

J. S. TIBBETS.  
Fire-Extinguishers.

No. 157,729.

Patented Dec. 15, 1874.

Fig. 1.

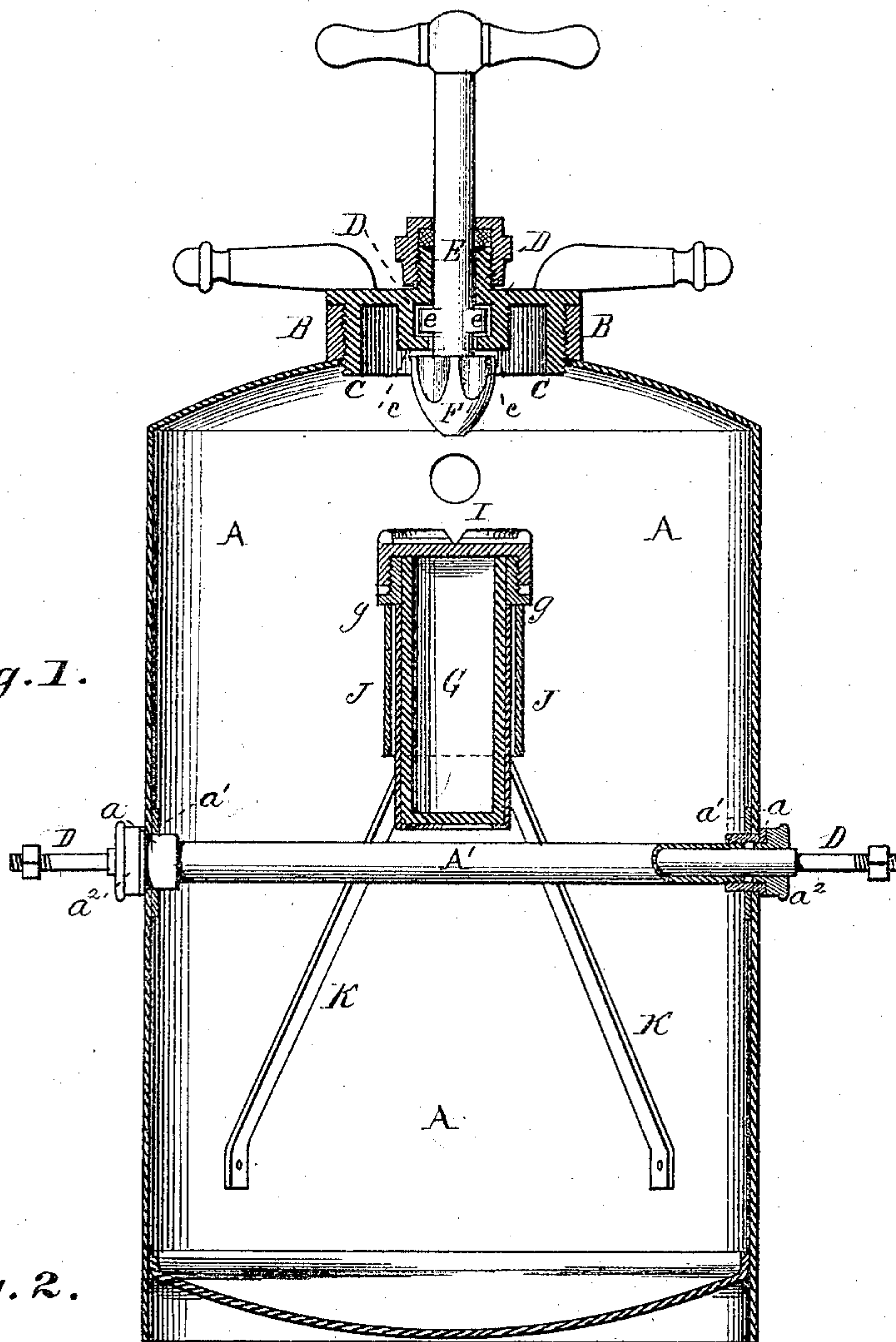


Fig. 2.

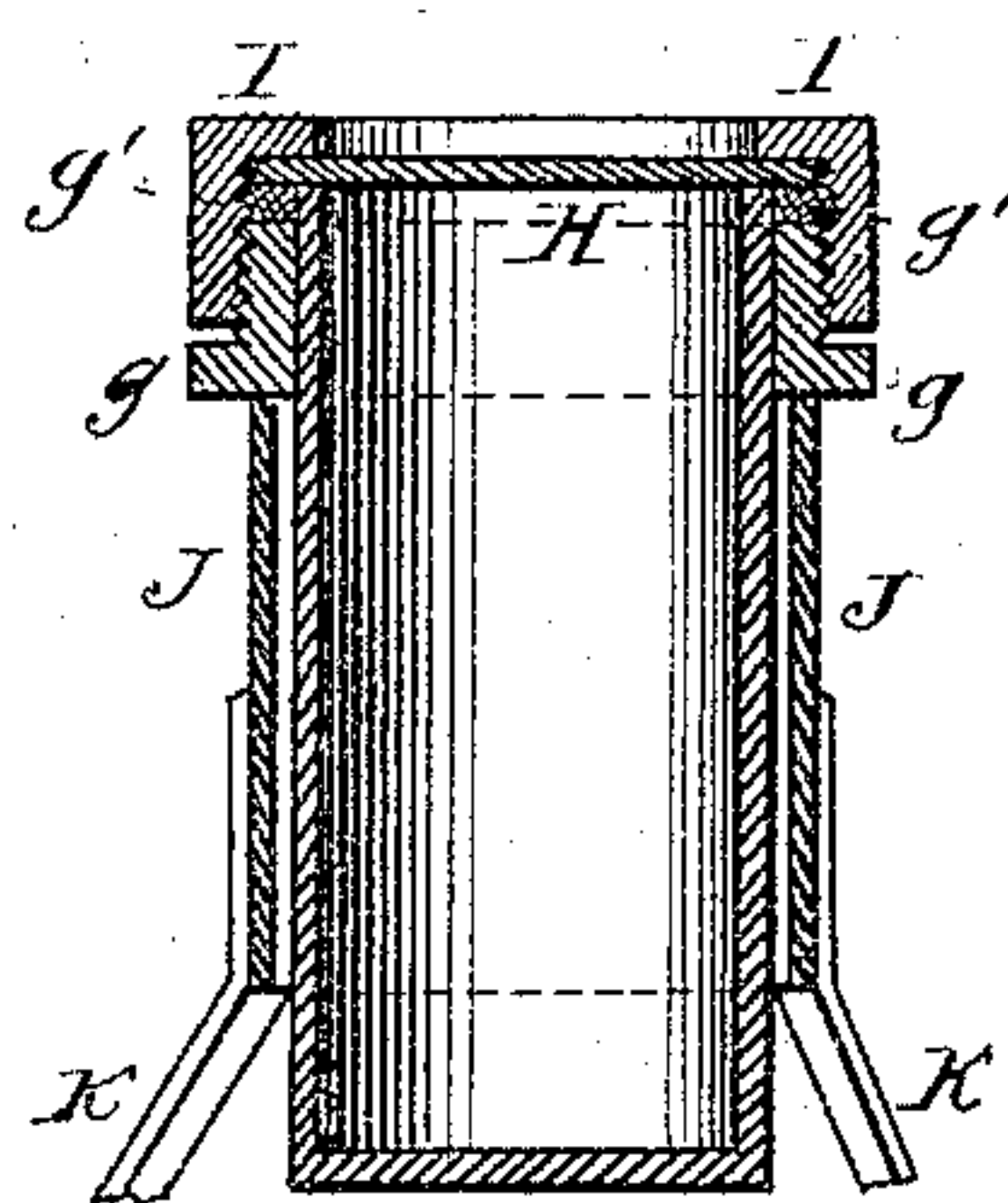
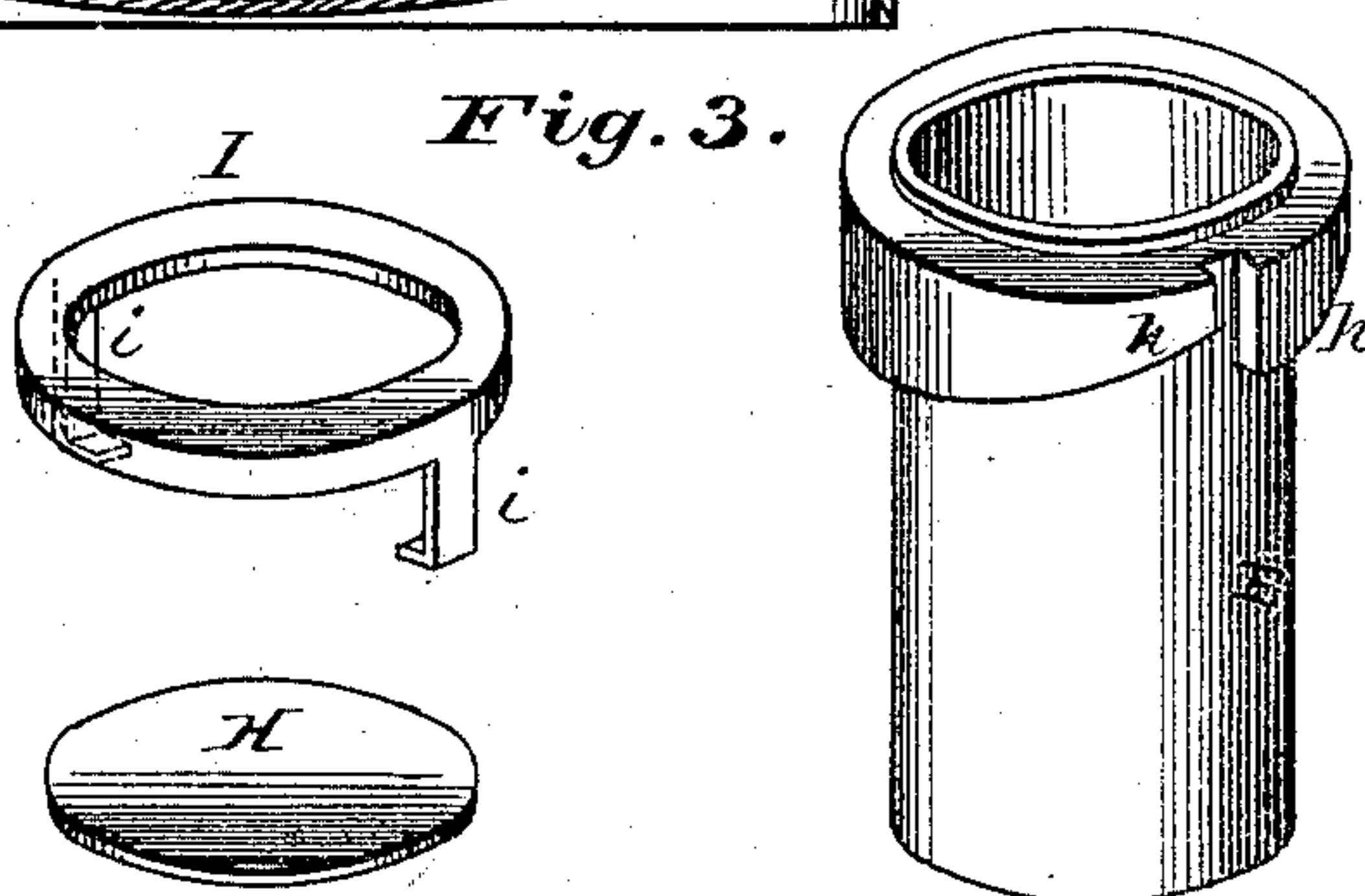


Fig. 3.



Attest:  
J. S. Goomb  
C. M. Reed

Inventor.  
Jonathan S. Tibbets  
By his atty.  
James L. Norris.



# UNITED STATES PATENT OFFICE

JONATHAN S. TIBBETS, OF JEFFERSONVILLE, INDIANA.

## IMPROVEMENT IN FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. **157,729**, dated December 15, 1874; application filed November 14, 1874.

*To all whom it may concern:*

Be it known that I, JONATHAN S. TIBBETS, of Jeffersonville, in the county of Clark and State of Indiana, have invented certain new and useful Improvements in Fire-Extinguishers, of which the following is a specification:

This invention relates to certain new and useful improvements in that class of fire-engines in which one or more chemical fire-extinguishers for generating carbonic-acid gas, charging water with the same, and ejecting the mixture upon the fire, are combined with a suitable truck or carriage, and hung thereon, at a point below the center of gravity, in order that their position may be readily reversed, to mix the acid and alkaline solution in order to generate the gas; and it consists in a novel manner of hanging the cylinder or extinguisher upon the shaft or journal, and in a novel construction of the acid-bottle, all of which is fully hereinafter described, and specifically pointed out in the claims.

In the drawing, Figure 1 represents a sectional view of my improved extinguisher in an upright position; Fig. 2, a sectional view of the bottle; Fig. 3, a perspective view of my improved bottle.

The body A of the extinguisher consists of a cylindrical vessel of metal of sufficient strength, usually of copper or steel, to resist the action of the acid. The top of said vessel has an opening through the same provided with a screw-collar, B, for the reception of the screw-cap C. Said cap has an aperture through the same, provided with a stuffing-box, D, through which the rod or plunger E passes. Said cap is provided with lugs *c c* on its under side, to hold and retain the plunger when the apparatus is not in use, by means of the lugs *e e* upon the same. The end of the plunger is provided with a conical bolt, F, in order to more readily pierce the top of the bottle.

Instead of providing the cap with a stuffing-box for the reception of a movable plunger, I propose to cast or attach on the under side of the cap a square journal-shaped point, which is designed to fracture the glass or brittle cap or disk of the acid-bottle, by causing said bottle to drop on the point when the cylinder A is inverted. The acid-bottle is, in order to en-

able this result to take place, fitted loosely in its supporting tube or holder.

Through the cylinder A, at a point slightly below the center of gravity of the same, passes a tube, A', of copper or other suitable metal. Said tube is securely attached at each end to screw-collars *a a*, which project through the side of the cylinder A, and are secured to the disks *a<sup>1</sup> a<sup>1</sup>*, soldered and riveted to the interior of the cylinder to prevent the escape of gas or solution. The shaft D passes through the tube A', being somewhat smaller in diameter than the same. The collars *a a* are provided with journal-boxes *a<sup>2</sup> a<sup>2</sup>*, which screw into the same, and through which the shaft D passes. The weight of the cylinder is supported by these boxes, which closely fit the shaft. The shaft D is rigidly secured to each side of the carriage-frame, and it thus serves to hold the same together in addition to its function as an axis upon which the extinguisher-cylinder turns. The bottle or acid-receptacle G consists of a cylindrical or other shaped vessel, of proper size, of lead, copper, glass, or other substance capable of resisting the action of acids. The acid-bottle is provided with an encircling collar or ring, *g*, which has a seat or groove in its upper edge for the reception of a rubber gasket, *g'*. The collar or ring *g* is formed with inclined lower edges or oppositely-located cam-surfaces *h h*, which are designed to secure the bottle-cap in the manner hereinafter set forth. H represents a glass disk, of a diameter equal to the external diameter of the gasket surrounding the bottle. Said disk is designed to fit over the mouth of the bottle, and is confined thereon by means of the flat ring I, which is provided with lugs *i i* on its lower side, which engage under the collar or ring *g* on the bottle, and may be tightened thereon to any extent by simply turning the ring in the proper direction, as will be evident. The ring may also be secured by a thread or other equivalent means. The gasket between the disk H and the mouth of the bottle will securely seal the same, and prevent the escape of the acids. The bottle is supported directly below the conical bolt of the plunger E, in such position that the glass cap may be readily broken by



unlocking the plunger and forcing it down upon the same, or by causing the bottle to drop by its own weight on the front on the under side of the cap. The plunger is unlocked by simply turning the same until the lugs thereon are free from the lugs on the under side of the screw-cap. The bottle is held in a short cylinder, J, of suitable material, supported upon arms K K K attached to the sides of the cylinder A, near its bottom, the ring *g* on its top preventing it from slipping through.

The operation of my invention is as follows: The cylinder and bottle are properly filled with their respective alkaline and acid solutions, and the screw-cap with bolt locked in position is securely fastened thereon. The extinguisher is then ready for use, and may be put in operation by simply unlocking the plunger, forcing the bolt down upon the glass disk so as to crush the same, or by tilting or turning the cylinder into a horizontal position, so as to cause a mixture of the acid and alkaline solutions, by causing the bottle to be thrown against the solid portion. Carbonic-

acid gas will be generated, and will create sufficient pressure to thoroughly charge the solution and eject the same upon the fire through a hose and nozzle attached to the discharge-tube.

What I claim is—

1. The boxes  $a^2$   $a^2$  and collars *a* *a*, in combination with the cylinder-tube A' and stationary shaft *d*, as and for the purpose set forth.

2. The acid-bottle G, provided with a ring, *g*, having inclined cam-surfaces and a gasket, in combination with the glass disk H and the ring I, provided with lugs *i* *i*, substantially as herein described.

3. The combination, with the cylinder, of the arms K and tube J, for supporting an acid bottle or receptacle, substantially as herein described.

In testimony that I claim the foregoing I have hereunto set my hand.

JONATHAN S. TIBBETS.

Witnesses:

GEORGE H. MOORE,  
CRITT. A. COX.