June 25, 1963 R. W. FULLER 3,095,556

FIRE ALARM UNIT

Filed Aug. 24, 1960

FIG-1

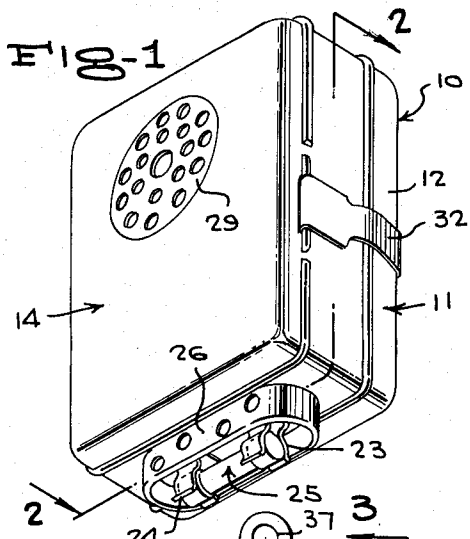


FIG-4

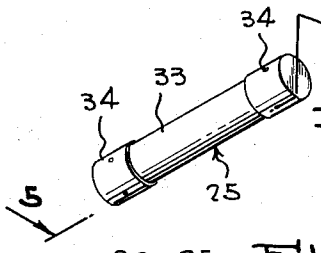
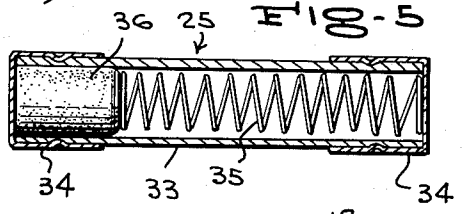


FIG-5



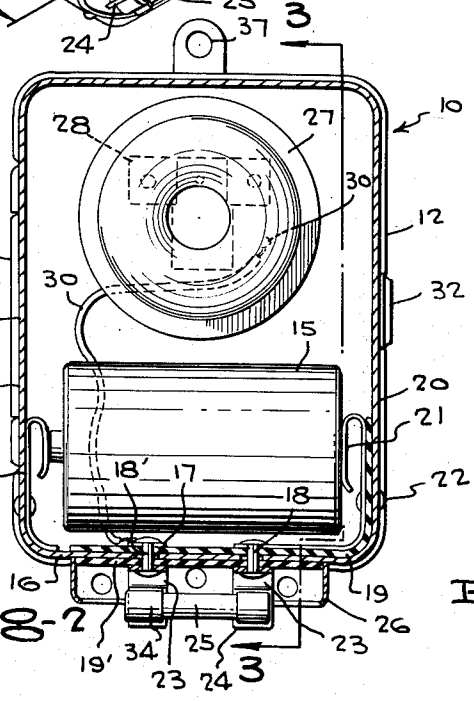


FIG-2

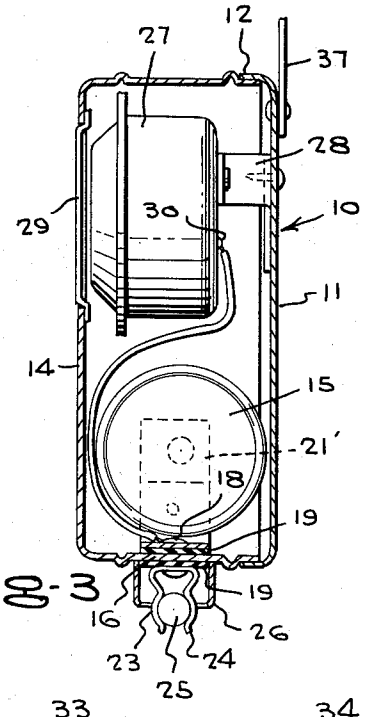


FIG-3

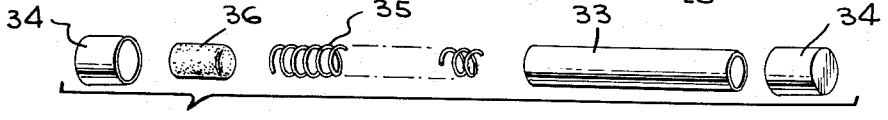


FIG-6

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FIRE ALARM UNIT

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1 Claim. (Cl. 340—227)

This invention relates to alarm devices and more particularly to a fire alarm wherein a fusible member is employed to complete an electrical circuit to the alarm device, and it consists in the constructions, arrangements and combinations herein described and claimed.

More specifically, it is an object of the invention to provide an alarm unit, which can be manufactured and sold at a low cost, the unit comprising a housing for enclosing an alarm device and a dry cell, the latter being in electrical circuit with the alarm device and a fuse block located exteriorly of the housing to expose a fuse mounted in the block to temperatures exteriorly of the housing, the fuse including a member of non-conducting material which is fusible by an excessive generation of heat in proximity of the fuse to effect energization of the alarm.

Another important object of the invention is the provision of a fuse member of simple construction embodying but few parts, one of which is a fusible member, which normally maintains the circuit to the alarm in a dormant or inoperative relation with respect to a source of current.

Additional objects, advantages and features of invention will be apparent from the following description considered in conjunction with the accompanying drawing, wherein—

FIGURE 1 is a perspective view of the alarm unit, constructed in accordance with the invention.

FIGURE 2 is a sectional view taken on the line 2—2 of FIGURE 1.

FIGURE 3 is a vertical section taken on the line 3—3 of FIGURE 2.

FIGURE 4 is a perspective view of the fusible element of the unit.

FIGURE 5 is an enlarged longitudinal section taken on line 5—5 of FIGURE 4.

FIGURE 6 is an exploded view, in perspective, of the elements constituting the fuse.

Referring more particularly to the drawing, there is illustrated an alarm unit generally indicated by the reference character **10**, which as best seen in FIGURES 1 and 3 comprises a rectangular metallic base member **11** having a circumscribing wall **12**, to one wall of which there is hingedly connected as at **13**, a metallic housing **14**. The housing is of a depth to enclose and support a dry cell **15** as will be now described, reference being made particularly to FIGURES 2 and 3. An end wall **16** of the housing is formed with a pair of spaced openings **17** for reception of a binding post **18** and **18'** respectively, which posts are insulated from the wall **16** as indicated at **19** and **19'**, the insulation **19** being of a length to extend a distance along a side wall **20** of the housing and against which a spring contact **21** may seat and is secured thereto, as well as the wall **20** by means of a suitable rivet **22**. A similar spring contact **21'** is secured to the opposed wall **20'** of the housing and is in direct contact with the wall.

The binding posts **18** and **18'** also serve to secure respective U-shaped clips **23**, the latter being provided with opposed arms **24** between which a fusible cartridge **25** may be installed.

As a protective means for the cartridge **25** and clips **23**, a ventilated casing or housing **26** is provided and is secured to the wall **16** by frictional fit upon the insulation strip **19'** or otherwise.

Within the housing at the end opposite the wall **16** an alarm device **27** is secured by means of a bracket **28** which is mounted upon the base **11** and as best seen in FIGURES 1 and 3, the housing **14** is provided with a perforated disk **29**, whereby sounds from the alarm may be emitted.

The alarm device **27** here shown is of the siren type, although an electrical operating bell may be employed, if desired. The circuit between the battery **15** and alarm device is by way of a wire **30** connected to a contact **31** of the siren and the binding post **18'**; the circuit being completed through the grounded clip **21**.

A suitable catch **32** may be employed to retain the housing **14** in closed relation with the base **11**.

The fusible cartridge **25** is shown in detail in FIGURES 4, 5 and 6 and comprises an elongated cylindrical housing **33** of fiber material, the open ends of which are closed by a metallic cap **34**. Enclosed within the cylindrical housing **33** there is a helical spring **35** one end of which is in contacting relation with the adjacent cap **34**, the opposite end being in pressure engaging contact with a non-metallic fusible cartridge **36**, which as shown in FIGURE 5, maintains the spring **35** in spaced relation with the adjacent end cap **34**.

In use, the alarm unit **10** may be suspended in the most likely location for a fire occurrence, by means of a hanger **37**. In the event of a fire, the heat therefrom will liquify the cartridge **36** and pressure exerted by the spring **35**, which is under compression will be such as to hasten disintegration and liquification of the cartridge to an extent that the spring will be in contacting relation between the two caps **34**, whereupon the alarm will be energized. In order to restore the alarm for further protective use, it is only necessary to install a new cartridge.

While I have shown and described a preferred construction of alarm unit, this is by way of illustration only, and I consider as my own all such modifications in construction as fairly fall within the scope of the appended claim.

I claim:

A fire alarm unit comprising a rectangular metallic base member having a circumscribing wall, a metallic housing hingedly connected to said wall, a dry cell positioned in said housing, an alarm device affixed to said base member and said alarm device adapted to be received in said housing when the housing and base member are in closed relation with respect to each other, an end wall of said housing being provided with a pair of spaced apart openings, a pair of binding posts extending through said openings, said posts being insulated from said end wall by means of insulation which is of a length to extend a distance along a side wall of the housing, a first spring contact arranged in said housing and abutting the portion of the insulation contiguous to the side wall of the housing, a securing element connecting said spring contact to the side wall of the housing, a second spring contact secured to the opposed side wall of the housing and arranged in direct contact with the last named side wall, and said spring contacts engaging opposite end portions of the dry cell, U-shaped clip members connected to said binding posts and arranged exteriorly of said housing, and said clip members being arranged in spaced aligned relation for receiving a cartridge having a fusible element normally maintaining an open circuit to said alarm device, a ventilated casing arranged exteriorly of said housing and surrounding said cartridge, said housing being provided with a perforated disk for alignment with the alarm device when the housing and base member are in closed relation

with respect to each other, said alarm device including a contact, and a conductor electrically connecting said contact to one of said binding posts.

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