Sept. 1, 1931. J. T. CARROLL 1,821,140

FIRE EXTINGUISHER

Filed Nov. 4, 1929

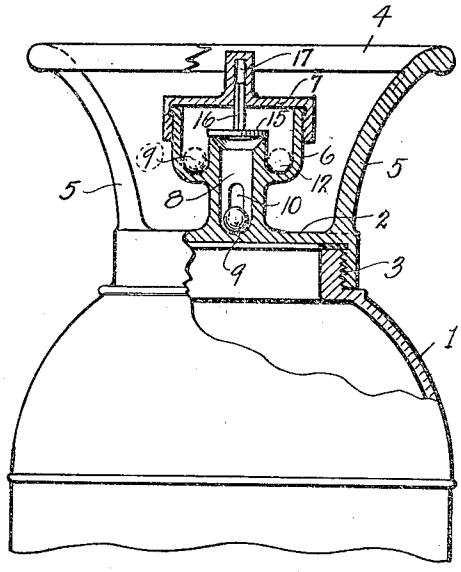


Fig. 1

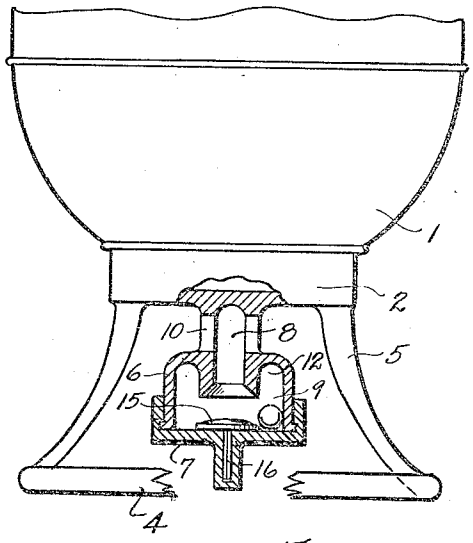


Fig. 2

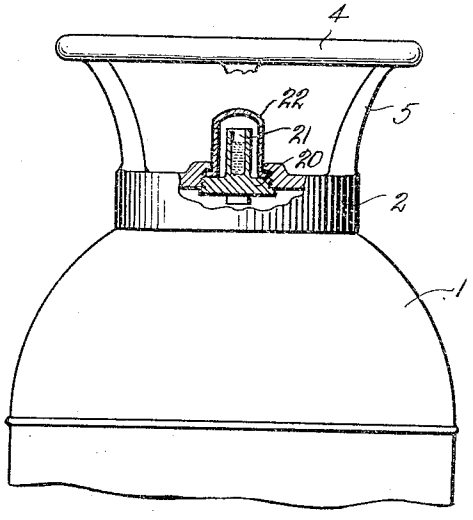


Fig. 3

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UNITED STATES PATENT OFFICE

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FIRE EXTINGUISHER

Application filed November 4, 1929. Serial No. 404,611.

This invention relates to improvements in fire extinguishers and it has reference in particular to devices of that character which are normally charged and retained ready for use in an upright position, and which are automatically rendered operative incident to their being inverted; such devices requiring recharging after each time they are used, and this is done by removal of a cap or closure which is threaded onto one end of the extinguisher body.

Explanatory to this invention, it will be here stated that it frequently happens that fire extinguishers of the above character are used and are then replaced in their customary positions without being recharged. In such instances, it is very difficult for an inspector, or any one else, to determine, without making a very close examination, whether or not the device has been used and whether or not it has been recharged and is in condition for use in case of emergency.

In view of the above, it has been the principal object of this invention to provide a simple and efficient indicating means for fire extinguishers of the above-stated character, whereby it may be readily determined at a glance whether or not the device has been used and whether or not it has been recharged.

More specifically, the invention resides in the provision of an indicating means for the above purpose used in connection with or applied to the cover, or cap of the fire extinguisher body. The means consisting of a cup-like receptacle provided with a ball socket in which a ball is normally disposed to indicate that the device is charged and which will be displaced from the socket when the device is inverted for use and cannot by itself again enter the socket even though the extinguisher be replaced in upright position. It is preferred also that the socket have slots or the like through which the ball is visible when seated therein.

Other objects of the invention reside in the various details of construction and in the combination of parts, and in the use of the device as will hereinafter be described.

In accomplishing these objects, I have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawings, wherein—

Fig. 1 is a view illustrating the upper end portion of a fire extinguisher embodying an indicator embodied by the present invention; parts being shown in section for better illustration.

Fig. 2 is a view showing the displacement of the ball by inversion of the extinguisher.

Fig. 3 is a detail view of an alternative construction.

Referring more in detail to the drawings—

1 designates what may be the upper end portion of a fire extinguisher of the type rendered operative by inversion, and 2 designates the cap or cover which is provided therefor and which is threaded, as at 3, into the end of the extinguisher body. As illustrated, the cover or cap 2 is provided with a ring-like hand hold 4 joined to the cover body by a plurality of legs 5. Formed centrally upon the cover is a cup-like receptacle 6 over which a cover 7 is fitted and removably secured in any suitable manner and formed within the bottom of the cup is a socket 8 adapted to receive a ball 9; there being slots 10 formed in the sides of the socket forming portion through which the ball is visible, but which are of such width as to prevent escape of the ball.

The socket is so arranged that when the extinguisher is inverted for use, the ball will roll out of the socket into the cup, and the socket forming wall extends well above the base of the cup so that when the extinguisher is again turned to upright position the ball cannot, by itself, enter the socket, but will be caught and retained in the annular channel 12 encircling the socket. As an additional means for preventing return of the ball to the socket, I provide a valve member 15 on a stem 16 slidable in a socket 17 in the cover of the cup. The stem guides the valve in its movement so that when the extinguisher is in upright position, the cap overlies the entrance to the socket, then when it is inverted, the valve falls down, as in Fig. 2, and the ball rolls out. When the extinguisher is turned back to upright position, the

valve again closes and prevents any possibility of the ball entering the socket.

In Fig. 3 is illustrated an alternative construction in which a plug 20 is threaded upwardly through the bottom of the cap, and this is provided with a cup 21 adapted to contain a liquid or other fluid. A glass cover 22 encloses the cup and through this it may be determined whether or not the contents has been poured from the cup. In this alternative device, inversion of the extinguisher causes the liquid to flow into the cover 22, and it cannot be replaced in the cap except by removal of the plug 20.

Assuming that the device is constructed as illustrated in Figure 1, when the extinguisher is charged, it is disposed in upright position and the cap 2 is threaded into place as in Figure 1. The cover 7 is then removed from the cup 6 and the ball 9 is placed within the socket 8. The cover 7 is then replaced on the cup 6 and the fire extinguisher is placed in position ready for use in emergency.

An inspector, or anyone else interested, may determine the condition of the fire extinguisher, that is, whether or not it has been used since being charged, by looking through the slots 10 in the side of the cup socket. If the ball 9 is visible, it is quite apparent that the extinguisher has not been inverted since the ball was placed into position. If the ball is not visible, this would indicate that the device was not charged.

The condition of the device of Figure 3 may be determined in a like manner by glancing at the glass container 22. If the liquid is seen to be contained in the cup 21, it would indicate that the device was ready for use, and if it was contained outside of the cup and within the cover member 22, it would indicate that it needed recharging.

It is apparent that various changes in details of construction might be made without departing from the spirit of the invention. For this reason, it is not desired that the claims be limited in scope only to the details shown, but that they broadly cover the construction.

Having thus described my invention, what I claim as new therein and desire to secure by Letters-Patent, is:

1. In a device of the character described, an indicator comprising a receptacle fixed to a part of the device and formed with a base socket and having a channel encircling the socket, a ball adapted to be contained within the socket when the device is in upright position and to be displaced therefrom by its inversion and to then be contained within the channel of the receptacle when the device is returned to upright position and a valve member arranged to overlie the socket and to move by gravity from and against the entrance to the socket.

2. In a fire extinguisher, or the like, comprising a container with a top opening and a closure member removably applied to the opening, of an indicator formed on the closure and comprising a cuplike receptacle having a base socket, an indicating element adapted to be contained within the socket when the extinguisher is in upright position, and to be displaced therefrom into the cup by inversion of the extinguisher, a flange encircling the socket for preventing natural return of the element into the socket, and a valve normally closing the socket and adapted to fall by gravity away from it when the extinguisher is inverted.

3. In a fire extinguisher having a removable top, or cover portion, an indicator comprising a cup-like receptacle integral with said cover, a cover removably applied to the receptacle, a supporting neck for the cup formed with a socket opening into the cup and having a slot through the neck portion into the socket; said socket forming portion extending above the base of the cup and forming an encircling channel, and a ball adapted to seat within the socket when the device is in upright position, and to be displaced therefrom into the receptacle by inversion thereof, and then to be retained within the cup channel when the device is returned again to upright position, and a valve member overlying the socket and adapted to move by gravity from and against the entrance to the socket when the device is inverted and returned to upright position.

Signed at Tacoma, Washington, this 15th day of October, 1929.

JOHN T. CARROLL.