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Description

OBJECT OF THE INVENTION

As is expressed in the title of this specification, the present invention refers to a fire extinguishing and prevention device and provides a series of relevant features with regard to the devices presently used for a similar purpose.

The device acts automatically when contacted by with fire, causing the explosion and disintegration of the device and the subsequent expansion of the extinguishing product, liquid or powder and in general of any fire-resistant product, or physical or chemical product to smother the fire, which is of course stored inside the device.

The fire extinguishing product is not advantageously pressurized inside the device, which defines a safety feature of the state of the charge of the extinguisher. Therefore, periodic checks are not necessary. In certain circumstances the vessel could have pressure. The expelling force that causes the ejection of the extinguishing product is caused in the combustion of an explosive charge, located inside the vessel and that is isolated from the extinguishing product.

BACKGROUND OF THE INVENTION

Fire extinguishing devices of the type called extinguishers are presently used. With such extinguishers the extinguishing product is pressurized inside the vessel, in such a way that the product comes out upon manual operation of the valve device that is located in the head of the vessel.

With this known device, it becomes necessary to periodically check the state of the charge of the extinguisher in such a way that if this is not done somewhat frequently, it may happen on certain occasions and when it is necessary to use the extinguisher that the pressure is lower than the required one and the device turns out to be ineffective.

The same applicants of the present invention also have registered another device of a similar effect, specifically patent of invention number P-8703285, where the container has a complex structure and does not comprise the advantageous features which are the object of the present invention.

US-A-4,964,469 discloses a device for dispersing fire-suppressing chemicals by explosive force. The device according to US-A-4 964 469 includes a container in which is stored an explosive charge surrounded by a dry powder payload. A fuse cord protruding from the container can be used to trigger the explosive.

However, if the part of the fuse cord protruding from the container is very short, the fuse cord

might be ignited too late by a fire in the vicinity of the container.

On the other hand, if the part of the fuse cord protruding from the container is long, the fuse cord is likely to be damaged, for example during transport of the device.

Another disadvantage of the device disclosed in US-A-4 964 469 is that if the fuse cord is ignited, there is no emission of sound that could warn people in the vicinity of the device of the imminent explosion.

These disadvantages are overcome by the advantageous features of the present invention.

DESCRIPTION OF THE INVENTION

In general terms, the fire extinguishing and prevention devices that the invention proposes includes a fire-resistant material vessel so that it is not destroyed before the explosion. It may also be of plastic with an alloy of this fire-resistant material. The explosive charge is contained in the central area of the inside of the vessel and is isolated from the extinguishing product and immobilized in its housing by any known means. The inlet of the vessel is sealed by a plug or a cap. There is also a sealing plug or cap to prevent moisture from entering during storage time, and once this sealing plug is destroyed, even the environment will wet the explosive charge sufficiently to make the device unusable.

There is a wick that surrounds the vessel and that reaches the explosive charge, this wick passing through a series of perforated lugs provided on the periphery of the vessel. A suspension element for the vessel also passes through these lugs, such as a fiber glass or asbestos string or one of any other incombustible materials to form a type of handle so the device may be hung from trees.

This suspension string that passes close to the wick also defines a protective element for the wick as it has a rather larger diameter. Any impact that is made during transport and that could damage the wick, is resisted by the suspension string.

A special characteristic that is derived from the structure of the vessel containing the extinguishing product and explosive charge and that is derived precisely from the existence of said lugs is that the wick remains clamped upon crossing the lugs, which produces warning or prevention detonations of the imminent explosion of the charge.

Additionally, the existence of a peripheral strip containing liquid or powder that causes a combustion inert environment, inhibiting a chain reaction, is provided for. Such is the case for halons or saturated halogenated hydrocarbons. Halons are very effective when extinguishing agents that do not conduct electricity are needed, or when the weight

- effectiveness ratio is an important factor.

Inside the vessel and after the explosive, there may also be a signaling powder or flare that indicates the place of the explosion, either by forming a cloud of smoke, or by any other indication.

In order to make it easier to understand the features of the invention and forming an integral part of this specification, a page of drawings is provided in whose sole figure the following has been represented with an illustrative and non-restrictive manner:

BRIEF DESCRIPTION OF THE DRAWINGS

Sole figure - a plan view with a sectioned quadrant, of the fire extinguishing and prevention device which is the object of the invention.

DESCRIPTION OF A PREFERRED EMBODIMENT

Making reference to the numbering that is indicated in the figure, we can see that the fire extinguishing and prevention device that the invention proposes is determined by vessel (1) with a general cylindrical shape and that has an inlet provided with a neck (2) in a point of its side surface.

In the side around the periphery there are lugs (3) each one provided with a pair of holes (4.)

The inside of the vessel is filled with the extinguishing product. Subsequently a tube 6 containing the explosive charge (5) is introduced through the inlet of the vessel (1), and the mouth of the tube is threaded to the neck (2) as is clearly seen in the sectioned portion of the figure.

The explosive charge fills the center area of the vessel so that when the explosion is started there is a better distribution of charges that uniformly cast the extinguishing product in the stipulated action radius, after destruction of the vessel (1.)

The explosive charge (5) is in direct communication with the wick (7) that emerges outside and that is located on the outer periphery of the vessel (1), passing through the holes (4) of the lugs (3.)

In order to prevent the wick (7) from deteriorating, or even splitting as a result of knocks during handling, or else during transport and storage, there is a protection means therefor, defined by the string (8) that follows the same peripheral path as the wick (7), passing through the pairs of holes (4) of the lugs (3.) This string (8) is used to suspend the device from a tree or the like, in the fire barrier laying foreseen for example as fire prevention.

The diameter of the string (8) is notably greater than that of the wick (7) and therefore any knock that could damage the wick (7) is endured by the string (8.)

As is seen in the figure, the vessel (1) is also provided with a second covering cap or plug (9) acting as a moisture seal.

The wick (7), upon entering and coming out through the pair of holes (4) of each of the lugs (3), remains "clamped" and during combustion of the wick detonations are caused as the part of the wick passing through these clamped areas burns, warning of the imminent explosion of the charge and therefore acting as a safety measure.

Claims

1. Fire extinguishing and prevention device of the type that consists of a vessel (1) containing an extinguishing product, the latter not normally being pressurized or sometimes being pressurized in specific circumstances, the extinguishing product coming out of the vessel upon automatic activation of an explosive device (5) contained in the vessel (1), the automatic activation being provided by a wick (7) extending from the inside to the outside of the vessel (1) through an inlet defined by a neck (2), inside of the vessel there is the extinguishing product and an explosive charge (5) isolated and immobilized in the center area and in communication with the wick (7) that has access through the inlet (2) of the vessel (1), the neck (2) of the vessel (1) can be plugged with a plug or cap,

characterized in that

the device consists of a plastic vessel (1) with a fire-resistant alloy, the device further consists of a string (8) of incombustible material that defines the suspension means of the vessel (1) for laying a line of devices to act as a fire barrier, the periphery of the vessel (1) has some lugs (3) each provided with two holes (4) through which the wick (7) and the string (8) pass.

2. Fire extinguishing and prevention device, according to claim 1, in which the string (8) has a larger diameter than the wick (7) in order to define protection means of the latter in the event of knocks.
3. Fire extinguishing and prevention device, according to claim 1, in which the wick (7) is clamped in each lug (3) upon passing through the two holes (4) of the same, thus causing warning detonations of the imminent explosion of the charge upon the portion of the wick passing through the lugs (7) burning.
4. Fire extinguishing and prevention device, according to claim 1, in which the inlet of the

vessel includes a second moisture sealing plug (9) and once destroyed the moisture itself of the environment makes the device unserviceable.

5. Fire extinguishing and prevention device, according to the above claims, in which the vessel (1) also includes a peripheral strip, outside or inside, containing liquid or powder that causes a combustion inert environment, inhibiting a chain reaction. 5 10
6. Fire extinguishing and prevention device, according to the above claims, in which the housing for the explosive charge (5) also includes a signaling powder or flare, which upon the device functioning, comes out to indicate the place of the explosion. 15
7. Fire extinguishing and prevention device, according to the above claims, in which the explosive charge (5) is located in the bottom of a slightly conic tube (6), introduced in the mouth of the vessel (1) and in radial arrangement upon being provided with a flange threaded to the neck (2) of the vessel (1). 20 25

Patentansprüche

1. Vorrichtung zum Löschen und Verhüten von Feuern, der Art, die aus einem Behälter (1) besteht, der ein Löscherzeugnis enthält, wobei letzteres normalerweise nicht unter Druck steht, oder gelegentlich unter bestimmten Umständen unter Druck steht, wobei das Löscherzeugnis bei automatischer Betätigung einer explosiven Vorrichtung (5), die in dem Behälter (1) enthalten ist, aus dem Behälter austritt, wobei die automatische Betätigung durch einen Docht (7) erfolgt, der von der Innenseite zur Außenseite des Behälters (1) durch einen Einlaß verläuft, der durch einen Hals (2) gebildet wird, wobei sich im Inneren des Behälters das Löscherzeugnis sowie eine explosive Ladung (5) befinden, die im mittleren Bereich isoliert und unbeweglich ist und die mit dem Docht (7) in Verbindung steht, der über den Einlaß (2) des Behälters (1) eintritt, wobei der Hals (2) des Behälters (1) mit einem Stopfen oder einer Kappe verschlossen werden kann, 30 35 40 45 50
dadurch gekennzeichnet, daß
 die Vorrichtung aus einem Kunststoffbehälter (1) mit einer feuerbeständigen Legierung besteht, wobei die Vorrichtung des weiteren aus einem Seil (8) aus nicht brennbarem Material besteht, das die Aufhängungsvorrichtung für den Behälter (1) bildet, so daß eine Reihe von Vorrichtungen hergestellt werden kann, die als 55

Feuersperre dient, wobei der Umfang des Behälters (1) einige Ansätze (3) aufweist, die jeweils mit zwei Löchern (4) versehen sind, durch die der Docht (7) und das Seil (8) verlaufen.

2. Vorrichtung zum Löschen und Verhüten von Feuern nach Anspruch 1, wobei das Seil (8) einen größeren Durchmesser hat als der Docht (7), um bei Stößen eine Schutzeinrichtung für letzteren zu bilden.
3. Vorrichtung zum Löschen und Verhüten von Feuern nach Anspruch 1, wobei der Docht (7) in jedem Ansatz (3) beim Hindurchtreten durch die beiden Löcher (4) desselben festgeklemmt wird, wodurch vor der bevorstehenden Explosion der Ladung warnende Detonationen entstehen, wenn der Teil des Dochtes brennt, der durch die Ansätze (7) verläuft.
4. Vorrichtung zum Löschen und Verhüten von Feuern nach Anspruch 1, wobei der Einlaß des Behälters einen zweiten, feuchtigkeitsdichten Verschuß (9) enthält, wobei, wenn dieser zerstört wird, die Umgebungsfeuchtigkeit selbst die Vorrichtung unbrauchbar macht.
5. Vorrichtung zum Löschen und Verhüten von Feuern nach den obenstehenden Ansprüchen, wobei der Behälter (1) des weiteren einen außerhalb oder innerhalb befindlichen Umfangsstreifen einschließt, der Flüssigkeit oder Pulver enthält, das eine verbrennungsinaktive Umgebung erzeugt und eine Kettenreaktion verhindert.
6. Vorrichtung zum Löschen und Verhüten von Feuern nach den obenstehenden Ansprüchen, wobei das Gehäuse für die explosive Ladung (5) des weiteren ein Signalpulver oder ein Leuchtsignal enthält, das, wenn die Vorrichtung in Funktion ist, austritt, um den Ort der Explosion anzuzeigen.
7. Vorrichtung zum Löschen und Verhüten von Feuern nach den obenstehenden Ansprüchen, wobei sich die explosive Ladung (5) am Boden einer leicht konischen Röhre (6) befindet, die in die Öffnung des Behälters (1) in radialer Anordnung eingeführt ist, wobei sie mit einem Flansch versehen ist, der auf den Hals (2) des Behälters (1) aufgeschraubt ist.

Revendications

1. Appareil de prévention et d'extinction d'incendie du type qui comprend un réservoir (1) qui

- contient un produit d'extinction, celui-ci n'étant pas normalement sous pression ou étant parfois sous pression dans des circonstances particulières, le produit d'extinction sortant du réservoir par activation automatique d'un dispositif explosif (5) contenu dans le réservoir (1), l'activation automatique étant assurée par une mèche (7) placée de l'intérieur à l'extérieur du réservoir (1) et passant par une entrée délimitée par un col (2), le produit d'extinction et une charge explosive (5) isolée et immobilisée dans la zone centrale et communiquant avec la mèche (7) qui a accès par l'entrée (2) du réservoir (1) étant placés dans le réservoir, le col (2) du réservoir (1) pouvant être bouché par un capuchon ou bouchon, caractérisé en ce que
- l'appareil est formé d'un réservoir (1) de matière plastique ayant un alliage résistant à l'incendie, l'appareil étant constitué d'une corde (8) d'un matériau incombustible qui forme le dispositif de suspension du réservoir (1) pour la pose d'une ligne d'appareils destinés à agir comme barrière contre l'incendie, la périphérie du réservoir (1) ayant des pattes (3) qui possèdent chacune deux trous (4) pour le passage de la mèche (7) et de la corde (8).
2. Appareil de prévention et d'extinction d'incendie selon la revendication 1, dans lequel la corde (8) a un diamètre supérieur à celui de la mèche (7) afin qu'elle forme un dispositif de protection de la mèche en cas de coups.
 3. Appareil de prévention et d'extinction d'incendie selon la revendication 1, dans lequel la mèche (7) est serrée dans chaque patte (3) lors du passage dans les deux trous (4) de celle-ci, si bien que des détonations d'avertissement relatives à l'explosion imminente de la charge sont provoquées lorsqu'une partie de la mèche passant dans les pattes (7) brûle.
 4. Appareil de prévention et d'extinction d'incendie selon la revendication 1, dans lequel l'entrée du réservoir comprend un second bouchon (9) de fermeture étanche contre l'humidité et après destruction, l'humidité elle-même de l'atmosphère rend l'appareil inutilisable.
 5. Appareil de prévention et d'extinction d'incendie selon les revendications précédentes, dans lequel le réservoir (1) possède aussi une bande périphérique externe ou interne, contenant un liquide ou une poudre qui provoque la formation d'une atmosphère inerte pour la combustion, inhibant ainsi une réaction en chaîne.
 6. Appareil de prévention et d'extinction d'incendie selon les revendications précédentes, dans lequel le boîtier contenant la charge explosive (5) contient aussi une poudre ou une fusée de signalisation qui, lorsque l'appareil fonctionne, s'échappe pour indiquer l'emplacement de l'explosion.
 7. Appareil de prévention et d'extinction d'incendie selon les revendications précédentes, dans lequel la charge explosive (5) est placée à la partie inférieure d'un tube légèrement conique (6) introduit dans l'embouchure du réservoir (1) et ayant une disposition radiale tout en ayant un flasque vissé sur le col (2) du réservoir (1).

