

No. 648,371.

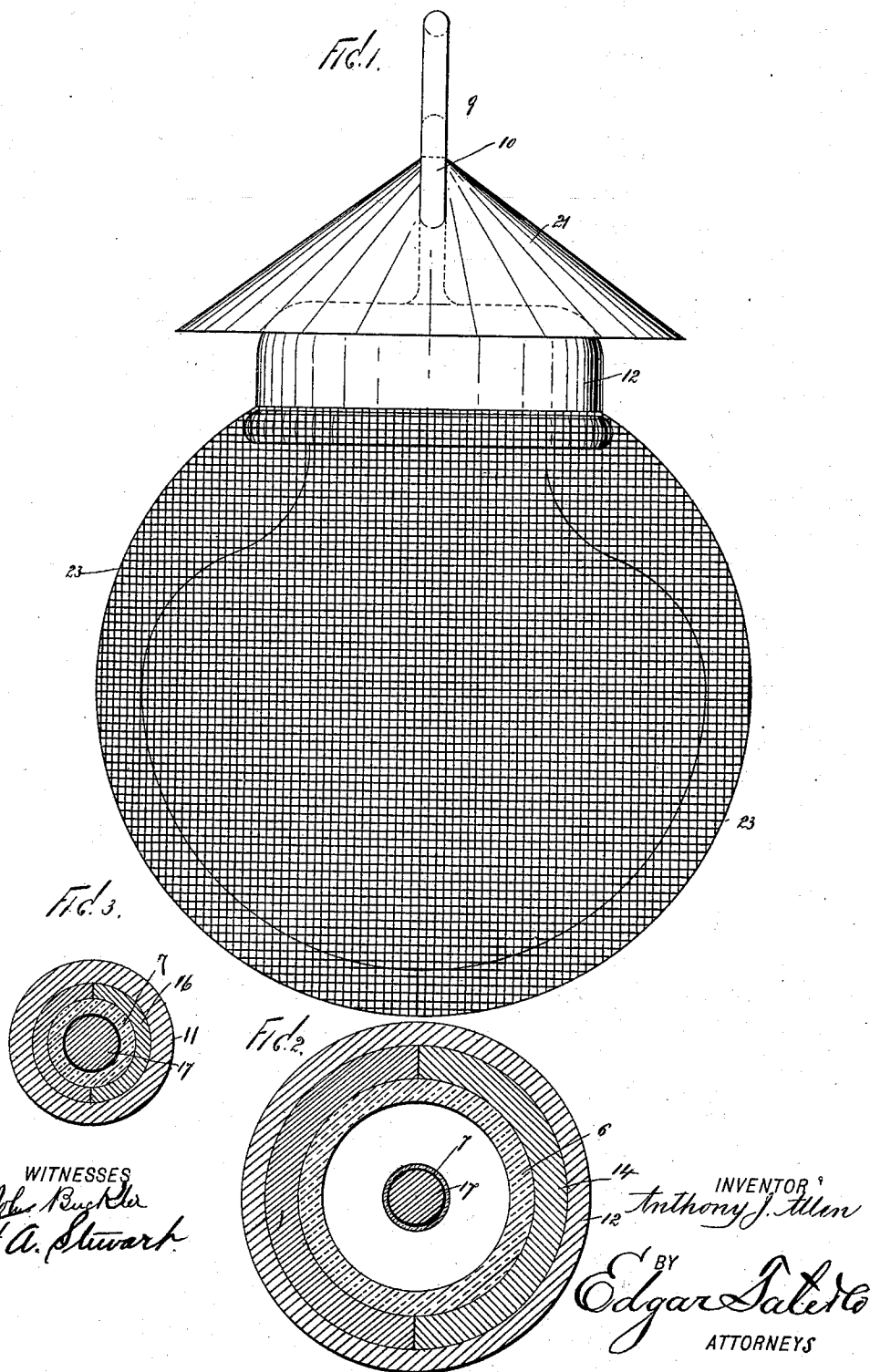
Patented May 1, 1900.

A. J. ALLEN.
FIRE EXTINGUISHER.

(Application filed Feb. 21, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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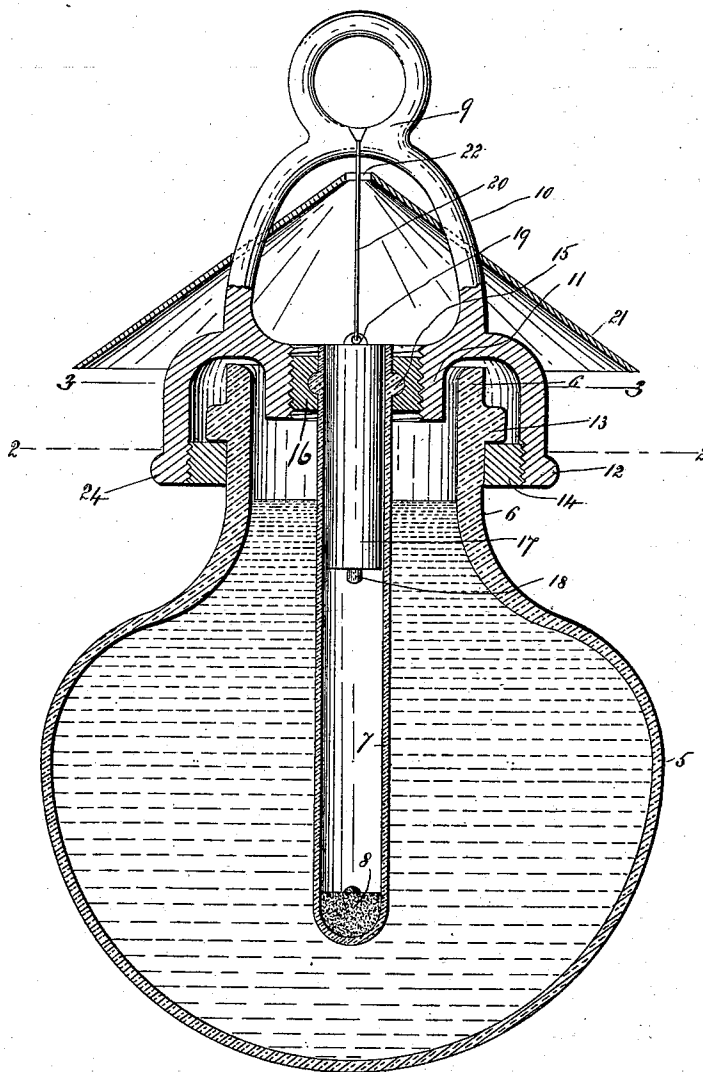
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2 Sheets—Sheet 2.

FIG. 4.



WITNESSES

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ANTHONY J. ALLEN, OF HOBOKEN, NEW JERSEY.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 648,371, dated May 1, 1900.

Application filed February 21, 1899. Serial No. 706,325. (No model.)

To all whom it may concern:

Be it known that I, ANTHONY J. ALLEN, a citizen of the United States, residing at Hoboken, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Fire-Extinguishers, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to automatic fire-extinguishers, and has more particular reference to a chemical extinguisher which shall be automatically actuated by a predetermined rise in the temperature of the surrounding atmosphere. I am aware that extinguishers of this class have been constructed in which a fuse communicating with explosive material surrounded with suitable combustion-destrorying substances was adapted to be ignited by flame and operate the extinguisher; also, that the explosion of chemical fire-extinguishers has been caused by electrical and other means; but my improvement is intended to be more responsive, reliable, and accurate than any before constructed in that the scattering of the extinguisher chemicals is caused by an explosion in the center of its mass, said explosion being caused by the mechanical action of an element of the construction directly and absolutely controlled by a length of fusible material which a predetermined degree of heat without the aid of flame will cause to fuse.

Reference is made to the accompanying drawings, forming a part of this specification, in which like figures of reference refer to like parts in the several views, and in which—

Figure 1 is a side elevation of my fire-extinguisher; Fig. 2, a section on the line 2 2 in Fig. 4; Fig. 3, a partial section on the line 3 3 in Fig. 4, and Fig. 4 a sectional elevation of my extinguisher.

Referring more particularly to the drawings, 5 is a bulbous globe or other receptacle designed to hold fire-extinguishing material. The globe 5 may be of any form and may, if desired, be designed to hold water or other fire-extinguishing substance and is provided with a neck portion 6, through which and into which globe is inserted a tube 7, which extends downwardly through approximately the entire globe 5 and is preferably of glass and

designed to contain a small mass of fulminated explosive, as at 8, the explosion of which it is designed shall scatter the contents of the globe 5, which latter will be shattered by the shock of the explosion. I also provide a suspension device 9, consisting of a ring or loop of metal provided with downwardly-extending arms 10, and integral with said arms 10 are formed concentric annular interiorly-screw-threaded heads 11 and 12. The head 12 is of larger diameter than the head 11 and is designed to surround and clamp the globe 5 and the head 11 to surround and clamp the tube 7 within the neck portion 6 of the globe 5, as about to be described. The neck portion 6 of the globe 5 is provided with an exterior annular bead 13, and a split ring 14 is formed to fit said neck portion 6 beneath said head 13 and is exteriorly screw-threaded. The tube 7 is provided in the upper portion thereof with an exterior annular bead 15, and an exteriorly-threaded split ring 16 is formed to fit said tube 7 and the bead 15 thereon. The threaded head 11 is screwed onto the ring 16, firmly clamping the tube 7 within said ring. The tube 7 is then placed in the globe 5, and the threaded head 12 is then screwed onto the ring 14, firmly clamping the tube 7 within the globe 5, and as the heads 11 and 12 are integral with the suspension-ring 9 the whole may be suspended thereby from a suitable hook, nail, or peg. It will be evident that the neck portion of the globe 5 is thus effectively closed by the tube 7, ring 16, head 11, head 12, and ring 14.

To explode the fulminated charge 8 in the tube 7, I employ a cylindrical firing-pin 17, provided with a nipple 18 and slidably mounted in the tube 7, fitting closely therein. The firing-pin 17 is provided with an eye or ring 19 in the upper end thereof and is normally supported by a length of fuse-wire 20, which is secured to said eye 19 and to the suspension-ring 9, and the fuse-wire 20 is constructed to be fusible under any desired predetermined thermal condition. In practice I have found that a wire fusible at approximately 150° Fahrenheit is best adapted to general working conditions, and I do not mean to be understood that I employ a wire alone, but may employ any suitable composition or substance adapted to the purposes specified. I

also employ a funnel-shaped deflector or heat-concentrating device 21, which I suspend from the arms 10 of the suspension device, and the deflector 21 is provided with an upwardly-opening central mouth or opening 22, through which the wire 20 passes, and the heated surrounding atmosphere is concentrated in its rising movement and caused to strongly affect the wire 20 to fuse the same. I further provide a netting or perforated shield or casing 23, (shown in Fig. 1,) which I secure to the exterior of the head 12 above a bead 24, formed thereon, and inclose the entire bulbous portion of the globe 5, and when the latter is shattered under concussion of the powder 8 the netting 23 prevents the scattering thereof and the possible resultant injury to person or property. The netting 23 also prevents accidental destruction of the globe 5 from chance falls or blows.

The operation of my device is evident from the foregoing description, taken in connection with the accompanying drawings, and the following statement thereof.

The globe 5 may be filled through the neck 6 thereof with any suitable fire-extinguishing material, preferably well-known chemical agents, and the tube 7, charged with fulminated explosive 8, is then inserted through the neck 6 thereof after securing it firmly in the arms 10 by means of the ring 16 and head 11, and the arms 10 are then securely bound to the globe 5 by means of the ring 14 and head 12, thus firmly binding the tube 7 in place and sealing the globe 5. The firing-pin 17 is fitted into the tube 7 and suspended by the fuse-wire 20 and the netting 23 secured about the globe 5. The entire device may be suspended in a dwelling-room, factory, ship's hold, or elsewhere by means of a pin or nail which may pass through the ring 9. If the surrounding atmosphere become heated to a predetermined temperature, it will rise through the deflector 21 and cause the wire 20 to fuse, releasing the firing-pin 17 and causing the explosive 8 to expand, breaking the tube 7 and the globe 5 and disseminating the extinguishing substance therein. The firing-pin 17 will be retained within the netting 23, as also the majority of the material of the globe 5 and tube 7, and after an operation of the device it may be renewed by replacing the globe 5 and tube 7 and their contents and the wire 20.

It is evident that many changes may be made in the construction and operation of my device without departing from the spirit thereof.

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

1. In a fire-extinguisher of the class described, a globe or receptacle adapted to be filled with fire-extinguishing material, a tube provided with explosive material, and a suspending device provided with circular heads adapted to support said globe, and to support said tube in said globe, said circular heads furnishing a closure for said globe, substantially as shown and described.

2. In a fire-extinguisher of the class described, a globe or receptacle adapted to be filled with fire-extinguishing material, a tube provided with explosive material, a suspending device provided with circular heads adapted to support said globe and to clamp said tube in said globe, a firing-pin slidably mounted in said tube, and adapted to fire said explosive, and a wire or strand of fusible substance secured to said fastening device and said firing-pin, said circular heads furnishing a closure for said globe, substantially as shown and described.

3. In a fire-extinguisher of the class described, a globe or receptacle adapted to be filled with fire-extinguishing material, a tube provided with explosive material, a suspending device provided with circular heads adapted to support said globe and to clamp said tube in said globe, a firing-pin slidably mounted in said tube, and adapted to fire said explosive, and a wire or strand of fusible substance secured to said fastening device and said firing-pin, said circular heads furnishing a closure for said globe, and a shade or deflector connected with said suspending device and surrounding said wire or strand, substantially as shown and described.

4. In a fire-extinguisher of the class described, a globe or receptacle adapted to be filled with fire-extinguishing material, a tube provided with explosive material, a suspending device provided with circular heads adapted to support said globe and to clamp said tube in said globe, a firing-pin slidably mounted in said tube, and adapted to fire said explosive, and a wire or strand of fusible substance secured to said fastening device and said firing-pin, said circular heads furnishing a closure for said globe, and a netting, or screen secured to and surrounding said globe, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 18th day of February, 1899.

ANTHONY J. ALLEN.

Witnesses:

F. A. STEWART,
V. M. VOSLER.