney.

## UNITED STATES PATENT OFFICE.

WILLIAM E. ANDREW, OF ATLANTIC HIGHLANDS, NEW JERSEY.

## SMOKE-PROTECTOR.

SPECIFICATION forming part of Letters Patent No. 771,801, dated October 11, 1904.

Application filed March 25, 1903. Serial No. 149,525. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM E. ANDREW, a citizen of the United States, residing at Atlantic Highlands, in the county of Monmouth and State of New Jersey, have invented certain new and useful Improvements in Smoke-Protectors; 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 has for its object to provide an improved form of apparatus for protecting persons entering places where there is smoke or dangerous fumes in the atmosphere, enabling the wearer to breathe a supply of good air, while the air from the lungs is exhaled as usual.

With this object in view and with others my invention comprises the construction, arrangement, and combination of parts, as hereinafter set forth, described, and claimed.

In the drawings, representing an apparatus embodying my invention in my preferred form, Figure 1 is a front view of the device in position for use on a person. Fig. 2 is a side view of same, and Fig. 3 is a side view showing the mask in section.

In the several views, in which the characters of reference indicate the same parts, A represents the mask, preferably made of soft rubber, that fits snugly over the upper part of the head and extends down to and snugly fits the upper lip. A plate A<sup>2</sup>, preferably elastic, extends under the ears (that are left clear of the mask) and around back of the head, thus securing the mask tightly in place and holding the lower edge of the mask tightly in engagement with the upper lip. There are openings opposite the eyes and also one for the nose, as indicated in Fig. 3.

A plate of rubber A<sup>3</sup> is vulcanized or otherwise secured to the front of the mask to inclose the nose and eye apertures and has a beak portion A<sup>4</sup> to extend in front of the nose, but not of contact therewith, so as to leave a chamber in front of the nostrils. A pair of lenses A<sup>5</sup> A<sup>6</sup> are inserted in the front plate A<sup>3</sup> opposite the eyes of the wearer for obvious reasons.

In order to supply the chamber around the nose with pure air, I provide a suitable reservoir B, preferably in the form of a vest, having a number of tubes or cells *b*, which may be put on in the usual manner and secured by buttons or otherwise. A tube B<sup>2</sup> connects the vest-tubes with the nose-chamber and has a suitable valve B<sup>3</sup>, by means of which the air in the vest-tubes can be admitted to the nose-chamber as desired and the pressure controlled. If desired, any of the well-known forms of pressure-reducing valves may be used, by which the pressure of the air in the nose-chamber can be automatically regulated. An air-pump of any suitable form, such as an ordinary force-pump B<sup>4</sup>, is attached to the vest-tubes, preferably at the lower part of the vest. This pump I preferably have permanently secured to the vest.

This apparatus is especially designed for use by firemen.

The vest can be worn at all times when on duty or can be quickly slipped on when responding to an alarm and adjusted, while the mask can be carried in the pocket, say, of the vest, without being disconnected from the vest-tubes. The tube B<sup>2</sup> is, however, made detachable from the vest-tubes *b* by any suitable air-tight joint *b*<sup>2</sup>, so that the mask and tube *b*<sup>2</sup> may be disconnected from the vest-tubes *b* and carried in a place other than the vest-pocket or for other purposes, as is obvious. When it is necessary for the fireman to enter a smoke-laden room, he can quickly slip the mask in place and then pump into the vest-reservoir a supply of pure air, if it is not already sufficiently full. Until he enters the room filled with smoke he can breathe, inhale, and exhale through the mouth, which is left entirely free, so that he can give orders and talk whenever necessary; but when he enters a room filled with smoke he turns on the valve B<sup>3</sup> and admits air from the vest-reservoir to the nose-chamber and inhales through the nose, inspiring the air from the reservoir, while he exhales through the mouth, taking care not to permit any air to be inhaled through the mouth. When the supply of air in the vest-reservoir becomes exhausted, the fireman or other wearer goes to a window, door, or any

convenient place where a supply of pure air can be obtained and again fills the vest-tubes by the attached pump, which can be very quickly accomplished, and he can then return  
5 to his work in the smoke-filled room.

Without limiting myself to the details of construction and arrangement hereinbefore set forth, what I claim as new, and desire to secure by Letters Patent, is—

10 1. The combination of a mask arranged to inclose the nose and eyes and exclude the atmosphere therefrom, and having a nose-chamber, and a portion arranged to engage the upper lip and leave the mouth free, and hav-  
15 ing transparent windows for the eyes, and means for securing the mask to the head, substantially as described.

2. The combination of a mask arranged to inclose the nose and eyes and exclude the at-  
20 mosphere therefrom, and having a nose-chamber and a portion arranged to engage the upper lip and leave the mouth free, transparent windows for the eyes, and a band arranged to pass around the head under the ears and  
25 secured to the mask at the lip-engaging portion and bind the latter against the lip, substantially as described.

3. The combination of a mask arranged to inclose the nose and exclude the atmosphere  
30 therefrom, and having a nose-chamber, and having a portion arranged to engage the upper lip, means for securing the mask to the head, an air-reservoir arranged to be secured to the body, a tube arranged to afford communica-  
35 tion between the reservoir and the nose-chamber of the mask, and a valve in said tube, substantially as described.

4. The combination of a mask arranged to

inclose the nose, and exclude the atmosphere therefrom, and having a nose-chamber, and  
40 having a portion arranged to engage the upper lip, means for securing the mask to the head, a reservoir arranged to be secured to the body, a tube arranged to afford communication be-  
45 tween the reservoir and the nose-chamber of the mask, a valve in said tube, and an air-pump secured to the reservoir and arranged to fill the same, substantially as described.

5. The combination of a mask arranged to cover the face above the mouth and having  
50 apertures at the nose and eye portions, and a plate secured to the mask around said apertures and arranged to form a chamber in proximity to the nostrils of the wearer, means for securing the mask to the head, transparent  
55 windows in said plate for the eyes, and an air-reservoir having means of communication with the said nose-chamber, substantially as described.

6. The combination of a mask arranged to  
60 inclose the nose and exclude the atmosphere therefrom, and having a nose-chamber, and having a portion arranged to engage the upper lip, means for securing the mask to the head, an air-reservoir arranged to be secured  
65 to the body, a detachable tube arranged to afford communication between the reservoir and the nose-chamber of the mask, and a valve in said tube, substantially as described.

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

WILLIAM E. ANDREW.

Witnesses:

WM. H. REID,

E. T. BRANDENBURG.