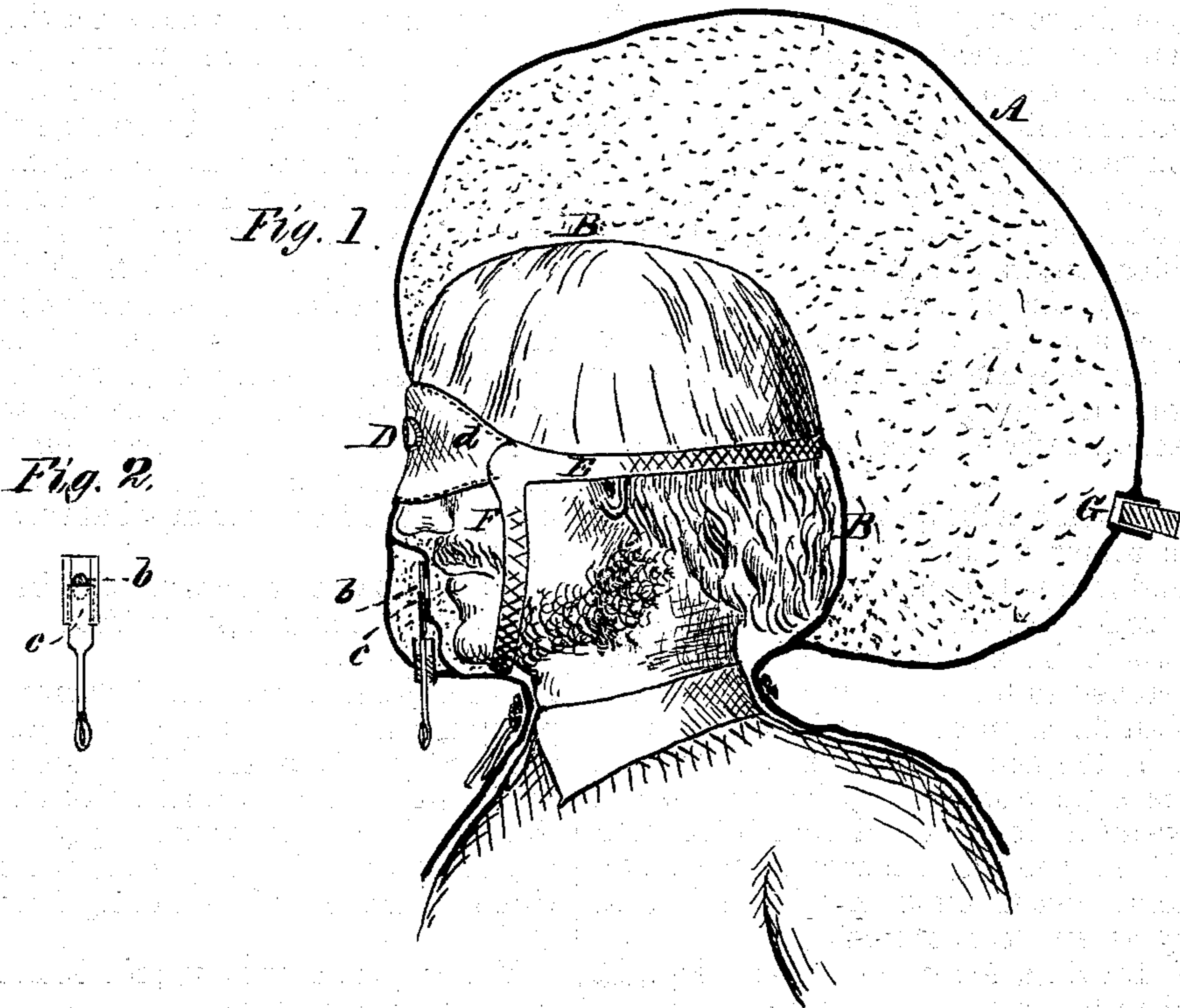


W. N. BALL.

Safety Head Dress Against Smoke.

No. 125,515.

Patented April 9, 1872.



Witnesses:

Inventor:

Julius Wicks
J. W. Munday.

Willard, S. Ball

UNITED STATES PATENT OFFICE.

WILLARD N. BALL, OF LA PORTE, INDIANA.

IMPROVEMENT IN SAFETY HEAD-DRESSES FOR SMOKE.

Specification forming part of Letters Patent No. 125,515, dated April 9, 1872.

To whom it may concern:

Be it known that I, WILLARD N. BALL, of La Porte, in the county of La Porte and State of Indiana, have invented a new and useful Improvement in Smoke Head-Dress; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 is a sectional view of my device as when in use, and Fig. 2 is a sectional view of the valve between the head-inclosing or inner cap and the air-chamber.

Like letters refer to like parts in each figure.

This invention has for its object the construction of an armor or head-dress, which, when inflated and applied, would enable the wearer to escape from a burning building, when within it he would be suffocated by the smoke, and is designed to furnish him with a limited supply of air for support of the breathing process, and by the addition of a flexible pipe a continuous supply of air may be furnished a fireman wearing it in a building filled with smoke. The invention consists in the novel and peculiar construction of the device, as more fully hereinafter set forth.

In the drawing, A represents an air-tight flexible chamber or helmet, within which is a bonnet or lining, B, adapted to fit over the head of wearer. The bonnet B is joined closely to the helmet at its edges, so that there is no communication between the two, except by the aperture *b*, guarded by a valve, *c*, shown detached and in section at Fig. 2. The helmet and bonnet are stitched together at that part which comes opposite the eyes of the wearer, and provided with glazed openings D inserted in a padded or cushioned part, *d*.

Elastic straps E F proceed from the ends of this padded portion around the head of the wearer and under the chin, serving to secure the whole device more firmly in position. The aperture *b* comes opposite the mouth of the wearer, and allows him to breathe the air from the helmet or chamber. An opening, G, into this helmet from the outside air, is provided at some convenient place, by means of which it is filled at pleasure with fresh air. A flexible pipe is attached upon occasion to the aperture G, and communicates with an air-pump operated either by the wearer of the helmet or by an assistant. In case the wearer operates the air-pump it is necessary that there should be a second pipe proceeding from the pump to the fresh air at whatever distance it may be.

By this device a person may be enabled to penetrate dense smoke or foul air and gases with impunity.

Where there is no time for arranging an air-pump for a constant supply of air, the head-dress may be inflated by means of a bellows or other contrivance, and the air contained therein, without further supply, will be sufficient to support life in passing a short distance through smoke, as in escaping from a burning building.

What I claim as new, and desire to protect by Letters Patent, is—

The smoke head-dress, composed of the helmet or flexible air-tight chamber A, the bonnet or lining B, elastic bands E F, and glazed openings D, the chamber A being provided with the openings *b* G, substantially as specified.

WILLARD N. BALL.

Witnesses:

HARRY S. SPRAGUE,
W. S. ROGERS.