

No. 887,392.

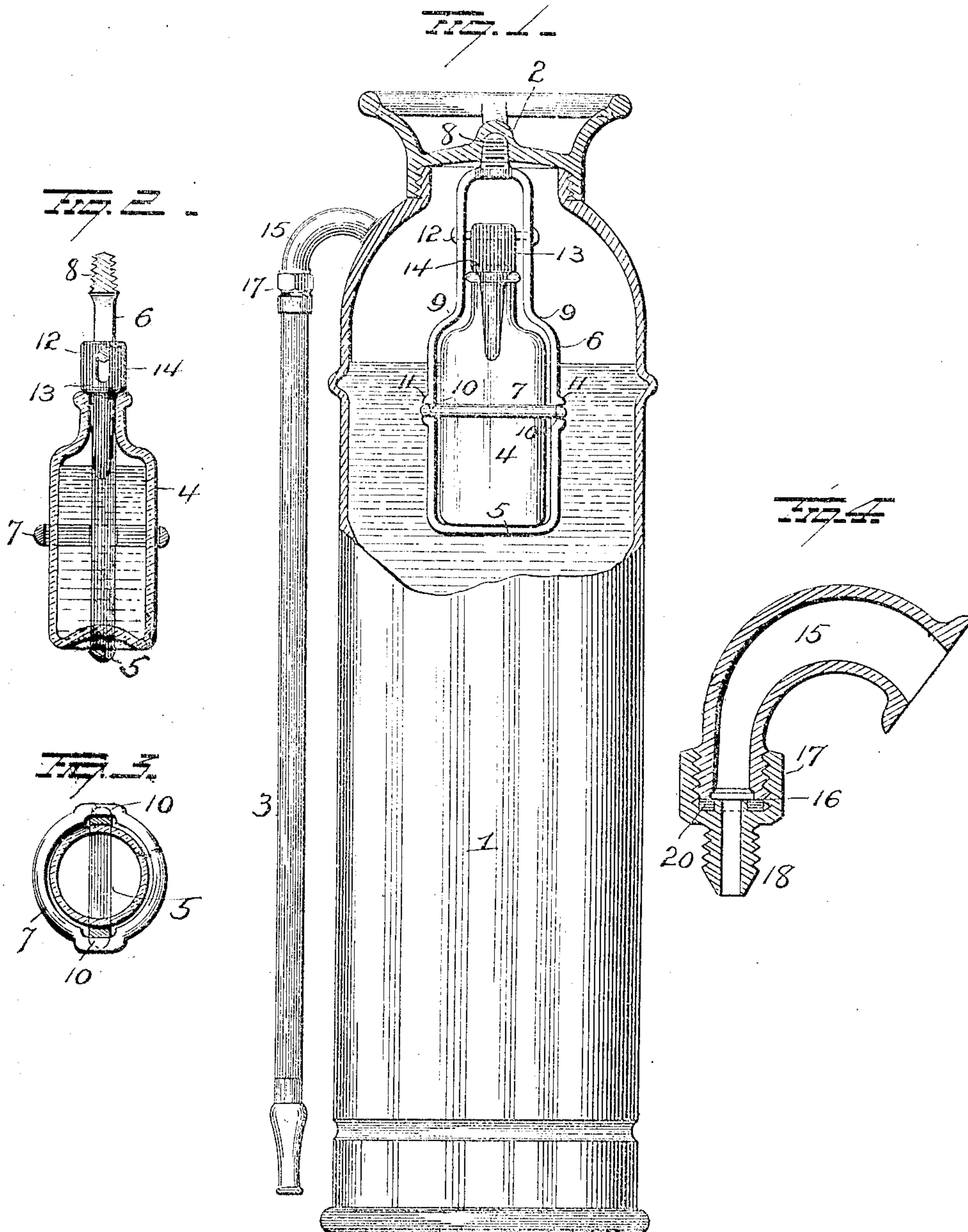
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FIRE EXTINGUISHER.

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# UNITED STATES PATENT OFFICE.

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## FIRE-EXTINGUISHER.

No. 887,392.

Specification of Letters Patent.

Patented May 12, 1908.

Application filed April 7, 1906, Serial No. 310,491. Renewed April 2, 1908. Serial No. 424,771.

*To all whom it may concern:*

Be it known that I, LEWIS A. HARKER, a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in 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 an improved fire extinguisher, the object of the invention being to provide an improved construction of acid bottle cage and improved stopper for the bottle and mounting for the stopper, which permits the stopper to move up and down yet limits such movement and prevents possibility of its becoming misplaced or lost, and the cage allows the bottle to be easily and quickly removed and replaced and is of extremely simple construction, cheap to manufacture, and securely holds the bottle in proper operative position.

With these objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in vertical section illustrating my improvements. Fig. 2 is a longitudinal sectional view through the bottle and its cage, with the stopper shown in elevation. Fig. 3 is a transverse sectional view through the bottle and cage, and Fig. 4 is a view in section of the hose coupling.

1 represents the tank of a portable fire extinguisher, provided with a screw threaded neck at its upper end, closed by a cap 2, and said tank is provided with the hose connection 3, for directing the extinguishing fluid and gas upon the fire. This tank 1, is adapted to contain a soda solution up to the desired level, preferably up to the flange or bead uniting the dome and body of the tank, and an acid solution, such for instance, as sulfuric acid, for mixing with the soda solution, when the tank is inverted, is contained in a bottle 4, and supported by my improved cage 5, which will now be described. The cage 5, comprises a metal swing 6, and a ring 7. The swing 6 has a screw threaded lug 8 at its upper end to screw into a threaded socket in the center of the cap or cover 2, and said swing is contracted at its upper portion

to provide curved shoulders 9, and hold the bottle against sliding longitudinally in the swing, when the tank is inverted. The parallel side bars of the cage are made with recesses 10, to receive and hold the ring 7 and beveled enlargements 11 are provided on the upper sides of the recesses to permit the ring to be slid therein, and held in the recesses, and it will be seen that this ring 7 serves to hold the bottle against possibility of lateral movement and consequent escape from the swing. However, the ring 7 can be easily slid upward from the recesses, when the side bars are pressed inward, to permit the ring to ride over shoulders 11, and when the ring is forced downward it will when engaging the beveled shoulders 11, compress the side bars and move into the recesses, the side bars springing outward and securing the ring in the recesses.

In the upper contracted portion of the swing, a cross pin 12 is secured, and my improved stopper 13 has an elongated slot 14 therein, to receive the pin 12. This slot 14 permits free movement of the stopper to release the contents of the bottle, when the tank is inverted, and yet the pin precludes all possibility of the stopper becoming displaced or lost.

The stopper is preferably cast of commercial lead, cored to form the slot 14, and has an elongated tongue at its lower end projecting down the neck of the bottle to hold the stopper against pivotal movement on the pin, but compel the same to fall back to closing position when the tank is righted. The stopper might, of course be composed of other material, and might be altered in shape, and the swing might be made of various metals, although I prefer to construct the same of cast brass.

By constructing my improvements as above explained, a cage of extremely simple construction is secured, which permits of easy and quick removal and replacing of the bottle whenever desired, and the stopper while free to move up and down to release the contents of the bottle, such movement is limited and is always maintained in its proper operative position.

The hose 3 is connected to a tube 15 by an improved coupling which will now be explained. The end of the tube 15 is externally screw threaded and internally bored to form a narrow bearing face 16. 17 repre-



sents the coupling nut having a threaded nipple 18 to receive the hose 3 and is made with an internal circular groove 19 which provides a seat for a washer 20 against which the end of tube 15 is tightly screwed effecting a perfectly tight joint. By reason of this grooved seat for the washer 20 and counterboring the end of tube 15 to engage the washer outside the opening or passage in the coupling nut, the washer cannot be forced over to close or partially close the passage which is a source of great annoyance to similar devices heretofore in use.

A great many slight changes might be made in the general form and arrangement of the parts described without departing from my invention, and hence I do not restrict myself to the precise details set forth but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

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

25 1. A bottle cage, comprising a swing made in a single piece having vertical members to be disposed alongside the bottle, a bottom member to be disposed under the bottle and a top member to extend over the top of the

bottle, a lug projecting upwardly from the top member of the cage for attachment to the cover of an extinguisher tank and a removable ring to encircle the bottle and engage the vertical members of the swing. 30

2. The combination with a cage for a fire extinguisher, of a cross pin in the upper portion of the cage and a stopper mounted in said cage and hung on said cross pin, said stopper having a vertical elongated slot through which said pin passes. 35 40

3. The combination with a fire extinguisher tank, and a cap or cover therefor, of a swing having a threaded lug screwed into said cap or cover, said swing constructed to form shoulders to limit upward movement of the bottle and having recesses in its side bars, a ring placed around the bottle and located in said recesses, a stopper for the bottle, and a cross pin in the swing passing through an elongated slot in the stopper. 45 50

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

LEWIS A. HARKER.

Witnesses:

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S. G. NOTTINGHAM.