Dec. 6, 1938. H. E. HEIGIS 2,139,634

FIRE EXTINGUISHER SUPPORT

Filed March 28, 1936

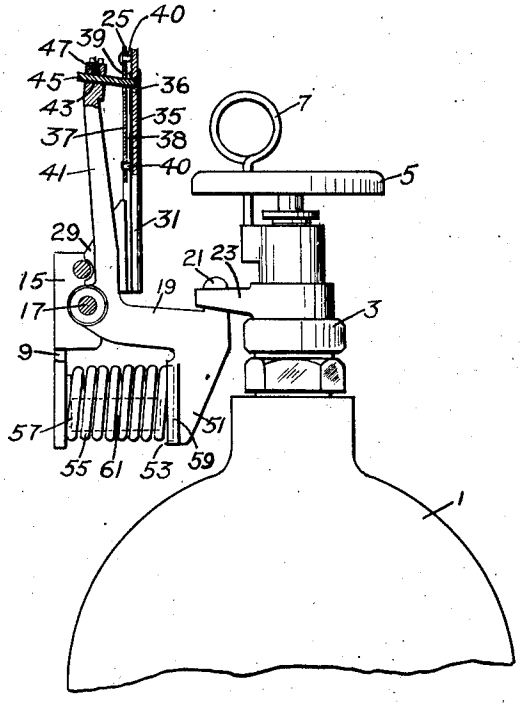


FIGURE 1

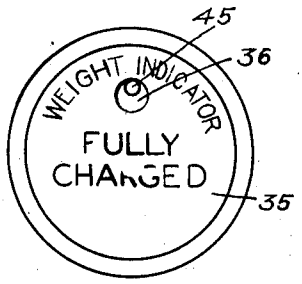


FIGURE 3

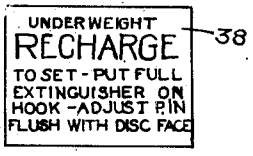


FIGURE 4

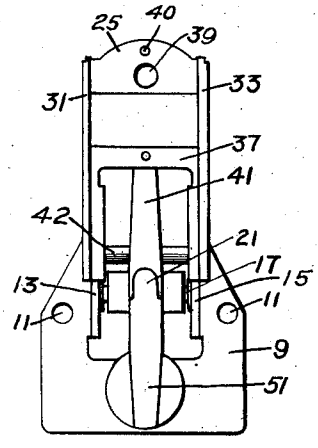


FIGURE 2

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FIRE EXTINGUISHER SUPPORT

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10 Claims. (Cl. 116—114)

The present invention relates to supporting means for portable fire extinguishing apparatus of the type which is normally suspended from wall brackets or the like and is so arranged that the extinguishing apparatus is readily accessible in time of need.

The invention relates more specifically to a support for a portable fire extinguishing apparatus of the type which retains fire extinguishing fluid under pressure in a container, as for example carbonic acid gas.

The present invention is an improvement on the invention described and claimed in the patent granted to me September 27, 1932, No. 1,879,228 in which means were provided to indicate the loss of weight of the extinguishing fluid, such as might occur by leakage of the fluid under pressure or by tampering with the release valve of the apparatus, as well as by actual intentional use thereof.

One object of my invention is to provide a support which eliminates the guard for the operating handle of the valve, or other release means of the extinguisher, that was provided to deter tampering with the valve.

Another object is to provide a simplified mechanism to indicate the loss of weight in the extinguisher which will clearly indicate that there has been a loss of weight.

Further objects which are not specifically set forth will be apparent as the invention is described in greater detail in connection with the accompanying drawing and as set forth in the appended claims.

Figure 1 is a cross-sectional view in elevation of the embodiment of the present invention with a portable extinguisher supported thereby.

Figure 2 is a front view in elevation of the support of Figure 1 from which the indicator disc has been removed.

Figure 3 is a view of the indicator disc.

Figure 4 is a view of the portion of the support which the indicator disc normally covers.

With reference to the drawing, Figure 1, illustrates a container 1 for a fluid fire extinguishing medium, as for instance, carbon dioxide. Mounted on the container 1 is a valve 3 to control the discharge of the fluid from the container. Mounted on the valve 3 is a handwheel 5 by which the valve may be opened or closed. In order that the valve handwheel may not be jarred in a manner which will open the valve when it is not desired, as for instance during shipment, a locking pin 7 is provided to prevent turning of the handwheel relative to the valve. All of the elements necessary for a portable extinguisher of the type herein referred to are not shown or described because those elements do not form any part of this invention.

With reference to the support specifically, at 9 is shown a base, or supporting member, which may be secured to any suitable structure as for instance by screws or bolts through the holes 11 which appear in Figure 2. The base is formed with two lugs 13 and 15 only one of which is shown in Figure 1. The lugs are provided with bearing holes in which a shaft 17 may be secured and supported. On the shaft is mounted a member 19 that may rotate on the shaft 17. On one end of the member 19 is a hook 21 for engaging a hole in a lug 23 provided on the valve 3.

An indicator guide and container 25 is fastened to the lugs 13 and 15 by some means such as by welding. The guide 25 is made of one piece of metal formed in a manner to provide two flaps 29. It is these two flaps which are welded to the lugs 13 and 15, and thus serve to support the remainder of the indicator guide. On both sides of the guide are guide slides proper 31 and 33 formed by lapping the metal back on itself and it is in these slides that the indicator disc 35 slides. The indicator disc shown in detail in Figure 3 is provided with a hole 36 the purpose of which will be explained hereinafter. Between the slides 31 and 33 and joining them is a member 37 which indicates by a sign 38, shown in detail in Figure 4, that the extinguisher should be removed and recharged. A hole 39 similar to the hole 36 is centrally located on the member 25. In order to keep the indicator disc in the guides so that it will not wobble and to prevent the disc from binding on the pin so that it would move with the pin when the pin is being withdrawn, the two projections 40 are provided on the indicator guide 25. If these projections were not provided, the disc would be free to hit against the back of the indicator guide 25 and accordingly the disc may not drop as rapidly as is desired.

The member 19 has an extension arm 41 that rises from the main portion of the member 19 at such an angle that it may move toward and away from the back of the indicator guide without striking it. A stop 42 is provided between the lugs 13 and 15 to prevent the arm 41 from going back too far. At the upper end of the arm 41 is a hole 43 in which an adjusting pin 45 is held securely by the set screw 47. The amount that the pin 45 may extend out in front of the arm 41 may be regulated by loosening the set screw 47 and sliding the pin in the hole 43. The hole 43 is

drilled at such an angle that the pin 45 may pass through the opening 39 in the guide member and support the indicator disc 35 under certain conditions. When the pin extends through the holes 36 and 39 the pin supports the indicator disc over the sign 38 and the disc covers the sign 38 until the pin is removed. The member 19 has another arm 51 which extends in a direction opposite to the arm 41. Between a face 53 of this arm and the base 9 of the indicator is placed a spring 55 which has been precompressed. The purpose of precompressing the spring will be discussed hereinafter.

The base 9 has a raised portion 57 and the face 53 of the arm 51 has a sunken portion 59 in order to center the spring and hold it in place. Between the face 53 and the base 9 and lying loose within the spring 55 is a wooden compression stop 61. This stop will prevent overcompression of the spring since that would deform the spring and tend to push the spring out of position. A further purpose of the stop 61 is to prevent the arm 41 from over-riding due to over-compression of the spring and cause it to strike or injure the back member 25.

The operation of the indicator will now be described in detail. When an extinguisher is hung on the hook 21 the weight of the extinguisher will tend to make the member 19 rotate on the shaft 17. The degree of rotation that will take place depends on the weight of the extinguisher. The rotation, of course, will be stopped by the compression spring. The spring that is used, of course, is a standard spring for the particular type of extinguisher that is to be supported. Hence, the weight of the extinguisher, acting on its particular type of spring, will determine whether the spring will compress, or not. If the extinguisher is underweight it will not compress the spring and if it is overweight it will compress so far that the spring stop 61 will stop all rotation of the member 19.

As the member 19 is rotated the arm 41 will also rotate on the shaft 17 and the pin 45 will move into the hole 39 of the guide member and extend between the guides through the hole 36 of the indicator disc and support the disc. The distance which it extends through the hole 39 depends on the position of the pin and the weight of the extinguisher.

Care must be taken in designing the spring in order that it will function in a manner which will operate the indicator when there is a decrease of fire extinguisher fluid in the portable fire extinguisher apparatus with which it is associated. If the indicator is used with a standard weight portable extinguisher in which for instance the amount of fire extinguishing fluid stored is fifteen pounds, the spring is then compressed to a point where it can resist compression from a weight which is equal to the weight of the extinguisher apparatus proper plus the minimum weight of fluid which the extinguisher apparatus must contain to be effective, for example, twelve pounds. Thus when a fully charged extinguisher is placed on the hook there will only be a compression movement of the spring due to the three pounds difference between the weight of the charged extinguisher and the precompression of the spring.

Should any fluid escape from the extinguisher the spring will tend to extend to its full length as the weight of fluid in the extinguisher falls. When the weight of fluid in the extinguisher has fallen to the minimum effective weight it is desirable to have an indication of the loss of weight so that the condition may be remedied.

The indication is given by the dropping of the indicator 35 in the guides due to the force of gravity and thus exposing the back member on which appropriate wording appears. The purpose of the adjusting pin 45 is now apparent since the position to which the pin may be adjusted determines the point at which the indicator will drop. This point may be fixed for a very slight decrease in weight of the extinguishing fluid, or, if it is desired, a very large decrease in weight may be necessary to let the indicator disc drop.

It should be noted that when the fire extinguisher, supported on a device as shown and described herein, is required for use it is merely necessary to lift the extinguisher off the supporting hook. If an empty or partially empty extinguisher is placed on the hook the indicator cannot be made to take a non-indicating position. It will be only by placing a fully charged extinguisher on the hook that the disc may be made to take a non-indicating position.

It will be seen accordingly that a novel type of support for portable fire extinguishing apparatus is provided which incorporates a simple and effective loss of weight indicator that will come into action immediately upon the occurrence of the predetermined loss of weight to be indicated, without any intermediate position of the indicator being possible.

From the foregoing disclosure it will be apparent that this invention resides in certain principles of construction which may be employed in other physical forms of apparatus without departure therefrom. It is apparent, therefore, that the form of apparatus illustrated in the drawing for the purpose of disclosure has been given solely in the illustrative sense and not in any limiting sense. The scope of this invention is best defined by the appended claims.

I claim:

1. In an indicator for a predetermined loss of the fluid medium in a fire extinguisher, a base, a member rotatably associated with the base to support the fire extinguisher, a spring to yieldingly oppose rotation of the member, an indicator proper associated with the base, a cover for the indicator proper, an arm on the member, a pin associated with the arm adapted to support the cover but adapted to move away from the supporting position upon a predetermined loss of weight of fluid medium in the container, whereby the cover will drop from its concealing position, and an adjustment screw to permit change of position of the pin with relation to the arm in order to determine the loss of weight which is to be indicated.

2. In an indicator for a predetermined loss of fluid medium in a fire extinguisher, a rotatable member adapted to support a fire extinguisher, a spring to yieldingly oppose rotation of the member, an indicator, an indicator cover, an arm on the member having a passage therethrough, a pin slidably adjustable in the passage and adapted to support the cover until a predetermined loss of fluid medium occurs, and a set screw to secure said pin in said passage whereby the pin may be adjusted to remove support from the cover at any desired predetermined decrease of fluid medium in the extinguisher.

3. In a support for a fire extinguisher containing a fluid medium and an indicator for a predetermined loss of fluid in the fire extinguisher, the combination comprising a base, a rotatable

member on the base, a hook on the member to support the extinguisher, a raised portion on the base, a recessed portion on the member, a spring surrounding the raised portion and resting in the recessed portion, a spring compression stop within the spring, an indicator support associated with the base having a passage therethrough, an indicator proper on the indicator support, a cover for the indicator having a passage therethrough, cover guides on the support guiding movement of the cover, an arm on the member, and a pin adjustably secured on said arm and adapted to extend through all the passages to support said cover, said pin being movable away from its supporting position upon a predetermined loss of the fluid medium in the container, whereby the cover will move from its position covering the indicator proper.

4. In an indicator for a predetermined loss of fluid medium in a fire extinguisher, rotatable means adapted to support an extinguisher, means to yieldingly oppose rotation of said means, indicating means, means to cover the indicating means, supporting means on the rotatable means for said covering means, and means for adjusting said supporting means with respect to said covering means, whereby any predetermined amount of decrease of fluid medium may render said supporting means ineffective.

5. In an indicator for a predetermined loss of fluid medium in a fire extinguisher, means adapted to support an extinguisher, means to indicate a predetermined loss of fluid medium, means movable with respect to said indicating means adapted to conceal said indicating means, and means to normally support said movable means in a position to conceal said indicating means, including adjustable means on said first named supporting means to render said second named supporting means effective for any desired predetermined loss of fluid medium, said second named supporting means being movable away from the supporting position upon a predetermined loss of fluid medium to thereby permit the movable means to move from the position normally concealing the indicating means.

6. A loss of weight indicator for a fluid medium container comprising a rotatably mounted member adapted to support the container, means to yieldingly resist rotation of said member, an indicator for indicating a predetermined loss of weight of the container, indicator concealing means movable with respect to the indicator, and means associated with said rotatably mounted member adapted to support said indicator concealing means in a position concealing said indicator, said supporting means being movable to a non-supporting position upon a predetermined loss of weight of the container.

7. A loss of weight indicator for a fluid medium container comprising a rotatably mounted member adapted to support the container, means to yieldingly resist rotation of said member, an indicator for indicating any desired predetermined loss of weight of the container, indicator concealing means movable with respect to the indicator, and means associated with said rotatably mounted member adapted to support said indicator concealing means in a position concealing said indicator, said supporting means being movable to a non-supporting position and being adjustable to release said indicator concealing means at any desired predetermined loss of weight of the container.

8. A loss of weight indicator for a fluid medium container comprising a base, a member rotatably mounted on said base and adapted to support the container, means to yieldingly resist rotation of said member, an indicator mounted on said base for indicating a predetermined loss of weight of the container, indicator concealing means adapted to be supported in a position overlying said indicator and to fall away from said indicator upon removal of said support, means associated with said base to guide the movement of said indicator concealing means with respect to said indicator, and means associated with said rotatably mounted member adapted to support said indicator concealing means, said supporting means being movable to a non-supporting position upon a predetermined loss of weight of the container.

9. A loss of weight indicator for a fluid medium container comprising a base, a member rotatably mounted on said base and adapted to support the container, a compression spring mounted between said base and said member and adapted to yieldingly resist rotation of said member, means to maintain said spring under precompression when no container is supported on the rotatably mounted member comprising a stop on the base adapted to limit rotation of the rotatably mounted member under the influence of the spring, an indicator for indicating a predetermined loss of weight of the container, indicator concealing means movable with respect to the indicator, and means associated with said rotatably mounted member adapted to support said indicator concealing means in a position concealing said indicator, said supporting means being movable to a non-supporting position upon a predetermined loss of weight of the container.

10. A loss of weight indicator for a fluid medium container comprising a base, a member rotatably mounted on said base and adapted to support the container, a compression spring mounted between said base and said member and adapted to yieldingly resist rotation of said member, means to prevent overcompression of said spring when a container is supported on the rotatably mounted member comprising a stop adapted to limit the rotation of the rotatably mounted member under the influence of the container, an indicator for indicating a predetermined loss of weight of the container, indicator concealing means movable with respect to the indicator, and means associated with said rotatably mounted member adapted to support said indicator concealing means in a position concealing said indicator, said supporting means being movable to a non-supporting position upon a predetermined loss of weight of the container.

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