

J. W. OSTBERG.
FIREMAN'S SUITS.

No. 174,286.

Patented Feb. 29, 1876.

Fig. 1.

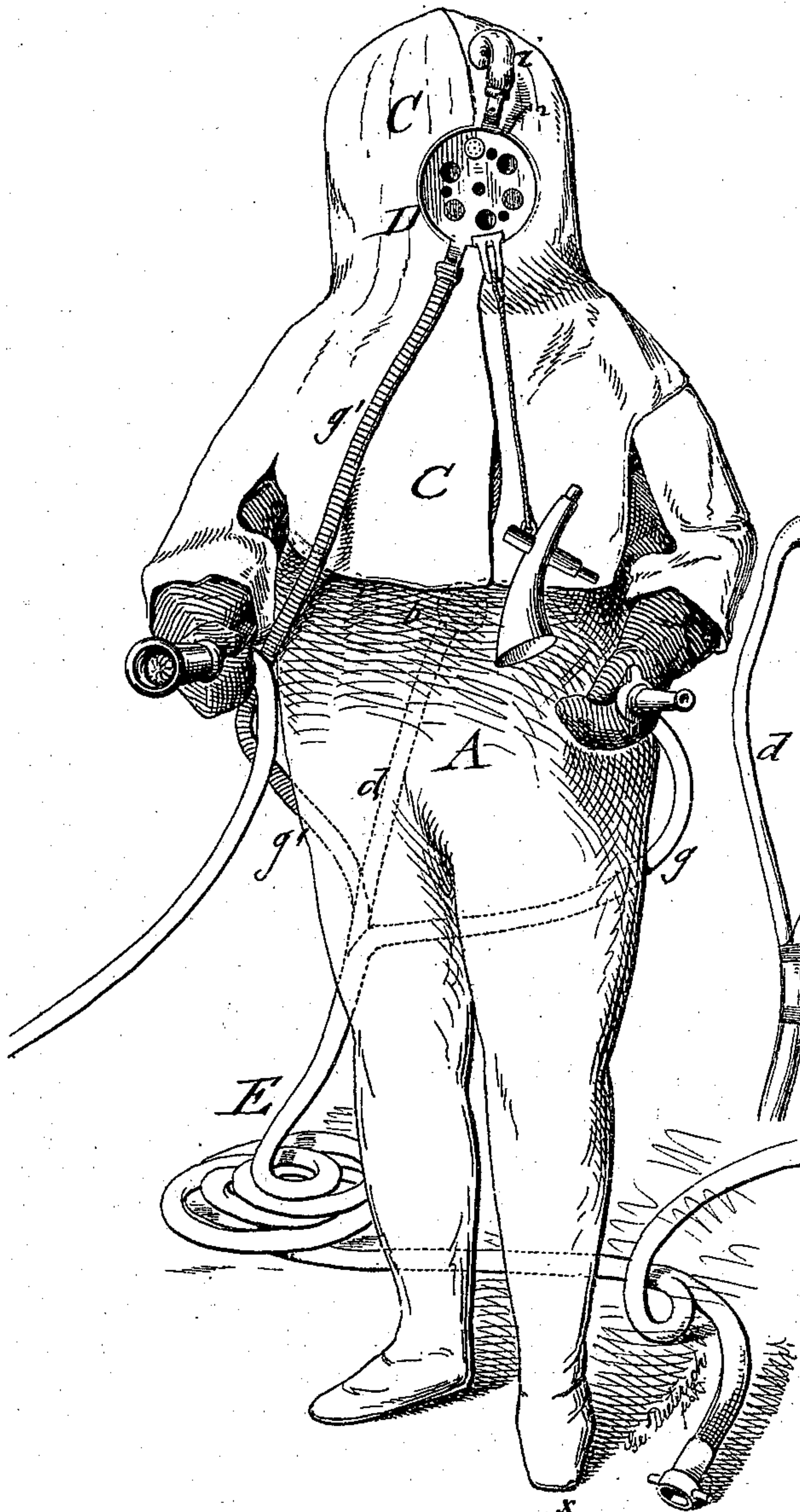


Fig. 2.

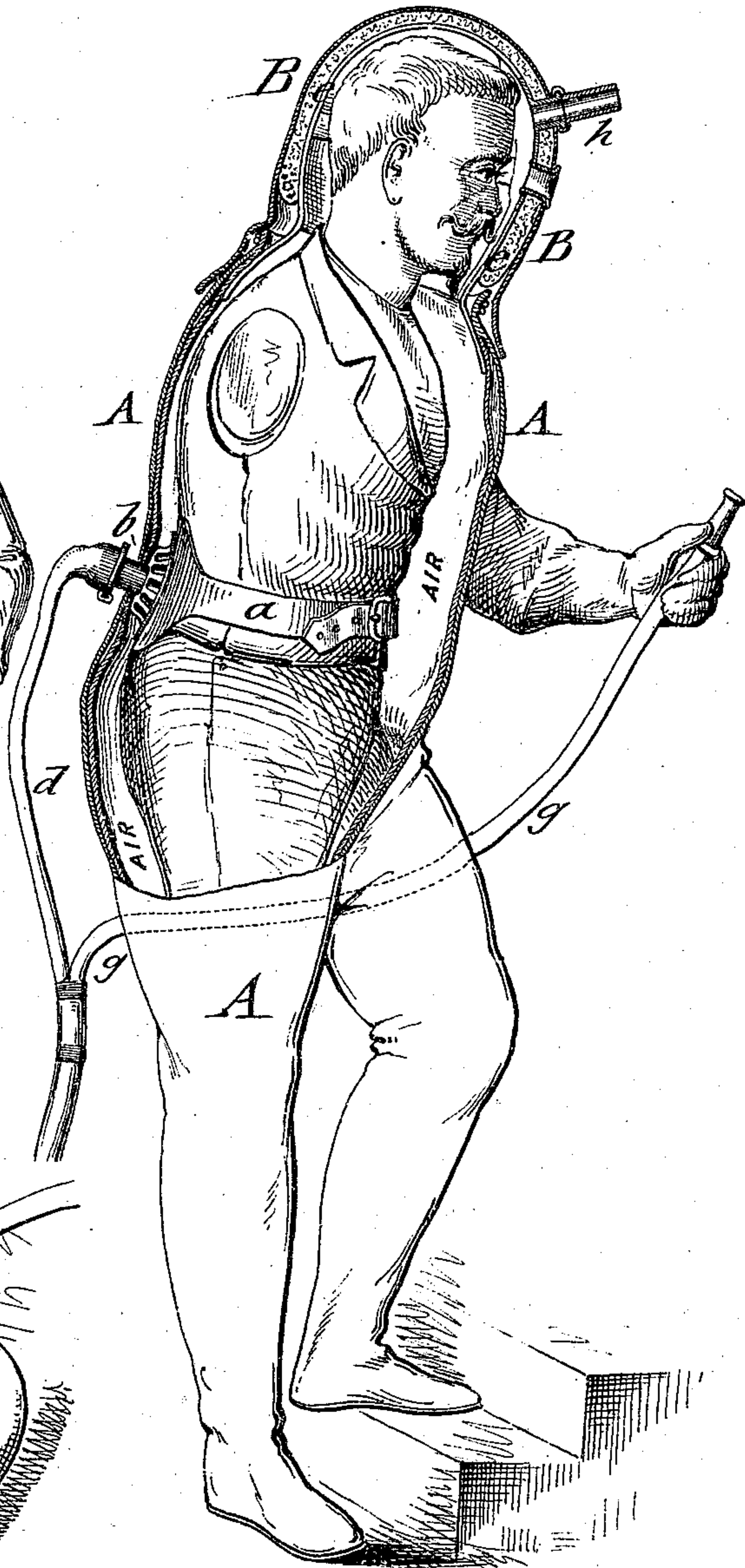


Fig. 3.

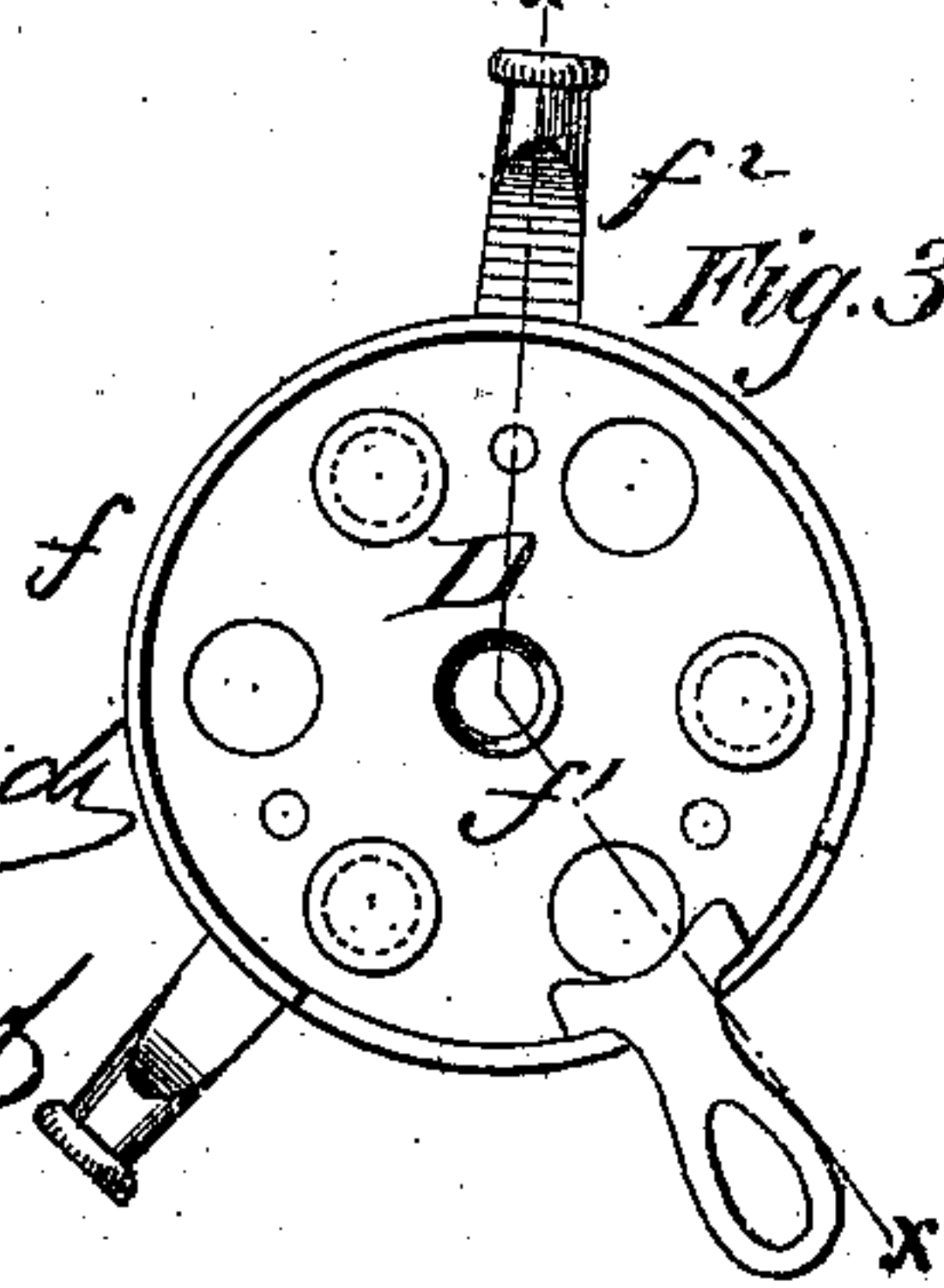
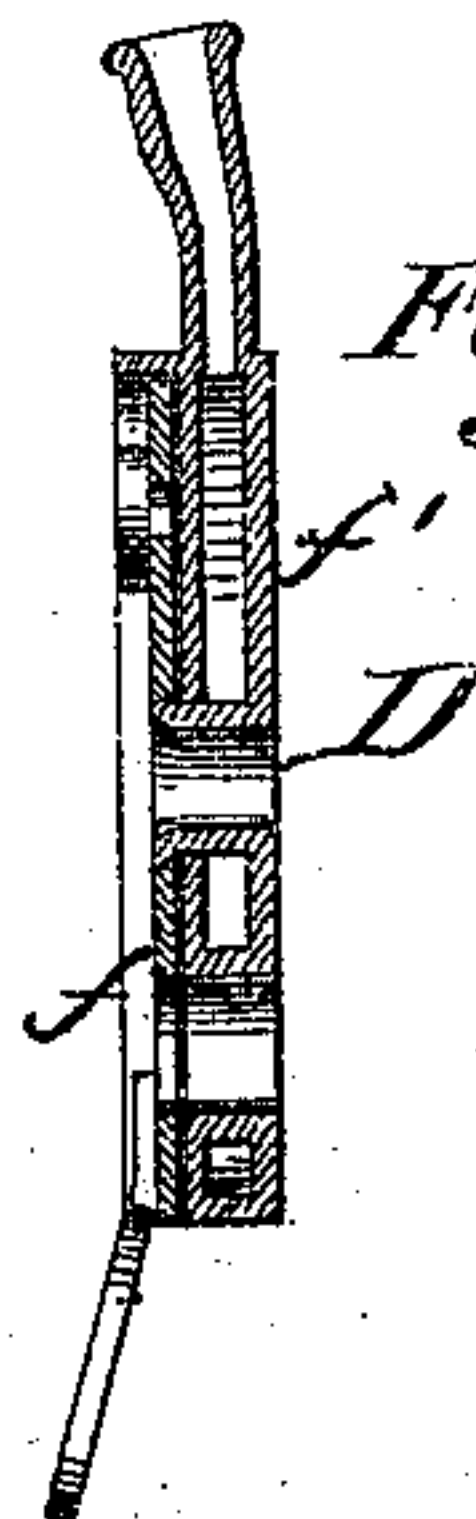


Fig. 4.



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IMPROVEMENT IN FIREMEN'S SUITS.

Specification forming part of Letters Patent No. 174,286, dated February 29, 1876; application filed December 13, 1875.

To all whom it may concern:

Be it known that I, JOHN WILHELM ÖSTBERG, of Stockholm, Sweden, have invented a new and Improved Fireman's Suit, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a perspective view of my improved fireman's suit, as applied to the body; Fig. 2, a side view of the same, partly in section, showing method of attaching it to the body, and Figs. 3 and 4 represent a front view and a vertical transverse section on line *x x*, Fig. 3, of the face-mask.

Similar letters of reference indicate corresponding parts.

The object of my invention is to protect, by a specially-constructed suit, the whole body against the influence of fire, smoke, and water, so that the fireman or other person may not only approach the fire nearer than has been heretofore the case, but may also pass through or into the same without being exposed to injury by the fire or smoke.

The fire-proof suit facilitates not only the extinguishing of fires, but enables also the wearer to enter the fire and save persons from being burned.

The invention consists of an air and water proof suit that covers the entire body, and is continually flooded with water, which is introduced by pipe-connection with the hood, covering the head-gear or helmet of the dress. The helmet is tightly applied to the body-covering dress, and the dress strapped to the body, air being supplied to the inside to keep out the smoke by an air-supply pipe and pump. The helmet is provided with a hollow valve mask, through which the water is continually flowing, passing by a connecting-tube to the hood that is fitted on the face-mask and extended over the dress to shed the water over the same.

In the drawing, A represents the body-covering dress, that is made in one connected piece, provided with sleeves and pants. B is the head gear or helmet, and C the detachable hood for shedding the water over the dress.

The body-covering dress A is made of an interior water and air tight lining, and of an exterior covering of mole-skin, velvet, or other water-proof material. The soles are made of

cork, felting, wire-cloth, or other material that serves to protect the feet against the influence of the heat. The dress A is strapped to the body above the hips by a strong belt, *a*, which carries at the back a cylindrical tube, *b*. Tube *b* passes through a hole of the dress to the outside, and serves to attach the air-supply tube *d*. Tube *b* is provided at the inside of the dress with a number of holes, through which the air, supplied by the tube *d*, issues, so as to fill gradually the interior of the dress, and form a cushion or layer of air between the body and dress.

The head-gear or helmet B corresponds to the shape of the head, and is constructed of a frame of steel springs, *e*, that are covered at at the inside with a leather lining, and at the outside with mole-skin, water-proof velvet, or similar material, the space between the inner and outer covering and the springs being stuffed with caoutchouc or any other water-proof material.

The frame of the helmet is provided at the front part with a valve-mask, D, that is made hollow, of an interior disk, *f*, and outer revolving disk, *f'*, the latter being guided along an encircling flange of the inner disk *f*. The disks have a number of perforations that register with each other, and are covered some with glass or perforated pumice-stone, some with fire-proof stoppers, the remaining ones being left open to enable the fireman to close the holes of the inner disk in any suitable manner, as required. The holes of the interior disk serve for the purposes of looking out, they being closed by the outer disk whenever it is required to protect the eyes against a too great degree of heat.

The space at the inside of the mask is continually supplied with water from a pipe, *g'*, that branches off from the main hose *g*, whose nozzle may be attached to a suitable fastening device at the left arm to be carried along, leaving the hands free until required for throwing water on the fire. Another hole at the top of the mask serves to attach, by bayonet or other attachment, a short tube, *h*, which connects, when the hood is taken off, by a flexible pipe, with a large felt cloak or cylindrical casing of fire-proof material, that may be wrapped around a person for carrying the

same out of the fire, furnishing a sufficient supply of air for breathing. This part of the device protects the person from injury through its cloak or cylindrical body, that may be provided with shoulder-straps if desired. This attachment forms, in connection with the dress, a reliable life-saving device in dangerous emergencies. The outer disk is adjusted by means of a handle, to which also a signal-horn, speaking-tube, or lantern may be applied, as shown in Fig. 1.

A tube, f^2 , at the upper part of the mask D, connects with a short pipe, i , of hood C, which is of double or three-ply sail-cloth, or other strong material, stepped together, and constructed to fit tightly around the mask and cover the helmet, shoulders, and arms. The water passes through the cavity of the mask, and is shed through pipe i over the helmet and the remaining part of the dress, dripping continually over the same, and keeping it thus in perfectly wet condition, capable of resisting the action of the fire.

In the lower part of the helmet is a spring-ring, below which the springs c extend in downward direction to form with the neck-ring rests or supports for the upper part of dress A, which is applied by means of gussets of air-tight material with hooks and eyes and fastening-strings or lacings tightly to the helmet.

The perfectly reliable and tight joint of helmet and dress forms one of main points for the successful working of the suit.

The air and water are supplied to the dress and hood by means of a hose, E, with double pipes, an inner air-pipe, d , and outer surrounding water-pipe. This has the advantage that the air is supplied to the body at nearly the same temperature as the water, so that the body is not disagreeably affected by the cold water running continually over the dress. The hose divides near the dress, and also at the other end, where the water-pipe forms connection with the hose of the engine, and the air-pipe with an air-pump that is worked continually to supply the air to the interior of the dress, at a pressure sufficient to prevent the smoke from entering through the eye-holes of the mask. The water-pipe branches near the dress again into two pipes, of which one supplies the mask and hood with water, while the other by its nozzle is directed against the fire, as described. A second larger hose and nozzle may be brought to bear with the right hand on the fire when a position near enough to it has been secured for applying it with the desired effect.

The dress-helmet and hood are carefully put on by the firemen that have to approach the fire with the hose to direct the streams of water in most effective manner thereon for extinguishing the same. They may go near the fire without the least danger, and reconnoitre the seat of the same, applying then the water directly to the points where it may be extinguished in the quickest manner.

This feature forms, in connection with the convenient manner of saving persons out of burning buildings, a protecting fire-proof dress of great value to firemen and others employed in extinguishing fires.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A fireman's suit composed of an air and water proof body-covering dress and tightly-jointed head-gear and helmet, and a water-shedding hood fitted and connected thereto, substantially in the manner and for the purpose set forth.

2. The body-covering dress provided with an interior belt, to be strapped to the body, substantially as set forth.

3. The combination, with the water-proof dress and helmet, of an air-supply pipe, attached to the belt of the dress to fill up the space between body and dress and keep out smoke, substantially as described.

4. The combination of helmet having neck-ring and downward-extending supporting-springs, with the gussets and fastening devices at the upper part of the dress to secure tight joint of dress and helmet, as set forth.

5. The helmet provided with a hollow valve-mask made of a fixed and movable disk with holes arranged substantially in the manner and for the purpose set forth.

6. The combination of the hollow valve-mask with a water-supply pipe and with the hood, having pipe connecting with mask for the purpose of keeping mask cool and providing a continual shedding of water over suit, substantially as described.

7. The helmet, provided with top aperture and tube for connecting by a flexible pipe with a protecting-cloak or cylindrical casing, serving as a life-saving device, substantially as specified.

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Witnesses:

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