

1

2,764,121

GAS ALARM DEVICE

Paul J. Showstack, Mattapan, Mass.

Application February 15, 1954, Serial No. 410,211

4 Claims. (Cl. 116—106)

The present invention relates to an alarm device and more particularly to a device which will provide an alarm for a fire when the temperature in the neighborhood of the alarm device has reached approximately 100° F. or slightly over.

The invention of the present invention is to provide such a cheap device that it may be placed in many places in the home and be operable to produce an alarm signal of some minutes so that a person in the home or outside of the home may become aware of it and act accordingly.

While alarm devices have been developed which comprise a container and a whistle operated thereby, no devices have been developed or put in use in which substantially a cheap container is employed in connection with a whistle which is readily attached or detached to the alarm device so that the individual himself can renew the alarm or put together the necessary parts in such a way that any number of such devices may be distributed around the home for operation in event that a catastrophe of fire should occur.

In the present invention a very simple alarm device is provided which comprises only a can of suitable gas such as "Freon," which has on one face, either the top or bottom, a fusibly plugged hole over which may be snapped in place a small whistle of the police type which will be operated when the fuse melts out of the hole and the gas is permitted to escape.

In my prior Patent No. 2,649,752, I have disclosed a self contained fire alarm and fire extinguisher, in which a can of "Freon" is punctured by a closure element which contains a fusible plug adapted to be melted out when fire occurs for permitting a whistle, particularly a siren to be operated.

The object of the device of the present invention is to provide an extremely simple and cheap arrangement so that any number can be placed around the home to fully protect every part of it.

It has definitely been recognized that it is essential to know at the very earliest possible moment when a fire may occur in a home, and that such knowledge is essential to extinguish the fire without damage to person and property.

In the present invention the means employed may be provided so cheaply that actually no home could do without protection of the type herein disclosed.

Further and other objects of the present invention will be more fully understood from the description in the specification set forth below when taken in connection with the drawings illustrating an embodiment of the same, in which:

Figure 1 shows a side elevation of the fire alarm device with parts indicated in section.

Figure 2 shows an end view of the device of Figure 1 as seen looking up from the bottom.

Figure 3 shows a modified perspective view.

Figure 4 shows a slightly modified section from the view shown in Figure 1, and

2

Figures 5 and 6 show slightly further modifications.

In the arrangement indicated in Figure 1, the container 1 may be filled with a gas 2, such as "Freon-12" (which is dischlorodifluoro methane) or some other such type of gas which is inert, vaporizes on expansion under normal temperature, may be used for such purposes as hereinafter set forth.

Other types of "Freon" gas may be used, and some of these may be used which are known under the name of "Aerosols." The advantage of using such a gas is that a small container may be used to store a tremendous volume.

In the case of the gas mentioned, "Freon" gas 12, the vapor pressure is 70 pounds per square inch gauge at 70° F., so that with the gas compressed to liquid under normal temperature conditions, a tremendous volume of gas will be contained in the container sufficient to give a considerably loud blast on a whistle of the type used in connection herewith for a considerably long period of time, perhaps 5 to 20 minutes.

The container 2 may be hung on a wall 3 by means of a loop 4 and a peg 5, or may be placed on a shelf in a proper position. While in Figure 1 the can is shown with an internal pipe 6, so that the vapor pressure would exert its force downward in the direction of the arrow A, the fusible connection or opening may be placed at the top of the can if it is desired.

In Figure 2, 8 indicates a fusible plug which is simply a fusible metal closing a small hole in the can. This hole may be somewhere in the neighborhood of .005" to .010" or a little more, sufficient to allow the gas to escape in proper volume to blow the police whistle 9 which is mounted just below the opening. Care must be taken to mount this type of whistle 9 just over the fusible opening 8 with the whistle held fairly firmly against the face of the can. This may be accomplished by providing the whistle 9 with a horizontally positioned flange 10 to which are joined spring arms 11, 11, which may be snapped over the edge beads 12 of the can 1.

It is not necessary that the whistle be held in air-tight contact against the end of the can, since when the fusible plug 8 melts away, the stream of gas through the pipe A or out of the can 2 will be directed into the mouth 13 of the whistle 1 and operate the whistle in the usual fashion. The whistle 9 may be provided with a pebble or ball 14 to provide the usual trill of the whistle sound which is considered distinctive and advantageous in this type of alarm device.

Besides the fusible plug, there may be another fusible plug in the container at 40 which may melt at a higher temperature than the plug 8 to release a spray of the fluid from the container which may be directed against the fire to extinguish it. Each of the modifications will preferably be provided with fusible plugs so that the liquid may be sprayed from the container to extinguish a fire. There may be two diametrically opposite spring arms 11, or as indicated in Figure 2, there may be four spring arms, 15, 15, 15, 15, spaced at 90° from one another, the ends of which snap over and cling to the beads of the can. For this purpose the ends of the spring elements 11 and 15 are preferably formed with arcuate ends 16 which grip the beads 12 and hold the whistle structure tightly in place. If a can of the gas has been used up, it simply is necessary to provide a new can and to snap the whistle of the old can on place on the new can, so that the replacement of the alarm device can readily be made.

In Figure 3 there is shown a perspective view with three spring straps 17, 17, 17, instead of the four straps shown in Figures 1 and 2. These spring straps 17 are attached in place similarly as indicated in Figures 1 and 2. In Figure 3 however, the fusible closure for the opening

3

in the can is at the top of the can and therefore the can may be placed upright on a shelf or suspended in a position with the whistle 18 at the top of the can instead of at the bottom as indicated in Figures 1 and 2.

In Figure 4 there is shown an arrangement in which only two spring straps 19 are used to support the whistle over the fusible plug 20 in the top of a slightly dished can as indicated by the top dished element 21 of the can. The can as indicated in Figure 4 may be made in the usual manner in which cans are constructed with the metal of the top cover of the can crimped and clamped over the upper edge of the side wall 22 of the can providing a bead 23 around the top periphery of the can over which the end 24 of the spring arm can rest and form a firm attachment by making the arcuate shape of the ends 24 to conform to that of the bead 23 formed at the top of the can.

The spring element 19 may be welded or attached in any suitable way to the lower end of the mouth of the whistle 25, which will be in a position over the fusible plug 20 closing the opening in the top of the can just below the mouth piece of the whistle.

Still further constructions of the invention are shown in Figures 5 and 6.

In Figure 5, the whistle 26 is held at the side of the can by means of a spring strap 27 which is attached to the whistle and passes down the side of the can as indicated by the element 28 and hooks over the lower edge of the can at 29, forming a gripping element along the side of the can. In this case a fusible plug will be made in the top 30 of the can under the mouth piece 31 of the whistle as indicated at 32. The strap 28 extends upwards from the can and has a keyhole 41 to permit hanging the can on the wall, etc.

In Figure 6 there is shown an arrangement in which the top cover 33 of the can may be provided with a threaded collar 34, which is soldered or welded in place over the fusible plug 35. The whistle 36 has its mouth threaded so as to be screwed over the threaded collar 34 so that it may be removed and screwed into position on any of the cans properly fitted with a threaded collar 34.

In addition to the can being used for an alarm device, it will be noted that in Figure 1, when the fusible plug has been blown out, the device may also be used to put out the fire by simply snapping off the whistle and the clips holding the whistle in place. The same use can also be applied to the construction shown in the other figures of the invention.

Having now described my invention, I claim:

1. A self contained fire alarm signal comprising a container having an inert fluid contained therein, self convertible from liquid to gas when escaping from higher than atmospheric to atmospheric pressure, said container having side walls and end walls sealed with a fusible, low melting point metal, a whistle having a mouth opening member and a chamber, at least one spring strap extend-

4

ing from said whistle and having means at its end for clamping over the edge of the container at the junction of the side and end walls.

2. A self contained fire alarm signal comprising a container having an inert fluid contained therein, self convertible from liquid to gas when escaping from higher than atmospheric to atmospheric pressure, said container having side walls and end walls sealed with a fusible, low melting point metal, a whistle having a mouth opening member and a chamber, a plurality of spring straps extending from the mouth opening and having means at their ends for clamping over the edge of the container at the junction of the side and end walls, the junction of the side and end walls of the container being formed with an outwardly extending bead for receiving the ends of the straps.

3. A self contained fire alarm signal comprising a container having an inert fluid contained therein, self convertible from liquid to gas when escaping from higher than atmospheric to atmospheric pressure, said container having side walls and end walls with a gas escape hole of small size in one of the end walls sealed with a fusible low melting point metal, a whistle having a mouth opening positioned over said gas escape hole and a spring strap attached at one end to said whistle and extending over the edge of the container down one side and clamping over the edge of the container at the other end from the position of the whistle.

4. A self contained fire alarm signal comprising a container having an inert fluid contained therein, self convertible from liquid to gas when escaping from higher than atmospheric to atmospheric pressure, said container having side walls and end walls with a gas escape hole of small size in one of the end walls sealed with a fusible, low melting point metal, a whistle having a mouth opening, means positioning said whistle with the mouth opening over said gas escape hole comprising a flange extending upwards from the end wall of the can where said escape hole is situated and a supporting spider comprising a plurality of spring steel legs radially arranged about said whistle and each secured at one end to said whistle with means formed at the other end extending over and engaging said flange.

References Cited in the file of this patent

UNITED STATES PATENTS

999,567	Kallstrom	Aug. 1, 1911
2,034,179	Franklin	Mar. 17, 1936
2,211,142	Loudon	Aug. 13, 1940
2,498,193	Anglo	Feb. 21, 1950
2,506,983	Williams	May 9, 1950
2,522,207	Bald	Sept. 12, 1950
2,649,752	Showstock	Aug. 25, 1953
2,682,855	Gerace	July 6, 1954
2,729,187	Bloom	Jan. 3, 1956