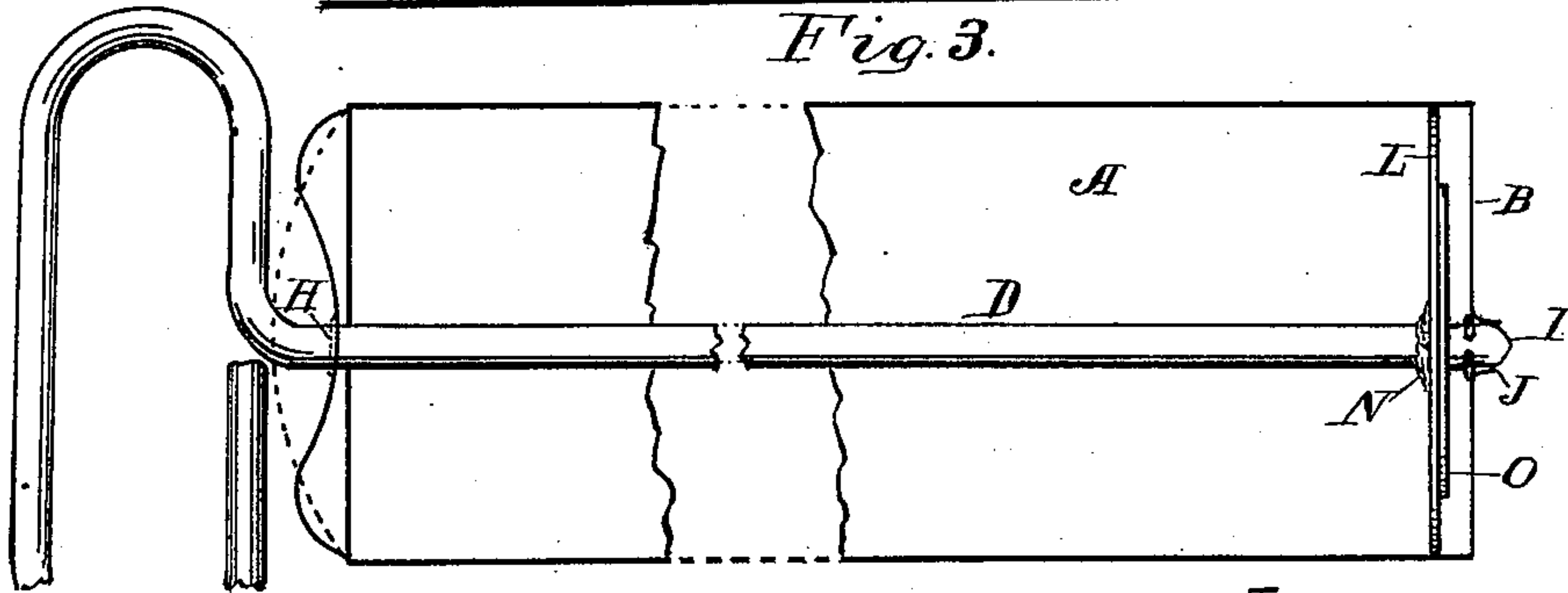
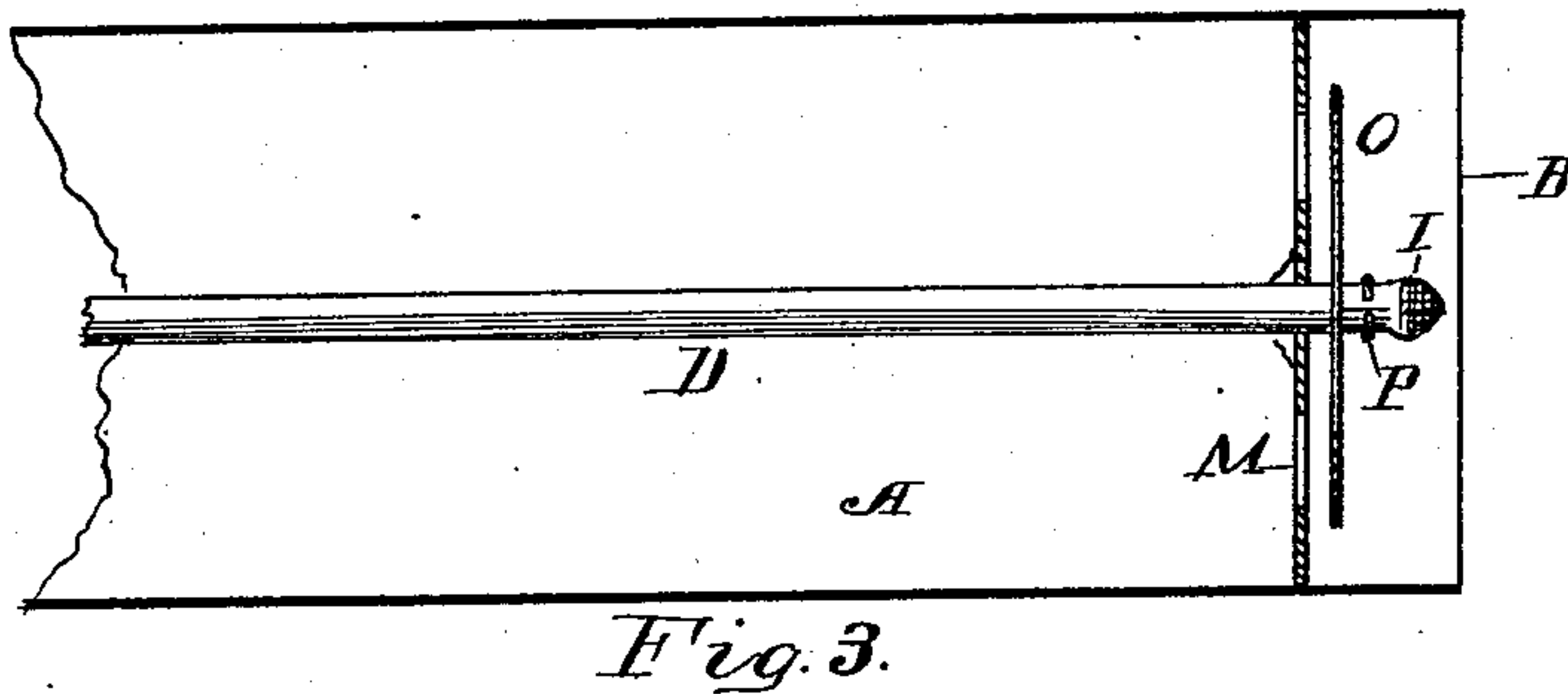
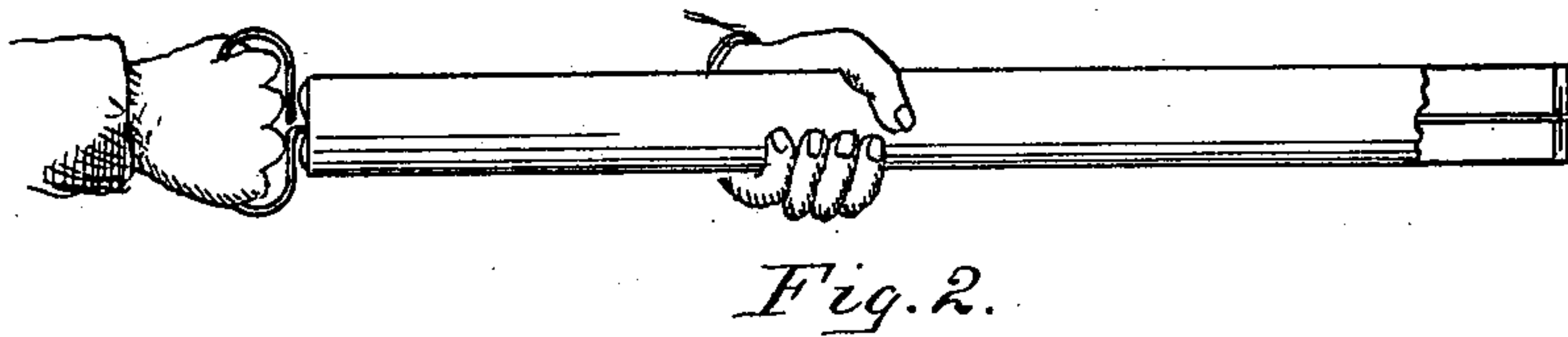
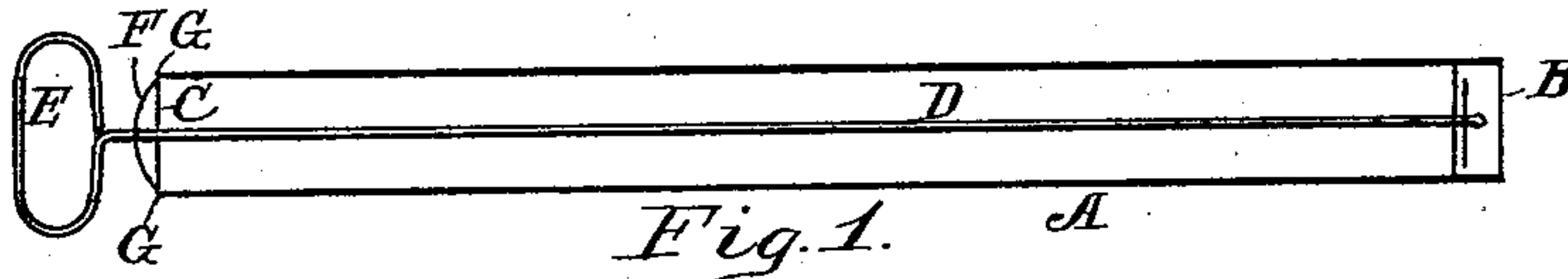


(No Model.)

J. S. ZERBE.  
HAND FIRE EXTINGUISHER.

No. 363,939.

Patented May 31, 1887.



WITNESSES:

Fig. 4.

INVENTOR :

John J. Heghan  
O. J. Bailey

J. S. Zerbe

# UNITED STATES PATENT OFFICE.

JAMES S. ZERBE, OF HARTWELL, OHIO, ASSIGNOR TO DAVID M. MONROE,  
OF BALTIMORE, MARYLAND.

## HAND FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 363,939, dated May 31, 1887.

Application filed January 28, 1885. Renewed September 18, 1886. Serial No. 213,896. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES S. ZERBE, of Hartwell, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Hand Fire-Extinguishers, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a longitudinal section of the hand fire-extinguisher. Fig. 2 is a view of the complete extinguisher, partly in section, showing manner of grasping the same when in use. Fig. 3 is an enlarged sectional view of the end containing the plunger and perforator; and Fig. 4, an enlarged sectional view of the two ends, showing the plunger and perforator forced through the head of the tube and the handle at the opposite end.

It is the object of this invention to construct a hand fire-extinguisher, preferably in the form of a tube, which will contain a liquid such as is best adapted for extinguishing fires, the tube being provided with a plunger and valve, so that when it is desired to employ the device the operator can by a simple motion of the hand disengage the plunger from its soldered position, impel it forward, and make suitable perforation in the center of the head, so that the liquid within can be ejected therefrom to any desired point, as will now be set forth in detail.

A shows a tube of any suitable size or length, having at each end a plane head, B C. Within the tube is placed a rod or bar, D, so that the body thereof projects centrally through the head C at the rear end, the rod terminating in a handle, E, at the rear end of the tube.

F is a flexible or yielding bridge or bow, of sheet metal, which extends over the head C, and the rod passes centrally through this bridge. The ends G of this bow are soldered to the head, and the rod D is soldered at its juncture with the bridge F at H. The rod D passes through the head C, but is not soldered thereto; but for the purpose of preventing the escape of the liquid through the head around the rod D, I place paraffine, wax, or any similar substance; and the object of the bridge F is to keep the rod D in position, so that by handling or in transporting the paraffine or wax around the rod at its juncture with the head

C will not be disturbed or render the tube leaky or liable to admit air, and thus destroy the liquid within.

The rod D is made of sufficient length that when the rear end is soldered to the bridge F the forward end will approach close to the forward head, B. The front end of this rod has its end somewhat flattened and ground or forged to an edge or point, so that when the handle forcibly impels the handle forward the point I will puncture the head B, as shown in Fig. 4, and leave an opening, J, through which the liquid is expelled. The bridge having centrally moved forward as far as the motion of the rod requires can now be released from the rod by giving the rod a quarter-turn, when the rod is ready to be reciprocated back and forth in the process of ejecting the liquid. If the rod had been soldered direct to the head C, the shoulder or collar formed by the solder H would have prevented the rod from being moved forward to the position indicated in Fig. 4. It will therefore be noticed that the bridge F is supple, so that it will sufficiently collapse to perform its function, while it also has the added quality of retaining the bar or rod firmly in position when not in use. Near the forward end of the rod is a tin disk, L, having one or more perforations, M. This disk is soldered to the rod, as shown at N. On the forward side of this disk is a smaller loose disk, O, which is limited in its endwise movement by a stop, P, soldered to the rod D. When the rod is drawn rearwardly, the liquid passes through the openings M and escapes to the opposite side of the disk. When the rod is impelled forward, the sliding disk O seats itself firmly on the disk L, closing the perforations and enabling the operator to forcibly eject the liquid.

What I claim as new is—

1. In hand fire-extinguishers, the plunger or piston-rod within the tube, having its ends sharpened, barbed, or pointed, provided at its opposite end with a handle outside the tube, by means of which the head of the tube may be perforated when the rod is impelled forwardly, substantially as herein described.

2. In a hand fire-extinguisher, a tube hermetically sealed and containing the fire-extinguishing compound, having within a plunger or piston rod and head whereby the said com-



pound is forcibly ejected therefrom, substantially as herein described.

3. In a hand fire-extinguisher, the rear end of the tube having a bridge or metallic bow through which the rod or plunger passes, in combination with the rod or plunger soldered thereto, so that when the rod is impelled forwardly the said bridge will collapse, substantially as herein described.

4. A hand or portable fire-extinguisher, consisting of a tube closed at both ends, and a piston-rod having a puncturing end and bearing a perforated piston and a movable disk.

5. A fire-extinguisher consisting of a tube closed at both ends and provided with a yielding bridge or bow at one end, in combination with a pointed piston-rod provided with a perforated piston and a movable disk, substantially as described.

6. In a hand fire-extinguisher, the tube containing the liquid having on its rear end the bridge or metal bow soldered to the said rod or plunger, in combination with said rod or plunger passing through the head of the cylinder or tube and sealed at its juncture with the head of the tube with paraffine, wax, or any analogous substance, substantially as herein described.

7. In a hand fire-extinguisher, the tube having two heads, B C, and at the rear end the bridge or metal bow F, in combination with

the plunger or piston-rod D, having a handle, E, on its outer end and soldered to the metal bow F, and on its inner end a perforated head, L, and valve O, and the pointed or sharpened end I, substantially as herein described.

8. In a hand fire-extinguisher, the tube A, having the heads B C for containing suitable liquid, in combination with the plunger or piston-rod D, having a handle at one end, and the head L perforated, and valve O, with the pointed or sharpened end I for puncturing the head B, as and for the purpose substantially as herein described and set forth.

9. In a fire-extinguisher, the combination of a cylinder to contain the solution, a plunger or piston-head to eject the solution, and a puncturing-point arranged to rupture or puncture the said cylinder.

10. In a hand fire-extinguisher, the combination of the tube or outside casing, a piston-head or plunger, a handle to operate the said head, and a valve to transfer the solution contained in the tube from one side of the piston-head to the other, for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand, this 26th day of January, 1885, in the presence of witnesses.

JAMES S. ZERBE.

Witnesses:

JOHN J. GEGHAN,  
O. J. BAILEY.