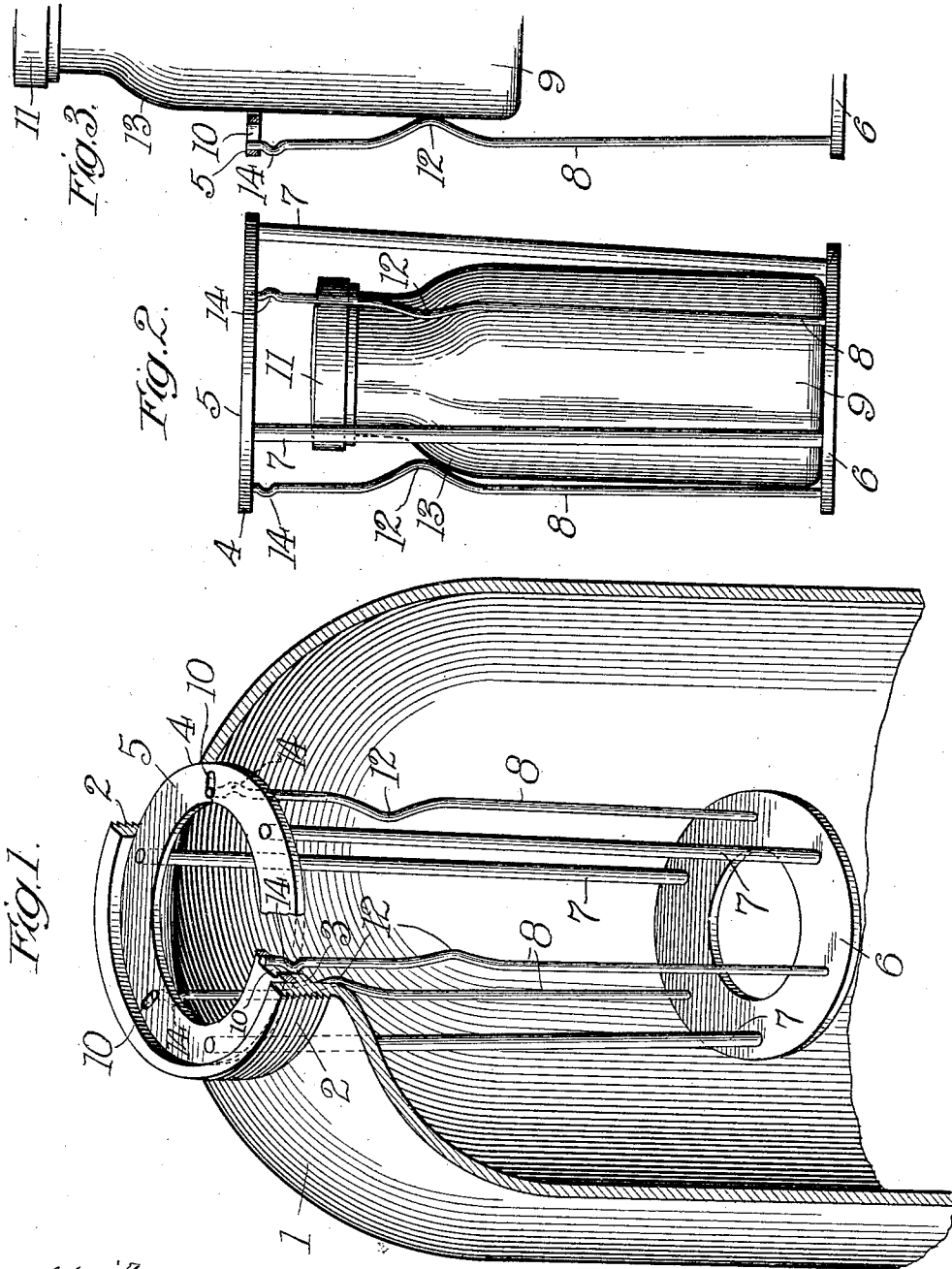


W. A. STAFF.
FIRE EXTINGUISHER.
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936,487.

Patented Oct. 12, 1909.



Witnesses
R. A. White.
H. R. L. White

Inventor
William A. Staff,
By *Summers & Summers*
Attys

UNITED STATES PATENT OFFICE.

WILLIAM A. STAFF, OF CHICAGO, ILLINOIS.

FIRE-EXTINGUISHER.

936,487.

Specification of Letters Patent.

Patented Oct. 12, 1909.

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To all whom it may concern:

Be it known that I, WILLIAM A. STAFF, a citizen of the United States of America, and a resident of Chicago, Cook county, State of Illinois, have invented certain new and useful Improvements in Fire-Extinguishers, of which the following is a specification.

The main object of this invention is to provide a fire extinguisher having improved means for supporting the acid bottle to prevent its accidental displacement during operation, and to insure the mixture of the gas forming elements when the device is in use.

A specific construction embodying this invention is illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view, partly broken away and partly in section, of the fire extinguisher casing and bottle cage. Fig. 2 is a side elevation of the cage with the acid bottle in its normal position. Fig. 3 is a fragmentary section of the cage, showing the bottle partly removed therefrom and retained in such position by the resilient retaining bars or members.

In the construction shown, the casing 1 is provided with a threaded neck 2 on which the closing or sealing cap, not shown, is adapted to be secured. On the inner side of said neck is an inwardly directed flange or other supporting member 3 adapted to support the bottle cage, which is indicated as a whole by 4. Said cage comprises an upper, apertured end member 5 adapted to enter the neck 2 and rest upon the flange 3, and a lower end member 6 which is of a size to pass through the neck 2 below the flange 3 and is rigidly secured to and supported from said upper end member 5 by a plurality of connecting rods or stays 7, which are rigidly secured at their ends in said end members. A plurality of resilient retaining bars or members 8 are secured at their lower ends to said end member 6, and are adapted to swing or spring outwardly or apart at their upper ends to permit the admission of the bottle or other acid holding receptacle 9 between them. The upper ends of said retaining members are movably secured in transverse or radial slots 10 in the upper end member, which slots are adapted to limit the movement of said ends in either direction. Any preferred number of said retaining members may be employed, and they are preferably spaced apart equidistantly and so connected with the lower end member that

their upper ends normally rest at the inner ends of said slots, as shown in Fig. 1.

The bottle 9 is supported between said bars 8 on the end member 6, and is provided with a loosely fitting stopper 11 which is adapted to fall therefrom when the casing is inverted and permit the contents of the bottle to mingle with those of the casing, and by chemical action to form gas adapted to force out the contents of the casing. Each of said retaining members 8 is provided intermediate its ends with an inwardly directed shoulder or projection 12 adapted to seat over and rest upon the shoulder 13 of the bottle when the latter is in its normal position in the cage, as shown in Fig. 2, and hold the bottle securely when the casing is inverted.

When the bottle is emptied, it must be refilled to render the device operative, and it has sometimes happened, where the bottle has been held between yielding retaining members, that when the bottle is being removed or replaced, its retaining members are so sprung or distorted that they will not again grip the bottle with sufficient tenacity to hold it in place when the casing is inverted. As a consequence, the bottle falls from the cage, and its stopper is held against the closing cap and prevented from falling from the bottle, thus preventing the contents of the bottle from flowing out to render the device operative. In order to obviate this difficulty and insure a firm grip by the retaining members upon the bottle when the cage is in place, each retaining member is provided adjacent its upper end with an outwardly directed projection or shoulder 14 adapted, when the cage is in place in the casing, to abut against the flange 3 and hold the upper end of the retaining member at the inner end of its slot 10 and thereby hold the projection 12 over the shoulder of the bottle.

The operation of the construction is as follows: The bottle is placed in its cage when the latter is removed or partially removed from its casing, so as to permit the retaining members to spring outwardly and let the bottle pass the projection 12. When the bottle is in position, the retaining members spring back to place, with said projections 12 extending over the shoulder 13 of the bottle, and when the cage is placed in the casing, as shown in Fig. 1, the shoulders 14 abut against the flange 3 and hold said

members at the inner limit of their movement and prevent the accidental displacement of the bottle when the casing is inverted.

5 When it is desired to refill the bottle, it may be removed from the cage, or, if desired, partially removed, as shown in Fig. 3, and said retaining members will hold it in such position.

10 Although but one specific embodiment of this invention is herein shown, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of
15 this invention.

I claim:

1. In a fire extinguisher, the combination of a casing, and a bottle cage removably supported therein and comprising end members, means rigidly connecting said end members together, and independently movable retaining members adapted to confine the bottle and to spread apart at their upper ends to permit the bottle to be withdrawn from the cage, said retaining members being adapted to engage the casing adjacent to the upper end member and prevent the spreading of said retaining members when the cage is in position in the casing, and means on the upper member for limiting such spreading when the cage is removed from the casing.

2. A fire extinguisher, comprising a casing, a bottle, and a cage for supporting said bottle in said casing and comprising end members, a plurality of resilient retaining members adapted to grip said bottle, said retaining members being each laterally movable in one end member and each rigidly secured to the other end member, and means on said one end member adapted to limit the spreading of said retaining members when removed from the casing, said retaining members being shaped to engage the casing and prevent the spreading of said retaining members when the cage is in position in said casing.

3. A fire extinguisher, comprising a casing having an inwardly projecting sup-

porting member thereon, an upper radially slotted end member supported on said supporting member, a lower end member, means rigidly connecting said end members together, resilient retaining members secured to the lower end member and each projecting into a slot in the upper end member, and means thereon adapted to engage said supporting member and force the retaining members inwardly of said slot with respect to the upper end member.

4. A fire extinguisher, comprising a casing, a supporting member thereon, a cage supported at its upper end on said supporting member, resilient retaining members supported on the lower end of said cage and projecting upwardly therefrom and each adapted to move independently of the others and of the top of said cage, means on said retaining members adapted to engage said supporting member and force the retaining members to the inner limit of their movement, and a bottle gripped between said retaining members.

5. A fire extinguisher, comprising a casing having an inwardly directed supporting member therein, a ring shaped end member on said supporting member and provided with radial slots, a bottle beneath said end member, means rigidly engaged to said end member and adapted to support the bottle, said means comprising upwardly directed resilient retaining members thereon each having its upper end projecting into one of said slots and having a shoulder adapted to engage over a shoulder on the bottle, and a projection on each retaining member adapted to engage the supporting member and hold the retaining member at the inner end of its slot when said ring shaped end member is resting on said supporting member.

Signed at Chicago this 24th day of February, 1909.

WILLIAM A. STAFF.

Witnesses:

EUGENE A. RUMMLER,
MARY M. DILLMAN.