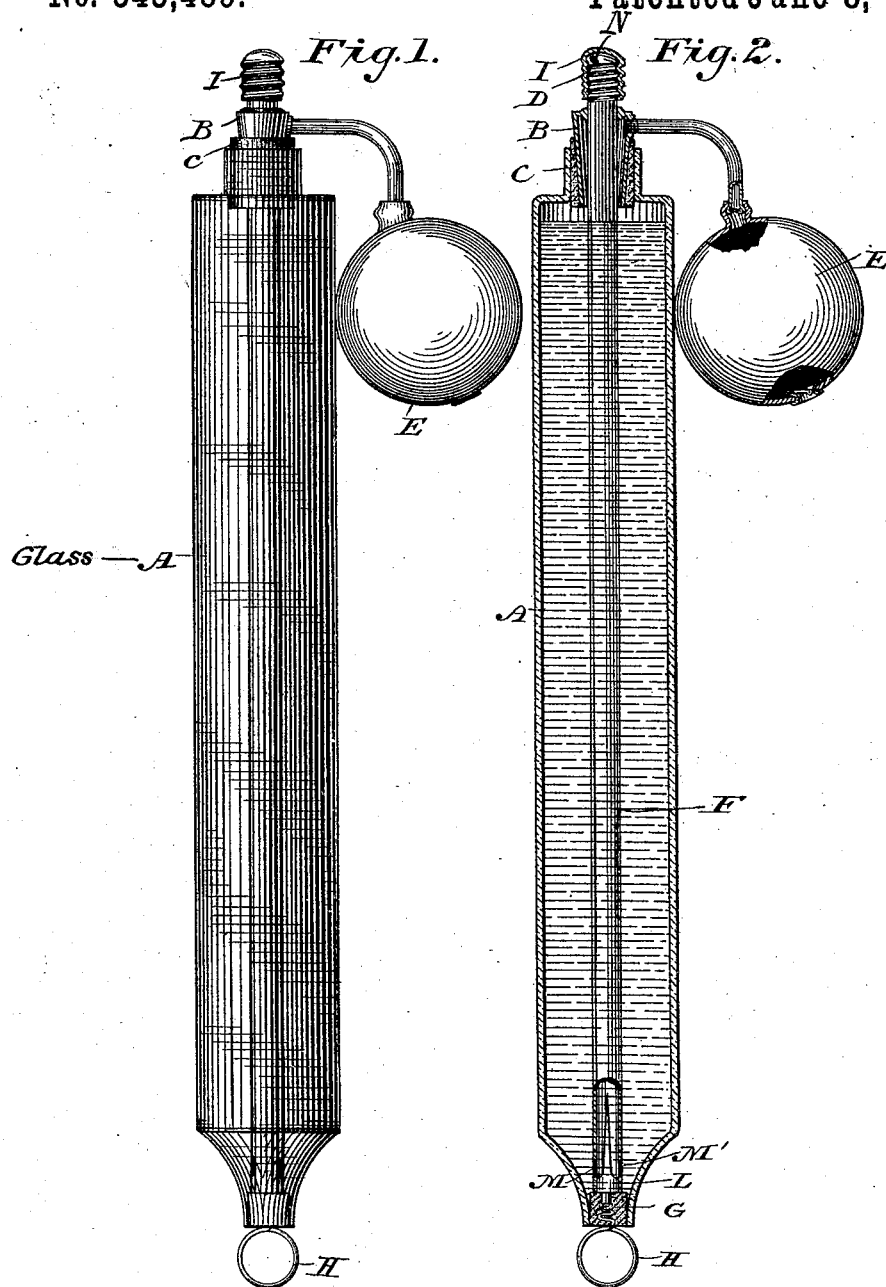


(No Model.)

A. W. PORTER.
HAND FIRE EXTINGUISHER.

No. 343,489.

Patented June 8, 1886.



Witnesses.

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UNITED STATES PATENT OFFICE.

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HAND FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 343,489, dated June 8, 1886.

Application filed August 13, 1885. Serial No. 174,227. (No model.)

To all whom it may concern:

Be it known that I, ALONZO W. PORTER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Hand 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 appertains to make and use the same.

My invention relates to certain new and useful improvements in hand fire-extinguishers, and is particularly designed to furnish in a single article of manufacture a device adapted, according to the particular exigencies of the case, to sprinkle or spray a fire-extinguishing solution, to spurt it in considerable volume, or permit its rapid escape by pouring, or, finally, to apply the entire contents at once by projecting and breaking the frangible containing-vessel at the place of conflagration.

To this end my invention consists in the construction hereinafter described, and particularly pointed out in the claims.

Referring to the accompanying drawings, forming a part of this application, and wherein similar letters indicate similar parts throughout the several views, Figure 1 illustrates in elevation the preferred embodiment of my invention. Fig. 2 represents a vertical central section thereof.

A indicates a receptacle for the fire-extinguishing solution, and made of glass or other frangible material. It is preferably of the elongated cylindrical form shown, to better insure its breakage when projected at the fire, as hereinafter set forth. At its upper end it is provided with a projecting neck, within which fits the closing plug or cork C. The cork C contains the tapering metallic thimble, fitting closely within it and opening into the top of the receptacle A. By a side branch it communicates with the compressible pressure-bulb E, having a double set of valves, as shown, and adapted when operated to compress air above the surface of the liquid in the receptacle A. Through the thimble B extends the inner tube, F, firmly soldered to the thimble at its upper portion and reaching to the bottom of the receptacle. The lower end of the latter is

of tapering form, as shown, and is closed by the cork G, within which is inserted the cork-screw ring H. The cork G has a step-recess at its upper surface, within which fits the shank of the stay and guide pin L. The main body of this pin is of external diameter equal to the internal diameter of the tube F, and terminates in an upwardly-extending tapering projection.

Apertures M M' form a communication between the interior of the receptacle A and the tube F; and an orifice, N, in the tip of the latter permits the escape of the liquid in the form of a spray or sprinkling-stream when pressure is applied to the bulb.

The tip is preferably screw-threaded externally, as shown, for the reception of the internally-threaded closing-cap I, preventing the escape of the liquid when the receptacle A is filled and in transit. The tip orifice is closed by a soft plug of grease or the like, to prevent evaporation, but which can be forced out when pressure is applied to the bulb.

The operation of the invention is as follows: The receptacle A being first filled with the fire-extinguishing solution, the cork C, together with the tube F, are inserted. The lower end of the tube F is readily directed over the point of the tapering projection of the pin L, and is thus guided downwardly over the close-fitting main portion of the stud or pin, thereby steadying the tube and preventing side strains upon its upper solder-joint. In case of the outbreak of fire and in its incipient stages, the cap I is unscrewed and removed, and by alternately compressing and releasing the bulb E the air-pressure above the surface of the liquid in A forces such liquid upward through the inner tube and through the orifice N in a small spraying or sprinkling stream, whose size and extent of throw are dependent upon the size of the orifice and the pressure produced above the liquid. The device being carried in the hand, the fire-extinguishing stream may be directed at any desired point and shifted at will, so as to control a large area. If, owing to the progress of the fire, this mode of operation is ineffectual, or if the fire is between floorings and accessible only by holes or openings leading into the intermediate space, the lower cork, G, is removed by means of the ring H, and the contents

spurted or poured out rapidly. Finally, if the fire has attained such headway as to require the sudden application of a considerable quantity of the solution, the entire extinguisher is hurled at it, the frangible receptacle A breaking and distributing the contents at once upon the fire. The elongated form of the receptacle renders it more readily frangible than a globular form.

10 I am aware that it has been heretofore proposed to extinguish fires by means of frangible hand-grenades; also, in a pending application filed by me I have shown and described a fire-extinguisher having a depending tube for the discharge of its contents and a compressible

15 bulb connected by a branch pipe to the top of the liquid-receptacle. I do not therefore claim either of these features herein, broadly. By my improved construction, however, I am

20 enabled to combine in a single device means for controlling and fighting a fire at various stages of its development, using but a small amount of the solution when the fire is insignificant, notably increasing the amount when

25 it has attained a greater progress, but preserving the integrity of the vessel, except in the last instance, where it is desirable to use it as a grenade. These various capabilities of my unitary device adapt it thoroughly to all

30 the conditions ordinarily met with in incipient fires.

The opening in the bottom of the frangible receptacle, in connection with the pressure-

bulb at the top, permits me, when the extinguisher is inserted between floors, to project the contents through said bottom opening to a great distance between and among the floor-beams, the liquid reaching places it would be impossible to reach readily otherwise.

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

1. A receptacle containing a fire-extinguishing solution, said receptacle being provided at its bottom with an opening, as shown, closed by a removable plug, and at its top with an opening connected with a pressure-bulb, substantially as described.

2. A frangible receptacle containing a fire-extinguishing solution, a spraying-tube extending to the bottom of said receptacle, a pressure-bulb connected with and opening into the receptacle above the surface of the solution, and a removable plug located in the bottom of the receptacle, substantially as shown and described.

3. In a fire-extinguisher, the combination, with the receptacle A, of the dependent tube F, cork G, pin L, stepped within said cork, and having an upwardly-extending guide projection, and the ring H, substantially as shown and described.

ALONZO W. PORTER.

In presence of—

GEO. A. SHINDA,
NELSON CHANDLER.