April 17, 1945. C. B. EATON 2,373,819

FIRE EXTINGUISHER

Filed Nov. 24, 1943

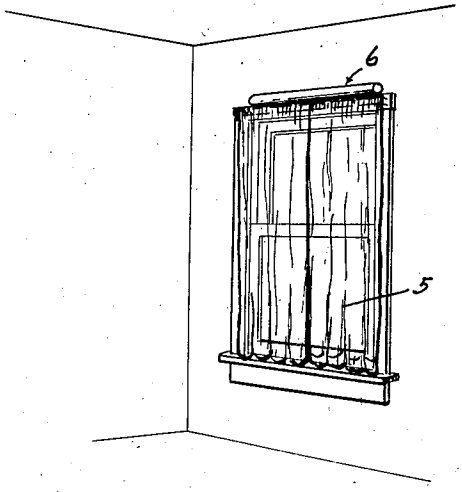


FIG. 1

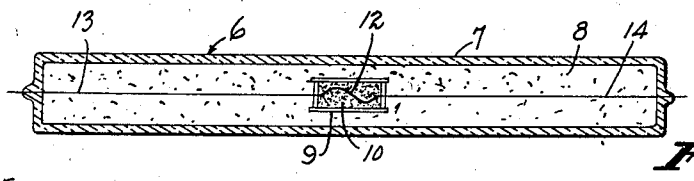


FIG. 2

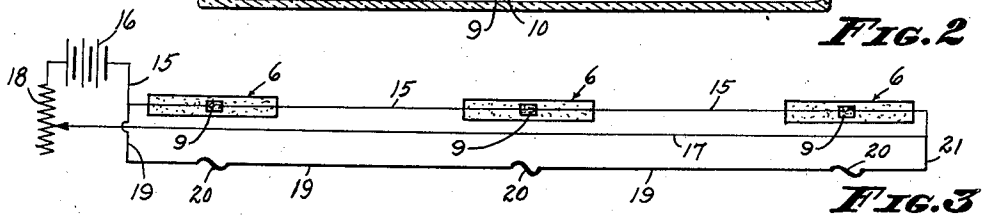


FIG. 3

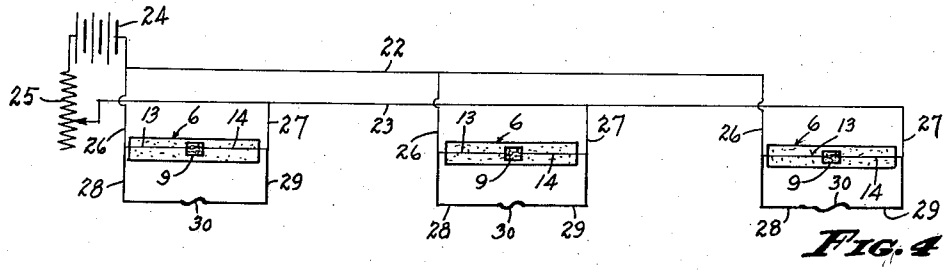


FIG. 4

INVENTOR.

Clarence B. Eaton

BY Carlos G. Stratton

ATTORNEY

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FIRE EXTINGUISHER

Clarence B. Eaton, Los Angeles, Calif.

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3 Claims. (Cl. 169—28)

My invention relates to a fire extinguisher which has for its principal object to provide means for automatically extinguishing a fire without the use of a liquid.

It has been found very often that water or other liquids used to extinguish a fire have produced more damage than the fire. It is, therefore, an object of the present invention to eliminate this damage by liquids and yet to provide means to extinguish the fire.

My invention also has for its objects to provide such means that are positive in operation, convenient in use, easily installed in a working position and easily disconnected therefrom, economical of manufacture, relatively simple, and of general superiority and serviceability.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description. However, the drawing merely shows and the following description merely describes one embodiment of the present invention, which is given by way of illustration or example only.

In the drawing, like reference characters designate similar parts in the several views.

Fig. 1 is a perspective view of a room corner, showing an embodiment of my invention arranged above combustible material in the room.

Fig. 2 is an enlarged longitudinal section of an element comprised in the embodiment.

Fig. 3 is a wiring diagram showing such elements, on a reduced scale, connected in series in an electric circuit.

Fig. 4 is a modified wiring diagram showing the fire extinguishing elements connected in parallel in an electric circuit.

Referring more in detail to the drawing, the reference numeral 5 generally designates a combustible article. In this case the article is a curtain, although, of course, it can be furniture, rugs, or any other combustible article. A fire extinguishing element is shown at 6 above the combustible article.

The extinguishing device comprises a tube 7 of frangible material (such as glass or plastic) which contains a supply of fire extinguishing powder or other dry fire extinguishing material 8. Such dry fire extinguishing material is well known to those skilled in the art. One such material is known commercially as, "Du Gas". A container or cartridge 9 in the fire extinguishing powder 8 has an explosive charge 10, such as gun powder. A high resistance, relatively high melting point, conductive link or fuse 12 is contained in the charge of powder 10. Wires 13 and 14 connect the link 12 in a suitable electric circuit.

The device shown in Fig. 2 may be connected in any of a variety of circuits. Two such circuits are shown in Figs. 3 and 4.

In Fig. 3, wires 15 connect the elements 6 in series with a suitable source 16 of electrical current. The circuit is completed by a wire 17 and a rheostat 18. Connected in parallel with the series-connected elements 6 is a series of wires 19 and low resistance, low melting point, conductive, fusible links 20. Wire 21 connects the latter series of wires and links 20 with the wire 17.

In Fig. 4, the elements 6 are connected in parallel with each other. Trunk lines 22 and 23 respectively connect with a suitable source 24 of electrical current and with a rheostat 25. Wires 26 and 27 respectively connect the wires 13 and 14 of the elements 6 with the trunk lines 22 and 23. Wires 28 and 29 respectively connect opposite ends of low resistance, low melting point, conductive, fusible links 30 with the wires 26 and 27.

In the operation of my device, a plurality of elements 6 may be placed above combustible material or combustible articles, in order that the fire extinguishing powder 8 in such elements may fall by gravity upon any burning article therebeneath.

The low resistance links 20 or 30 (depending upon the circuit used: Fig. 3 or 4) are preferably disposed adjacent the elements 6 respectively. In the absence of a fire in Fig. 3 the electrical current follows a closed circuit as follows: source 16, wires 19 and low resistance links 20, wire 21, wire 17, rheostat 18 and back to the source. This circuit is effected by the high resistance of the links 12. When a fire occurs adjacent any of the links 20, such adjacent link is fused, breaking the circuit just described. Thereupon the closed circuit is as follows: Source 16, wires 15 and wires 13 and 14 and links or fuses 12 in the cartridges 9, wire 17, rheostat 18 and back to the source. With this latter circuit, the temperature of the links 12 is raised to the explosion point of the powder 10 in the cartridge, thus exploding the cartridge 9, breaking the frangible tube 7 and causing the fire extinguishing powder to fall upon the burning article, extinguishing the burning thereof.

In the form shown in Fig. 4, all the cartridges 9 are not exploded if one link 30 is fused. Only the single cartridge adjacent the fused link 30 is exploded. The circuits of the other cartridges,

which are connected in parallel with each other, are not disturbed when the fire only melts one of the links **30**. Of course, in a general fire, all the links **30** would be fused and all the cartridges **9** in Fig. 4 would be exploded and all the elements **6** in that figure would be broken. The rheostats **18** or **25** may, of course, be adjusted to obtain the proper balance for certain uses of the present system, to avoid operation except in case of fire.

While I have illustrated and described what I now regard as the preferred embodiment of my invention, the construction is, of course, subject to modifications without departing from the spirit and scope of my invention. I, therefore, do not wish to restrict myself to the particular form of construction illustrated and described, but desire to avail myself of all modifications that may fall within the scope of the appended claims.

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

1. Fire extinguishing means comprising an electrical circuit, including a low melting point link fusible by heat, a container for a dry fire extinguishing material, an explosive cartridge in said container, means to explode said cartridge, another circuit including said means, a source of electrical energy, said last named circuit being energized to affect said means when said first named circuit is interrupted and cause the cartridge to explode, rupture the container and scatter the fire extinguishing material.

2. Fire extinguishing means comprising an electrical circuit including an eutectic link, a container for a dry fire extinguishing material, an explosive charge in said material, a firing means for said charge, and a second circuit, including said firing means and energizable upon the breaking of said first circuit to actuate said firing means, explode the charge and scatter the fire extinguishing material.

3. Fire extinguishing means comprising a first electrical circuit which passes through a frangible tube filled with dry fire extinguishing material, and explosive cartridge in said tube, a link in said electrical circuit of high resistance and high melting point within said cartridge, a second electrical circuit in parallel with the first circuit, a link of low resistance and low melting point in said second circuit adjacent to the said tube, said link being adapted to melt in case of a fire, thereby causing the high resistance link in the first circuit to explode the cartridge, rupture the tube and scatter the dry fire extinguishing material.

CLARENCE B. EATON.