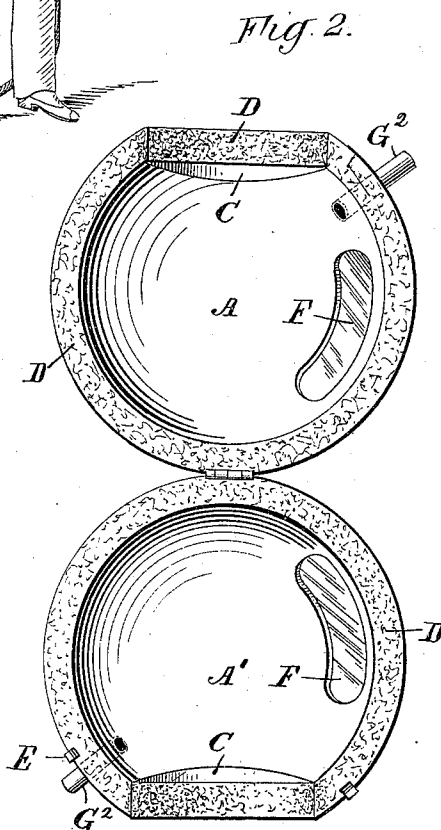
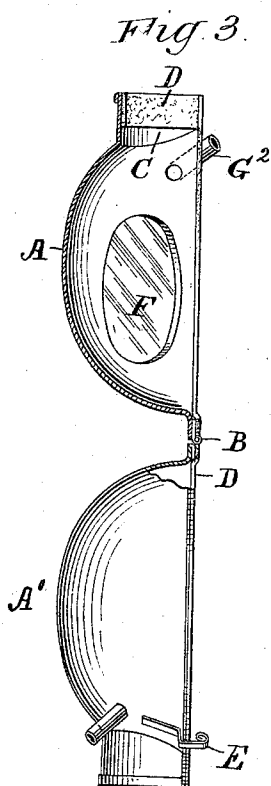
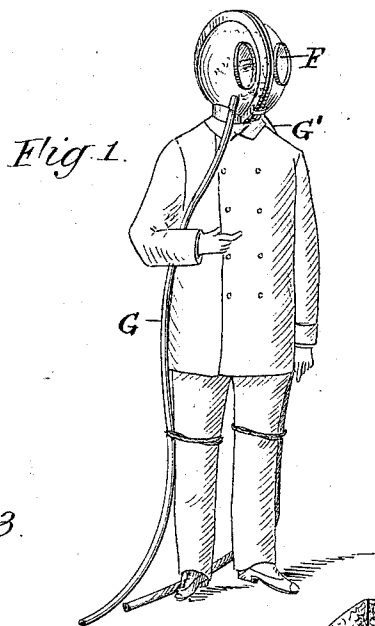


(No Model.)

J. SENIOR.
SMOKE HELMET FOR FIREMEN.

No. 544,832.

Patented Aug. 20, 1895.



Attest.
L. Lee.
Edw. Kinsey.

Joseph Senior by
Thomas S. Crane, Atty.

Inventor

UNITED STATES PATENT OFFICE.

JOSEPH SENIOR, OF MILLBURN, NEW JERSEY.

SMOKE-HELMET FOR FIREMEN.

SPECIFICATION forming part of Letters Patent No. 544,832, dated August 20, 1895.

Application filed June 9, 1894. Renewed June 29, 1895. Serial No. 554,503. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH SENIOR, a citizen of the United States, residing at Millburn, Essex county, New Jersey, have invented certain new and useful Improvements in Smoke-Helmets for Firemen, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of this improvement is to furnish a helmet of very light construction which may be instantaneously applied to and removed from the head, and which is packed at the joints with very light material, so that the whole structure may be worn without fatigue and firemen and others enabled to enter and remain a long time in rooms which are filled with smoke or suffocating gases without injury. The helmet is provided with an air-pipe adapted to reach the floor where in a burning building the purest and coolest air is usually found. For such a purpose the helmet requires scarcely any strength and does not need to be fitted water-tight around the neck, and it may, therefore, be conveniently made in sections with a vertical joint, by which construction it can be made much closer to the size of the head and applied to the head much more readily and comfortably. The helmet is made of material of suitable stiffness to form hemispherical sections, which are hinged together and formed with semicircular recesses in the lower edge to fit around the neck. The joint between the sections is provided with a yielding packing to exclude the smoke, and a similar packing is secured in the recesses to exclude the smoke at the neck.

The construction will be understood by reference to the annexed drawings, in which—

Figure 1 represents a fireman with the helmet applied for use. Fig. 2 is an inside view of the helmet, exposing fully the interior of both sections; and Fig. 3 is an edge view of the sections in the same position, with the upper section and a portion of the lower one, in addition to the hinge, divided at the center line to show the internal construction.

A and A' represent the sections of the helmet adapted to fit loosely upon opposite sides of the head and united at the top by hinge B. A semicircular recess C is formed in the

lower edge of each section, to fit around the neck, and a yielding packing D is secured around the entire margin of each section, thus excluding smoke from the joint and also preventing its access at the neck. The packing may be made of soft felt or flannel, as it is not exposed to any atmospheric pressure. Spring-catches E are applied to the joint of the sections at opposite sides of the neck, which, after the sections are suitably placed upon the head, may be readily sprung over the edge of the opposite section, thus holding them securely in place and affording a means of instantaneously releasing and removing the helmet.

Glass plates or windows F are secured in the front side of the helmet, and are shown of suitable size to permit vision in any direction. Glass, mica, or any other transparent substance may be used for these windows. By forming two sections to fit opposite sides of the head and hinging them at the top, their application by the user is greatly facilitated. The sections are thus provided each with a window, and are otherwise similar, although oppositely shaped.

Air-pipes G G' are shown connected by nozzles G² to each of the sections to admit and discharge air, and are made of sufficient length to reach down to the floor and preferably to trail thereon a short distance.

In Fig. 1 the pipes are shown tied to the side of the fireman's legs, to keep them close to his person and prevent their entanglement with surrounding objects.

I have found in practice that inspiration and expiration may be continued for half an hour through a single tube; but where two tubes are used, as shown in the drawings, one may be applied to the front of the helmet to discharge the air, and the other at the rear to admit a fresh supply.

If desired the tubes may be provided at their junction with the helmet with valves opening, respectively, inward and outward, thus securing a movement of the fresh air continuously in the same direction through one of the tubes and a continuous discharge of the foul air through the other.

The apparatus may not only be used by firemen, but in various manufactures where dangerous or offensive fumes are generated,

and furnishes a cheap and convenient means of preventing the smoke and gases from entering the nose, mouth, and breathing-passages. As the apparatus is not exposed, as in the case of submarine diving, to any excess of pressure externally, it may be made of very light and thin material of suitable stiffness, as paper, wood, or thin spun metal. By using such materials the whole helmet may be made of very little weight. The packing may be also made of light cotton or wool, which would add nothing to the weight, while it would sufficiently exclude the smoke or gases. The apparatus is thus adapted for comfortable use, while it effectually protects the wearer from the injurious effects of the smoke and gases and enables him to render valuable services—as the saving of human life in the case of firemen—or the performance of important work, as in the case of miners, engineers, &c.

Having thus set forth my invention, what I claim herein is—

1. The smoke helmet herein described, con-

sisting of the hemispherical sections A, A', 25 hinged at the top and formed with semi-circular recesses C at the lower edge to fit the neck, and spring catches E at opposite sides of the neck, the joint and recesses being provided with a yielding packing D and the helmet 30 having an air pipe adapted to reach the floor, and a window in the front of each section, as herein set forth.

2. A helmet divided in two sections adapted for application to the opposite sides of the 35 head, and formed to fit the neck with a yielding packing around the same, the sections being hinged together at the top and provided with an air inlet and suitable catches at the bottom, and having each a window in the 40 front, substantially as herein set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOSEPH SENIOR.

Witnesses:

L. LEE,

THOMAS S. CRANE.