Dec. 4, 1934. S. B. FORMAN 1,982,653

FIRE ALARM AND EXTINGUISHER

Filed April 29, 1933

Fig. 1

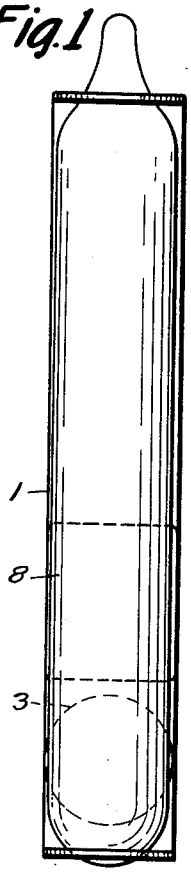


Fig. 2

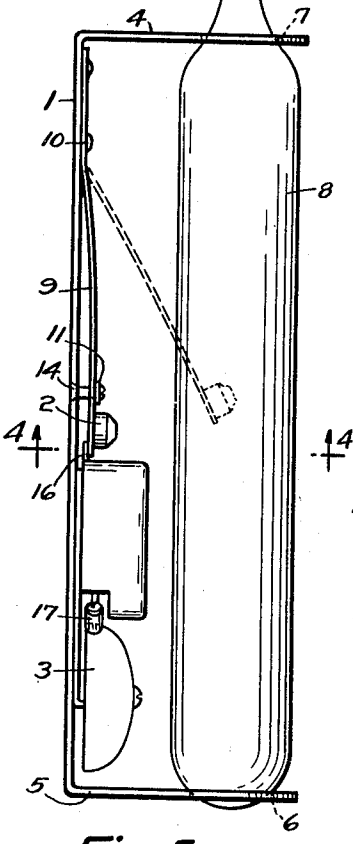


Fig. 3

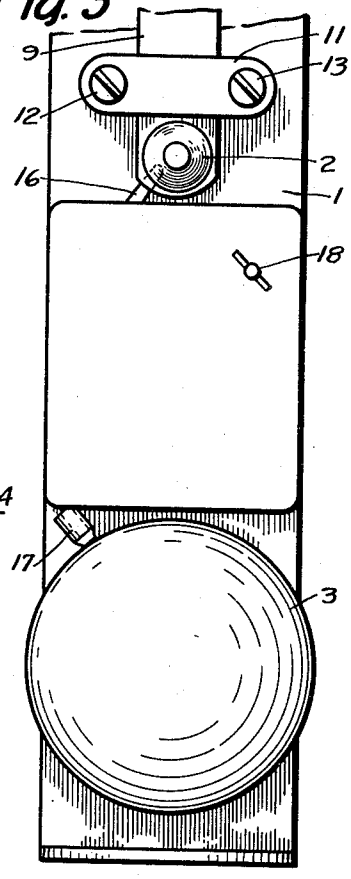


Fig. 4

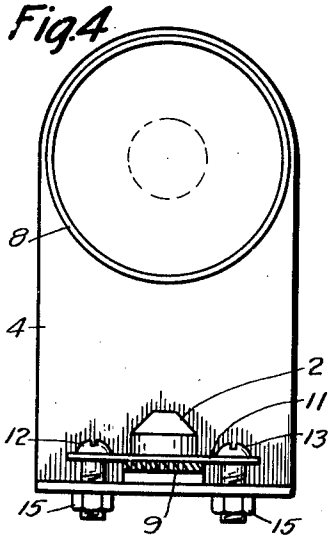


Fig. 5

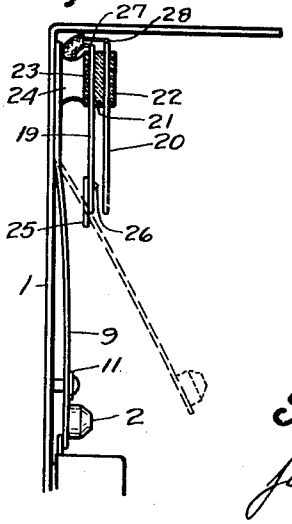
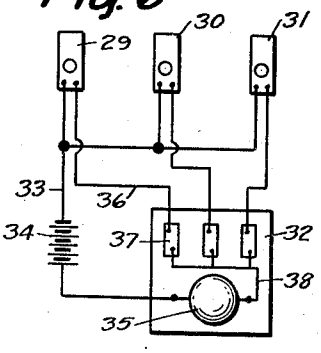


Fig. 6



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FIRE ALARM AND EXTINGUISHER

Samuel B. Forman, Long Island City, N. Y.

Application April 29, 1933, Serial No. 668,572

1 Claim. (Cl. 169—26)

The invention is an automatic fire extinguisher which operates to release a fluid when the temperature reaches a predetermined degree, which is also provided with means for giving an alarm as it operates.

The invention is an improvement over a particular type of automatic fire extinguisher in that it combines means for giving an alarm as the fire extinguishing fluid is released.

The object of the invention is therefore to provide a combined device which automatically extinguishes the fire and also gives an alarm.

Another object is to provide a combination fire extinguisher and alarm in which the same device that releases the fire extinguishing fluid also operates the alarm.

A further object is to provide an improvement in automatic fire extinguishers in which an alarm may also be sounded, in which the alarm may be operated by using electrical or mechanical means.

And a still further object is to provide means for combining an alarm with an automatic fire extinguisher which is of a simple and economical construction.

With these ends in view the invention embodies a bracket having a fire extinguishing fluid in a glass tube therein, a hammer for breaking the tube, a fuse for releasing the hammer and mechanical or electrical means for operating an alarm as the hammer is released.

Other features and advantages of the invention will appear from the following description taken in connection with the drawing, wherein:

Figure 1 is a view showing a front elevation of the device.

Figure 2 is a view showing a side elevation.

Figure 3 is a view showing the lower part of the device with the bottle omitted.

Figure 4 is a cross section thru the device on line 4—4 of Figure 2.

Figure 5 is a detail showing an alternate arrangement of the upper portion of the device showing an electric switch for operating the alarm.

Figure 6 is a view showing a combination of the devices as may be used in a building with an annunciator board.

In the drawing the device is shown as it may be made, wherein numeral 1 indicates the bracket, numeral 2 the hammer and numeral 3 the alarm bell.

The bracket may be made any size, shape or design and may be made of any material. In the design shown it is formed from a flat piece of material having lower and upper ends 4 and 5 which extend outward as shown in Figure 2. The end 5 is provided with an opening 6 and the end 4 with an opening 7 thru which the ends of a bottle 8 may extend.

It will be understood, however, that the bottles may be held in the bracket in any other means or in any other manner.

The hammer 2 is mounted upon a spring 9 which is attached to the bracket at the point 10 and the spring is held downward by a fuse 11 which may be made of a material that will fuse or melt when the temperature reaches a predetermined degree and it will be noted that as the fuse melts it will release the hammer and the spring 9 will force the hammer outward to the position shown in dotted line in Figure 2 so that it will break the glass and thereby release a fluid contained therein. The fuse 11 may be held to the bracket by bolts 12 and 13 and these may be held in the bracket in countersunk holes 14 as shown in Figure 2 or the inner ends may be provided with nuts 15 as shown in Figure 4 so that the tension on the spring may be adjusted as desired.

It will also be understood that the hammer may be held by any other means or in any other manner.

In the design shown in Figures 2 and 3 the spring bar 9 holds a lever 16 downward and the lever 16 holds a clapper 17 of the bell 3 so that the bell cannot ring, however, as soon as the bar 9 is released it will release the lever 16 so that the bell may ring. The bell may be provided with a clock, or any mechanism having a spring that may be wound by a button 18, or by any means. It will be understood that the alarm may be in the form of a bell or buzzer, or any means may be used for giving an alarm, and the device may be operated or controlled by any means, and any means may be used for releasing or operating the alarm as the hammer is released or as the fuse 11 is blown or melted by the heat.

In the design shown in Figure 5 the device is provided with an electric switch operated by the hammer spring 9, so that as the hammer operates to break the glass it will also close the switch and thereby complete a circuit thru the bell or other alarm 3. The switch may be made of any type or design and electric current may be supplied from a battery as shown in Figure 5, or from any suitable source. In the design shown in Figure 5 the switch is made of a lower spring bar 19 and an upper bar 20, and these are mounted between insulating plates 21, 22 and 23, which are attached to the bracket 1 thru a base 24. The bar

19 is provided with an insulating clip 25 and a contact point 26 and it will be noted that the switch is positioned so that as the spring bar 9 is released it will engage the clip 25 and force the point 26 against the bar 20 and complete a circuit thru wires 27 and 28 connected to the bars 19 and 20 and also to terminals of the bell or alarm 3. These wires may be connected in any manner and they may be connected to any suitable source of electric current.

Each device may be connected individually so that it will operate independently, or the different devices may be connected to a central station or to a switch or annunciator board to form a complete system or unit as shown in Figure 6. In this design the different units are indicated by the numerals 29, 30, and 31 and these may be connected to a central station or board 32, as shown, or in any manner. The device 29 may be connected by a wire 33, having a battery 34 therein, to a bell 35, and the opposite terminal may be connected thru a wire 36 to an annunciator 37 and from the annunciator to the opposite terminal of the bell thru a wire 38 so that as the device 29 is operated it will operate the annunciator 37 and also the alarm 35, thereby calling attention to the fire and also indicating where it is. In this arrangement the device 29 may have a bell and this bell or alarm and also the bell or alarm 35 on the board 32 may both ring or operate or either bell or alarm may be omitted as may be desired. The units 30 and 31 may also be similarly connected to an annunciator and to the bell or alarm on the board 32, and any number of units desired may also be used and similarly connected or arranged. The battery 34 may also be replaced by any source of supplying electric current.

It will be understood that other changes may be made in the construction without departing from the spirit of the invention.

The construction will be readily understood from the foregoing description. In use the device may be installed as shown and described and when the temperature surrounding the device reaches a predetermined degree the fuse 11 will melt and release the hammer 9 and as this springs outward it will break the container 8, thereby releasing the fire extinguishing fluid, and at the same time it will release the lever 16 or close the switch and operate or permit the bell or alarm 3 to operate. This combination of the agent for extinguishing the fire, the means for automatically releasing the same, and the means for giving an alarm, at the point of the fire or at a central station makes it possible to provide a very unique and complete device or apparatus for preventing spread of fires.

The device 32 may be any form of board or panel or may be in the form of a box or casing which may be located in or outside of the building, and the annunciators may be of any type, may have individual lights, of different or of any colors, and any means may be used for giving the alarm at the board or box or at the individual units, such as the bell shown, or a buzzer, horn, siren, or any device. The device may also be connected in the fire alarm circuit of the community or city, and this may be connected in any manner.

Having thus fully described the invention what I claim as new and desire to secure by Letters Patent, is:

In an automatic fire alarm unit, a bracket, a hammer mounted on a spring in said bracket, means adjusting the tension with which said spring is held including a fuse holding said hammer spring in tension and adapted to melt and release said spring at a given temperature, a container positioned in the path of said hammer and adapted to be broken thereby as it is released, an alarm, and means operating said alarm as the hammer is released.

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