

A. R. APGAR.
 AUTOMATIC FIRE EXTINGUISHER.
 APPLICATION FILED JAN. 25, 1916.

1,215,330.

Patented Feb. 13, 1917.

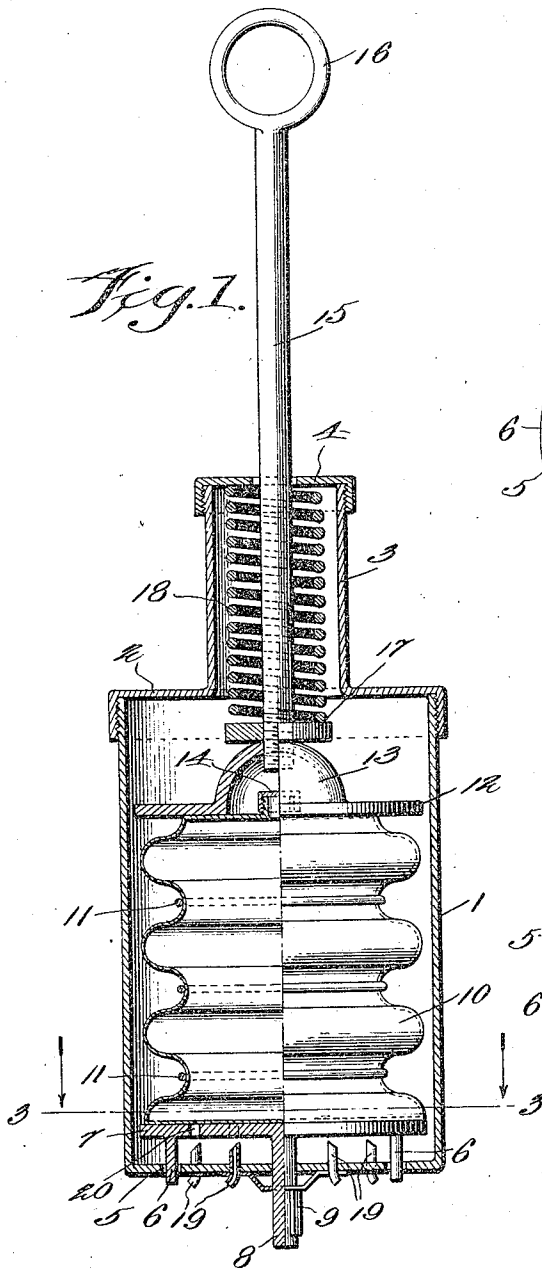


Fig. 2.

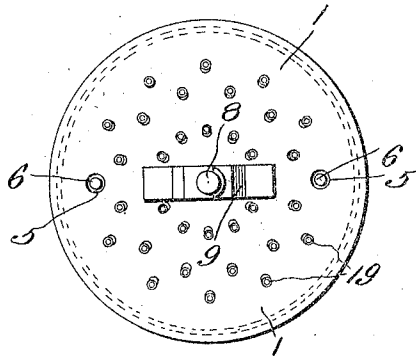
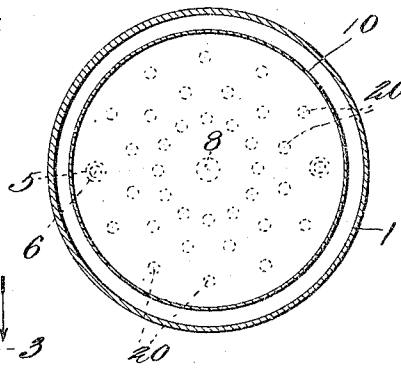


Fig. 3.



INVENTOR

Albert R. Apgar,

BY

Richard E. Owen,

ATTORNEY

WITNESSES

W. Marshall Dwyer
Garrett Bailey

UNITED STATES PATENT OFFICE.

ALBERT R. APGAR, OF COLUMBIA, PENNSYLVANIA.

AUTOMATIC FIRE-EXTINGUISHER.

1,215,330.

Specification of Letters Patent.

Patented Feb. 13, 1917.

Application filed January 25, 1916. Serial No. 74,213

To all whom it may concern:

Be it known that I, ALBERT R. APGAR, a citizen of the United States, residing at Columbia, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Automatic Fire-Extinguishers, of which the following is a specification.

This invention relates to fire extinguishers, and has particular reference to an extinguisher which is adapted to operate automatically.

The invention consists in the provision of a suitable container containing the extinguishing fluid, and it is the principal object of the invention to provide means to cause the fluid to be distributed in a number of directions when the extinguisher is operated.

Another object of the invention is to provide means to force the extinguishing fluid from the container under pressure, so as to cause the fluid to be thrown or distributed a considerable distance from the extinguisher.

A further object of the invention is to provide novel heat operating means for retaining the container in an inoperative position and to permit of the distribution of its contents.

With the foregoing and other objects in view, the invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings and claimed.

In the drawings:

Figure 1 is a vertical section of an extinguisher constructed in accordance with the invention;

Fig. 2 is a bottom plan; and

Fig. 3 is a transverse section on the line 3-3 of Fig. 1.

Before proceeding with a detailed description of the construction and operation of the improved extinguisher it is desired to have it understood that the same may be installed as either a single unit or in series, the operation in either case being exactly the same.

Referring to the drawings by numerals, wherein is illustrated the preferred embodiment of my invention, 1 designates a cylindrical casing which is closed at its bottom and open at its top. This casing may be constructed of any suitable material into any desired size, the same being closed at

its upper end by means of a cap 2 having a threaded connection therewith. This cap is provided with a centrally arranged reduced cylindrical extension 3 which opens into the interior of the casing 1, the upper end thereof being closed by a cap 4 which has a threaded connection therewith.

Openings 5 are provided in the bottom wall of the casing to receive guide members 6 extending from the lower face of a false bottom 7, the said guide members serving to prevent tilting or lateral movement of the false bottom within the container as will be understood.

A shank 8 is formed centrally upon the lower face of the false bottom and extends through an opening in the bottom wall of the casing and exteriorly of the casing. Fusible elements 9 are secured to the exteriorly extending portion of the shank 8 at one end and at their opposite ends are secured to the casing. These fusible elements serve to normally hold the false bottom in spaced relation from the bottom of the casing.

A container 10 for the extinguishing fluid is arranged within the casing and rests upon the false bottom 7. This container is formed of relatively soft metal and is corrugated throughout its length for a purpose which will presently appear.

Suitable bands 11 of wire of other suitable material are arranged upon the outer face of the container about its reduced diameters formed by the corrugations. The purpose of these bands will likewise presently appear.

A follower plate 12 is arranged in abutting relation with the upper end of the corrugated container which is provided centrally thereof with a hollow semi-spherically shaped enlargement 13, to avoid interference of the plate with the cap 14, closing the filling opening in the upper end of the container.

A rod 15 has threaded engagement with the enlargement 13 and extends through a central opening in the cap 4, the said rod having an eye 16 formed in its upper end whereby the extinguisher may be supported upon a suitable hook or the like upon the ceiling or any other desired part of a room.

A collar 17 is arranged upon the rod 15 adjacent the enlargement 13, and arranged between this collar and the cap 4 is an expansion spring 18 which operates to hold

the follower plate 12 in engagement with the container 10 under pressure.

Mounted in the lower wall of the casing 1 and having their pointed or sharpened extremities extending into the casing are a plurality of small tubular members 19, the outer ends of these members being extended exteriorly of the lower wall of the casing and deflected slightly for a purpose which will presently appear. The false bottom 7 is provided with a plurality of spaced openings 20 arranged in alinement with the tubular members 19 so that as the false bottom moves downwardly the tubular members will be permitted to pass therethrough.

The elements 9 may be formed from a material which will fuse at any desired degree of temperature. For purposes of illustration it will be assumed that the elements 9 will fuse at a temperature of 125 degrees.

Assuming that the extinguisher is in an operative position upon the ceiling of a room and that a fire has started within the room, the operation of the extinguisher will be as follows:

As soon as the heat from the fire has risen to a temperature of 125 degrees, or in other words sufficient to melt the fusible elements 9, the false bottom will be released and will be caused to be moved downwardly against the bottom wall of the casing under the action of the expansion spring 18. Before the false bottom moves into engagement with the bottom of the casing, however, the sharpened inner ends of the tubular members 19 will have passed through the openings 20 in the false bottom and perforated the container 10. This will release the contents of the container through the openings in the tubular members, as will be obvious. The releasing of the contents of the container will permit the spring 18 to gradually expand and crush the relatively soft metal of the container so that its contents will be sprayed through the tubular members 19, the curving or deflecting of the outer ends of the said tubular members causing the extinguishing fluid to be distributed in a number of directions about the room as will be understood.

It will be understood that when the container is filled the contents of the same will prevent it from being crushed by the expandable spring, and in order to prevent the sides of the container from bulging when the contents are released and the same is being crushed by the spring, the bands 11 are provided which will insure of a proper collapsing of the container.

From the foregoing description taken in connection with the accompanying drawings, it is thought that the construction and operation of the improved automatic fire extinguisher will be clearly understood, and while I have herein shown and described

one specific embodiment of my invention, I do not wish to be limited thereto except for such limitations as the claims may import.

I claim:

1. A fire extinguisher comprising a casing, a member movable within said casing, a collapsible container supported upon said movable member, pointed tubular members carried by said casing, means for releasing said movable member, said tubular members being adapted to penetrate said movable member, and means to move the container into engagement with said tubular members.

2. A fire extinguisher comprising a casing, a false bottom arranged in said casing, a plurality of tubular members extended through said casing, means to hold the false bottom in spaced relation with said casing and tubular members means to move the false bottom upon release of its holding means, a container arranged between the moving means and the false bottom, said false bottom and container being adapted to be penetrated by said tubular members upon movement of said false bottom toward said casing, and means for guiding said false bottom.

3. A fire extinguisher comprising a casing, a false bottom arranged in said casing, a shank on said false bottom, means connecting the shank with the casing, tubular members carried by said casing and provided with sharpened extremities, a container carried by said false bottom, a follower plate in engagement with said container, and means engaged with said follower plate to collapse the container upon release of the means connecting the shank with the casing, said false bottom and container being penetrated by the tubular members prior to collapse of the container.

4. A fire extinguisher comprising a casing, a member movable within said casing, a container supported upon said movable member, a tubular member carried by said casing, said tubular member being adapted to extend through an opening in the movable member, means to release the movable member, and means to move the container into engagement with the tubular member.

5. A fire extinguisher comprising a casing, a false bottom arranged within said casing, said bottom being provided with a plurality of openings, a plurality of tubular members carried by the casing, said tubular members being alined with said openings, means to hold the false bottom in spaced relation from the casing means to move the false bottom upon release of its holding means, and a container arranged between the moving means and the false bottom.

6. A fire extinguisher comprising a casing, a false bottom arranged in said casing, a shank on said false bottom extending ex-

teriorly of the casing, means connecting the
shank with the casing, means to prevent
lateral or tilting movement of the false bot-
tom, tubular members carried by the casing,
5 said tubular members having sharpened ex-
tremities, said tubular members extending
exteriorly of the casing and being deflected,
a container carried by said false bottom,
said container being collapsible, means to
prevent bulging of the container during its
collapse, a follower plate in engagement
with said container, a rod carried by said
follower plate and extending exteriorly of

the casing, and an expansible spring ar-
ranged between the casing and the follower 15
plate, said spring being adapted to collapse
the container upon release of the means
connecting the shank with the casing, said
container being perforated by the tubular
members prior to collapse of the container. 20

In testimony whereof I affix my signature
in presence of two witnesses.

ALBERT R. APGAR.

Witnesses:

M. E. APGAR,
M. G. RICHARDSON.