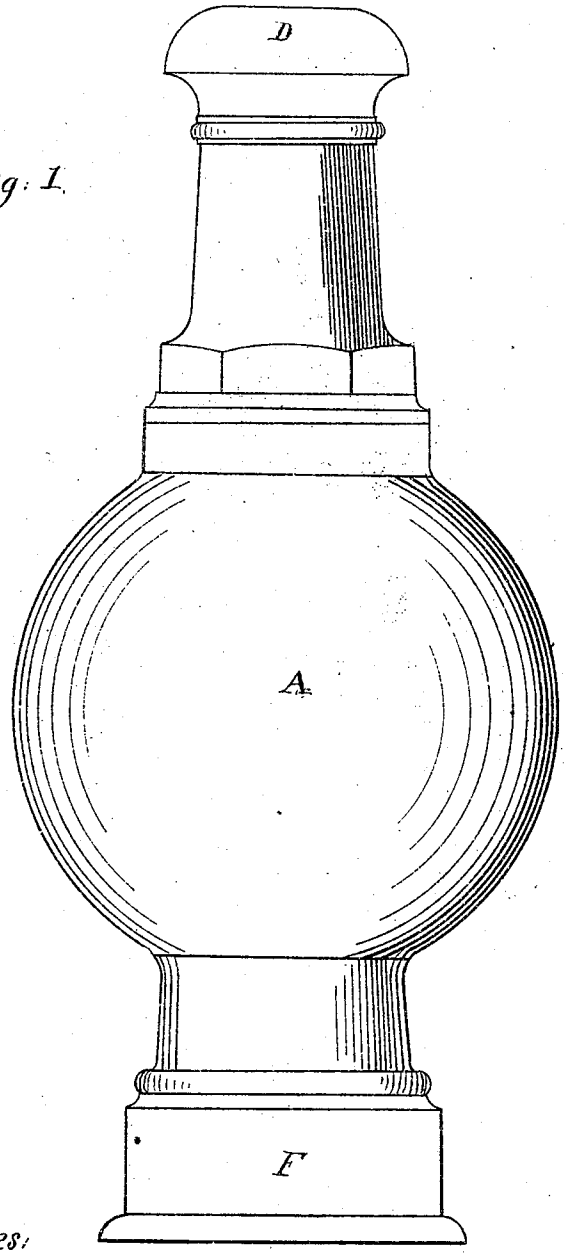
J. J. Hofer.

Nozzle for Fire-Engine &c.

No. 71756 Patented Dec. 3, 1867

Fig. 1.



Witnesses:

J. R. Beckwith

G. Crud.

Inventor.

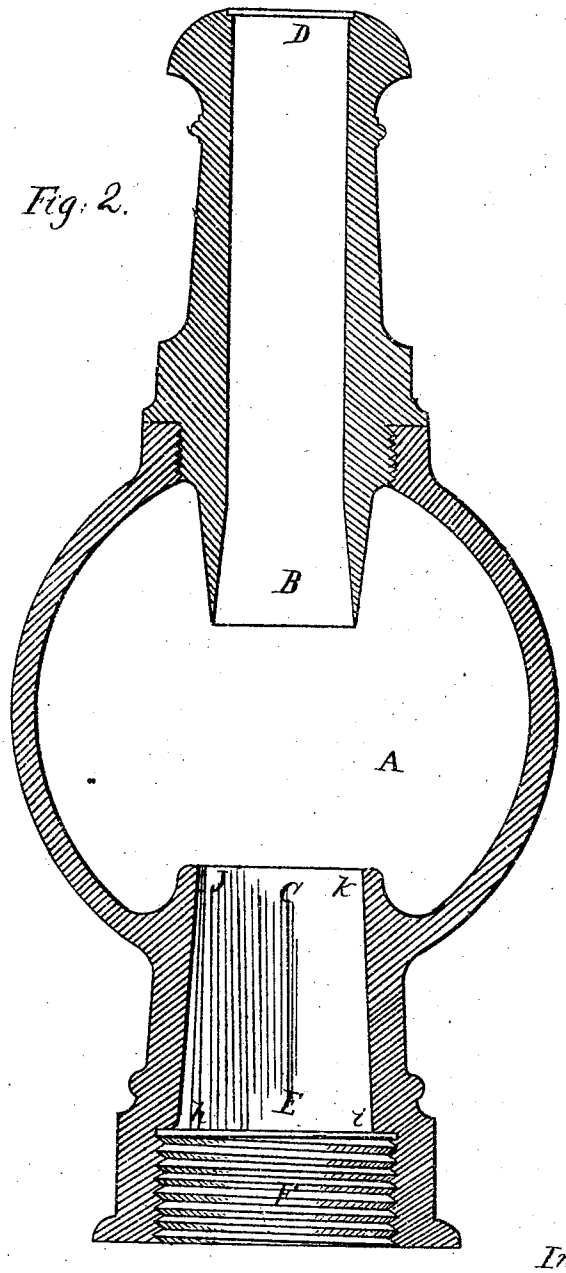
John J. Hofer.

J. J. Hofer.

Nozzle for Fire-Engine &c.

No. 71756 Patented Dec. 3, 1867

Fig. 2.



Witnesses:

J. R. Beckwith

G. Edmunds

Inventor:

John. J. Hofer.

United States Patent Office.

JOHN J. HOFER, OF NEW ORLEANS, LOUISIANA.

Letters Patent No. 71,756, *dated December* 3, 1867.

IMPROVEMENT IN NOZZLES FOR FIRE-ENGINES, &c.

The Schedule referred to in these Letters Patent and making part of the same

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOHN J. HOFER, of the city of New Orleans, parish of Orleans, and State of Louisiana, have invented a new and improved Nozzle for Fire-Engines, Pumps, Hydrants, or any engine, machine, or apparatus for projecting or throwing a jet or stream of water or other liquid with force, and at a distance from the point of discharge; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 represents an external perspective view and elevation of this invention.

Figure 2 represents a longitudinal section of the same, showing the internal shape, conformations, and arrangement of the improved nozzle.

Similar letters of reference indicate like parts.

The nozzle may be made of brass or any suitable material.

F represents the base of the nozzle, and the point at which it is connected with the delivery-pipe or hose, by means of a screw-joint or otherwise. C F represents the tube or opening for the delivery of the water or liquid from the delivery-hose into the air-chamber A. The form of this pipe or opening is tapering, the diameter *h i* being made about equal to the internal diameter of the delivery-pipe or hose with which it is connected, and the diameter *j k* being reduced to nearly the diameter of the jet of liquid which the nozzle is intended to throw. The pipe C E is so constructed that it, at the end C, projects into the air-chamber A towards the pipe B D, so that the end of the pipe C E, which delivers the liquid or water into the air-chamber A, is above the bottom of the air-chamber A. A represents an air-chamber, of any convenient or suitable form, with internal capacity and size proportionate to the size of the nozzle. D B represents the opening or pipe through which the jet or stream is forced, and is constructed in such a manner as to allow the end, B, to project down into the air-chamber A, towards the pipe C E, far enough to enclose a portion of air between the end of the pipe at B and the upper surface of the air-chamber A, to act as a spring to relieve the friction of the liquid against the sides of the tube D B, and insure a smooth, even discharge from the nozzle at D; but the pipe D B must, at the end B, be sufficiently far from the inside end of the pipe or opening C E, to allow free admission of liquid from the hose or delivery-pipe into the air-chamber A. The pipe D B should be constructed with the inner sides parallel, except at the opening at the end B in the air-chamber A, at which end I construct the pipe tapering for a short distance, the pipe having its inside diameter increased at the end B, in order to allow free admission of the liquid from the air-chamber.

The practical effect of my invention, and the arrangement of the various parts of the improved nozzle with the introduction of the air-chamber A, is to prevent the irregular discharge common in the ordinary nozzle, caused by the air and gases contained in the water and liquid; to utilize the same by retaining a sufficient amount of elastic air or gas in the air-chamber A, to act as a spring to compress the liquid as it passes into the pipe D B, and to lessen thereby the amount of friction on the surface of the tube D B, insuring a more perfect stream or jet, and causing the same to be projected to a greater distance from the point of discharge by the use of any given power or force.

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

An air-chamber, in combination with the nozzle, constructed and operating substantially as and for the purpose described.

JOHN J. HOFER.

Witnesses:

J. R. BECKWITH,

G. CENAS.