(No Model.) 2 Sheets—Sheet 1.

E. H. HILCHEN.

INHALER MASK.

No. 407,527. Patented July 23, 1889.

Fig. 1.

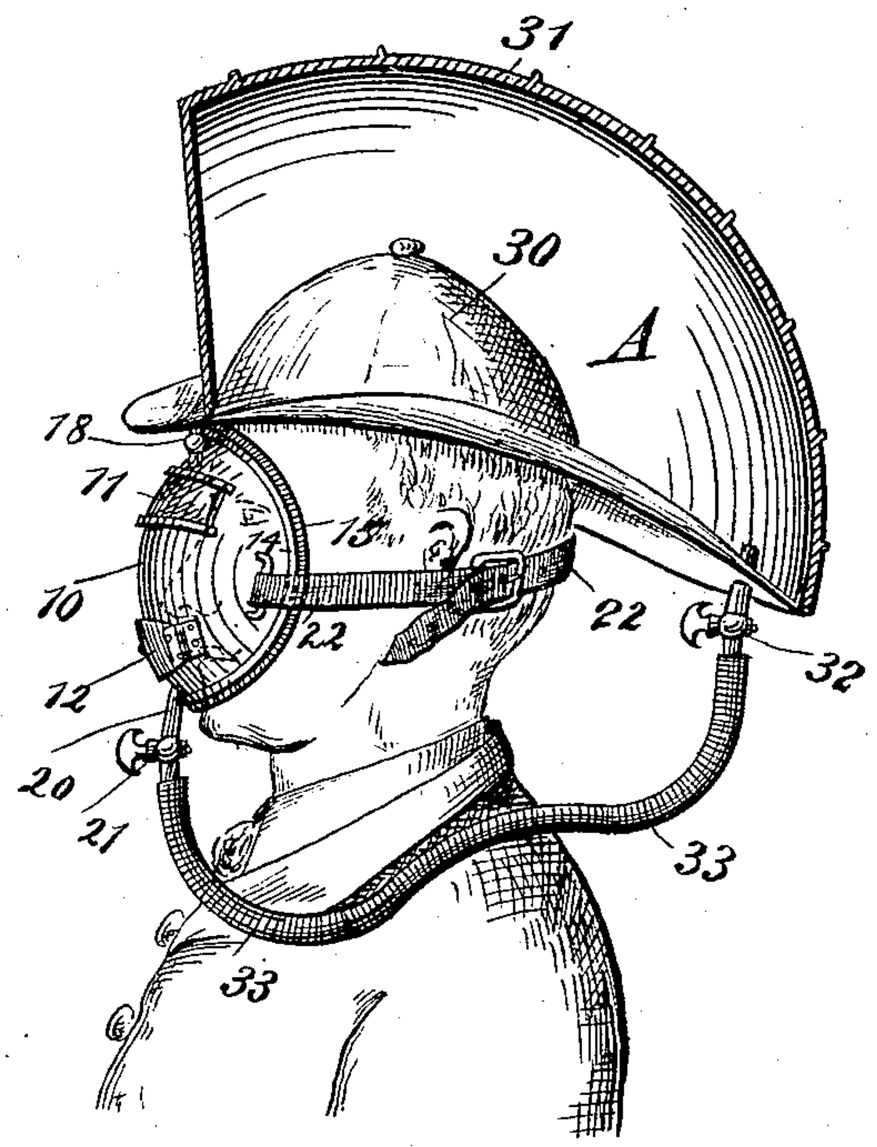
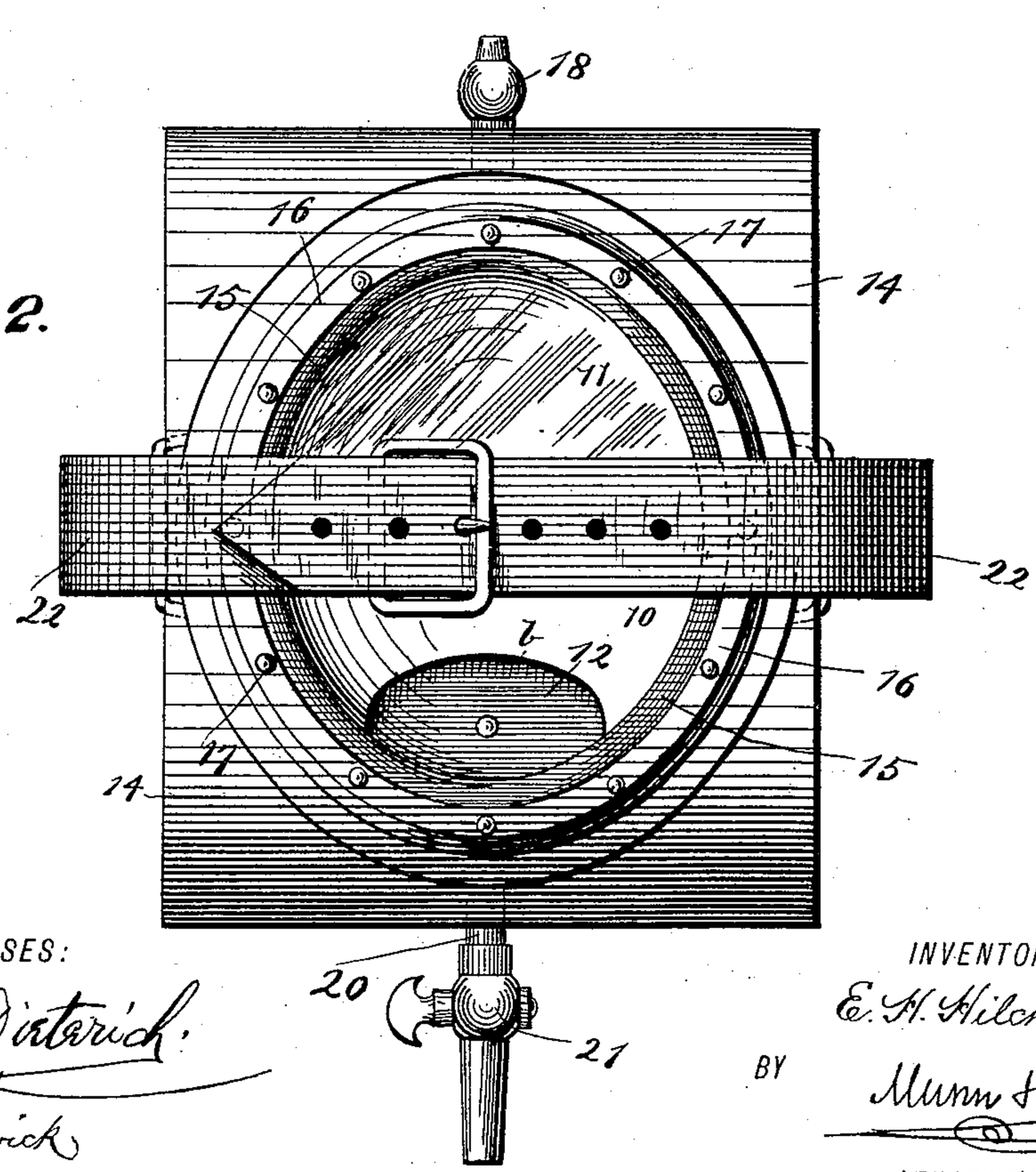


Fig. 2.



WITNESSES:

Phil. C. Dieterich.

C. Sedgwick

INVENTOR

E. H. Hilchen

BY Munn & Co.

ATTORNEY

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

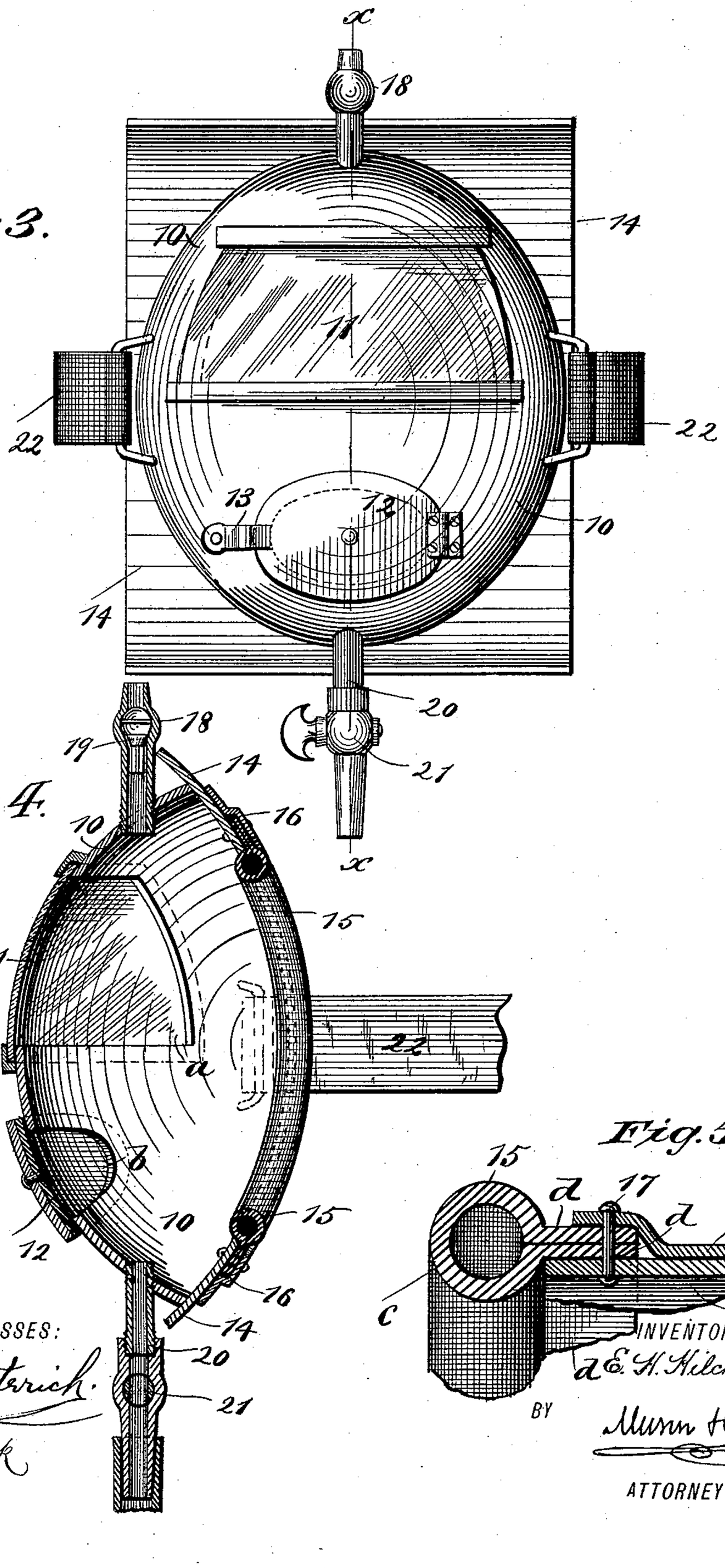

Fig. 4.

Fig. 5.

WITNESSES:

Phil. C. Dieterich.

A. Sedgwick

INVENTOR

E. H. Hilchen

BY Munn & Co.

ATTORNEY

UNITED STATES PATENT OFFICE.

ERNEST H. HILCHEN, OF JERSEY CITY, NEW JERSEY.

INHALER-MASK.

SPECIFICATION forming part of Letters Patent No. 407,527, dated July 23, 1889.

Application filed January 31, 1889. Serial No. 298,184. (No model.)

To all whom it may concern:

Be it known that I, ERNEST H. HILCHEN, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and Improved Mask, of which the following is a full, clear, and exact description.

The object of this invention is to provide a mask by means of which those having occasion to deal with manufacturing interests in which noxious vapors are generated may enter apartments, tanks, &c., filled with such noxious vapors, or by means of which firemen may enter dense volumes of smoke without injury.

To the end named the invention consists of certain novel constructions, arrangements, and combinations of elements to be hereinafter described, and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side view of a person wearing my improved mask, the air-reservoir being shown in section. Fig. 2 is a view of the rear side of the mask. Fig. 3 is a face view of the mask. Fig. 4 is a central sectional elevation, and Fig. 5 is a sectional detail view illustrating the construction of the rubber cushion.

In constructing the mask forming the subject-matter of this application I provide a face-plate 10, preferably formed with a concave inner face and apertured at *a* and *b*, the aperture *a* being covered and protected by a sheet of mica or glass 11, while the aperture *b* is closed by means of a trap 12, that is hinged to the plate 10 and held in closed position by any suitable catch 13. It will of course be understood that the transparent panel 11 and the trap 12 are packed so as to be air-tight. To the rear edge of the plate 10, I secure a curved plate 14, formed with an oval or other shaped aperture, about which there is secured a yielding cushion 15, said cushion being preferably made of a rubber strip of the form in cross-section shown best in Fig. 5—that is, a strip having a tubular body *c* and flanges *d*, which said flanges are placed against the face of the plate 14 and held thereto by a retaining-strip 16 by means of rivets 17.

In any proper position—as, for instance, near the top of the plate 10—I arrange a valve-case 18, in which there is mounted a valve 19. In the drawings I have shown a puppet-valve; but it will of course be understood that a flap or any other form of check-valve could be employed instead of the puppet-valve.

Air is admitted to the interior of the mask through a tube 20, the supply being regulated by a stop-cock 21.

In order that the mask may be held to place, I provide a strap 22, which is connected to the mask proper in any convenient way and provided with a buckle, as shown in the drawings.

In applying the mask it is adjusted so that the eyes, nose, and mouth of the wearer will be protected, the mask being held from displacement by the strap 22, which is passed behind the head of the wearer, as shown in Fig. 1. It will be seen that the ears are left free, so that oral messages may be received by the wearer.

In connection with the mask I employ a reservoir adapted to contain compressed air. This reservoir may be of any form; but in practice I prefer that it should be made as illustrated in Fig. 1, wherein it is represented as being constructed so that it may be worn as a hat, 30 being a dome-like indentation adapted to fit upon the head of the wearer, the reservoir proper being formed by an outer wall 31, that is arranged as shown, the wall 31 being evenly ribbed.

In order that communication between the interior of the mask and the chamber A may be established, I provide a stop-cock 32, to which there is connected a flexible hose 33, that leads to the stop-cock 21 of the mask.

From the construction above described it will be seen that if the mask be applied as represented in Fig. 1 the wearer can enter any apartment, tank, or other place where noxious vapors predominate, drawing the necessary supply of pure air from the compartment A, which in practice would be charged with compressed air.

In case the wearer desires to communicate

with others, he can open the trap 12 for an instant.

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

1. In a mask, the combination, with an outer plate provided with a transparent panel, of a rear plate apertured to receive the face of the wearer, a yielding cushion 15, mounted about the aperture and consisting of a strip having a tubular body *c* and flanges *d*, and connections between the flanges and the apertured plate, substantially as described.

2. In a mask, the combination, with an outer plate provided with a transparent panel, of a rear plate apertured to receive the face of the wearer and a yielding cushion arranged about the edge of the said aperture, substantially as described.

3. In a mask, the combination, with a plate provided with a transparent panel, of an apertured plate, a yielding cushion arranged in connection with said apertured plate, a tube 20, and a check-valve, substantially as described.

4. In a mask, the combination, with a plate provided with a transparent panel and a trap, of an apertured plate, a yielding cushion arranged in connection with said plate, an induction-tube, and a check-valve, substantially as described.

5. The combination, with a mask adapted to fit against the face of the wearer, of an air-reservoir arranged to be worn upon the head of the wearer and connections between the mask and the reservoir, substantially as described.

ERNEST H. HILCHEN.

Witnesses:
EDWARD KENT, Jr.,
W. S. WALKER.