

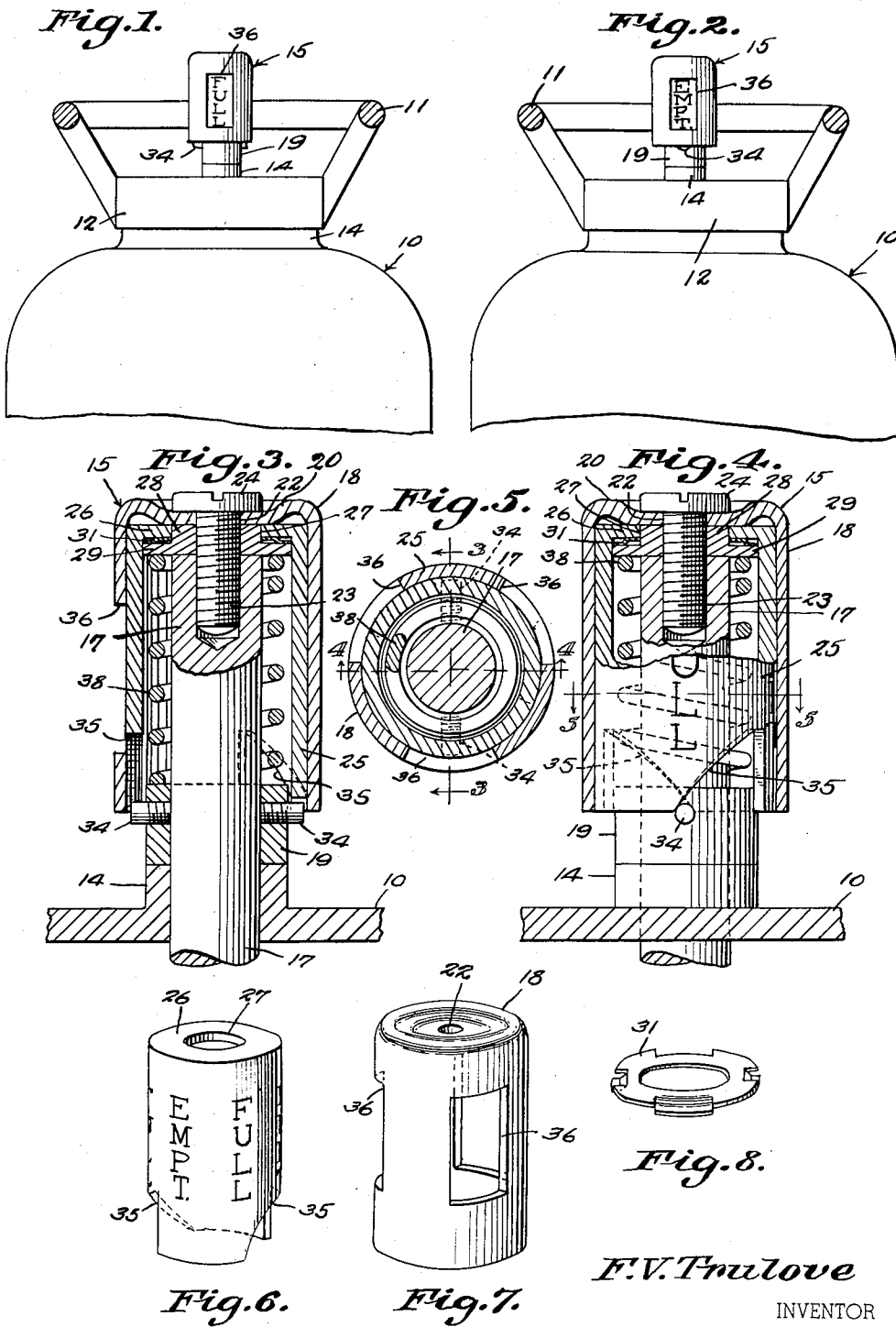
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INDICATOR FOR FIRE EXTINGUISHER

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INDICATOR FOR FIRE EXTINGUISHER

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This invention relates to a fire extinguisher and more particularly to a portable fire extinguisher actuated by pressure means for forcing fire extinguishing fluid from a portable extinguisher to the fire and having means carried by the cap of the extinguisher for indicating the usable condition of the fire extinguisher.

It is an object of this invention to provide a portable fire extinguisher contains a fire extinguisher fluid and pressure means for throwing the fire extinguishing fluid from the container and having indicating means carried by the container for indicating whether the fire extinguisher is full for operation or empty of the pressure actuating means and should be prepared again for use.

It is another object of this invention to provide a sight gauge for a fire extinguisher of the pressure actuating type which may be easily and economically constructed and attached to a conventional refillable and rechargeable manual fire extinguisher bottle.

Other and further objects and advantages of this invention will be hereinafter described and the novel features thereof defined in the appended claims.

In the drawings:

Fig. 1 is a side elevation, partly broken away and partly in section showing the fire extinguisher bottle with the indicator reading that the bottle is full and ready for operation.

Fig. 2 is a side elevation, partly broken away and partly in section, as is Fig. 1 with the indicator reading empty and the bottle not in condition for reuse.

Fig. 3 is a transverse section of the indicator on the bottle, the bottle being in condition for use.

Fig. 4 is a transverse section through the neck of the bottle and the indicator and at right angles to the position of the indicator shown in Fig. 3.

Fig. 5 is a transverse section taken on the line 5—5 of Fig. 4.

Fig. 6 is a perspective view of the drum of the indicator removed from the assembly.

Fig. 7 is a perspective view of the shell of the indicator remote from the invention.

Fig. 8 is a perspective view of the spring washer of the indicator, removed from the invention.

Referring to the drawings the numeral 10 designates generally a fire extinguisher bottle or base, for containing fire extinguisher fluid, which may be fundamentally water, and the fire extinguisher bottle 10 is more or less portable. The fire extinguisher bottle 10 is provided with an upwardly extending neck 14 around which a collar 12 is engaged and handles 11 are secured to the collar and extend outwardly therefrom to provide for the handling of the fire extinguisher bottle 10 where and as desired. The fire extinguisher bottle normally contains water loosely disposed therein and the water may be thrown from the bottle 10 by pressure energized within the bottle 10 as by a carbon dioxide capsule. When the water within the bottle is energized by the carbon dioxide pressure the water will be thrown from

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the bottle through a hose and nozzle connected to the bottle and not shown in the drawings. When the carbon dioxide fluid energizing means has been broken in the bottle 10 for casting water therefrom the bottle must again be energized to put the bottle 10 back in condition for use.

In order to provide a means for indicating the usable condition of the bottle 10, there is provided a sort of sight gauge on the neck 14 of the bottle within the handles 11 where it may be readily viewed by a person before using the fire extinguisher bottle 10. Since the water or fire extinguishing fluid is contained loosely within the bottle 10 a pressure must be exerted against this fire extinguishing fluid for projecting that fluid from the bottle and this may be conventionally accomplished by breaking a carbon dioxide capsule within the bottle. The carbon dioxide capsule is not shown in the drawings of this invention as the carbon dioxide bottle forms no part of this invention. A shaft 17 is mounted within the bottle 10 and extends through the neck 14. The carbon dioxide bottle or capsule is mounted on the end of the shaft 17 within the bottle 10 and when the bottle of carbon dioxide is broken within the bottle 10 the carbon dioxide pressure will be exerted downwardly against the fire extinguisher fluid, also not shown in the drawing, and the fluid actuating means must again be replenished within the bottle 10. An indicator 15 is carried by the neck 14 and possesses visual indicating means for indicating whether or not the fluid pressure actuating means is sufficient within the bottle or whether the fluid pressure actuating means must be replenished.

The indicator 15 comprises an outer shell 18 which is slidably disposed adjacent the upper end of the bottle 10 and neck 14 and is slidable on a second neck 19 adjacent the center of the upper end of the bottle 10. The shell 18 is provided with a top wall 20 and depending side walls 21 engageable about the second neck 19 when the shell 18 is depressed downwardly. The bottom end of the shell 18 is open for receiving the second neck 19 in the manner to be more fully described hereinafter. The top wall 20 of the shell 18 is provided with a central opening 22 through which the shank of a screw 23 may be engaged threadedly securing the shell 18 to the upper end of the shaft 17 above the bottle 10. The screw 23 is provided with an enlarged head 24 for engaging the upper side of the top wall 20 of the shell 18. With this construction of the indicator having the shell 18 rigidly secured to the upper end of the shaft 17 the pressure actuating means within the bottle 10 may be actuated by depression of the shell 18 downwardly toward the bottle 10.

A drum 25 is disposed within the shell 18 and connected to the shell and to the shaft 17. The drum 25 is somewhat cylindrical in configuration having an upper wall 26 with an opening 27 near the center thereof for receiving the shoulder 28 of a shoulder washer 29. The shoulder 28 of the washer 29 is adapted to be extended through an enlarged opening 27 in the upper wall 26 of the drum 25 as clearly shown in Fig. 3 of the drawings. The fastening screw 23 for attaching the shell 18 to the shaft 17 is threadedly engaged through the shoulder 28 of the shoulder washer 29 and an ordinary spring washer 31, stamped from and bent to a configuration providing for resiliency thereof, is disposed between the upper surface of the shoulder washer 29 and the lower surface of the top wall 32 of the drum. The lower end of the drum 25 is open for sliding along the length of the neck 19 together with the depressed movement of the shell 18 and shaft 17.

The drum 25 is rotatable within the shell 18 and the outer walls of the drum 25 are provided with indicia for visually indicating the relative position of the drum 25

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within the shell 18, thus showing the bottle as being in a charged or discharged condition.

A plurality of cam pins 34 are fixedly secured to the neck 19 above the lower edge of the neck 19 and below the upper edge thereof for engagement with the cam surfaces 35 formed in the drum 23. Upon depression of the shell 18 and drum 25 together with the shaft 17, for energizing the pressure actuating means within the bottle 10, the cams 35 engage the cam pins 34 thus causing the drum 25 to rotate with respect to the shell 18 and move the indicia "Full" as seen through the windows 36 in Fig. 1 to the indicia "Empty" as seen in Fig. 2. The spring washer 31 serves through frictional contact with the members 25 and 29 to retain the drum 25 in the position to which it has been moved. A coil spring 38 is positioned between the upper flat edge of the second neck 19 and the lower flat surface of the shoulder washer 29 for constantly biasing the shoulder 29, the drum 25 and the shell 18 upwardly relative to the bottle 10.

In the use and operation of the fire extinguisher bottle 10, the carbon dioxide, fluid pressure energizing means, is initially secured on the shaft 17 within the bottle 10 and the water or fire extinguishing means is free within the bottle 10. The fire extinguisher bottle 10 is then in condition for extinguishing a fire, or other use, and the spring 38 will energize the drum 25 and shell 18 upwardly from the neck 19 so that the indicia on the outer side of the drum will indicate that the drum is full and ready for use as shown in Fig. 1 of the drawings. When the fire extinguisher bottle 10 is used the shell 18 will be depressed against the spring tension of the spring 38 for depressing the shaft 17 to break the carbon dioxide bottle within the tank 10 and upon depression of the shell 18 the drum 25 is also caused to be depressed and the depression of the drum 25 downwardly relative to the bottle 10 will cause the inclined cam edges 35 to engage the cam pins 34 to thereby rotate the drum within the shell and change the visible indicia on the outer surface of the drum from full to empty indicating that the fire extinguisher bottle should be reconditioned, as with another carbon dioxide capsule, and the cam pins 34 will then engage the straight longitudinal edge 37 so that when the drum and shell are released to be actuated by the springs 38 the drum will not rotate any further but will be moved axially of the shell so that the indicia on the drum 25 will read empty, through the window openings 33 in the side walls of the shell 18 for indicating that the bottle 10 is in condition for refilling and reconditioning before further use as a fire extinguisher.

While the specific details have been herein shown and described, the invention is not confined thereto as changes and alterations may be made without departing from the spirit and scope of the invention as defined in the appended claims.

I claim:

1. A fire extinguisher bottle having a neck at one end containing fire extinguisher fluid in said bottle and a

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slidable shaft in said neck for actuating a pressure actuating means within said bottle discharging said fire extinguisher fluid from said bottle comprising a hollow shell open at the lower end thereof slidably engaging said neck and engaging an end of said shaft outwardly of said neck, said shell having circumferentially spaced apart windows in the side walls thereof, a cylindrical drum rotatable in said shell open at the bottom thereof and rotatable on said neck, outwardly extending cam pins carried by said neck, a plurality of openings on said drum, a circumferentially inclined cam edge on the lower edge of one of said openings, a longitudinally extending straight edge in said opening opposite from said inclined cam edge, said cam pins being engageable with said cam edges of said drum for rotating said drum upon downward movement of said shaft for actuating said pressure actuating means and with said straight edges upon free sliding movement of said drum outwardly of said neck with said shaft after actuation of said pressure actuating means, spring means urging said drum and said shell outwardly of said neck, and indicating means on said drum viewable through one of said openings in said shell indicating the relative relation of said drum and said pressure actuating means.

2. In a fire extinguisher bottle having a neck and an endwise slidable shaft in said neck, indicator means carried by said neck and said shaft for indicating the full or empty condition of said bottle; comprising a shell fixed to said shaft and slidable on said neck, a drum withing said shell and slidable therewith and rotatable relative to said shell, inter-engaging cam means carried by said drum and said neck for rotating said drum in one direction upon endwise inward movement of said shaft and drum, and resilient means urging said drum and said shaft in an opposite direction for opposite sliding movement thereof and indicia on said drum for indicating the amount of the fluid in said bottle.

3. In a fire extinguisher having a neck at one end containing fire extinguisher fluid and a vertically slidable shaft in said neck for actuating a pressure actuating means within said bottle; a condition indicating means comprising an outer shell fixed to said shaft, an inner shell rotatable within said outer shell, said outer shell having a window, indicia on said inner shell for exposure through said window, cam means formed on the lower edge of said inner shell, a spring within said inner shell and about said shaft constantly urging said shells and shaft upwardly, and a pair of cam engaging pins fixed to said neck for rotating said inner shell to expose selected indicia through said window.

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