

I. P. Nelson,

Respirator.

Patented Mar. 17, 1857.

Fig. 1.

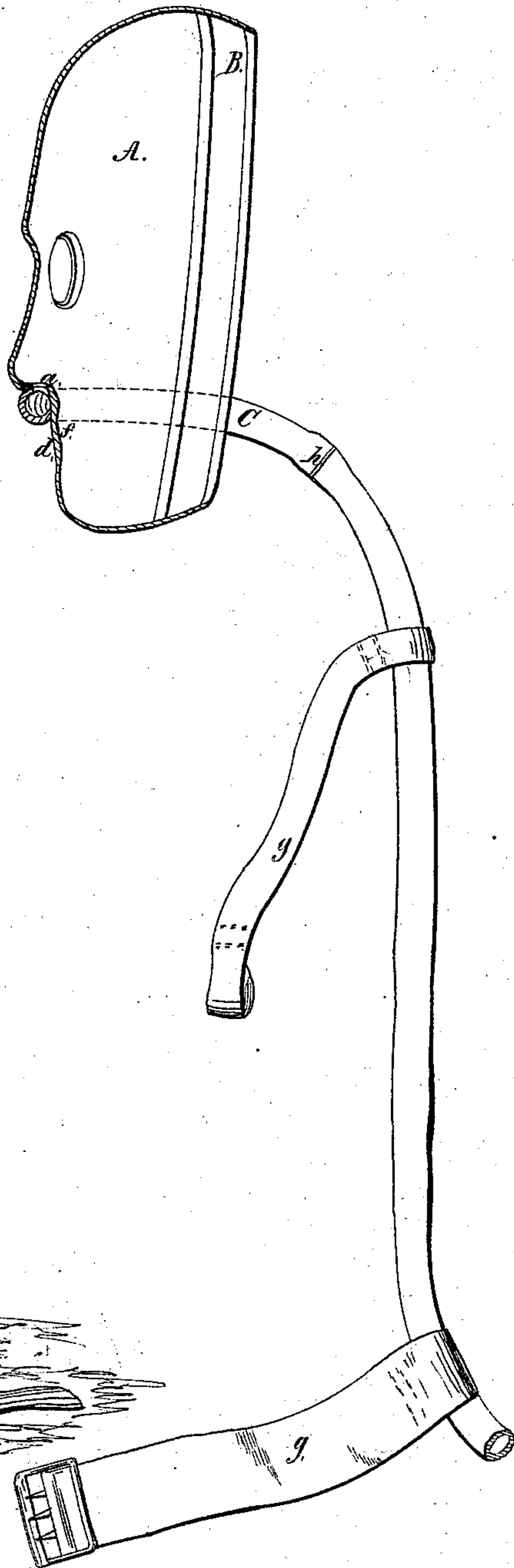
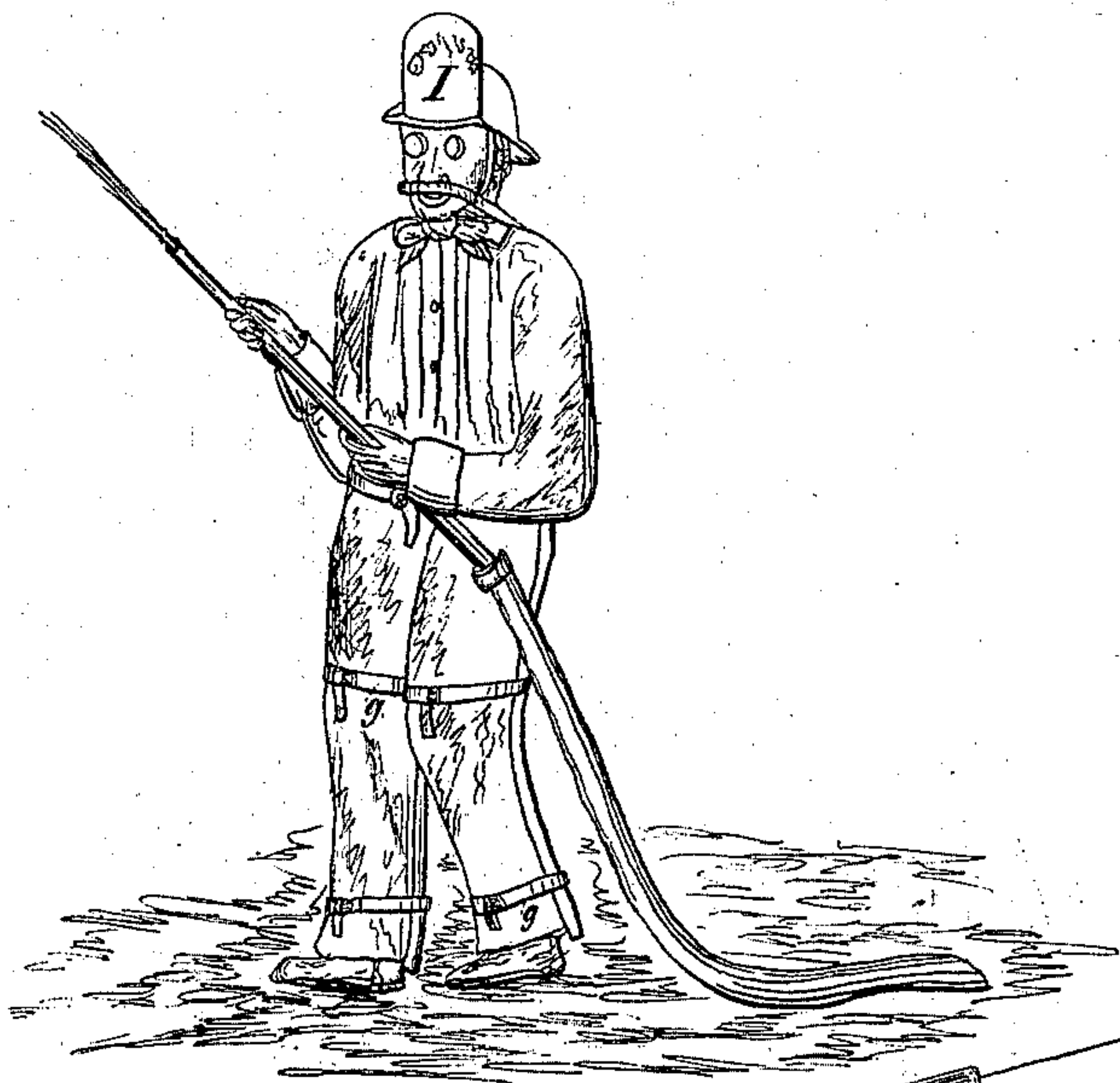


Fig. 2.



UNITED STATES PATENT OFFICE.

ISRAEL P. NELSON, OF CAMBRIDGE, MASSACHUSETTS, ASSIGNOR TO ISRAEL P. NELSON
AND GEO. N. DAVIS.

FIREMAN'S MASK AND RESPIRATOR.

Specification of Letters Patent No. 16,863, dated March 17, 1857.

To all whom it may concern:

Be it known that I, ISRAEL P. NELSON, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented a new
5 and Improved Fireman's Mask and Respirator, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

10 Figure 1 is a section through the mask, Fig. 2 representing the manner in which it is applied to the person.

The attempts which have been made to protect firemen from the injurious effects of
15 smoke and heated air upon the lungs, by causing the air which they breathe to pass through moist sponge for the purpose of filtering and cooling it, have been but partially successful.

20 My present improvement has for its object the accomplishment of the same end and is based upon the fact that in apartments filled with smoke to an extent that would render it impossible to breathe at the height
25 of a man's head above the floor, there is nearly in every instance a draft of cool pure air immediately upon the floor, and a few inches above it. To take advantage of this circumstance, I have adapted a tight fitting
30 mask to the face of the person, from which depend the air tubes through which he breathes, the extremities of the tubes reaching to within an inch or two of the floor as will now be more fully explained.

35 In Fig. 1, A is a section through the mask which conforms generally to the face of the individual, and is made of a sheet of prepared india rubber; at B, the mask is contracted by an elastic band of the same, by
40 means of which it is caused to cling to the head, and all entrance of air or smoke at this point is prevented. The tubes C, are united to the mask immediately beneath the nose, and at this point there is an opening *a*,
45 between the tubes, and the interior of the

mask, through which air is admitted for respiration. Immediately in front of the mouth there is an opening *f*, which is covered upon the outside by the flexible valve *d*. This opening is placed directly in front of
50 the mouth so that expiration may readily take place through it, while no air can be admitted at this point from the outside, as the valve *d*, is of flexible india rubber and effectually closes the opening when the air is
55 exhausted upon the inside of the mask. The tubes C, reach to very near the floor, and are passed over the shoulders and secured to the body and legs by straps *g*, as seen in Fig. 2. It will be seen that a person thus
60 equipped, on entering an apartment filled with smoke, may inspire through the tubes C, taking the air from the lowest stratum in the room, and expire through the opening
65 at the mouth. By removing the lower portion of the tubes at the joint *h*, the mask may be used to protect the face from severe wind and cold, and will be of great service to pilots, stage-drivers and others whose occupations require them to be exposed to
70 great degrees of cold, and to the beatings of storms in the face which often materially interfere with their capability of performing their duties. Heretofore I have spoken of india rubber as the material of which to
75 manufacture the mask and tubes, as this I have found to answer the purpose. It is evident however that any other suitable material such as oiled silk, leather, &c., may be used for the purpose without altering the
80 principle of my invention.

What I claim as my invention and desire to secure by Letters Patent, is—

The within described mask with its tubes C, and valve *d*, operating in the manner substantially as herein set forth.

ISRAEL P. NELSON.

Witnesses:

THOS. R. ROACH,

P. E. TESCHEMACHER.