

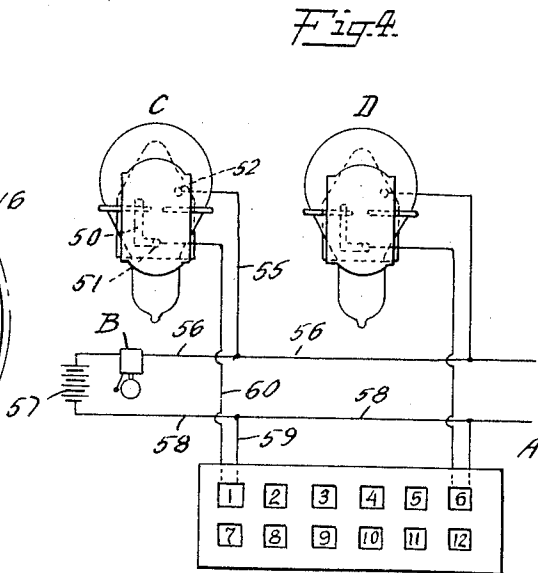
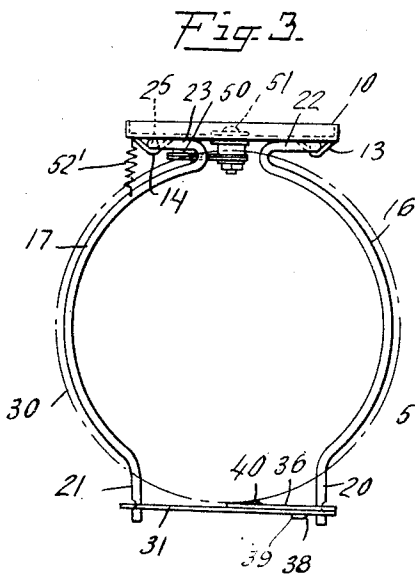
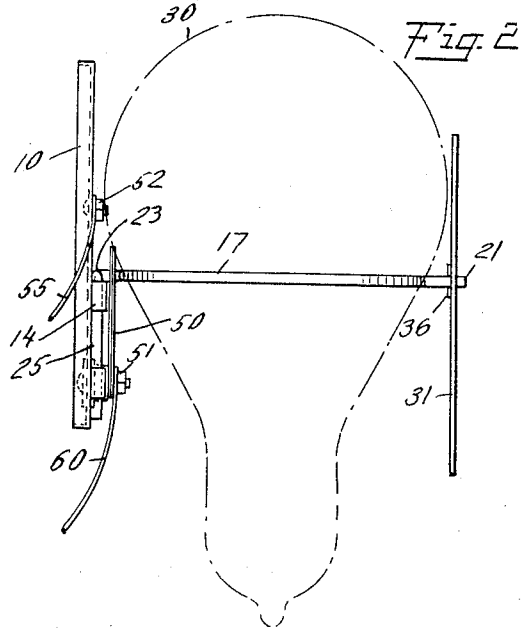
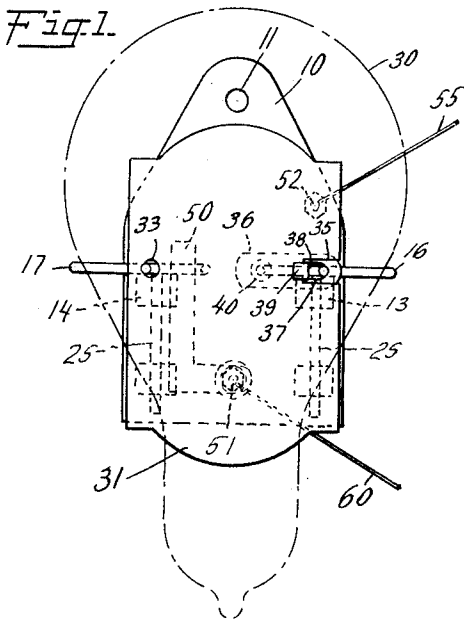
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1,885,309

FIRE EXTINGUISHER

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FIRE EXTINGUISHER

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This invention relates to fire extinguishers and particularly to a combination of an automatically operable fire extinguishing device and circuit control mechanism.

5 Various mechanisms have been worked out to automatically operate a fire extinguisher in case of fire. Such a structure is disclosed in Patent No. 1,708,867.

10 Devices of this character are efficient in extinguishing fires but unless a tour of inspection is made periodically and often to determine the condition of the device, it is obvious that the extinguisher might operate and extinguish a fire without any knowl-
15 edge of the fire or extinction thereof reaching the occupants of the building or dwelling.

For instance, a fire might break out in the attic of a building and be extinguished without attracting the notice of the inhabitants of the house. Under such circumstances the
20 extinguisher would not be replaced and the section of the dwelling served thereby would be unprotected.

25 This invention has for its salient object to provide a fire extinguishing device so constructed and arranged that the extinguisher will operate automatically in case of fire and will also automatically close a circuit for sounding an alarm or causing a signal
30 to be given.

Further objects of the invention will appear from the following specification taken in connection with the drawing, which forms a part of this application, and in which

35 Fig. 1 is an elevational view of a device constructed in accordance with the invention;

Fig. 2 is an elevational view taken at right angles to Fig. 1;

40 Fig. 3 is a top plan view of the device shown in Figs. 1 and 2; and

Fig. 4 is a diagrammatic view showing a circuit for a signal and alarm system adapted to be controlled by extinguisher devices such as those shown in Figs. 1 to 3 inclusive.

50 The invention briefly described consists of a fire extinguisher device comprising a supporting member, means carried by said member and adapted to releasably support a

frangible fire extinguisher container, means including a fusible element for holding said supporting means in supporting position, and a circuit for controlling an alarm or signal circuit including mechanism closing mechanism controlled by the supporting means and adapted to automatically close the alarm or signal circuit when the releasable supporting means is released by the melting of the fusible element.

Further details of the invention will appear from the following description.

It should be understood that any desired form or type of automatically operable fire extinguishing device may be utilized but in the particular form of the invention illustrated the device shown in Patent No. 1,708,867 is disclosed.

In the particular form of the invention shown, there is illustrated a plate or bracket 70 having an opening 11 therein adapted to receive a screw or other retaining member. The plate is preferably formed of sheet metal and has punched therefrom or secured there-
75 to, two sets of pivot lugs or loops 13 and 14. The grenade is supported in a pair of longitudinally curved supporting members 16 and 17 formed of resilient material, such as resilient wire stock. These members have substantially straight end portions 20 and 21
80 which are disposed in parallel relation to each other when the supporting members are placed under tension as shown in Fig. 3.

The members 16 and 17 are bent laterally, as shown at 22 and 23, and at the ends of the lateral portions are bent downwardly or at substantially right angles to the plane of the body portion of the supporting members.

The downwardly extending portions 25 are pivoted in the lugs or loops 13 and 14. The bends 22 and 23 are so formed that in order to bring the body portions of the members 16 and 17 to the position shown in Fig. 3, or to the position in which they are adapted to support a grenade 30, the members must
95 be placed under tension. In order to retain the supporting members under tension, a plate 31 is mounted on the outer ends 20 and 21 of the supporting members 16 and 17. The plate has an opening 33 adjacent
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one edge thereof for receiving the end 21 of the member 17. At its opposite edge, the plate 31 has formed thereon, an inwardly extending elongated notch 35. A strip 36, preferably formed of sheet metal or like material, is mounted in the rear of the notch 35 and has an opening 37 formed therein by punching out a lip 38 from the body of the strip. The lip extends through the notch 35 and is bent back as shown at 39 against the rear surface of the plate 31.

The strip 36 is secured to the rear surface of the plate 31 by a connection 40 of fusible metal, such as soft solder. In case of fire, the fusible connection 40 melts or is softened to such an extent that the tension of the resilient supports 16 and 17 will cause the supports to spread apart and detach the strip 36 from the plate 31. As the resilient supports are released, the grenade will drop and break, thus extinguishing the fire. Furthermore, as the supports are released, the tension will cause the supports to swing about the pivot portions 25 thereof.

Although the structure above described comprises a pair of pivoted arms, it will be understood that one of the arms only may be pivoted if desired and in this case the grenade or frangible container would be released when said arm moves pivotally away from the other arm.

In addition to causing the frangible container or grenade to be released and to automatically drop in case of fire, means is provided for automatically closing an alarm or signal circuit when the device is automatically operated to release the container. This mechanism comprises a thermostatic or bimetallic circuit closure member 50 which is shown as L-shaped in outline. The member 50 is connected to a terminal 51 which is secured to but insulated from the base or back plate 10. Another terminal 52 of an alarm or signal circuit is connected directly to the back plate 10 and is in electrical contact therewith.

The member 50, as shown in Figs. 1 and 2, extends upwardly between the bend 23 of the arm 17 and the curved or grenade encircling portion of the arm. A spring 52' may be provided, if desired, to connect the arm 17 with the back plate and assist in swinging the arm when the fusible element gives way.

It will be obvious that when the arm 17 is released and swings on its pivot shank 25, contact will be made between the portion 23 of the arm and the upwardly extending portion of the member 50. This will cause the alarm or signal circuit to be closed. The spring 52' will retain the arm in a position to hold the circuit closed until the arm is manually swung in a reverse direction and out of contact with the member 50.

The member 50 may, if desired, be formed of bimetallic or thermostatic metal so that

it will automatically engage the arm 17 upon a predetermined rise in temperature in the event that the arm 17 is not automatically released by the fusible holding means.

Fig. 4 illustrates diagrammatically an alarm and signal circuit that can be utilized in connection with a plurality of extinguishers of the type above described. In this figure there is shown an annunciator A having a plurality of drops or indicators bearing the numbers 1, 2, 3, 4, 5, 6, etc. Two extinguisher devices C and D are shown, the device C being connected by a wire 55 to a wire 56 which leads through a bell B and battery 57 to a wire 58 which in turn is connected by a wire 59 to the annunciator signal circuit 1. The other side of the annunciator circuit is connected by a wire 60 to the terminal 51 of the extinguisher C. When the extinguisher C operates, the circuit will be closed through the bell B, battery 57 and annunciator signal 1.

The circuit from the extinguisher D is also connected to the wires 56 and 58, which in this case communicate with the signal 6.

It will be obvious from the foregoing description that whenever the grenade or container is released by a fire extinguisher device, an alarm will be given and the location of the extinguisher which is operated will be indicated on the annunciator.

Furthermore, this action will take place automatically whenever an extinguisher operates and in case the extinguisher does not operate the circuit closer 50 will complete the alarm and signal circuit.

Although one specific embodiment of the invention has been particularly shown and described, it will be understood that the invention is capable of modification and that changes in the construction and in the arrangement of the various cooperating parts may be made without departing from the spirit or scope of the invention, as expressed in the following claims.

What I claim is:

1. In combination, a supporting member, means carried thereby for releasably holding a frangible grenade, heat controlled means for retaining said holding means in grenade holding position, an electric circuit, and a circuit closer for said circuit controlled by said holding means and automatically operable upon release of said holding means.

2. In combination, a supporting member, pivoted means carried thereby for releasably holding a frangible grenade, heat controlled means for retaining said holding means in grenade holding position, an electric circuit, and a circuit closer for said circuit controlled by said holding means and automatically operable upon release of said holding means.

3. A grenade support comprising a supporting member, means permanently associated with said supporting member for supporting a grenade, fusible means for holding

the supporting means in grenade engaging and supporting position, said latter means being incapable of supporting said grenade when free of said fusible member, and an electric circuit including contacts controlled by said supporting means.

4. A grenade support comprising a supporting member, means including a fusible element mounted thereon for supporting a grenade, said means being constructed to release the grenade from said support upon failure of the fusible element, and an electric circuit including contacts controlled by said supporting means.

5. In combination, a supporting member, means carried thereby for releasably holding a frangible grenade, heat controlled means for retaining said holding means in grenade holding position, and an electric circuit including contacts controlled by said supporting means.

6. In combination, a fire extinguisher device comprising means for releasably supporting a frangible container, an electric circuit, heat controlled means for holding said supporting means in supporting position, and means in said circuit adapted to coast with said holding means and close the circuit when said holding means is released.

7. In combination, a supporting member, means including an arm for engaging and supporting a frangible fire extinguisher container, heat controlled means for holding said arm in supporting position, an electric circuit, and means engageable by said arm when released for closing said circuit.

8. In combination, a supporting member, means including a pivoted arm for engaging and supporting a frangible fire extinguisher container, heat controlled means for holding said arm in supporting position, an electric circuit, and means engageable by said arm when released for closing said circuit.

9. In combination, a supporting member, means including an arm for engaging and supporting a frangible fire extinguisher container, heat controlled means for holding said arm in supporting position, an electric circuit, and means controlled by said arm when released for closing said circuit.

10. In combination, a supporting member, means including a curved arm for engaging and partially encircling and supporting a frangible fire extinguisher container, heat controlled means for holding said arm in supporting position, an electric circuit, and means engageable by said arm when released for closing said circuit.

11. In combination, a grenade support including a movable supporting means effective in one position to hold the grenade and effective in another position to release the grenade, heat controlled means for retaining said supporting means in grenade holding position, an electric circuit, and a circuit closer therefor

consisting in part of said movable means and a terminal located for engagement by said movable means when the latter is in grenade releasing position.

12. In combination, a grenade support including a movable supporting means effective in one position to hold the grenade and effective in another position to release the grenade, heat controlled means for retaining said supporting means in grenade holding position, an electric circuit, and a circuit closer therefor consisting in part of said movable means and a terminal spaced from said movable means, and means effective under the influence of heat to bridge the space between said terminal and said movable means.

13. In combination, a grenade support including a movable supporting means effective in one position to hold the grenade and effective in another position to release the grenade, heat controlled means for retaining said supporting means in grenade holding position, an electric circuit, and a circuit closer therefor consisting in part of said movable means and a terminal spaced from said movable means and located for engagement by said movable means when the latter is in grenade releasing position, and means effective under the influence of heat to bridge the space between said terminal and said movable means.

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