April 5, 1927. 1,623,510

A. E. WAGGONER

FIRE EXTINGUISHER

Filed Nov. 30, 1923

FIG I

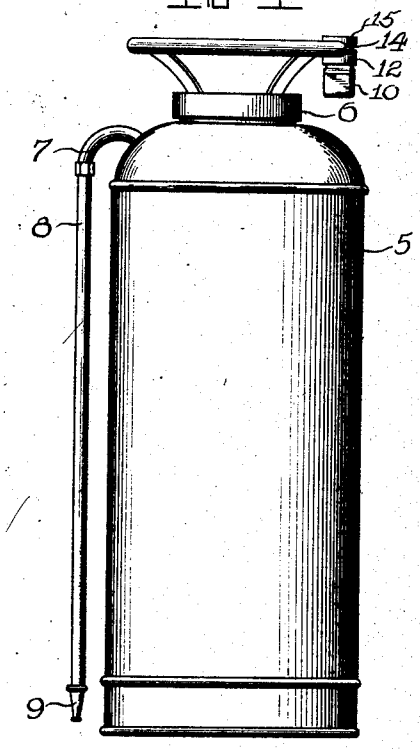


FIG II

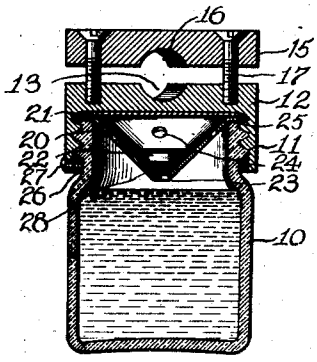
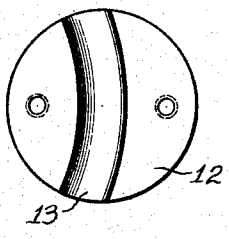


FIG III



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Patented Apr. 5, 1927. 1,623,510

UNITED STATES PATENT OFFICE.

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FIRE EXTINGUISHER.

Application filed November 30, 1923. Serial No. 677,591.

The invention relates to indicating devices for fire extinguishers.

In the use of chemical extinguishers of the type in which the tank contains a volume of water and a quantity of chemical suspended in a bottle above the water level and adapted to mix with the water upon the inversion of the tank, it frequently occurs that the tank will be inverted accidentally or otherwise when it is not to be used and it also occurs that after the extinguisher has been used, it will be restored to its place without being recharged. As a result of these conditions, it sometimes occurs that extinguishers are not in operative condition when occasion arises for their use. The object of the invention is to provide an indicating device which will readily indicate to the casual observer that the extinguisher is inoperative or has not been charged, since the last time it has been inverted.

A further object of the invention is to provide a simple device of this character which may be readily attached to and used in connection with the extinguishers now in general use.

The invention consists in the several novel features hereinafter set forth and more particularly defined by claims at the conclusion hereof.

In the drawings: Fig. 1 is a side of a fire extinguisher provided with the invention. Fig. 2 is a vertical section through the indicating device. Fig. 3 is a plan, the upper clamp member being removed.

The invention is exemplified in a fire extinguisher comprising a tank 5 provided with a removable cap 6 and a discharge elbow 7, a flexible pipe 8 connected to said elbow and to a nozzle 9. This fire extinguisher may be of usual construction and is provided with a chemical bottle which is adapted to release the chemical into the water in the tank when the tank is inverted, as well understood in the art.

The improved indicating device comprises a small bottle or jar 10 of glass or suitable transparent material, which is adapted to contain a column of water. The upper end of the jar is connected by a screw-thread 11 to an interiorly threaded cap 12. Cap 12 is provided with a curved groove 13 adapted to receive the usual ring 14 on the cap 6 of the extinguisher. A circular plate 15 is provided with a similar groove 16 which receives and conforms to the upper portion of ring 14. Plate 15 and caps 12 are thus adapted to be clamped and firmly secured to the ring 14 by screws 17 which extend through plate 15 and are threaded into cap 12. This construction exemplifies a clamp by which the indicating device may be readily secured to a fire extinguisher of usual construction without modification of the extinguisher. A capsule retainer 20, usually formed of a sheet of copper, has its margin adapted to extend between the upper rim of bottle 10 and cap 12, a gasket 21 being interposed between the retainer rim and the cap, so that when the bottle is screwed tightly into the cap, a waterproof joint will be formed to prevent the evaporation of water in the bottle. The central portion of the retainer is depressed or conoidal to form a retaining chamber 25 above the level of the water in the bottle for capsule 22, a wire screen being disposed between the capsule and the retainer to prevent the capsule from clogging opening 23. Opening 23 is formed in the apex of the retainer portion 20 and holes 24 are formed adjacent the upper end of the bottle-neck, so that when the fire extinguisher is inverted or tilted sufficiently to bring the water in the tank 5 into contact with the chemical in said tank, the water in bottle 10 will simultaneously pass into and circulate through the chamber 25, causing the capsule 22 to be dissolved. This capsule contains sufficient coloring matter to highly and distinctively color the water in the bottle as soon as the water comes in contact therewith. In order to prevent the bottle 10 from becoming loose or being released by turning only, an exterior groove 26 is formed in the bottle neck to receive a screw 27 extending through the depending flange of cap 12. This will discourage the removal of the bottle by other than inspectors or those having the extinguishers in charge.

In the operation of the device, the water in bottle 10 will be retained clear until the extinguisher is inverted or tilted and as soon as that is done, the water in the bottle will flow into capsule chamber 25 and will become highly colored by dissolving the capsule. If the extinguisher is put back into place, the colored water will indicate to a casual observer or inspector that the extinguisher is inoperative or should be recharged. When the extinguisher has been

recharged or inspected and found to be in operative condition, the colored water will be poured out of bottle 10. A fresh capsule 22 will then be placed in chamber 25 and clear water placed in the bottle, whereupon the indicating device will be again operative.

The invention thus exemplifies an automatic device for reliably indicating whether or not the fire extinguisher has been tilted or inverted. Also a device of this character which is adapted to be readily applied or clamped to a fire extinguisher of usual construction.

The invention is not to be understood as restricted to the details set forth, since these may be modified within the scope of the appended claims, without departing from the spirit and scope of the invention.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent, is:

1. The combination with a chemical fire extinguisher adapted to become active upon inversion thereof, of a device for automatically indicating that the extinguisher has been tilted comprising an open top bottle containing a liquid, a cap for closing the top of said bottle, a one-piece substantially conical retainer having its upper margin held between the top of the bottle and the cap and forming with the latter a chamber, a solid soluble liquid coloring capsule in said chamber, said retainer having an opening formed in its apex and perforations adjacent its upper end, through which the liquid will pass when the extinguisher is inverted to circulate through the chamber and dissolve the capsule, and means for attaching said device to the extinguisher.

2. The combination with a chemical fire extinguisher adapted to become active upon inversion thereof, of a device for automatically indicating that the extinguisher has been tilted comprising a bottle having a constricted neck and containing a liquid, a cap having a socket into which said neck extends, interengaging screw threads integrally formed on the inner neck and the periphery of the cap respectively, a perforated retainer disposed in the constricted neck, means in the retainer for changing the color of the liquid when the extinguisher is inverted, and means for securing the cap to the extinguisher.

Signed at Chicago, Illinois, this 12th day of July, 1923.

ALBERT E. WAGGONER.