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CORROSION ARRESTOR FOR USE IN FIRE EXTINGUISHERS

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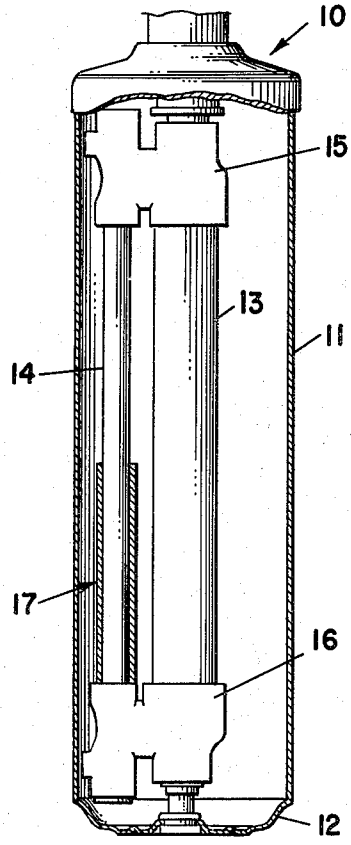



FIG. 1.

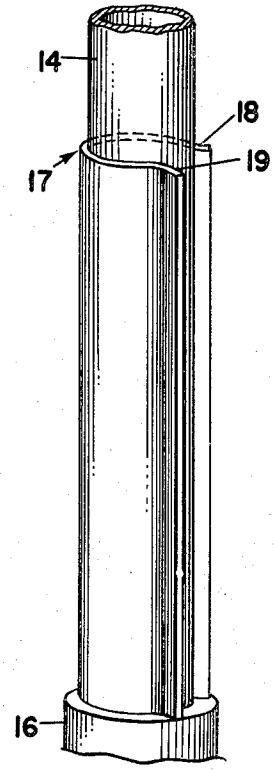



FIG. 2.

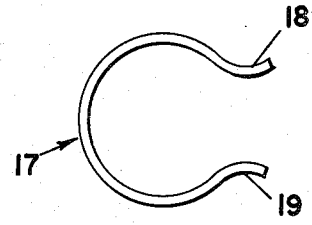



FIG. 3.

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# CORROSION ARRESTOR FOR USE IN FIRE EXTINGUISHERS

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This invention generally relates to apparatus for controlling and arresting corrosion of the interior of fire extinguisher tanks and parts disposed therein. More particularly, the invention relates to certain types of fire extinguishers which employ fire extinguishing fluids which may include traces of water and/or acids.

The corrosion problems associated with such extinguishers are set forth in some detail in Patent No. 2,563,171, entitled "Apparatus for Controlling Corrosion in Fire Extinguishers" and issued to Charles K. Huthsing, Jr., on August 7, 1951. It is not believed necessary, therefore, to review in detail the basic theory of the problem towards which the present invention is directed.

The present invention has as its primary purpose the provision of a corrosion arrestor for a fire extignuisher which may be readily positioned within the interior of a fire extinguisher tank and securely retained in place, and yet which may be conveniently and simply replaced without dismantling any parts of the extinguisher.

Thus, an object of the present invention is to provide an improved corrosion arrestor for a fire extinguisher which is so constructed that it may be readily positioned and retained within the interior of a fire extinguisher tank.

Another object of the present invention is to provide an improved corrosion arrestor for a fire extinguisher which is of a relatively simple and easily fabricated construction.

Another further object of the present invention is to provide an improved corrosion arrestor for a fire extinguisher which may be quickly removed if necessary and replaced with a new unit.

A still further object of the present invention is to provide an improved corrosion arrestor for a fire extinguisher which is efficiently shaped from the standpoint of maximum use of the sacrificial material employed, and yet which is also shaped for secure coupling to an internal component of the extinguisher tank as well as for expeditious manufacture.

These and other objects and advantages of the present invention are generally attained by providing an elongated spring clip of solid magnesium formed with a generally U-shaped cross section and designed to be sprung onto a cylindrically shaped member in coupled relationship thereto. The cylindrically shaped member may comprise a siphon tube, pumping chamber, or other member which may extend down into the interior of the fire extignuisher tank.

Of course, the invention is only applicable to fire extinguishers which include a tank and parts disposed therein formed of metals lower on the electro-chemical scale than magnesium such that the water and/or acids which may be disposed in the fire extinguisher fluid in the tank will be attracted to and attack the magnesium rather than the other metal materials constituting the tank and parts therein.

A better understanding of the present invention will be had by reference to the drawings showing an illustrative embodiment of the present invention, and in which:

FIGURE 1 is a side view, partially in section, illustrating the interior of a fire extinguisher tank, the head portion of the extinguisher not being shown;

FIGURE 2 is an enlarged perspective view of a part of the siphon tube of the extinguisher of FIGURE 1 having coupled thereto the improved corrosion arrestor according to the present invention; and,

FIGURE 3 is a top plan view of the corrosion arrestor, as such, as seen in FIGURES 1 and 2.



Referring now to the drawings, there is shown in FIGURE 1 is a fire extinguisher embodying a tank **10** having metal sidewalls **11**. The tank **10** is provided with a bottom closure **12**.

The tank **10** has axially extending therethrough a cylindrically shaped pump chamber **13** and a siphon tube **14**, also of circular cross section. The pump chamber **13** and siphon tube **14** have their opposite ends supported, respectively, in members **15** and **16**. The particular shape and structure of members **15** and **16** is not deemed a part of the present invention nor are the particular dimensions of the pump cylinder **13** and siphon tube **14**. It is important, however, from the standpoint of the present invention that at least one cylindrical member be disposed within the tank **10**.

As a primary feature of the present invention, there is shown disposed about the siphon tube **14** an elongated spring clip-like member **17** formed of solid magnesium. The member **17** functions as a sacrificial anode in exactly the same manner as the member **26** heretofore referred to in Patent No. 2,563,171.

As more clearly shown in the view of FIGURES 2 and 3, the member **17** is generally U-shaped and more particularly has a split ring-like cross section modified by having the free edges provided with reversed bends or turned back at **18** and **19** in contrast to the nominal circular cross section.

It is, of course, essential to the proper operation of the anode magnesium clip **17** that the tank **10**, sidewalls **11**, and internal parts **13**, **14**, **15**, and **16** (as well as others not described) be characterized by or consist of metals lower on the electro-chemical scale than magnesium. Usually, the metals used for such standard parts are steel, brass, zinc, or the like and the magnesium clip **17** will properly perform its function of removing traces of water and/or acid which might tend to corrode the internal structure of the extinguisher tank **10**.

It will be clearly evidence that by providing the clip **17** in the form illustrated in the drawings, it may be readily replaced in the event it becomes corroded and its efficiency is decreased. Furthermore, its initial installation is very simple by merely springing it into position over either the pump cylinder **13** or the siphon tube **14**. For purposes of illustration, the clip **17** has been shown of dimensions to be sprung over the siphon tube **14**.

It is, of course, desirable that the clip **17** be formed of sufficiently thin material such that it may be manually sprung onto the siphon tube **14**, for example, and yet be sufficiently thick that it will not be susceptible of immediate deterioration.

For illustrative purposes, a satisfactory unit has been made up which is three inches long, has a nominal internal diameter of $4\frac{1}{64}$ inch, has a thickness of .067 inch, and has a minimum width between its opposing ends of $\frac{13}{32}$ inch.

Although it is not believed essential to the requirements of the invention, as pointed out in Patent No. 2,563,171, it is apparent that the opposite ends or edges **18** and **19** of the clip **17** will form a positive electrical contact between the siphon tube **14** and the clip **17**. Such contact is believed to have certain electro-chemical advantages from the standpoint of having corrosion attack the clip **17** rather than the part **14**, for example. Also, it is to be noted that the clip **17** is shaped such that substantially all of its surface is exposed for corrosion thereof. It has also been found that the exposed edges **18** and **19** tend to form points of concentration for action of any

corrosion which improves the operation of the clip in its function as a corrosion arrestor.

Other advantages will be evident to those skilled in the art.

It will be appreciated, however, that certain variations and modifications may be made in the generally U-shaped clip without departing from the spirit and scope of the present invention as set forth in the following claims.

What is claimed is:

1. In a fire extinguisher including a tank and parts disposed therein formed of metals lower on the electrochemical scale than magnesium, the combination comprising: an elongated cylindrical member disposed and supported within the interior of said tank; and an elongated spring clip of solid magnesium of generally U-shaped cross section designed to be sprung onto said cylindrical member in coupled relationship thereto.



2. In a fire extinguisher including a tank and parts disposed therein formed of metals lower on the electrochemical scale than magnesium, the combination comprising: an elongated cylindrical member disposed and supported within the interior of said tank; and an elongated spring clip of solid magnesium, said spring clip having a cross section defined substantially by a split-ring construction with the free ends thereof provided with reverse bends in opposing relationship, said clip being designed to be sprung onto said cylindical member such that said reversed bends engage said cylindrical member.

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