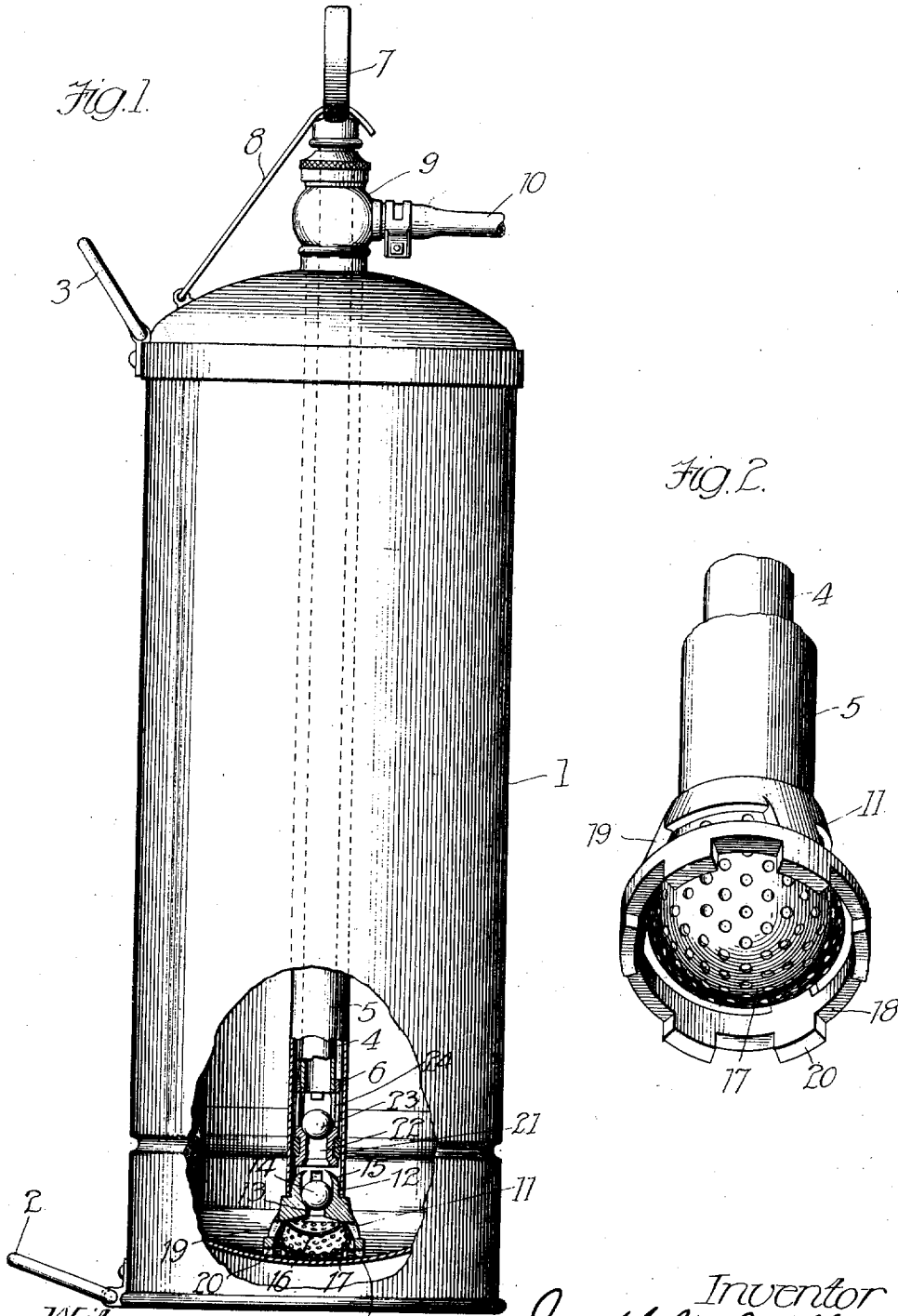


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FIRE EXTINGUISHER.
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1,018,514.

Patented Feb. 27, 1912.



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UNITED STATES PATENT OFFICE

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FIRE-EXTINGUISHER.

1,018,514.

Specification of Letters Patent.

Patented Feb. 27, 1912.

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To all whom it may concern:

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

This invention relates to hand fire extinguishers and particularly to the type in which there is a liquid chemical which is forced out from the container by means of a pump. In devices of this kind, there is frequently a deposit of solid matter, caused by precipitation of some of the chemicals, and it is essential that means be provided for adequately insuring against the possibility that the suction inlet of the pump be obstructed by the accumulation of such solid matter. It is usual to provide some sort of screen over the suction inlet of the pump to prevent solid particles from being drawn into the pump, and to provide a guard for supporting the screen so as to prevent it from coming into contact with the walls of the container in such manner as to prevent the free flow of liquid into the pump.

The main object of this invention is to provide an improved construction for the strainer screen and the protecting guard surrounding it, so as to reduce to a minimum the possibility that the free flow of liquid to the pump will be seriously obstructed by the accumulation of solid particles, such as the scales of sediment accumulating in the bottom of the container.

An illustrative construction for accomplishing this object is shown in the accompanying drawings, in which:—

Figure 1 is a side elevation, partly broken away, of a hand fire extinguisher provided with a pump strainer cage constructed according to this invention. Fig. 2 is an enlarged detail in perspective of the pump strainer and guard cage.

In the construction shown in the drawings, the extinguisher comprises a container or casing 1, provided with handles 2 and 3 for carrying and manipulating it and provided with a pump 4 which extends longitudinally through the interior of the casing from the top to a point adjacent to the bottom.

The pump comprises a cylinder or casing 5, a piston rod 6 extending longitudinally through the cylinder 5 and having a handle

7 at its upper end. In order that this handle may serve as a means for carrying the apparatus, in addition to serving as a pump handle, a hook 8 is hinged on the top of the casing in position to engage the handle, as shown in Fig. 1. This hook is preferably made of spring material, so that it will have to be sprung into and out of engagement with the handle 7, and through its resilient pressure thereon will prevent its becoming accidentally disengaged therefrom. The pump cylinder 5 also extends through the upper end of the casing 1, and terminates in a fitting 9, to which the discharge hose 10 is connected.

At the lower end of the valve cylinder 5, there is a fitting 11, which has threaded engagement at 12 with the pump cylinder, and which has a cylindrical aperture 13 shaped at its upper end to form a seat for a ball valve 14, the ball valve being guided and limited in its movements by a cage made up of prongs 15 integral with the fitting 11. The lower end of the aperture 13 is guarded by a strainer screen 16, which is convex downwardly and is in turn surrounded and protected by a second downwardly convex screen or cage 17. The lower part of the fitting 11 is in the form of a bell shaped skeleton frame or cage protecting the sheet metal screens 16 and 17 from injury. This comprises a ring 18 surrounding the lower part of the outer screen 17, being connected with the upper part of the fitting by suitable spider arms 19 and having projections 20 at the bottom to allow of the free flow of liquid to the screen from all sides. The arms 11 and ring 18 are spaced away from the screen 17 at all sides, but are sufficiently near to it to partly support pieces of solid matter if they are large enough to clog the perforations in the screens, in such manner as to prevent them from lying flat against the surface of the screen 17, and thereby reducing to a minimum the possibility that an accumulation of flakes or particles of solid matter in the lower part of the casing 1 will obstruct the free flow of liquid to the pump. The piston 21 of the pump has a liquid passage 22 extending through it and is preferably packed at its periphery by a band of lead or other metallic packing. The passage 22 in the piston 21 is controlled by a ball valve 23 surrounded by a skeleton cage 24 threaded at its upper end to the piston rod 6.

The operation of the pump will be readily

understood from the foregoing description, and it will be seen that when solid matter is sucked toward the screens by the operation of the pump, it will be unable to pack 5 tightly against the perforated surface of the screens, because the flakes or lumps of solid matter will be partly supported by the surrounding cage, so that they will lean partly against the perforated screen and 10 partly against the cage, and will thereby allow plenty of room for the liquid to have access to the pump, even though there be a considerable accumulation of solid matter.

Although but one specific embodiment of this invention is herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention, as defined by the following 20 claims.

I claim:—

1. In a fire extinguisher, a pump having an inlet opening, a convex screen arranged over said opening to obstruct the flow of 25 solid matter into said inlet, and a guard cage located outside of said screen and spaced away from said screen, comprising intersecting parts adapted to coact with said screen to support particles of solid matter that are too large to pass the perforations 30 in said screen, in such manner as to prevent said solid particles from completely obstructing such perforations.

2. In a fire extinguisher, a pump having an inlet opening, a convex screen arranged over said opening to obstruct the flow of 35 solid matter into said inlet, and a guard cage located outside of said screen and spaced away from said screen, comprising a ring surrounding said screen and intersecting parts adapted to coact with said 40 screen to support particles of solid matter

that are too large to pass the perforations in said screen, in such manner as to prevent said solid particles from completely obstructing such perforations. 45

3. In a fire extinguisher, the combination of a pump having an inlet, with a suction cage adjacent to said inlet and comprising a pair of perforated screens located one within the other, the outer screen being convex, 50 and a guard cage surrounding said outer screen, and comprising a bell-shaped skeleton frame surrounding said outer screen and comprising parts located near, but spaced 55 away from said outer screen in such manner as to have contact with and support particles of solid matter that are too large to enter the perforations of said screen and thereby serving to prevent such solid particles from 60 lying flat against the surface of said screen and completely obstructing the perforations thereof.

4. In a fire extinguisher, the combination of a pump having an inlet, with a suction 65 cage adjacent to said inlet and comprising a pair of perforated screens located one within the other, the outer screen being convex, and a guard cage surrounding said outer screen and comprising a bell-shaped skeleton 70 frame surrounding said outer screen and comprising an annular ring arranged concentrically with respect to said screen and provided with projections to prevent said ring from fitting against an even surface, 75 and spaced arms connecting said ring with the casing of said pump.

Signed at Chicago this 17th day of October 1911.

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