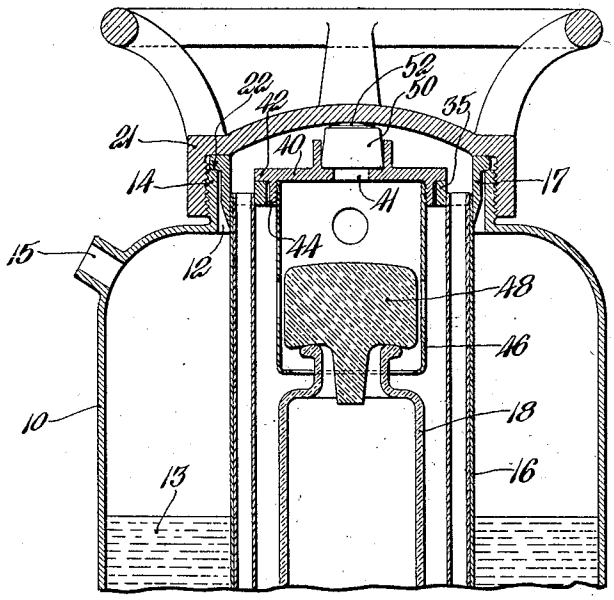
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FIRE EXTINGUISHER

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FIRE EXTINGUISHER

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This invention relates to fire extinguishers.

The invention has for an object to provide a novel and improved construction of fire extinguisher of a character in which the extinguishing liquid is contained within the outer or main casing of the fire extinguisher, and wherein the gas generating chemicals are contained within an inner container removably positioned within the outer container.

With this object in view the invention consists in the fire extinguisher hereinafter described and particularly pointed out in the claims at the end of this specification.

The drawing illustrates in vertical section a portion of the preferred embodiment of the present fire extinguisher.

In certain fire extinguishers at present upon the market, the fire extinguishing fluid, either water or calcium chloride solution, is contained within the outer or main extinguisher casing, and the chemicals for generating the gas pressure utilized in forcing the extinguishing fluid from the outer container, are contained within an inner container removably positioned within the outer container. The present invention aims to provide a novel, improved and simplified construction of fire extinguisher of this character, and in which the inner container is closed at its upper end by a novel construction of cap member, having provision whereby accidental explosions due to inadvertent mixing of the gas generating chemicals and the obstruction of the gas produced from within the inner container may be avoided. Furthermore, the present construction of extinguisher is such as to facilitate cleaning of the inner container.

Referring to the drawing, which illustrates the preferred form of the invention, 10 represents the extinguisher casing preferably of usual construction, having a mouth 12 through which the extinguishing fluid 13 is introduced into the casing, and which is also provided with a threaded neck portion 14 upon which the usual form of extinguisher cap 21 is screwed to close the opening 12. The extinguisher casing 10 is also provided with a discharge nozzle 15, through which the extinguishing liquid is expelled during the operation of the extinguisher.

The chemicals for producing the gas for expelling the extinguishing liquid are contained within an inner container 16, provided at its upper end with a flanged portion 17, which rests upon a seat 22 formed on the neck 14 of the extinguisher casing, as shown in the drawing. An acid bottle 18 adapted to contain a supply of acid is operatively supported within the inner container. The upper end of the inner container is provided with an annular plate, having a raised ring portion 35, and provision is made for closing the upper end of the inner container in a manner such as to insure against accidental explosion of the container in the event of inadvertent production of gas within the container and clogging of the usual gas outlets therefrom. For this purpose as herein shown, the container is provided with a cap member 40, having an opening formed therein, herein shown as comprising a hole 41 bored through the central portion of the cap. The cap member is provided with a flange portion 42, adapted to rest on the upstanding ring 35, and with a depending portion 44 adapted to fit down into the cylindrical chamber formed by the ring 35. The cap member preferably carries a stopper retaining cage 46, having a porcelain stopper 48 therein, arranged as illustrated in the drawing, to close the mouth of the acid bottle when the extinguisher is in a normal or upright position, and adapted to open sufficiently to permit free outflow of the acid when the extinguisher is inverted.

Upon inversion of the extinguisher, the gas generated within the container 16 is conducted to above the extinguishing liquid 13, through two sets of tubes, one of which 19 leads from within the container to conduct the gas into the space under the extinguisher cap, and the other of which 21 extends entirely through the container to conduct the gas to without the container and above the extinguishing liquid 13.

The cap member 40 is provided with a cushion stopper 50, herein shown as comprising a tapered rubber stopper set into a recess

in the upper portion of the cap member and above the hole or opening 41. The cap member and the stopper are made of such length that when the extinguisher cap is screwed to the neck 14, the under surface of the cap forces the stopper downwardly to seal the hole in the cap member and to retain the cap member in its operative position, closing the upper end of the inner container 16.

In order to insure against accidental twisting of the stopper and consequent liability of destruction of the same, I provide a metallic member 52 upon the upper surface of the stopper and between it and the extinguisher cap, and which operates to permit the extinguisher cap to be screwed upon the casing without exerting a twisting effect upon the stopper.

From the description thus far it will be observed that in the present construction of extinguisher the cap member 40 slidably fits into the opening at the upper end of the inner container, thus permitting the cap to be readily removed when the extinguisher is recharged. The difficulties due to corrosion which have heretofore sometimes been experienced with threaded caps of prior extinguishers are thus avoided.

The cushion member 50 serves the double function of holding the cap member 40 upon the mouth of the inner container, and also for closing the opening 41 in the cap member 40. The provision of the opening 41 in the cap member 40 serves as an absolute insurance against accidental explosions when the inner container is being recharged. The posibility exists for the cap member to become corroded even with the slidably fitting construction of cap member of the present invention, and in the event that the inner container is accidentally inverted after having been recharged and before having been placed in the extinguisher casing and the usual outlets for the gas clogged, then the presence of the opening 41 insures free passage of the gas to without the container and eliminates all liability of accidental explosion.

While the preferred embodiment of the invention has been illustrated and described, the invention may be embodied in other forms within the scope of the following claims.

Having thus described the invention, what is claimed is:—

1. In a fire extinguisher of the character described, in combination, an extinguisher casing, an inner container for gas pressure generating chemicals removably positioned within the container and provided with an open upper end, a cap member forming a closure for the open upper end of the inner container and itself provided with an opening, an extinguisher cap for the extinguisher casing, and a resilient member between the extinguisher cap and the cap for the inner container arranged to form a closure for the opening in said last mentioned cap.

2. In a fire extinguisher, in combination, an outer casing provided with an opening, a cap for closing said opening, an inner container provided with an opening, means for retaining said inner container in fixed relation to said outer casing, a closure member for said opening in said inner container, an opening in said closure member and a cushion member between said cap member and said closure member arranged to retain said closure member in position and to close the opening therein.

3. In a fire extinguisher, in combination, an outer casing provided with an opening, a cap for closing said opening, an inner container provided with an opening and having a flange which engages a seat on said outer container, a closure member for said inner container, an opening in said closure member, and a cushion member carried by said closure member and engaging said cap member to retain said closure member in position and close the opening therein.

4. In a fire extinguisher, in combination, an outer casing provided with an opening in its upper end, a cap for closing said opening, an inner container retained in fixed relation within said casing, an opening in the upper end of said inner container, and a yielding stopper member between said cap member and the upper end of said inner container and closing the opening in said upper end.

5. In a fire extinguisher, in combination, an outer casing provided with an opening, a cap for closing said opening, an inner container provided with an opening, means for retaining said inner container in fixed relation within said casing, a closure member for said opening in said inner container, an opening in said closure member, a yielding cushion member carried by said closure member and closing the opening therein, and a bearing member carried by said cushion member and engaging said cap member to retain said closure member in position.

6. In a fire extinguisher, in combination, an outer casing provided with an opening, a cap for closing said opening, an inner container provided with an opening, means for retaining said inner container in fixed relation within said casing, a closure member for the opening in said container, an acid receptacle within said inner container, a stopper for said receptacle, a retaining member for said stopper carried by said closure, an opening in said closure, and a cushion member between said cap and closure members arranged to retain said closure member in position and close the opening therein.

In testimony whereof I have signed my name to this specification.

RALPH W. AUSTIN.