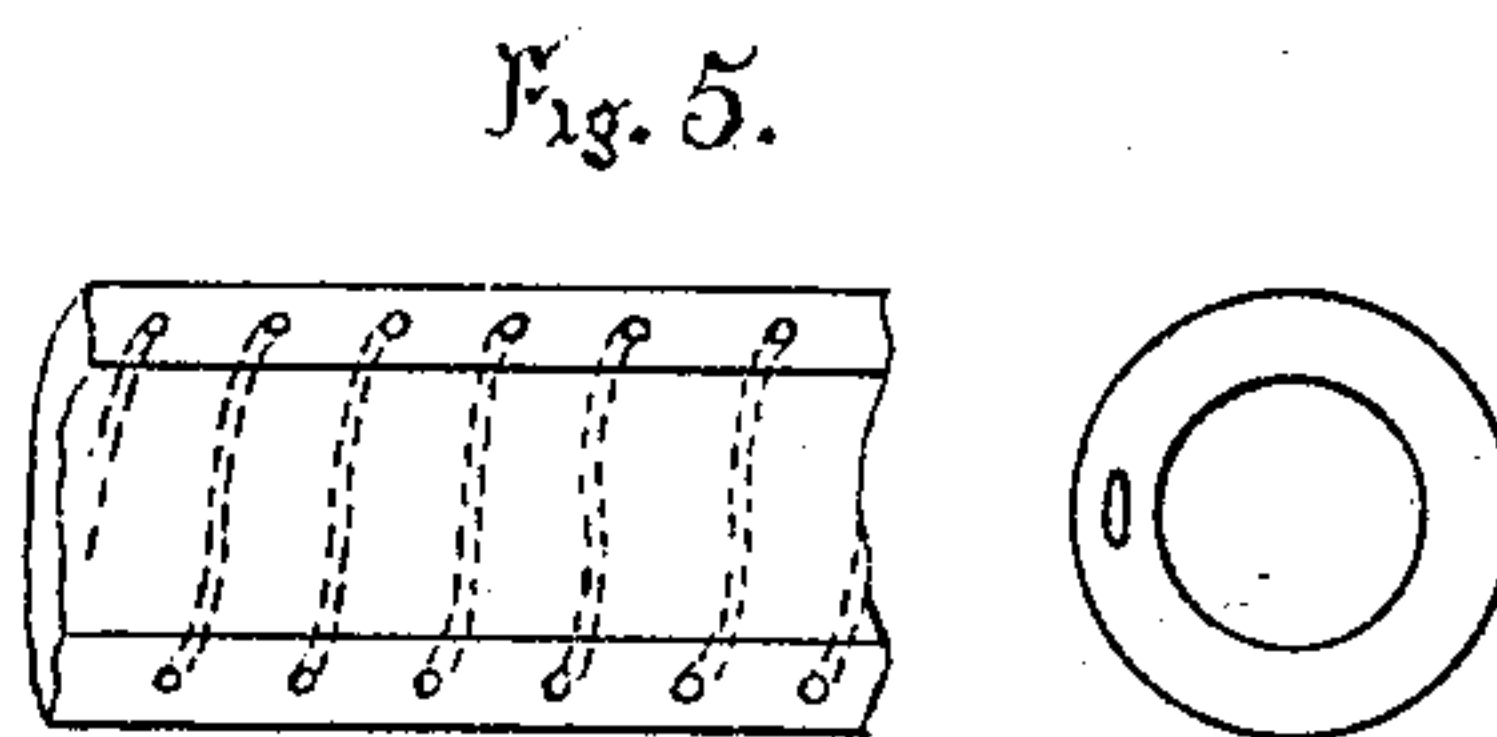
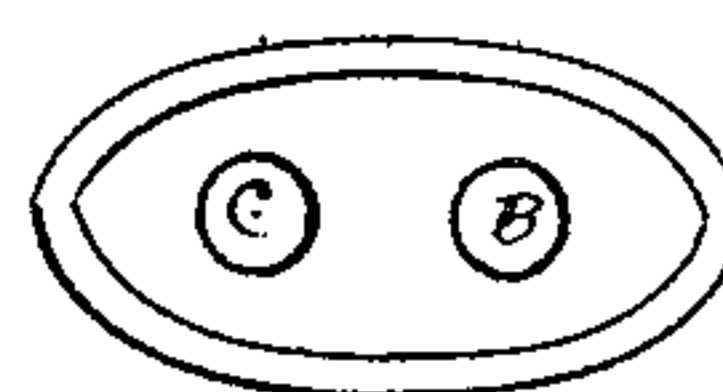
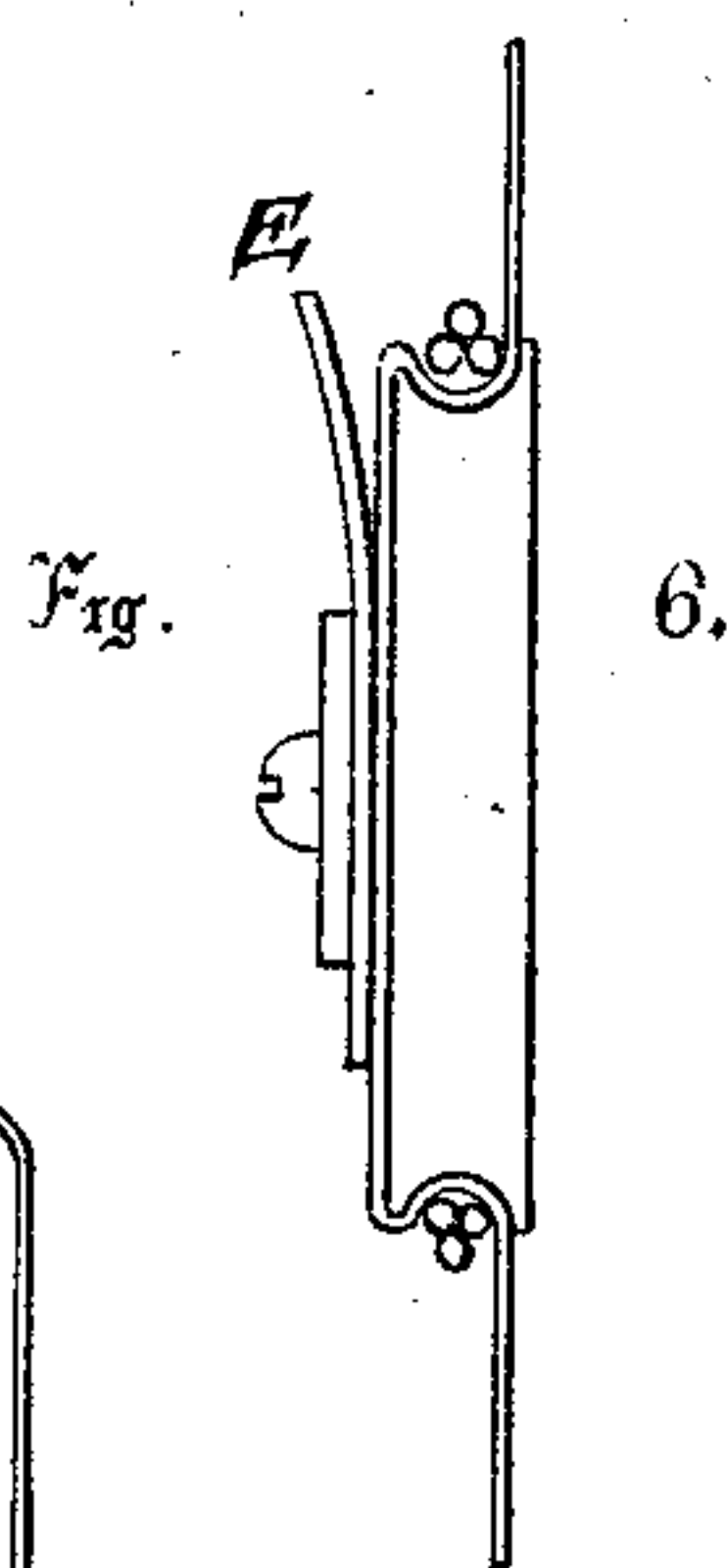
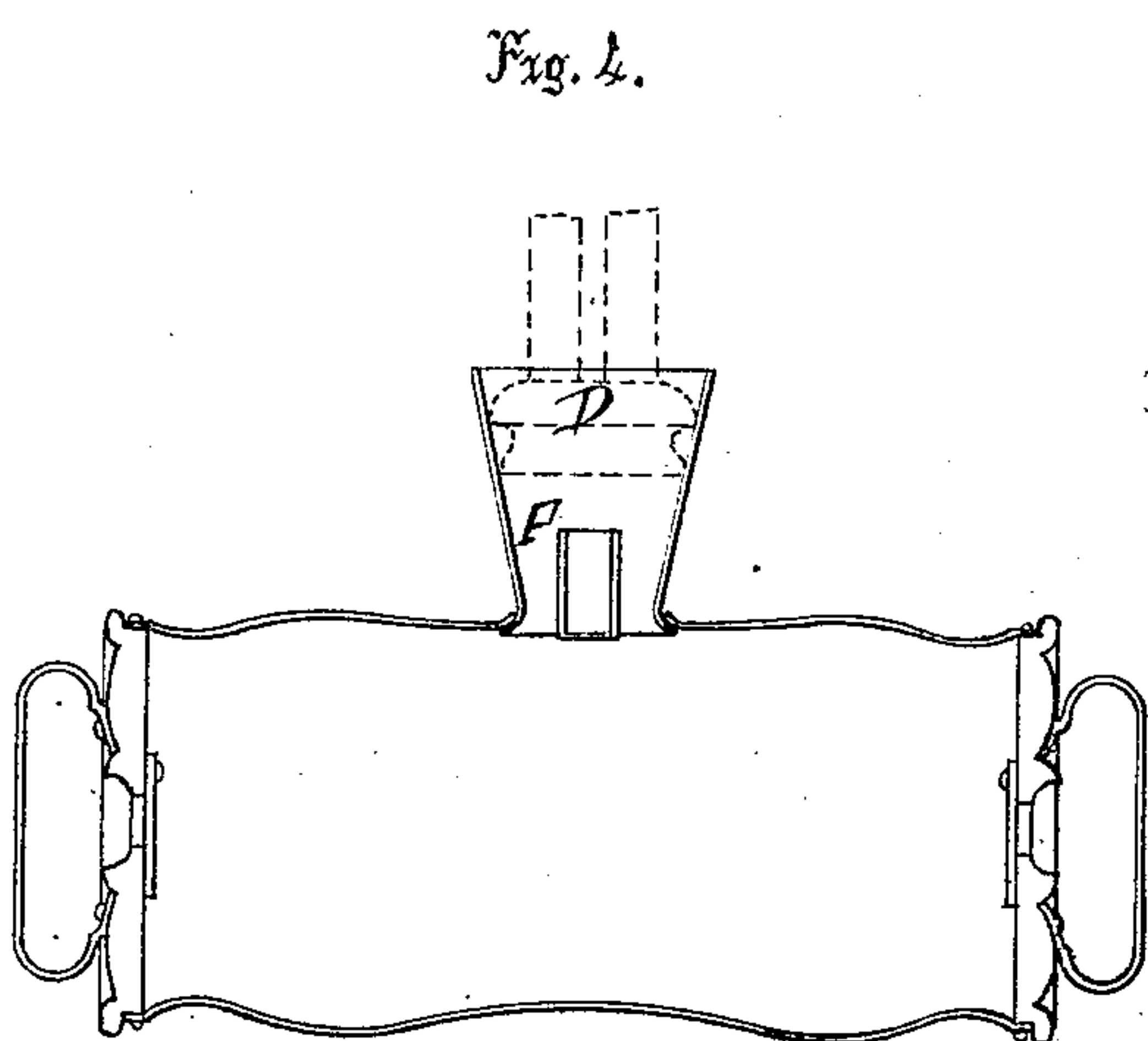
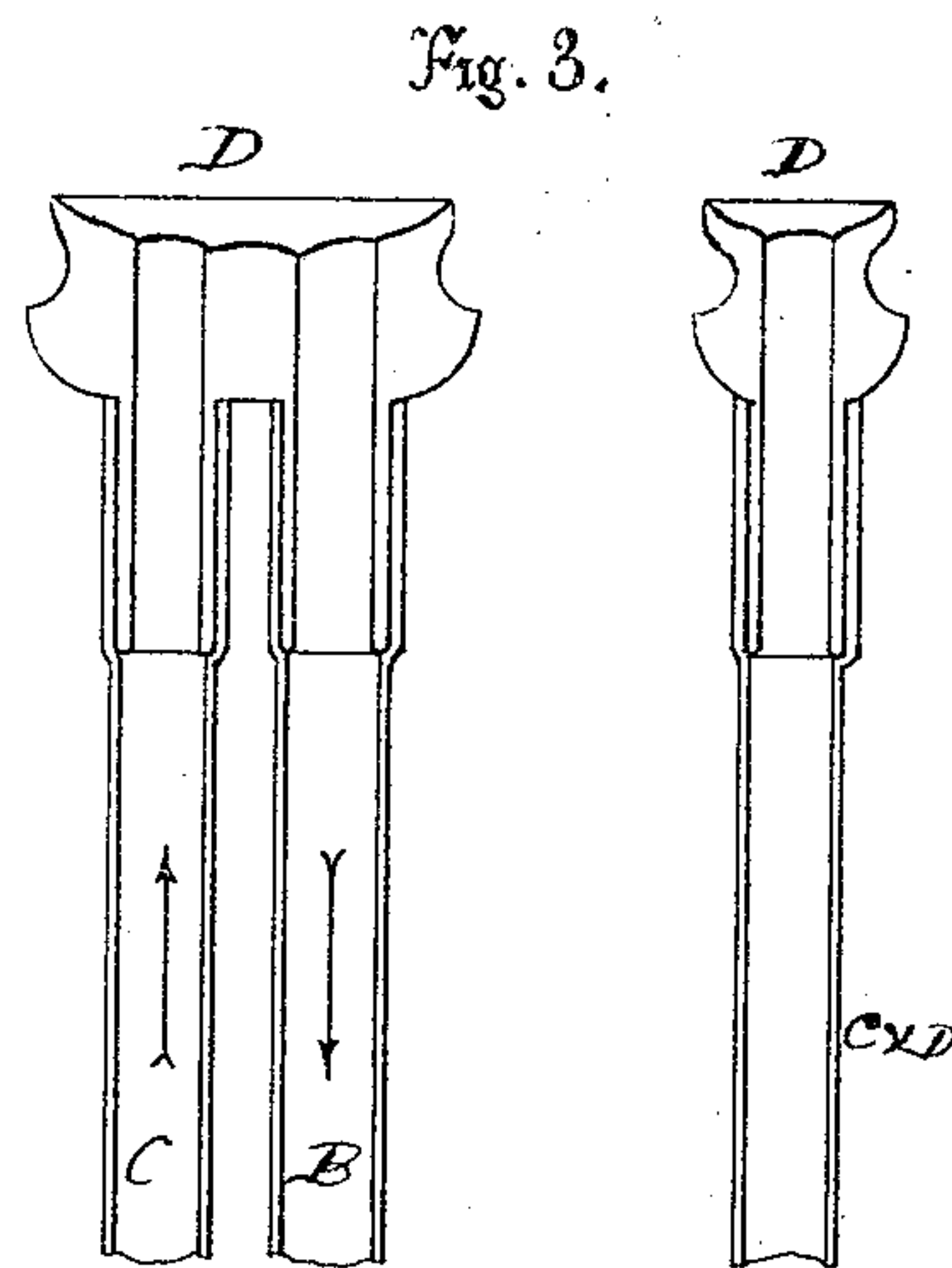
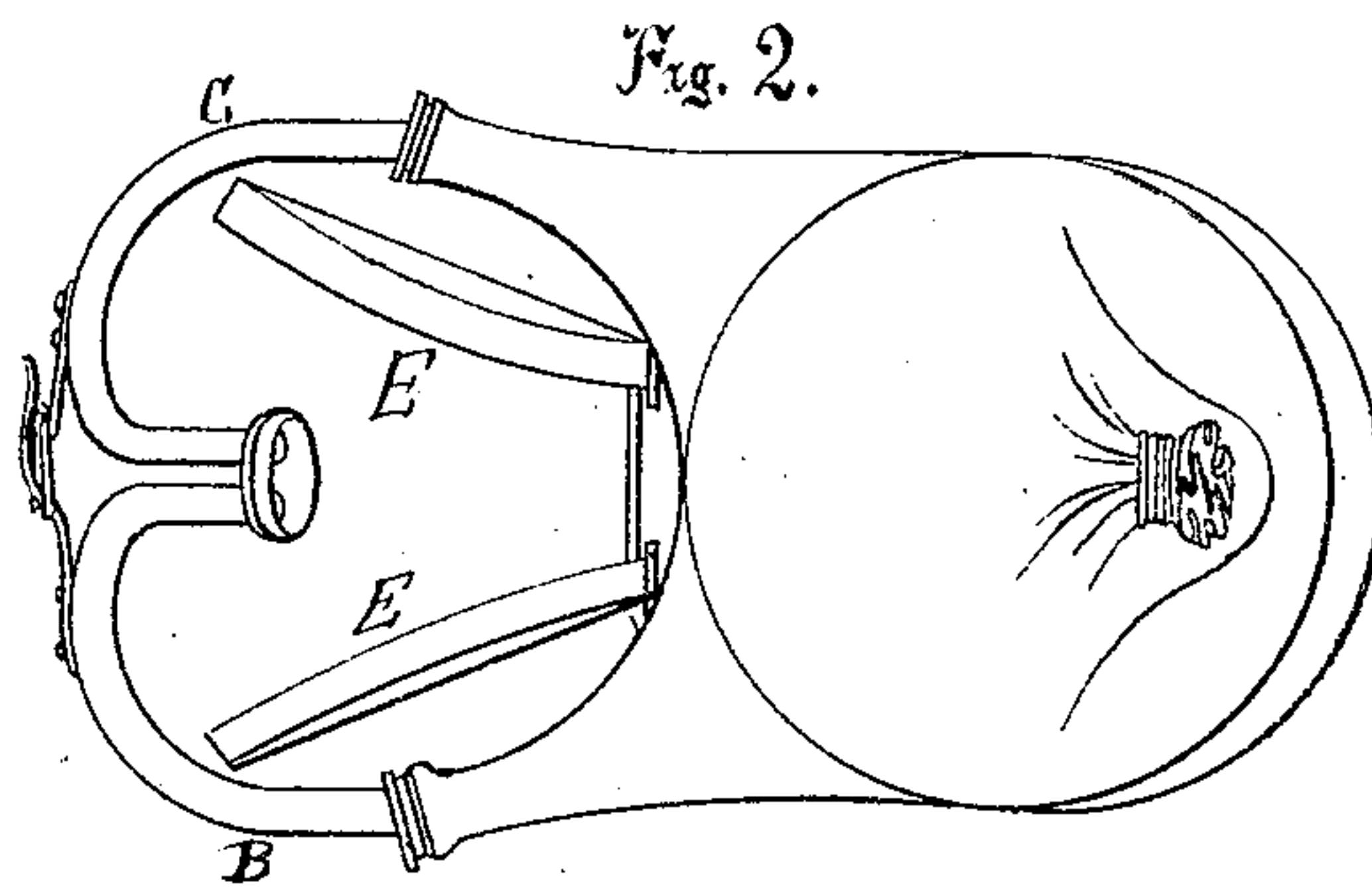
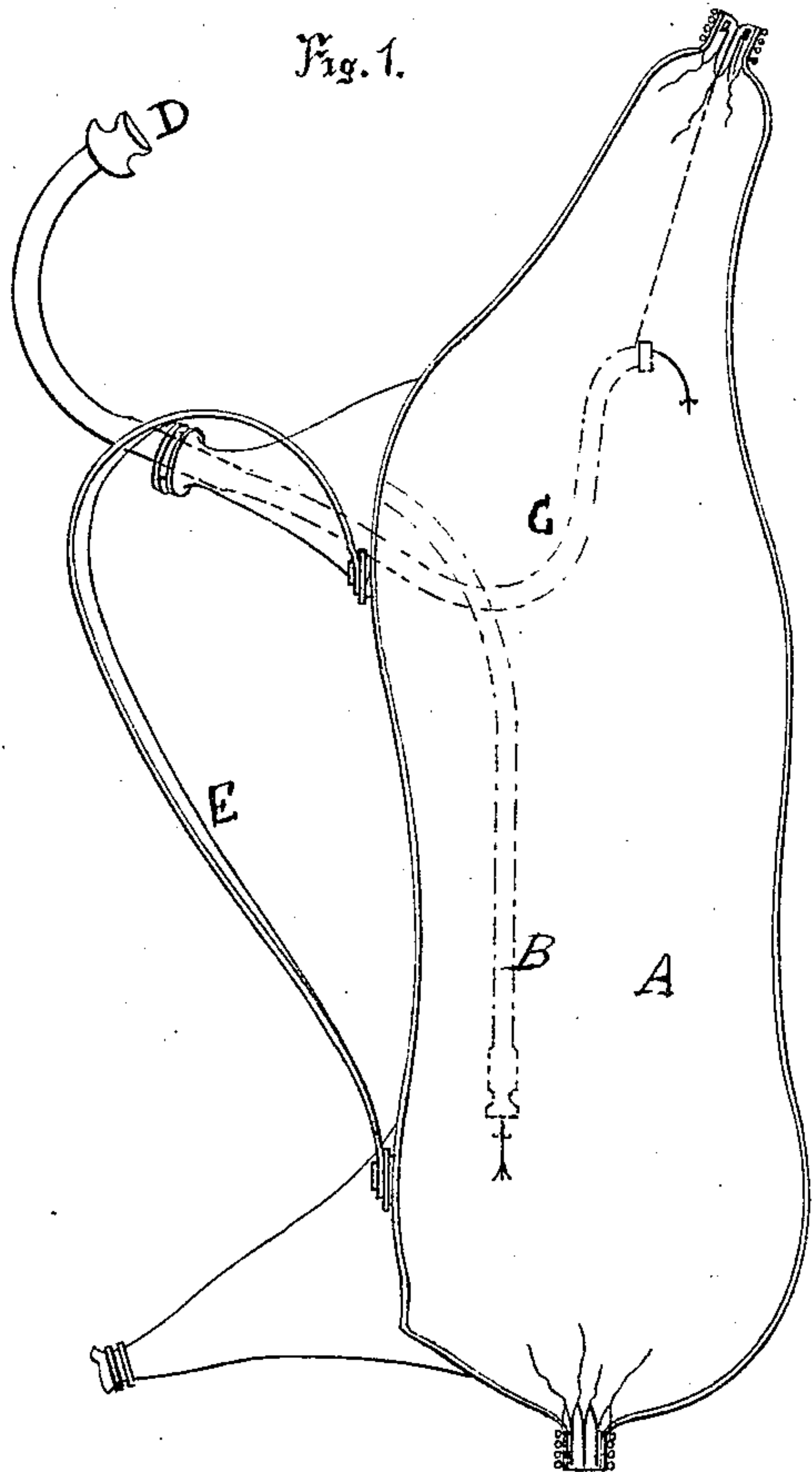


A. GALIBERT.
Respiring Apparatus.

No. 153,194.

Patented July 21, 1874.



Witnesses
A. Moore
H. S. Miller.

Inventor
A. Galibert
by O. Colne
att'y

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Fig 7.



Witnesses

*A. Moore
H. S. Miller*

Inventor

*A. Galibert
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UNITED STATES PATENT OFFICE.

ALBERT GALIBERT, OF PARIS, FRANCE.

IMPROVEMENT IN RESPIRING APPARATUS.

Specification forming part of Letters Patent No. **153,194**, dated July 21, 1874; application filed February 27, 1874.

To all whom it may concern:

Be it known that I, A. GALIBERT, of Paris, France, have invented certain Improvements in Respiratory Apparatus, of which the following is a specification:

My invention relates to an air-reservoir made of a skin, india-rubber, or any other air-tight material, in which india-rubber or other pipes are suitably arranged for inspiring and expiring air from and into said reservoir.

The apparatus is used to furnish pure air for breathing in all localities where vitiated air, impure gases, smoke, &c., render the atmosphere unfit to sustain life, such as mines, buildings on fire, deep wells, chemical apparatus, diving, &c.

Sheet No. 1 of drawing shows the apparatus in use.

In Figure 1, Sheet 2, A represents an air-tight bag, made of a skin or any other air-tight cloth or material. B and C are two india-rubber or other flexible pipes, penetrating to the inside of the air-bag—one fastened near the top, and the other dropping to a point near the bottom. These pipes, after passing to the outside a certain distance, are fastened to the mouth-piece D. D is a mouth-piece, so shaped as to fit inside of the mouth, so as to be held by the help of the teeth and lips. E are two straps fastened to the air-bag, and by which it is carried by the bearer.

Fig. 2 shows a top view of Fig. 1.

Fig. 3 is an enlarged view of the mouth-piece D, pierced with two holes, and extended into two tubes, around which are fastened the inspiring and expiring tubes B and C. This mouth-piece has no valves.

Fig. 4 represents a bellows for inflating the air-bag, with the mouth-piece D inserted into opening F.

Fig. 6 shows how the straps E are fastened to the air-bag. A pulley grooved on the periphery is inserted into an opening made in the air-bag, and the edges of the cloth are brought

over the groove, and fastened by wires or strings, &c.

To use the apparatus I proceed as follows: The air-bag is inflated with the bellows. When full, the tubes B and C are stopped by pressure with the fingers, or by twisting them so as to arrest the escape of air from the bag. The bag is now strapped to the back, the nose stopped with spring-pinchers or otherwise, the mouth-piece is inserted between the lips, and the pipes relieved from pressure.

The apparatus is now ready for breathing. This is accomplished by inspiring air from the pipe C, while with the tongue the opening in B is stopped. The tongue is now shifted over the opening in C, and by so doing the pipe B is left open to expire the air contained in the lungs.

This process of inspiring and expiring air is continued until the air contained in the reservoir is so vitiated by expiration as to become unfit to be breathed any longer.

It will be seen that the air for inspiration is taken from the top of the air-bag, where it is kept purer, and the expired air is expelled at the bottom, where it remains, owing to its change of density, after being breathed.

The air-bag is generally made of a sufficient capacity to furnish pure air for half an hour. If the apparatus is to be used in a smoky atmosphere, or in gases injurious to the eyes, a pair of goggles or spectacles having leather or elastic pieces fitting closely to the face may be used.

What I claim as my invention is—

The construction and arrangement of the mouth-piece D, the air-tubes B and C, one having its end suspended near the inner upper end of the air-bag, and the other pendent and reaching near the bottom, all substantially as herein described.

Witnesses: ALBERT GALIBERT.

BURNIER,
DUPERRAY.