Sept. 11, 1951 L. L. NEALLEY 2,567,344

FIRE EXTINGUISHER AND PERFORATING DEVICE

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Fig. 1.

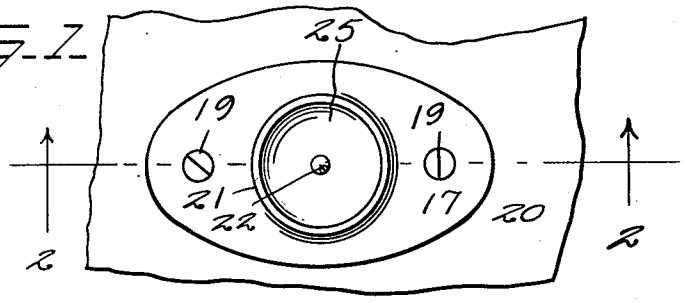


Fig. 2.

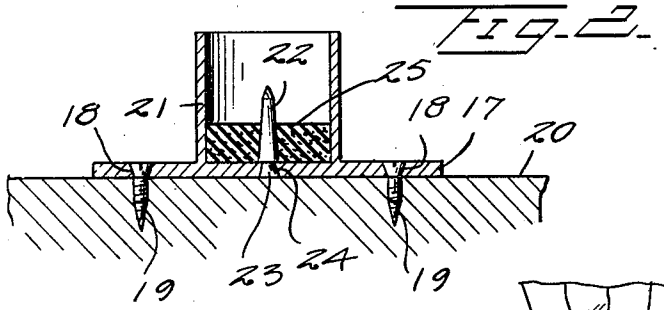


Fig. 3.

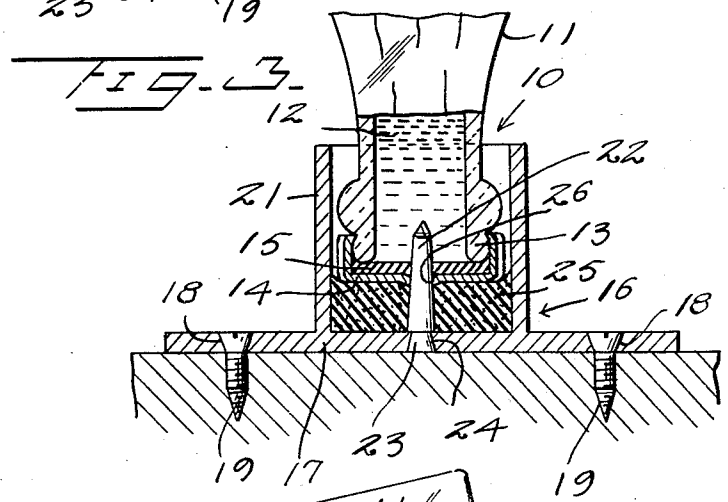
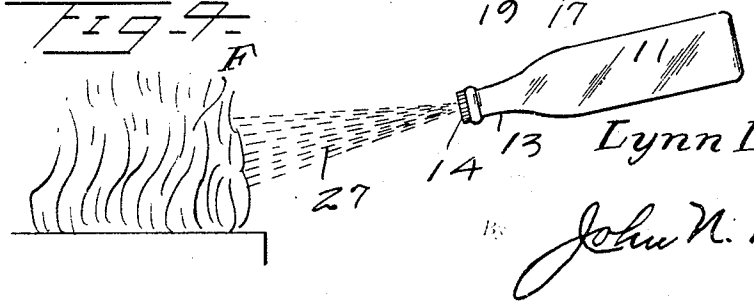


Fig. 4.



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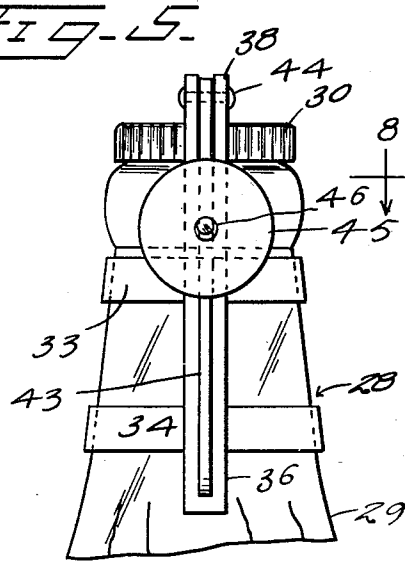
Witness

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FIG. 5.



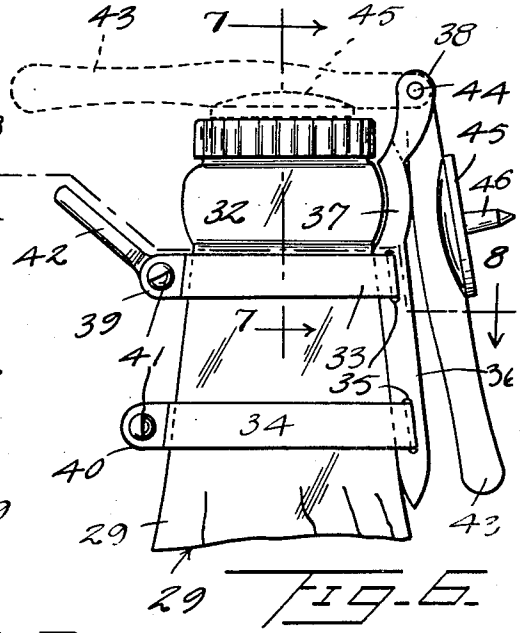


FIG. 6.

FIG. 7.

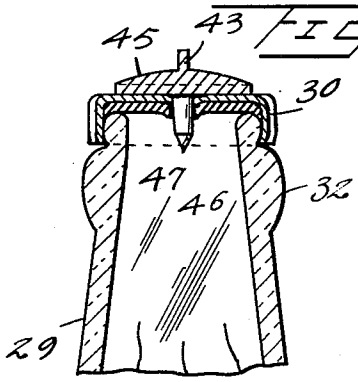


FIG. 8.

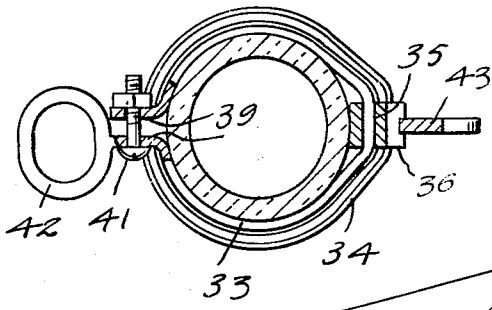
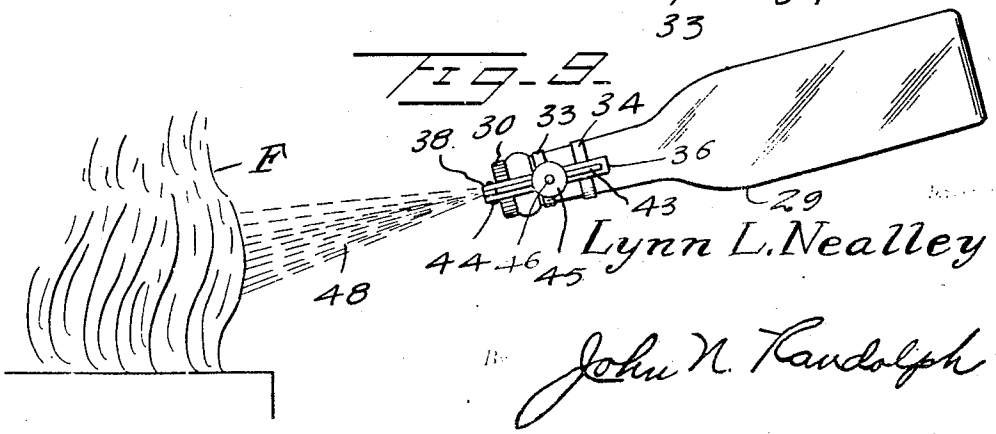


FIG. 9.



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FIRE EXTINGUISHER AND PERFORATING DEVICE

Lynn L. Nealley, Santa Rosa, Fla.

Application June 7, 1950, Serial No. 166,646

5 Claims. (Cl. 169—31)

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This invention relates to a fire extinguisher and fire extinguisher opener or perforator and more particularly has reference to a device for use with a conventional bottle containing a carbonated beverage and which is provided with a conventional crown cap for sealing the open neck of the bottle whereby the bottle may be shaken to activate the gases therein and the cap perforated by a part of the device so that the contents of the bottle may be discharged therefrom through the cap perforation and in the form of a foam or fine spray which is very effective in extinguishing fires.

The foam produced by a carbonated beverage when shaken to activate the gas is extremely effective as a fire extinguishing substance and the present invention accordingly provides a device for use with a capped bottle containing a carbonated beverage or carbonated water for forming a small perforation in the top of the metal cap so that the activated gases of the beverage or water will cause the liquid to be ejected through the perforation in the form of a fine spray or foam, thus providing a device of extremely simple construction and which will effectively function as a fire extinguisher and which may be economically maintained and replaced merely by acquiring another bottle containing a carbonated beverage or carbonated water to be utilized with the perforating device.

Still another object of the invention is to provide a device which will readily make available and obtainable a fire extinguisher for every household or other enclosure or for every vehicle equipped with an internal combustion engine.

Various other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawings, illustrating presently preferred embodiments thereof, and wherein:

Figure 1 is a plan or side elevational view of one form of the cap perforating means of the fire extinguisher;

Figure 2 is a sectional view thereof taken substantially along a plane as indicated by the line 2—2 of Figure 1;

Figure 3 is a view similar to Figure 2 but showing the neck and cap portion of a carbonated beverage bottle after the bottle sealing cap has been perforated;

Figure 4 is a side elevational view showing the bottle with the perforated cap employed as a fire extinguisher;

Figure 5 is a fragmentary side elevational view of another form of the fire extinguisher in an inoperative position;

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Figure 6 is a side elevational view taken at a right angle to Figure 5 and looking from left to right thereof;

Figure 7 is a sectional view taken substantially along a plane as indicated by the line 7—7 of Figure 6 and showing the parts as they will appear immediately after the cap is perforated;

Figure 8 is a cross sectional view of the fire extinguisher taken substantially along a plane as indicated by the line 8—8 of Figure 6, and

Figure 9 is a view similar to Figure 4 showing the fire extinguisher in use.

Referring more specifically to the drawings, and first with reference to the embodiment of the invention as illustrated in Figures 1 to 4, the fire extinguisher in its entirety is designated generally 10 and includes a conventional bottle or container 11 which contains a carbonated beverage 12, such as carbonated water or other carbonated liquid and which has a conventional open neck 13 which is sealed by crimped metal cap 14 which constitutes a conventional crown cap and has a sealing gasket 15 on its inner side formed of cork or similar material and which seats against the open end of the neck, as seen in Figure 3.

The fire extinguisher 10 includes a cap perforating unit, designated generally 16, including a base plate 17 having an opening 18 adjacent each end thereof for receiving a driven fastening 19 by which the base plate 17 may be secured against a supporting surface 20 which may be disposed either horizontally or vertically or at any angle. A sleeve 21 has one end formed integral with and suitably secured to the outer side of the base plate 17 and projects perpendicularly therefrom to form a bottle neck and cap guide. A tapered spike 22 has a restricted tapered end 23 which is secured in a central opening 24 of the plate 17 for positioning the spike 22 perpendicular to the plate 17 and so that it will project therefrom partially through the sleeve 21 and will be disposed centrally of said sleeve. The spike 22 tapers outwardly from the plate 17 and terminates in a pointed end. A sealing disk 25 is disposed in the inner portion of the sleeve 21 and against the plate 17 and around the inner portion of the spike 22.

From the foregoing it will be readily apparent that the sealed bottle or container 11 may be conveniently maintained in a position readily accessible to the perforating device 16 so that in the event of a fire, the bottle 11 can be initially shaken to activate the gases therein and the neck of the bottle then inserted into the guide sleeve 21 and the cap 14 forcibly projected inwardly of said guide sleeve so that a central por-

tion of the cap 14 will be perforated by the outer end of the spike 22. The block 25, which is preferably formed of sponge rubber will cushion the inward movement of the bottle neck after perforation of the cap 14 and will also function to seal the opening 26, formed in the cap 14 and disk 15 until the bottle neck and cap are withdrawn from the sleeve 21. After disengagement of the bottle neck and cap from the sleeve 21, said parts and the bottle 11 may be held as illustrated in Figure 4 and with the neck and cap directed toward the fire to be extinguished, as indicated at F, so that the carbonated liquid will be ejected by the pressure of the activated gas through the perforation 26 in the form of a fine spray or foam, as indicated at 27, onto the fire to extinguish the fire. Such a fine spray or foam thus produced is extremely effective as a fire extinguishing substance. The size of the perforation or discharge opening 26 may obviously vary depending upon the size of the spike 22, which may likewise be varied to obtain the most effective result.

Figures 5 to 9 illustrate another embodiment of the fire extinguisher, designated generally 28 and which likewise includes a conventional bottle or container 29, corresponding to the container or bottle 11 having a cap 30, corresponding to the cap 14 and which is provided with a sealing disk or gasket 31, corresponding to the disk 15. The neck of the bottle 29 adjacent its open end is provided with a conventional external enlargement 32.

The cap perforating unit of the fire extinguisher 28 includes two split rings 33 and 34 having intermediate portions which extend loosely through longitudinally spaced openings 35 of a supporting arm 36 which has an inner edge which is shaped to fit against a longitudinal portion of the neck of the bottle 29 including an outwardly bowed portion 37 which fits the contour of the neck enlargement 32. Said arm 36 terminates in an outwardly curved bifurcated end 38 which extends from the portion 37 and is curved away from the cap 30. The rings 33 and 34 engage around the neck of the bottle 29 and are provided with outwardly projecting free ends 39 and 40, respectively, which are provided with aligned apertures for receiving the shanks of nut and bolt fastenings 41 which are tightened for detachably clamping the rings 33 and 34 around the bottle neck and with the ring 33 engaging directly under the neck enlargement 32. One of the extensions 39 of the upper ring 33 is provided with a loop or eye 42 which projects upwardly and outwardly therefrom and which may be formed integral therewith or suitably secured thereto. The eye 42 provides a convenient means for engaging a hook or other support, not shown, for suspending the fire extinguisher 28 in a convenient position available for use.

A lever 43 has one end disposed between the furcations of the bifurcated end 38 and pivotally connected thereto by a headed pin 44. A disk-shaped head 45 is connected to one longitudinal edge of the lever 43, preferably by being formed integral therewith and has a spike 46 suitably secured to or formed integral with the central portion of its outer surface. The spike 46 projects perpendicularly from the outer surface of the disk or head 45 and is tapered outwardly and has a pointed free end. The head 45 is disposed on the outer edge of the lever 43, when said lever is in a normal inoperative position, disposed against the outer side of the arm 36.

From the foregoing it will be readily apparent that the fire extinguisher 28 may be utilized, after disconnecting the eye 42 from a supporting hook, not shown, by manually swinging the lever 43 in a counterclockwise direction from its full line toward its dotted line position of Figure 6. When this occurs, the head 45 swings with the lever 43 to a position over the cap 30 and by exerting a downward pressure on the other end of the lever 43 the spike 46 is caused to penetrate the cap 30 and sealing disk 31, as illustrated in Figure 7, to form a dispensing opening 47 therein. Thereafter the lever 43 is swung back to its full line position of Figure 6 and the discharge end 30 of the fire extinguisher is then directed toward the fire F, after shaking the container 29 to activate the gases of the carbonated liquid, contained therein, so that the liquid will be dispensed under pressure through the discharge opening 47 in the form of a foam or fine spray, as illustrated at 48 in Figure 9, for extinguishing the fire, as previously described in detail.

Obviously, the fastenings 41 may be removed so that the rings 33 and 34 may be disconnected from the bottle neck and the opening unit applied to another sealed bottle containing a carbonated liquid, after the contents of one bottle has been dispensed.

Various modifications and changes are contemplated and may obviously be resorted to, without departing from the spirit or scope of the invention as hereinafter defined by the appended claims.

I claim as my invention:

1. A fire extinguisher and fire extinguisher opener comprising a container containing a carbonated liquid and having an open end, a crown type metal cap sealing said open end, a cap perforating unit including a pointed spike, a spike supporting member from which the spike projects, and guide means connected to the spike supporting member and centering the spike relatively to the cap whereby the spike will form a discharge opening in said cap and substantially centrally thereof when the spike is forcibly projected through the cap, a harness unit detachably fastened to and mounted on a portion of the container, a lever swingably connected to a part of said harness unit and combining therewith to form said guide means, and a disk fixed to said lever from which said spike projects, said disk constituting the spike supporting member and being disposed so that the spike will penetrate the central portion of the cap when the lever is swung in one direction and will be disposed with the spike outwardly of and to one side of the cap when the lever is swung in the opposite direction.

2. In combination with a bottle containing a carbonated liquid and having a crimped type cap closing and sealing the open end thereof, a harness including a pair of split rings detachably fastened around the neck of the bottle, a supporting arm having openings through which said rings extend and supported thereby against the bottle neck and longitudinally thereof and having one end extending outwardly to beyond the cap and spaced laterally therefrom, a lever having one end pivotally connected to said outwardly extending end of the arm and normally disposed along the outer side of said arm and longitudinally of the bottle neck, and a spike fixed to and projecting outwardly from said lever intermediate of its ends and perpendicular to its longitudinal axis, said spike being disposed relatively

to the pivoted end of the lever for engaging and puncturing the cap when the lever is swung in one direction to a position across the outer side of the cap.

3. A structure as in claim 2, a disk fixed to said lever and disposed to abut the cap after it is punctured by said spike, said spike projecting perpendicularly from the central portion of the disk.

4. A structure as in claim 2, and a supporting hook engaging eye forming an extension of one end of one of said split rings.

5. A fire extinguisher comprising in combination with a bottle containing a carbonated liquid and having a crimped type cap closing and sealing the open end thereof, a harness detachably fastened around a portion of the bottle and including a portion disposed beyond and spaced laterally from the cap, a lever having one end pivotally connected to said harness portion for

swinging movement between an inoperative position substantially longitudinally of the bottle to an operative position across the cap, and a spike fixed to and projecting transversely from the longitudinal axis of said lever and disposed, relatively to its pivoted end, to puncture the cap when the lever is swung to a position across the cap.

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