

A. E. HUGHES.

Chemical Fire-Extinguishers.

No. 142,340.

Patented September 2, 1873.

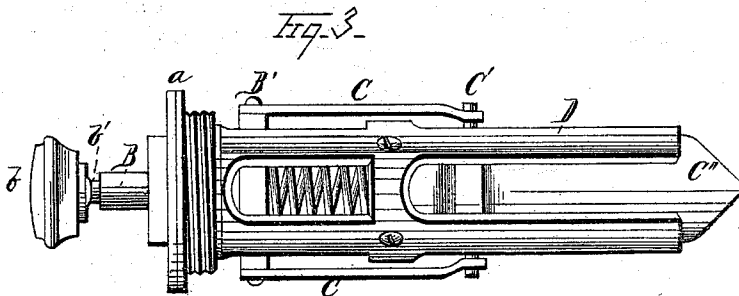
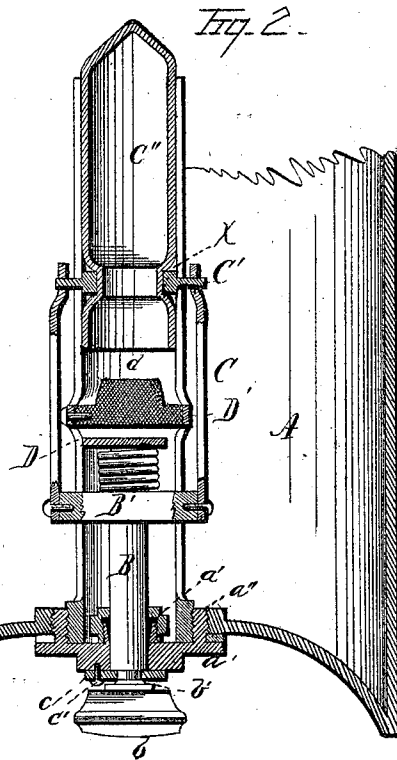
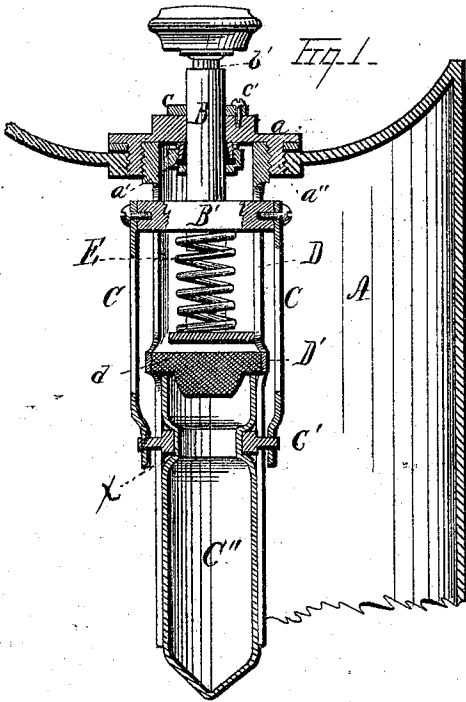
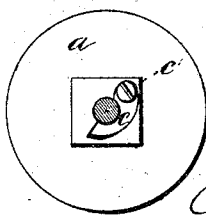


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

ALEXANDER E. HUGHES, OF LOUISVILLE, KENTUCKY, ASSIGNOR OF ONE-EIGHTH HIS RIGHT TO EDWARD FORD, OF NEW ALBANY, INDIANA.

IMPROVEMENT IN CHEMICAL FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. 142,340, dated September 2, 1873; application filed June 19, 1873.

To all whom it may concern:

Be it known that I, ALEX. E. HUGHES, of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Chemical Fire-Extinguishers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in chemical fire-extinguishers.

In the drawings, Figure 1 represents a longitudinal section of my invention while not in operation; Fig. 2, the same as operating; Fig. 3, a side elevation, showing the relative position and adaptation of the different parts; and Fig. 4, a plan view, showing the operation of the retaining-trigger during the operation of charging the acid-reservoir.

My invention consists as follows: Into one end of the main reservoir A is screwed the plate *a*, in which is constructed the packing-box *a'*, through which passes the acid-reservoir shaft B. This shaft is provided, upon its outer extremity, with a suitable head, *b*, and around its body, at a suitable distance from its head *b*, is formed the annular groove *b'* for the engagement of the retaining-trigger *c*, which swings upon the outer face of the plate *a* by means of the pivot *c'*. The inner end of the shaft B is provided with the cross-bar B', from the extremities of which pass the supports C. These supports are of suitable length, and are made to bear the semicircular clamps C', which engage in a groove, *x*, formed upon the body of the acid-reservoir C'', said reservoir C'' being constructed of glass or any suitable material capable of withstanding the action of the acid to be contained within it. The plate *a* is provided with a collar, *a''*, upon which is formed a male and female screw. Into the female screw is fitted the cage or basket D, formed of suitable material and of any desired design. This cage envelops the reservoir C'' and its shaft B. At a suitable point in the cage D is placed the

diaphragm D', which supports the plug or stopper *d*, made of lead or any proper material. This plug or stopper is formed so as to fit accurately into the acid-reservoir C''. E is a spring interposed between the diaphragm D' and the cross-bar B' of the acid-reservoir shaft B.

The main reservoir A is filled to a proper degree with, say, a saturated solution of bicarbonate of soda, and the reservoir C'' with any suitable acid, say sulphuric acid. The reservoir C'' is filled by the following method: The shaft B is pressed in until the trigger *c* engages in the annular groove *b'*. The acid-reservoir C'' is by this means removed from its stopper *d*, so that acid may be introduced within the reservoir C''. The plate *a*, holding the within-described parts, is now introduced within the main reservoir A, as shown in Fig. 1.

The machine as now prepared is ready for operation. While idle it is to be so set that the end containing the plate *a* and its attached parts shall be uppermost.

When it is to be used the machine is to be set down in an inverted position, so that the entire weight of the machine and its contents shall rest upon the head *b* of the shaft B. This weight will drive in said shaft, and as a consequence the acid-reservoir C'' will be lifted from its stopper *d* and the contained acid allowed to escape into the soda solution. The result is evident. Carbonic-acid gas is immediately evolved in immense quantities, and the usual pressure and impregnation of the water by the gas occurs, as has heretofore been frequently described, but which forms no part of this invention.

I am aware that in the construction heretofore of chemical fire-extinguishers the plugs to the acid-reservoirs have been removed by screws and various devices; but I am not aware that any extinguisher has been constructed wherein the stopper to the acid-reservoir always maintains the same relative position to the main reservoir as in this my invention, while the acid-reservoir itself is removed from its plug by the weight of the machine upon the free end of its shaft B.

I claim as my invention—

1. A chemical fire-extinguisher wherein, on the inversion of the instrument and by the weight thereof, the acid-reservoir is removed from its cork or stopper while said stopper remains stationary, substantially as set forth.

2. The combination of the shaft B, cross-bar B', supports C, and semicircular clamps C' with the annular groove *a* upon the body of the acid-reservoir.

3. The combination of the annular groove *b'* upon the shaft B of the acid-reservoir, the retaining-trigger *c*, and the spring E, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of June, 1873.

ALEXANDER E. HUGHES.

Witnesses:

THOMAS W. COMER,
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