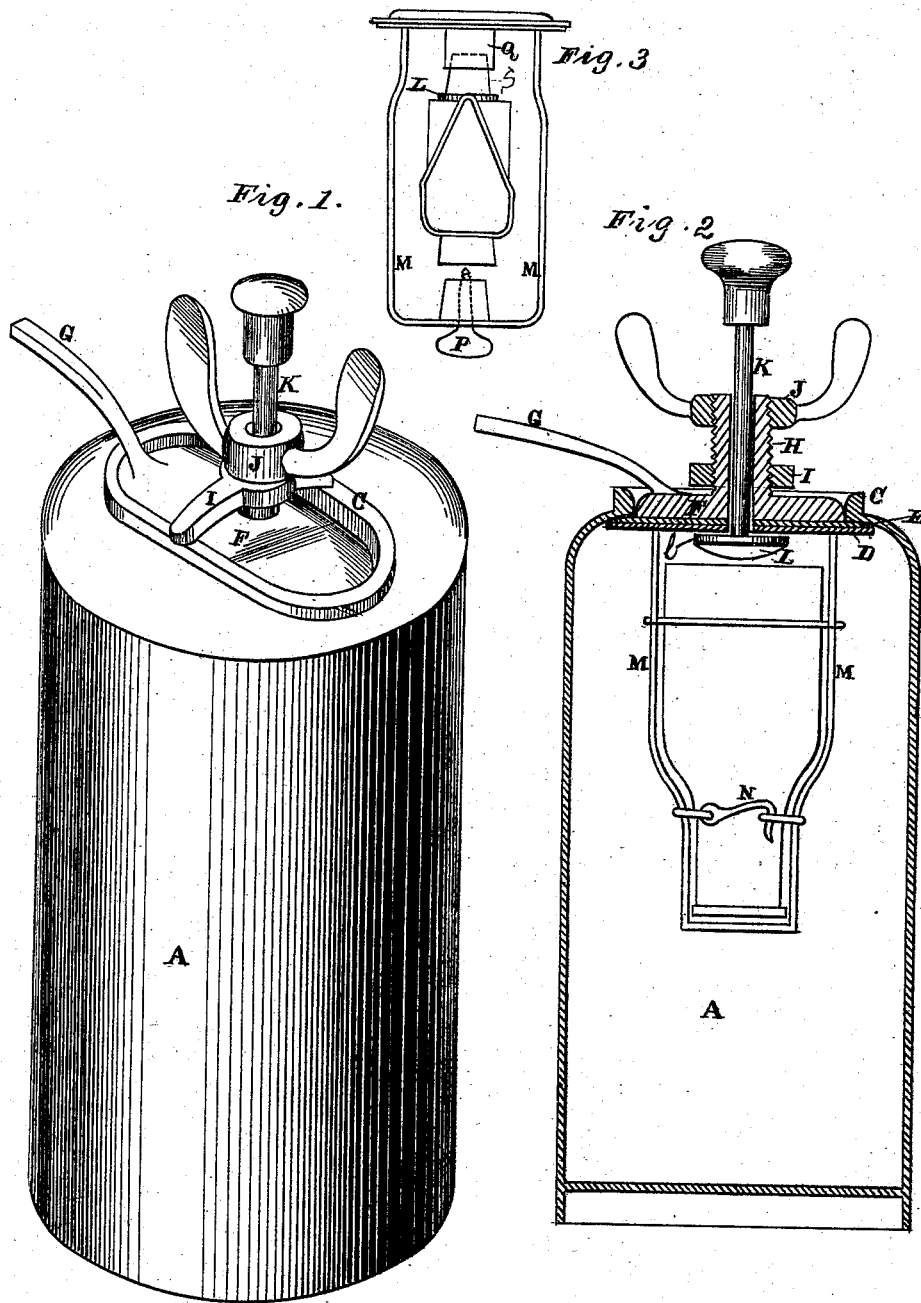


W. R. FERGUSON.  
Fire-Extinguisher.

No. 214,557.

Patented April 22, 1879.



Witnesses  
Geo. H. Strong  
Frank A. Brooks

Inventor  
William R. Ferguson  
By Dewey & Co.  
attys

# UNITED STATES PATENT OFFICE.

WILLIAM R. FERGUSON, OF DIXON, CALIFORNIA.

## IMPROVEMENT IN FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. **214,557**, dated April 22, 1879; application filed October 28, 1878.

### *To all whom it may concern:*

Be it known that I, WILLIAM R. FERGUSON, of Dixon, county of Solano, and State of California, have invented an Improved Fire-Extinguisher; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention relates to an improvement in that class of fire-extinguishers in which a chamber is used for storing an alkali, and inside of the chamber is a fragile vessel containing the acid, means being provided for breaking the vessel containing the acid, and throwing its contents into the alkaline substance, so as to gain a pressure from the resultant gas.

My improvements consist of a method of forming a cover for the main chamber, in which the ingredients are placed, so as to make said cover self-sealing, and prevent any possible escape of gas, and also in a means for breaking the acid-containing vessel, or otherwise discharging its contents, as will be more fully described by referring to the accompanying drawings, in which—

Figure 1 is a perspective view of my invention. Fig. 2 is a section of the same. Fig. 3 is a view of a modification.

Let A represent the chamber or body of the extinguisher, formed of metal in any desired shape.

On top of the cylindrical case is formed an oblong hole or opening, having a raised flange, C, around it. The cover for this hole is formed of the plate D, which is somewhat larger than the hole. On top of this plate D is the rubber or leather washer E, and on top of that is the smaller plate, F, as shown. This plate F has formed on it a handle, G, which projects from it lengthwise, the plate for the purpose hereinafter described. Projecting upward from and through these plates D and F is a cylindrical hollow standard, H, connecting with the interior of the chamber A when the cover is in place. On this standard is slipped the clamp I, which swings loosely on the standard.

The upper part of the standard H has screw-threads formed on it, and on this part of the standard is secured the thumb-screw J, which presses on the clamp, as hereinafter described.

A plunger-rod, K, passes down through the center of the hollow standard to the interior of the chamber, and has at its lower end a disk or plate, L, as shown, having a washer, l, or other device on its upper surface, so that when pressed up against the plate-cover, egress of gas through the standard is prevented.

Attached to the under side of the lower plate of the cover of the chamber is the cage or frame M, intended to hold the glass receptacle for the acid.

The frame is made so as to hold an inverted vial or bottle, the sides being formed of rods or bars, with suitable devices for inclosing the bottle, and it is secured in place by a latch-hook, N, as shown.

In order that the bottle may be saved and not broken, as is usually done, it is secured to the plate L in an inverted position in any suitable manner.

The hollow standard H may be enlarged and extended under the plate D, as shown, and the washer made of a form to correspond.

The cork which closes the mouth of the bottle is secured to the lower portion of the frame M by a thumb-screw, P, as shown.

In case it is desired to save the bottle and not break it, the bottle will be supported by wires or other suitable device from the plate L, as shown in Fig. 3. A thumb-screw, P, passes up through the lower part of the cage or frame M, and has a screw formed on its upper end, as shown, which screw passes through the cork in the bottle, said bottle being inverted. On the under side of the lower plate of the cover is a projecting metallic cylinder, Q, through which passes the piston or plunger rod, the lower end of said rod being secured to a plate, L, on the bottom of the bottle, which is fastened to said bottle by wires, as shown.

The plunger-rod also passes centrally through a cork, S, (see Fig. 3,) so that said cork, which fits close to the bottom of the bottle, will fit into the cylindrical projection Q when the plunger is drawn up. With this method the bottle is fastened to the plunger, and by raising the plunger up the cork at the mouth of the bottle is withdrawn by the thumb-screw, and its contents poured into the vessel. By the same action of raising the plunger the

upper cork, which is on the plunger-rod, closes the orifice through which the rod passes, and prevents the gases escaping from the vessel.

The operation of my device is as follows: The bottle or vial containing the acid is placed in the frame; then, by taking hold of the handle G and inserting the opposite end of the plates forming the cover into the hole, the frame, vial, and cover come on the inside of the chamber A. The lower plate, D, of the cover, although larger than the hole, may be inserted in the manner described. Then, when lifted to its bearings, the plate D will fit close up on the under edge of the opening B, so as to close said opening. By turning the clamp across the openings its ends will rest on top of the flange C. Then, by turning down the screw onto the clamp, the plate D, with the washer, will be drawn tight up against the under side of the opening and close it tightly.

The bottle containing the acid having previously been placed in its frame, when it is desired to operate the machine, by drawing the plunger up, the bottle is withdrawn from the cork on the thumb-screw P and its contents spilled into the chamber, the same action drawing the washer or joint-covering device into the extension of the hollow standard and preventing egress of gas.

If it is not desired to save the bottle, it is placed in the position shown in Fig. 3, and by striking a blow on the piston or plunger the bottle will be broken and its contents mixed with the other ingredients in the chamber, thus evolving the gas, which generates the necessary pressure.

Now, as this pressure is generated, the washer or joint-covering device on the plate L on the lower end of the plunger-rod is pressed upward against the bottom of the cover tightly, thus preventing any gas escaping through the hollow standard. The press-

ure against the plate forming the cover also presses said plate close to its bearings, and the greater the pressure the less danger there is of leakage of gas.

The cover is therefore really self-fastening. The usual hose is attached to the bottom of the chamber to eject the fluid from.

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

1. The exterior guide-plate, F, with its handle G, and the enlarged interior plate, D, with its bearing-surface E, to form the joint, in combination with the clamp I and the vessel A, whereby the cover so formed may be easily introduced and removed and form a self-packing joint, substantially as herein described.

2. The plates D F, with the joint-forming surface E and the operating-handle G, in combination with the frame M, for holding the vial, and the retaining-hook N, substantially as and for the purpose herein described.

3. The plates D F, with their joint-forming surface E, and handle G, together with the clamp I and the threaded standard H, with the holding-screw J, substantially as and for the purpose herein described.

4. The joint-forming plates and cover D F, and handle G, said plates being provided with the hollow standard H, in combination with the plunger-rod K, with its head L, said head having a joint-forming surface or washer, I, whereby the opening around the rod is automatically closed by the pressure of gas, substantially as herein described.

In witness whereof I have hereunto set my hand.

W. R. FERGUSON.

Witnesses:

OWEN O'NEILL,  
G. C. McCRARY.