(No Model.)

# L. S. LEWIS.

## FIRE EXTINGUISHER.

No. 345,908. Patented July 20, 1886.

*Fig. 1*

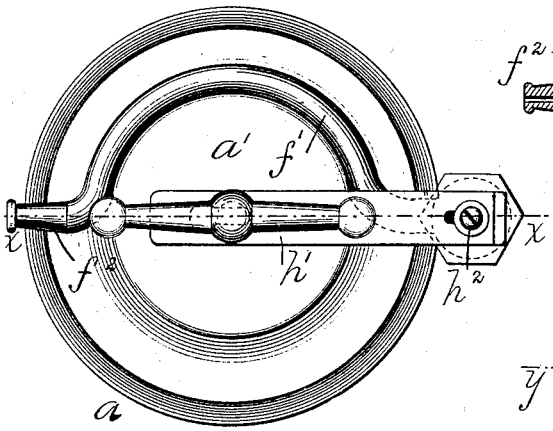



*Fig. 2*

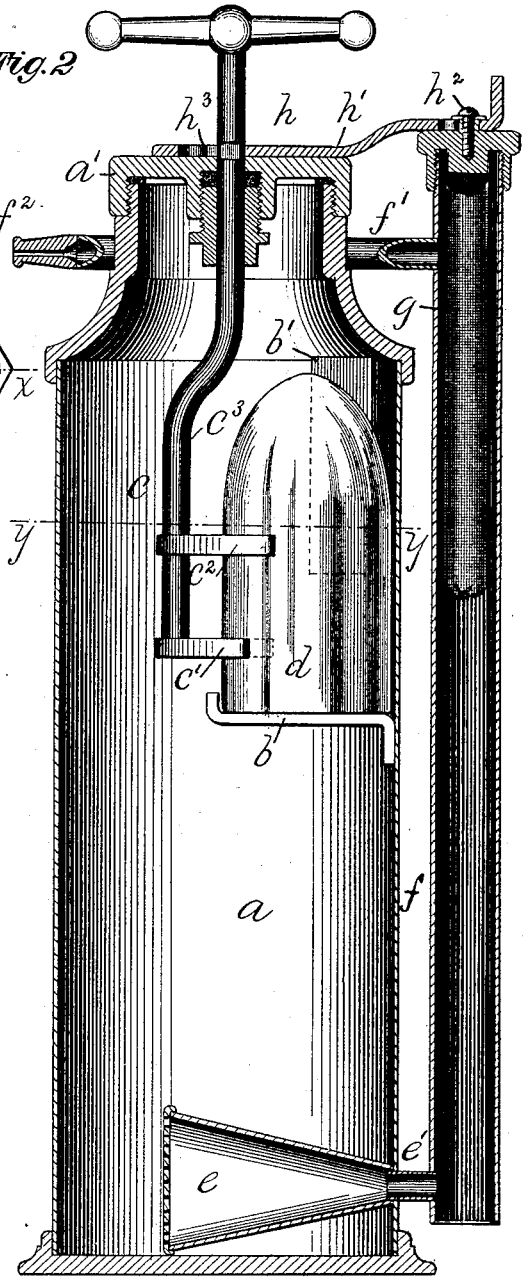
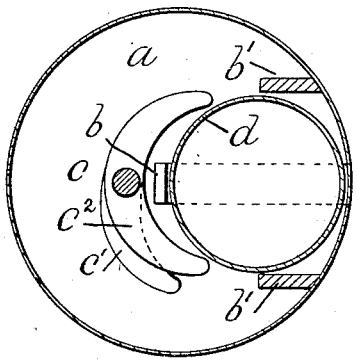



*Fig. 3*

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# UNITED STATES PATENT OFFICE.

LEROY S. LEWIS, OF EAST HARTFORD, ASSIGNOR OF ONE HALF TO GEORGE S. MILLER, OF HARTFORD, CONNECTICUT.

## FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 345,903, dated July 20, 1886.

Application filed January 16, 1886. Serial No. 188,712. (No model.)

*To all whom it may concern:*

Be it known that I, LEROY S. LEWIS, of East Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Fire Extinguishers, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

My improvement relates to the class of machines that are used to throw liquid containing a saline solution or carbonic-acid gas upon fire by the expansion of gas generated within the vessel; and its object is to produce a machine that shall be more certain in the operation of its parts, and in the perfect charging of the liquid than has been attained in prior structures.

My improvement consists in the combination, with the main vessel and its discharge-tube, of a supplemental tube, with perforated walls and containing a supplemental supply of alkali in form of a salt, located in the outlet-tube; in the particular form of the bottle-crushing device, and in details of the construction and combination of the several parts, as more particularly hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a top view of a fire-extinguisher made in accordance with my invention. Fig. 2 is a view in central vertical section of the machine on plane denoted by line *x x*, of Fig. 1. Fig. 3 is a detail view in horizontal section of the main vessel, bottle, and crusher on plane denoted by line *y y* in Fig. 2.

In the accompanying drawings, the letter *a* denotes the main vessel, which is preferably of metal, is cylindrical in form, with a removable cap or cover *a'*, and has at a convenient height within it a shelf or like support, *b*, for a bottle or jar, *d*. There is a flange or shallow recess on top of the shelf, and vertical sides *b'*, to prevent the bottle from slipping off from it, and the arms *c' c²* of the bottle-crusher *c* form, with one side of the vessel, further support at other points along its height.

The crusher *c* consists of a rod or spindle that is supported in an opening through the center of the cover *a'*, and packed in the ordinary manner to prevent leakage or escape of gas, the spindle having the offset portion *c³*, that bears the arms *c' c²*. One of these arms, *c²*, is fixed to the rod at a point that will bring it near the center or slightly above the center of the acid-bottle *d*, and its prongs are in advance of those on the arm *c'*, which is fixed to the spindle at a point nearer the bottom. The object of this construction of the spindle and arms is to insure the breaking of the bottle before it is swept from the shelf by the arms of the crusher. In practice, this has proved to be a very effective device for the purpose.

Near the bottom of the main vessel *a*, and within it, is secured a strainer, *e*, with a large number of small holes, particularly through the ends and the bottom, and this communicates by a short branch with the lower part of the outlet-tube *f*. This outlet-tube *f* has a branch, *f'*, that extends towards the main vessel, sweeps around it, as shown in Fig. 1, and ends in a jet or nozzle *f²*. This branch is preferably fastened to the neck of the main vessel, so that the vertical portion of the outlet-tube serves as a handle for holding the device and directing the contents as they are thrown through the nozzle. The lower end of the outlet-tube *f* extends below the branch *e'*, and affords space in which sediment may collect without danger of clogging up the connection with the main vessel. The upper part of this tube terminates on about the level of the top of the vessel, and is closed by the screw-cap to which is securely fastened the supplemental tube *g*, with porous or perforated walls. This tube is adapted to hold a supplemental charge of alkali, and extends far enough into the outlet-tube to insure the passage around it of the liquid as it is forced out of the main vessel. By this construction the liquid as it flows past and through this tube carries with it this extra amount of alkali that is held in the tube and strengthens the liquid that becomes weakened by precipitation of the alkali by long standing in the vessel.

It is evident that this precise construction of the main vessel, outlet-tube, and supplemental tube is not essential to the embodiment of my invention and that other means may be adopted without the exercise of invention to add to the outflowing liquid a supplemental charge of alkali or equivalent ingredient in the fire-extinguishing liquid.

In order to prevent the spindle from turning the crusher, I make use of a lock, *h*, that consists of a sliding bolt, *h'*, held at its outer end by the screw $h^2$, that passes through a slot in the bolt into a cap on the upper end of the outlet-tube *f*. The front end of the bolt embraces the stem of the crusher-spindle that is flattened to enter readily the slot $h^3$, and the outer end of this slot is enlarged to allow the spindle to be turned when the bolt is slid backward.

I claim as my improvement—

1. In a chemical fire-extinguisher, in combination with the main vessel and its discharge-tube, a supplemental tube with permeable walls and adapted to contain a supplemental supply of alkali or like ingredient, all substantially as described.

2. In combination with the main vessel *a*, having a bottle-supporting shelf, *b*, a rotary crusher, *c*, supported in the cap of the vessel, its spindle having an offset lower portion, and bearing the bent arms *c'* and $c^2$, with the point of the latter arranged to strike the bottle in advance of the former, all substantially as described.

3. In a fire-extinguisher, in combination with the main vessel and a bottle-supporting shelf, a rotary crusher with curved arms arranged one in advance of the other, all substantially as described.

4. In combination, in a fire-extinguisher, the main vessel *a*, having the bottle-support *b* and strainer *e*, the rotary bottle-crusher *c*, with the locking device *h*, the outlet-tube *f*, with branches *e'* and *f'*, and the supplemental tube *g*, arranged in the outlet-tube, all substantially as described.

LEROY S. LEWIS.

Witnesses:
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