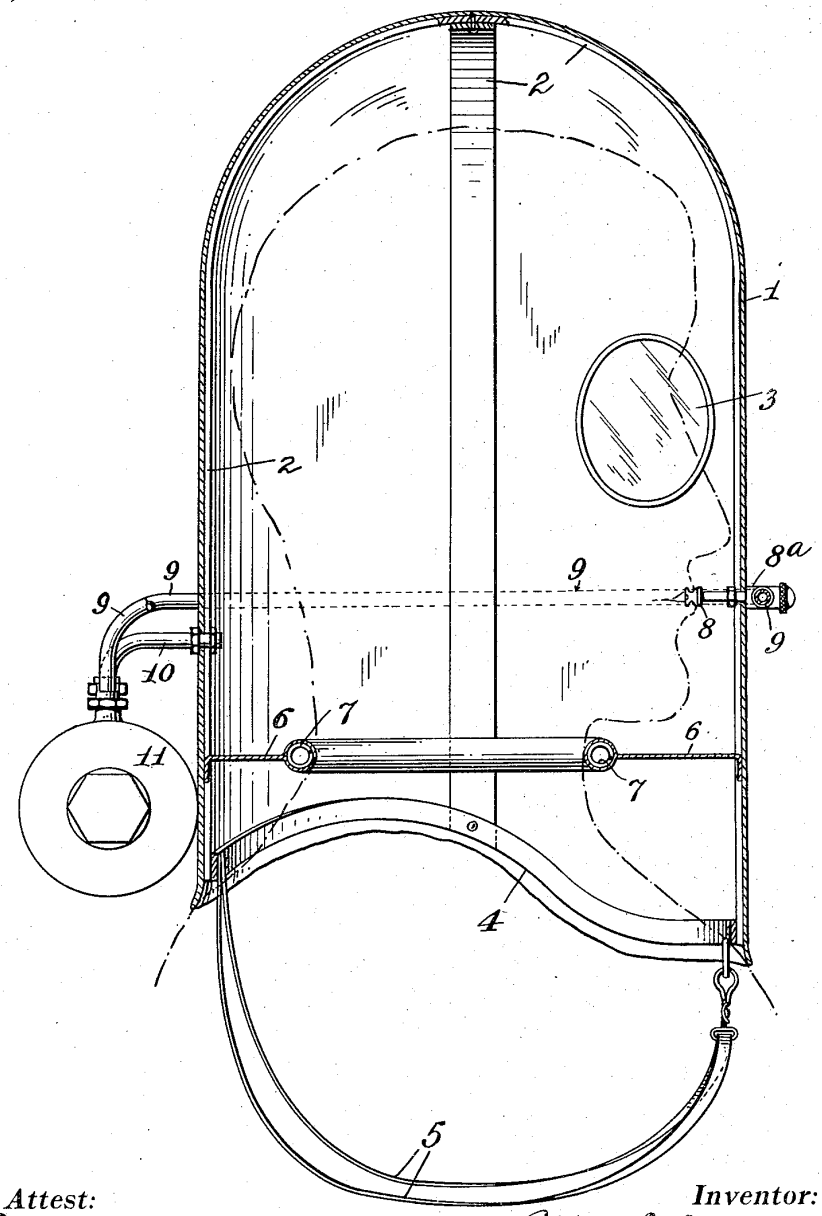
A. E. DAVIDSON.
RESCUE APPARATUS.
APPLICATION FILED AUG. 20, 1912.

1,201,566. Patented Oct. 17, 1916.



Attest:
Edna A. Maeland
Alan D. McDonnell

by

Inventor:
Alfred E. Davidson
E. W. Scherr Jr.
Atty

UNITED STATES PATENT OFFICE.

ALFRED E. DAVIDSON, OF NEWARK, NEW JERSEY.

RESCUE APPARATUS.

1,201,566. Specification of Letters Patent. Patented Oct. 17, 1916.

Application filed August 20, 1912. Serial No. 715,983.

To all whom it may concern:

Be it known that I, ALFRED E. DAVIDSON, a subject of the King of Great Britain, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Rescue Apparatus, of which the following is a specification.

My present invention relates to a rescue apparatus and more particularly to a smoke helmet and its advantages will be apparent to those skilled in the art from an understanding of the following description in connection with the drawings. These show only one of the specific embodiments which my improvements are adapted to take. In the drawing, there is shown a central vertical section of an apparatus embodying the invention.

I will now describe the devices of the drawings, reserving it to the claims to point out the novel features and to define the scope of the invention, it being understood that the claims will be given the due range of equivalents to which they may be entitled in view of the art.

The helmet is made of collapsible material 1, and upheld at the top by a pair of crossed steel springs 2. These prevent the helmet from being collapsed by anything striking the crown of it, but permit it to be the expansible and collapsible breathing bag of the apparatus.

The helmet has the usual eyes 3 and has bottom edges 4 which fit down close on the shoulders against which they are strapped down by straps 5 extending under the armpits.

6 is a horizontally disposed ring of rubber or leather, etc., material secured air-tight at its outer edge with the interior of the helmet. In putting on the helmet, the wearer pushes his head up through the hole in the ring which has an elastic periphery, which in the drawings is shown edged by a coiled spring 7,—causing said periphery to snugly encircle the wearer's neck.

8 is a breathing tube within the helmet which the wearer grips in his mouth and which projects through the front of the helmet at 8^a where it has an opening protected by a screw cap which can be removed when the wearer is in good air to permit him to breathe it direct.

9—9 are metal tubes leading exteriorly from the tube 8^a to the back of the helmet where they connect with a chamber 11 for containing the sodium peroxid or other chemical yielding oxygen when acted upon by moisture in the breath.

Since the helmet 1 is expansible and collapsible with the breathing of the wearer, as hereinbefore stated, it follows that the entire system operates under atmospheric pressure. In other words, it is not necessary to provide a pressure tank or to provide means for maintaining a pressure in said tank. The wearer exhales thruogh the nose into the interior of the helmet and the vitiated air passes to the interior of tank 11 where it is regenerated by the oxygen released from the sodium peroxid in a manner that will be readily understood.

10 is a third tube between the other two connecting the chamber 11 with the back of the helmet.

What I claim is:

1. A rescue apparatus comprising a helmet adapted to envelop the head; means for containing a chemical delivering oxygen to the interior of the helmet under the action of moisture and operating at atmospheric pressure; a horizontal diaphragm across the interior of the helmet having a hole through it with an elastic periphery to permit the head to be passed up through it and thereafter to snugly fit the neck of the wearer, said helmet being made of flexible material and thereby constituting a breathing bag which is expansible and collapsible with the breathing of the user, and means for upholding the crown of the helmet.

2. A rescue apparatus comprising a helmet adapted to cover the head and encircle the neck of a wearer, the helmet being made of substantially air-tight material that is readily flexible so that when the helmet is closed about the neck of the wearer it will expand and collapse with the breathing of the wearer like a bellows, means for maintaining the helmet tightly closed about the neck of the wearer, an air revivifying chamber from which the air is delivered at atmospheric pressure, and a pair of conduits establishing communication between the said chamber and the interior of the helmet.

3. A rescue apparatus comprising a helmet adapted to cover the head and encircle the neck of a wearer, the helmet being made of substantially air-tight material that is readily flexible so that when the helmet is

closed about the neck of the wearer it will expand and collapse with the breathing of the wearer like a bellows, means for maintaining the helmet tightly closed about the neck of the wearer, such means comprising an annular spring defining the open neck portion of the helmet, an air revivifying chamber from which the air is delivered at atmospheric pressure, and a pair of conduits establishing communication between the said chamber and the interior of the helmet.

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

ALFRED E. DAVIDSON.

Witnesses:
ALAN C. MCDONNELL,
EDNA A. MORELAND.