June 3, 1952 A. A. TRUDEAU 2,599,298

FIRE ALARM AND SPRAY SYSTEM

Filed April 14, 1950

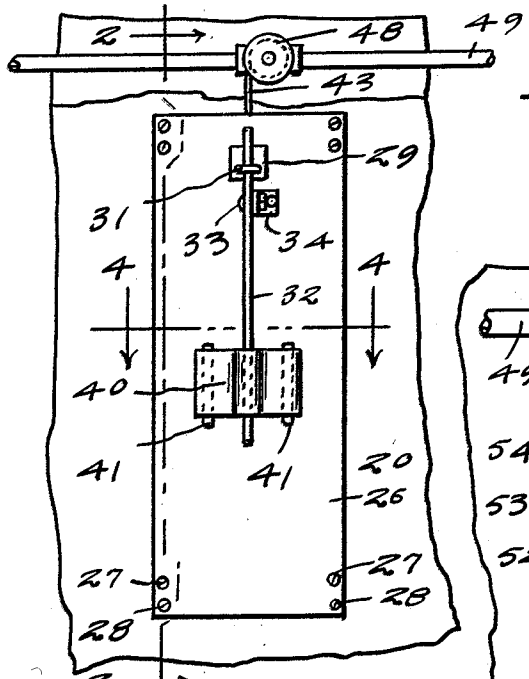


FIG. 1.

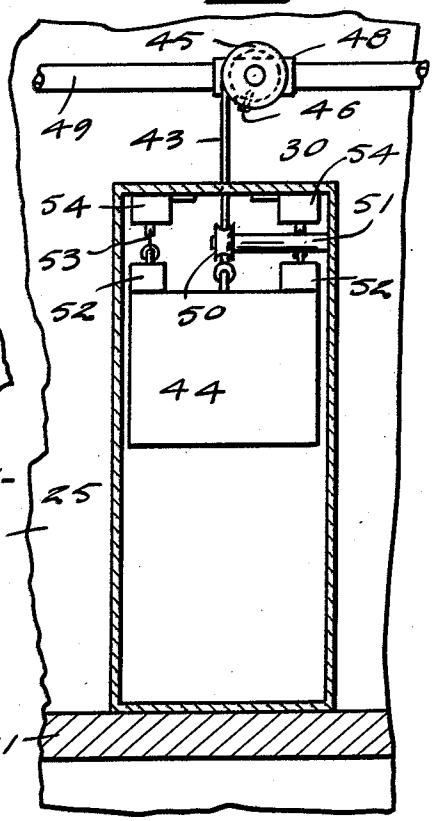


FIG. 3.

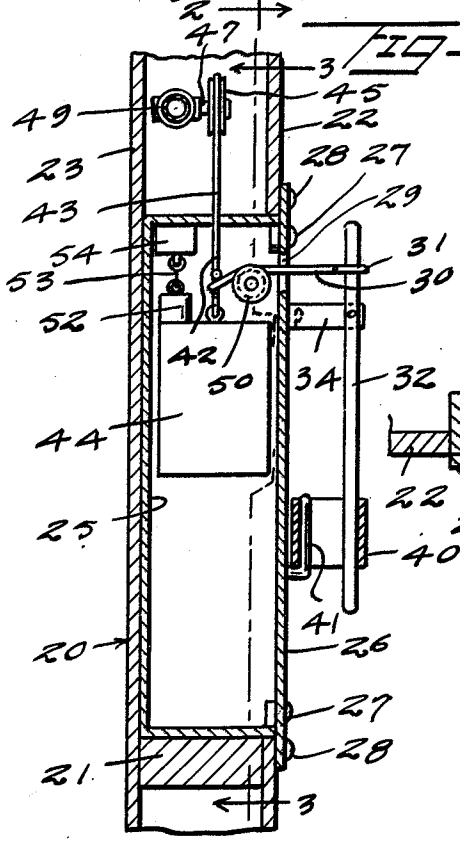


FIG. 2.

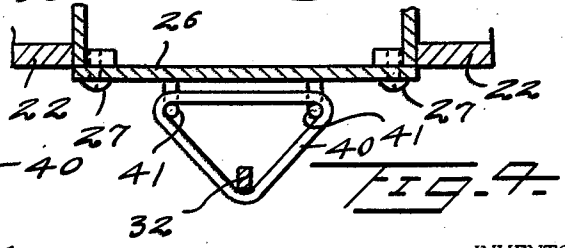


FIG. 4.

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FIRE ALARM AND SPRAY SYSTEM

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2 Claims. (Cl. 169—19)

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This invention relates to a fire alarm and spray system, and, more particularly, to that type of fire alarm and spray system wherein a signal is actuated by the severance through fire or heat of a highly inflammable or dissoluble member.

A primary object of this invention is the provision of a device of this character adapted to be provided with a heat dissoluble and inflammable member of such material as a suitable plastic which, upon dissolution thereof, will cause the actuation of an alarm.

A further object of the invention is the provision of such a device adapted for the simultaneous actuation of a water supply system, such as a sprinkler system or the like.

A still further object of the invention is the provision of improved mechanical means for accomplishing the foregoing objects.

Still other objects reside in the combinations of elements, arrangements of parts, and features of construction, all as will be more fully pointed out hereinafter and disclosed in the accompanying drawings, wherein:

Figure 1 is a front plan view of one form of device embodying the features of the instant inventive concept.

Figure 2 is a sectional view taken substantially along the line 2—2 of Figure 1 as viewed in the direction indicated by the arrows.

Figure 3 is a sectional view taken substantially along the line 3—3 of Figure 2 as viewed in the direction indicated by the arrows.

Figure 4 is a sectional view taken substantially along the line 4—4 of Figure 1 as viewed in the direction indicated by the arrows.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Referring now to the drawings in detail and, more particularly to Figures 1 to 4, inclusive, there is generally indicated at 20 a wall structure of conventional hollow construction including joists 21 and front and rear panels 22 and 23, respectively. The wall is recessed to accommodate a rectangular weight box 25, provided with a front plate 26, secured thereto as by screws 27, the assembly being secured to the front wall panels 22 as by screws 28. Panel 26 is provided at its upper extremity with an aperture 29 through which extends a flexible member or link 30 provided at its outer end with a loop 31 adapted to encircle the upper end of a rod 32 pivotally mounted as by a pivot 33 carried by bracket 34 secured to front panel 26.

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The lower end of rod 32 is adapted to be surrounded by a flexible band 40, which is carried by vertically extending post members 41 secured to front plate 26, the arrangement being such that when band 40 is in a position about rod 32 the latter is held in substantially vertical position, thus exerting an outward pressure on link 30, which is normally biased inwardly in such direction as to rotate the upper end of rod 32 about pivot 33 in a manner to be more fully described hereinafter.

The band 40 is adapted to be soluble upon the achievement of a predetermined temperature adjacent thereto and is preferably of inflammable material such as a suitable plastic.

Referring back now to link 29, the latter is secured at its inner end as at 42 to a flexible cord 43 which in turn carries at its lower end a relatively heavy weight 44 within weight box 25. At its upper end cord 43 is looped around a pulley 45, centrally grooved, and has its extremity secured as at 46 to the periphery of the pulley. Pulley 45 is adapted to actuate through its axle or shaft 47 a suitable valve of conventional type 48 carried by a water pipe 49 such as a feed pipe of a sprinkler system.

As best shown in Figures 2 and 3, link 30 is fulcrumed on a rotatable disc or pulley 50 which is carried by a stub shaft or axle 51 suitably secured to the side wall of weight box 25. Adapted to rest on the top of weight 44 when in its raised position are a pair of oppositely disposed smaller weights 52 each of which is secured to a link 53 associated with a pull type switch 54 of any desired conventional constructional construction.

From the foregoing the operation of this type of device should now be readily understandable. As the heat of the room in which band 40 is located is sufficiently increased to either dissolve or ignite the band the end of rod 32 is released, permitting the same to rotate about its pivot 33, link 30 serving to pull the same inwardly, by its connection with the cord 43 and the force of the weight 44. As the weight 44 is thus permitted to drop, valve 48 is opened by rotation of pulley 45. Simultaneously, smaller weights 52 are correspondingly permitted to drop which, through the actuation of links 53 closes their associated pull type switches 54.

Closure of switches 54 will serve to close a conventional circuit to energize any suitable type of alarm.

From the foregoing it will now be seen that

there are herein provided various modifications of a fire alarm structure which accomplish all the objects of this invention and others, including many advantages of practical utility and commercial importance.

As many embodiments may be made of this inventive concept and as many modifications may be made in the several embodiments hereinbefore shown and described, it is to be understood that all matter herein is to be interpreted merely as illustrative, and not in a limiting sense.

I claim:

1. In a device of the character described, a weight box, a water supply valve actuating wheel, a flexible connection extending about said wheel and suspending the weight in said box, a pivoted link secured to said flexible connection and extending outwardly of said weight box, a lever connected to said link, and a heat soluble member retaining said lever in position whereby upon dissolution thereof said weight will fall to rotate said valve actuating wheel.

2. In a device of the character described, a weight box, a water supply valve actuating wheel, a flexible connection extending about said wheel and suspending the weight in said weight box, a pivoted link secured to said flexible connection and extending outwardly of said weight box, a lever connected to said link, a heat soluble member retaining said lever in position whereby upon dissolution thereof said weight will fall to rotate said valve actuating wheel, a second weight normally supported by said first mentioned weight, and in alarm connected to said second weight.

ALPHERI A. TRUDEAU.

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