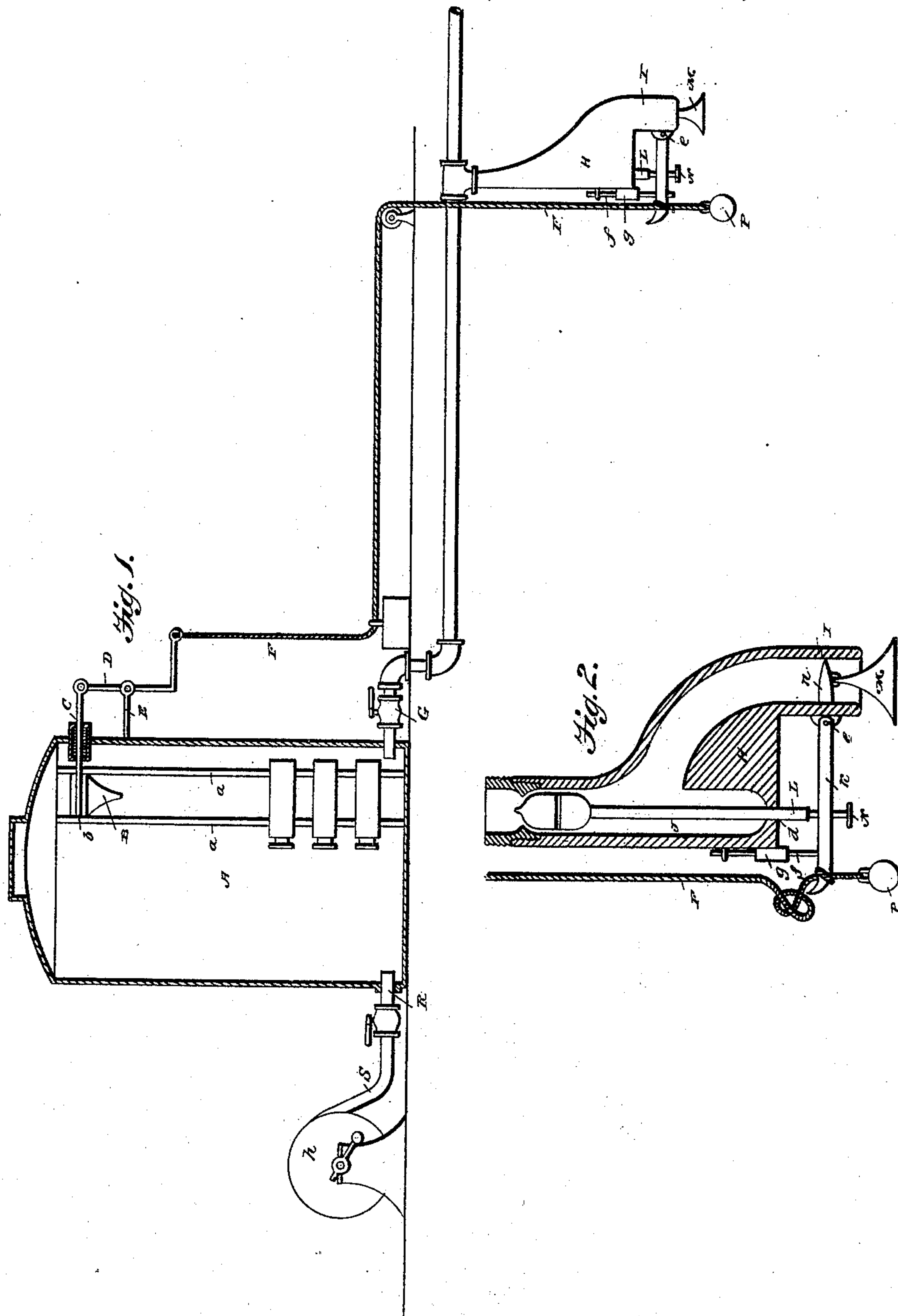


(No Model.)

O. PIERCE.
FIRE EXTINGUISHER.

No. 395,756.

Patented Jan. 8, 1889.



Witnesses:

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OCTAVIUS PIERCE, OF CHICAGO, ILLINOIS.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 395,756, dated January 8, 1889.

Application filed August 27, 1888. Serial No. 283,941. (No model.)

To all whom it may concern:

Be it known that I, OCTAVIUS PIERCE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Automatic Fire-Extinguishers; and I do 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 appertains to make and use the same.

This invention has relation to fire-extinguishing apparatus.

The invention will be fully understood from the following description and claims, when taken in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of my improved apparatus, showing the reservoir in vertical section, so as to more fully illustrate the chemical-holders and means for breaking the same; and Fig. 2 is a longitudinal sectional view of the nozzle with the attachments in position.

Referring by letter to the said drawings, A indicates a steel tank or reservoir, which is designed to contain an extinguishing medium, such as chemicals, water, or the like. Within this reservoir is vertically arranged a guide-frame composed of wires *a*, and which are designed to serve the additional function of holding glass jars or bottles containing chemicals. These bottles or jars are arranged one above another, so that when the weight (which will be presently described) has been allowed to fall it will destroy all of the holders containing the chemicals, thereby mixing the chemicals and generating gases, which, with the liquid portion, are forcibly expelled from the said reservoir through the discharge-nozzle.

B indicates the weight, which is designed to move vertically and be guided in the frame *a*. This weight is of a form substantially as shown, being pointed downwardly or tapered, so that easily it may break the bottles containing the chemicals when it has been allowed to fall. This weight is provided with a groove, *b*, to receive a rod, C, whereby it is held in an elevated position within its guide-frame. The rod C is designed to reciprocate through an aperture in the tank or reservoir

A, and is connected at its outer end with an angular lever, D, which latter is pivoted in a fulcrum, E, extending from the side of the reservoir, and extending from the lower branch of this angular lever is a pull rope or cord, F, which is carried off and attached to devices at the spray-nozzle, as will be hereinafter fully described.

Connected with the lower portion of the tank or reservoir is a discharge-pipe, G, provided with a regulating-cock, as shown, and this discharge-pipe is connected with a nozzle or a suitable number of nozzles designed to spray.

In the present illustration of my invention I have shown but one nozzle attached to the discharge-pipe; but it is obvious that any suitable number may be employed. These nozzles are of a peculiar construction, and, as they are all similar, a description of one will be sufficient.

Referring to the details of construction, H indicates the body of the nozzle, which is provided with a discharge branch, I, and a longitudinal internal recess or valve-chamber, J, which latter is provided with an aperture, *d*, for the passage of the valve-rod L. This valve-rod is provided with an elastic ball-valve on its upper end, and the upper portion of the valve-chamber is contracted, so that when the said rod has been lifted the valve will be seated in a sealed manner.

K indicates a lever, which is pivoted to the discharge-nozzle adjacent to its mouth, as shown at *e*.

Within the nozzle is a piece, *n*. This piece *n* has loosely connected to it within the discharge-nozzle a deflector or spray-plate, M, and the outer end of the lever K is normally secured to the body of the valve by means of an arm, *f*, secured by a fusible joint, *g*. This lever carries a set-screw, N, which is designed to bear against the lower end of the valve-rod L, so that the said valve may be adjusted in its seat.

The pull-rope F, which leads from the weight-tripping device at the tank-reservoir, is also attached to the outer end of the lever K, and has secured to it a weight, P, which is held in a depending manner, and the action of which is to open the valve when the joint,

as before described, has been severed by fusion. It is obvious that by the employment of this set-screw N the valve may be tightened or loosened in its seat without disconnecting
5 any of the other parts.

h indicates a hose-reel, which is designed to hold a hose in close relation to the tank, whereby it may be readily attached, as will be next explained.

10 *R* indicates a discharge-pipe arranged in the lower portion of the tank or reservoir and provided with a cock, as shown, whereby the liquid or gas will be allowed to discharge, and connected with this discharge-pipe is one end
15 of the hose *S*.

I design placing a tea-lead seat in each of the discharge-pipes *G* and *R* between the tank and the shut-off cocks, being put in the end of the cock and screwed in place on the
20 connection next the tank. This prevents the chemicals from escaping and leaves the pipe entirely free from all water or chemicals. The seat will be blown from its position at a pressure of fifty pounds, so that when the machine
25 goes off pressure is retained up to fifty pounds, and then the valve opens. This serves a double purpose. It retains pressure until the chemicals have time to thoroughly mingle, and also keeps the pipe dry and makes the
30 steel tank air-tight.

In operation it will be seen that when fire takes place in a structure provided with my apparatus and the heat becomes sufficiently great to fuse the joint *g* the pivoted lever *K*,
35 through the action of the weight *P*, will be drawn down, when the same will act to simultaneously remove the valve from its seat and pull the cord *F*, thereby acting upon the angle-lever *D*, disconnecting the rod *C* from the
40 weight *B* and allowing the latter to fall upon the bottles containing the chemicals. The chemicals are thereby mixed and caused to generate gas, which is forcibly discharged from the reservoir through the discharge or
45 spray nozzles. It should be observed, however, that the cock at the discharge-pipe should be first opened.

By this construction it will be observed that the water or extinguishing medium may be
50 taken from the reservoir through the discharge-pipe *R* without a fire coming near the fusible joint, in the latter case the cock at such point being turned on, when the hose can be used in the ordinary manner.

55 The bottles containing the chemicals are hermetically sealed, so that their usefulness is not impaired so long as the bottles remain unbroken.

Having described my invention, what I
60 claim is—

1. In a fire-extinguishing apparatus, the

combination, with a reservoir for holding chemicals, of the discharge-pipe leading therefrom, a weight suspended within the reservoir, the nozzle *H*, secured to the discharge-
65 pipe, the lever *K*, pivoted at one end to the nozzle, the opposite end of the said lever being secured by a fusible joint, *g*, to the body of the nozzle, and also having a weight secured thereto, the valve arranged in the nozzle
70 and having its rod secured to the pivoted lever, and the rope *F*, leading from the weight supporting and tripping device at the reservoir to the free end of the lever *K*, substantially as specified. 75

2. In a fire-extinguishing apparatus, the combination of the reservoir having the guides *a* therein to receive chemical-holders and guide a weight, the weight *B*, arranged in the
80 said guides, the reciprocating rod *C*, adapted to engage and normally sustain the weight, the angle-lever *D*, pivotally connected at one end to the reciprocating rod, and a rope, *F*, secured to its opposite end, whereby the drawing of the cord will precipitate the weight upon
85 the chemical-holders, substantially as specified.

3. The fire-extinguishing apparatus described, comprising the tank or reservoir having a guide-frame therein, a weight arranged
90 in the said frame, a reciprocating rod adapted to engage the weight, an angle-lever for reciprocating the rod, an operating rope or wire connected with the said angle-lever and carrying a weight on its opposite end, a spray-
95 nozzle connected with the tank, a valve in the nozzle, the valve-lever, a screw in said lever bearing against the valve-rod, and the said weighted cord connected with the outer end of the lever, substantially as specified. 100

4. The fire-extinguishing apparatus described, comprising the tank or reservoir having a guide-frame therein, a weight arranged in the said frame, a reciprocating rod adapted
105 to engage the weight, an angle-lever for reciprocating the rod, an operating rope or wire connected with the said angle-lever and carrying a weight on its opposite end, a spray-nozzle connected with the tank, a lever pivoted to the nozzle, a valve in the nozzle, a
110 screw in said lever bearing against the valve-rod, and the said weighted cord connected with the outer end of the lever, and a discharge-pipe in the tank adapted to receive a hose and provided with a cock, substantially
115 as specified.

In testimony whereof I affix my signature in presence of two witnesses.

OCTAVIUS PIERCE.

Witnesses:

MAX FRÖHLICH,
GUSTAV HAUSER.