Aug. 18, 1942. A. SOLOSKO 2,293,366

FIRE EXTINGUISHER

Filed March 17, 1941

Fig. 2

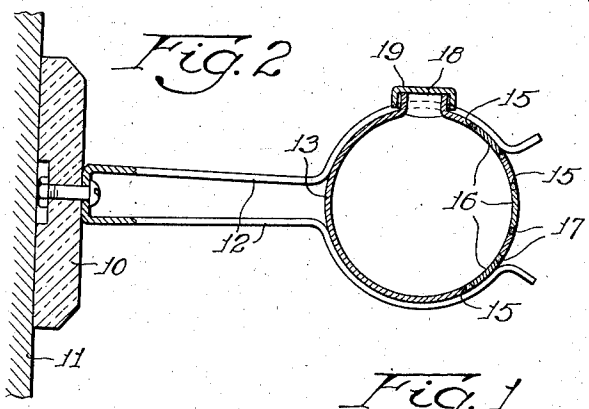


Fig. 3

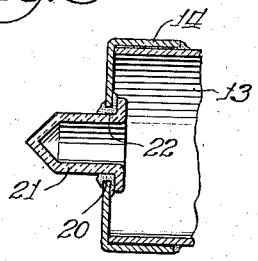


Fig. 1

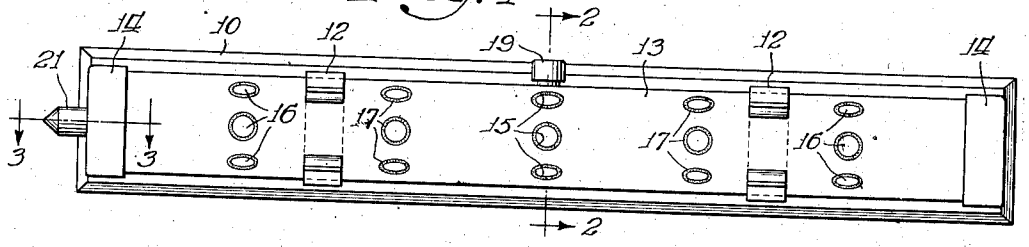


Fig. 4

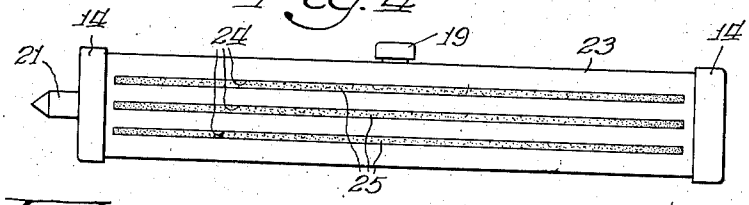
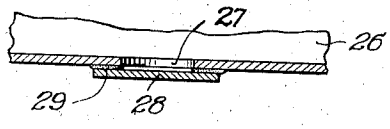


Fig. 5



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UNITED STATES PATENT OFFICE

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FIRE EXTINGUISHER

Abraham Solosko, Chicago, Ill.

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3 Claims. (Cl. 169—26)

This invention relates to fire extinguishers of the type comprising containers adapted to hold a fire extinguisher liquid and provided with outlet openings for the escape of the liquid, such openings being normally closed by means comprising a heat softening material by which effective closure of the container is maintained until the wall of the container has been subjected to a temperature slightly above the highest temperature normally reached. The container is preferably mounted in such position that the liquid and gas escaping through the openings are scattered effectively for quickly smothering any fire at the point sought to be protected, such result being effected automatically. The container is preferably arranged, however, for manual manipulation independently of its automatic operation when desired, as is well understood in connection with this type of device.

It is the object of the invention to improve the form and arrangement of the parts of a device of this type whereby effective automatic action may be assured. For attaining this end, I have provided closure means for the several outlet openings comprising members in the form of plates which are secured in closure position by means of heat softening material, such plates having substantial weight so as to have a tendency by the force of gravity to escape from their closure positions. In an alternative arrangement, I have provided an elongated container having a series of slots extending substantially the full length of the container and closed by means comprising a heat softening material so that when the container is heated up above the normal limit the slots are opened at all points along the container for the escape of the fire extinguisher liquid.

It is another object of this invention to improve devices of this type in sundry details hereinafter pointed out. The preferred means by which the several objects have been attained are illustrated in the accompanying drawing, in which—

Fig. 1 is a bottom face view of the preferred form of my invention in position on a supporting panel;

Fig. 2 is a vertical cross sectional view taken substantially at the line 2—2 of Fig. 1;

Fig. 3 is a vertical sectional view on an enlarged scale taken substantially at the line 3—3 of Fig. 1;

Fig. 4 is a bottom face view of a modified form of container;

Fig. 5 is a sectional view through a fragmentary portion of the wall of a container provided with a modified form of closure means.

Referring now to Figs. 1, 2 and 3 of the drawing, in which corresponding parts are indicated by the same reference characters, 10 indicates a panel made of metal or plastic secured in any suitable manner upon a wall 11 for supporting a pair of spring brackets 12 in spaced relation on its bottom face. Normally the wall 11 would be a ceiling or other horizontally extending wall. Each of the brackets 12 comprises two spaced arms between which a container 13 is frictionally secured, the container 13 in the arrangement shown being in the form of a cylindrical pipe made of iron or copper or other suitable non-fusible metal. The ends of the pipe 13 are preferably closed by means of caps 14 which may be of the same type of metal as that making up the pipe itself. At intervals along the container 13 a series of openings 15 are provided, in each of which openings a closure plate 16 is removably secured, the closure plate 16 being preferably formed of the same metal as that from which the pipe is formed. As is clearly shown in the drawing, each of the plates 16 has a loose fit in the opening 15 in which it is positioned, each of the plates being held in position so as to seal the opening by means of a suitable quantity of solder or other heat softening material 17. In the arrangement illustrated, three rows of openings 15 are provided, with the openings spaced lengthwise of the pipe, and with the intermediate row facing downwardly, the other rows being located at about 45 degrees angularly from the intermediate row. It will be noted from the short description of the figures that Fig. 1 is a bottom face view, which means that the intermediate row of openings 15 face directly downward. If the bracket is mounted on a vertical wall then of course the container 13 would have to be rotated in the bracket arms until the openings are in the desired position.

At its side face, the container 13 is provided with an opening comprising a short sleeve portion 18 extending outwardly therefrom so as to be readily closed by a cap 19 secured in position by means of solder. With the openings 15 effectively closed by plates 16, the container 13 is filled with a supply of carbon tetrachloride or other suitable fire extinguisher liquid, and the cap 19 is then sealed in position upon the neck 18. With the container filled with fire extinguisher liquid and placed in position in the brackets 12 with the openings 15 facing downwardly, the device is effective for affording protection against fire, as is well understood in connection with devices of this type. When a fire develops adjacent to the container 13 so as to raise the temperature of the solder 17 above the normal limit, the solder softens sufficiently for permitting the plates 16 to move by gravity out of their closure position so as to permit the liquid to escape from the container.

It is desirable also that the container 13 be available for use independently of its automatic

operation. For making this possible, the end cap 14 at the left in Fig. 1 is provided with an opening 20 therein in which a closure member 21 is secured by means of a supply of heat softening material as indicated at 22, the closure member 21 being in the form of a shell and formed preferably of glass with the major portion of the member extending outwardly beyond the end of the container. By reason of this arrangement, when the container has been removed from the brackets 12 the closure member 21 can be broken by a blow at one side so as to afford an outlet for feeding the liquid from the container by a proper manipulation of the container by hand.

In the arrangement shown in Fig. 4, the construction is similar to that above described except that a container 23 in the form of a pipe is employed in lieu of the container 13, such container being provided with a plurality of longitudinal slots 24 in its bottom face which slots are normally closed by means of suitable quantities of solder indicated by the numeral 25. By the use of this arrangement, the carbon tetrachloride or other fire extinguisher liquid is enabled to escape at all points along the container when the heat softening solder is brought to an abnormally high temperature as above explained in connection with the arrangement of Fig. 1. The construction of Fig. 4 is thus highly effective as a protection against fire.

In the arrangement shown in Fig. 5, the construction is similar to that shown in Fig. 1, except that the closure means for the openings is slightly different. In Fig. 5, a container 26 is illustrated having an opening 27 through a portion of its wall over which a plate 28 is secured by means of a quantity of solder 29 adapted normally to hold the plate 28 in position but adapted to permit the plate 28 to move downwardly by gravity when the solder has become softened by heat.

In each of the several constructions, the container is preferably formed of iron or brass or some other non-fusible metal, as are also the closure plates inserted in or over the openings through the wall of the container. In each instance, the means for holding the plates in position is formed of fusible metal or other heat softening material.

By the employment of the arrangement as shown and described, a highly effective fire protection means is afforded. The construction is such that the parts can be produced and assembled very readily and cheaply, and the parts can be employed over and over again if desired.

My invention contemplates, among other arrangements, the utilization of frame bars, or the like, made into the form of containers for holding a supply of fire extinguisher liquid to be available automatically when a fire occurs. For example, a curtain rod or a drape arm may be made hollow and provided with closure means adapted automatically to open for the escape of fire extinguisher liquid. Other forms of container may be readily worked out, by which a supply of liquid may be held in readiness and in which the fire protection feature is not readily noticeable without close inspection.

While I prefer to employ the form and arrangement of parts as shown and as above described, it is to be understood that I do not limit my invention thereto except so far as the claims may be so limited, it being understood that changes might well be made in the form and arrangement of the parts without departing from the spirit of the invention.

I claim:

1. In a fire extinguisher, the combination of a container in the form of an elongated tube closed at its ends and having an opening at one end portion and three rows of outlet openings through its side wall portion, with the outlet openings spaced from each other longitudinally of the tube and with the rows spaced about 45 degrees apart circumferentially of the tube, means for closing said first-named opening in the form of a frangible closure member extending outwardly from the opening so as readily to be broken by a blow thereon, and means for hermetically sealing said tube so as to hold a supply of fire extinguisher liquid and comprising heat softening means in said outlet openings adapted when the tube reaches a predetermined temperature above the normal limit to permit the liquid to escape from the container.

2. In a fire extinguisher means, the combination of a container in the form of an elongated tube closed at its ends and having an opening at one end portion and three rows of outlet openings through its side wall portion, with the outlet openings spaced from each other longitudinally of the tube and with the rows spaced about 45 degrees apart circumferentially of the tube, means for closing said first-named opening in the form of a frangible closure member extending outwardly from the opening so as readily to be broken by a blow thereon, means for hermetically sealing said tube so as to hold a supply of fire extinguisher liquid and comprising heat softening means in said outlet openings adapted when the tube reaches a predetermined temperature above the normal limit to permit the liquid to escape from the container, and bracket means adapted normally to hold said container frictionally in horizontal position with said outlet openings facing downwardly and adapted to yield for permitting easy removal of the container therefrom.

3. In a fire extinguisher means, the combination of a container in the form of an elongated tube closed at its ends and having a plurality of openings through its wall portion, comprising a filling opening, an opening at one end portion of the container, and three rows of outlet openings spaced from each other longitudinally of the tube with the rows spaced about 45 degrees apart circumferentially of the tube, means for closing said filling opening comprising a cap and heat softening means for sealing the cap over the filling opening, means for closing the opening at the end portion of the container comprising a frangible closure member extending outwardly from the opening so as readily to be broken by a blow thereon, means for hermetically sealing said tube so as to hold a supply of fire extinguisher liquid and comprising heat softening means in said outlet openings adapted when the tube reaches a predetermined temperature above the normal limit to permit the liquid to escape from the container, and bracket means adapted normally to hold said container frictionally in horizontal position with said outlet openings facing downwardly and adapted to yield for permitting easy removal of the container therefrom.

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