March 17, 1964

T. F. ROCHE

SAFETY LANTERN

3,125,300

Filed Jan. 4, 1962

3 Sheets-Sheet 1

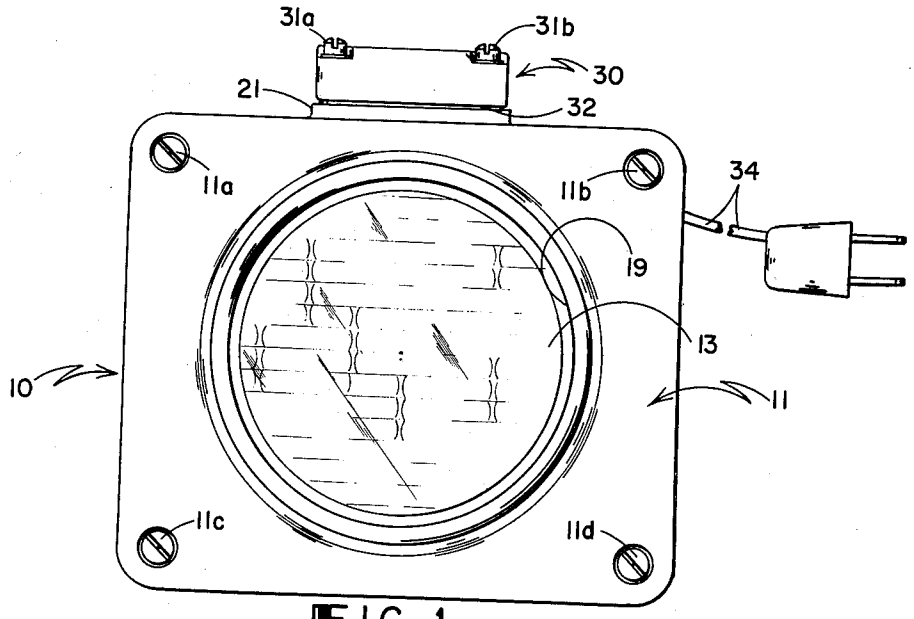


FIG. 1

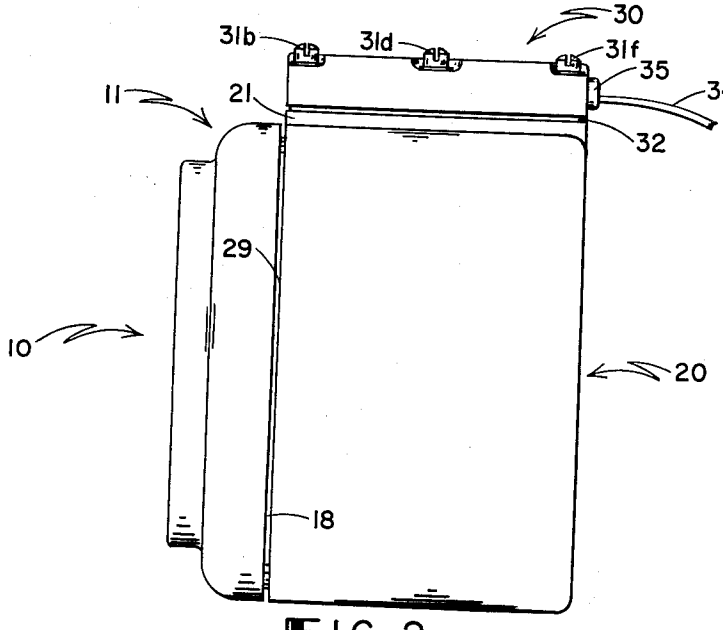


FIG. 2

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3 Sheets-Sheet 2

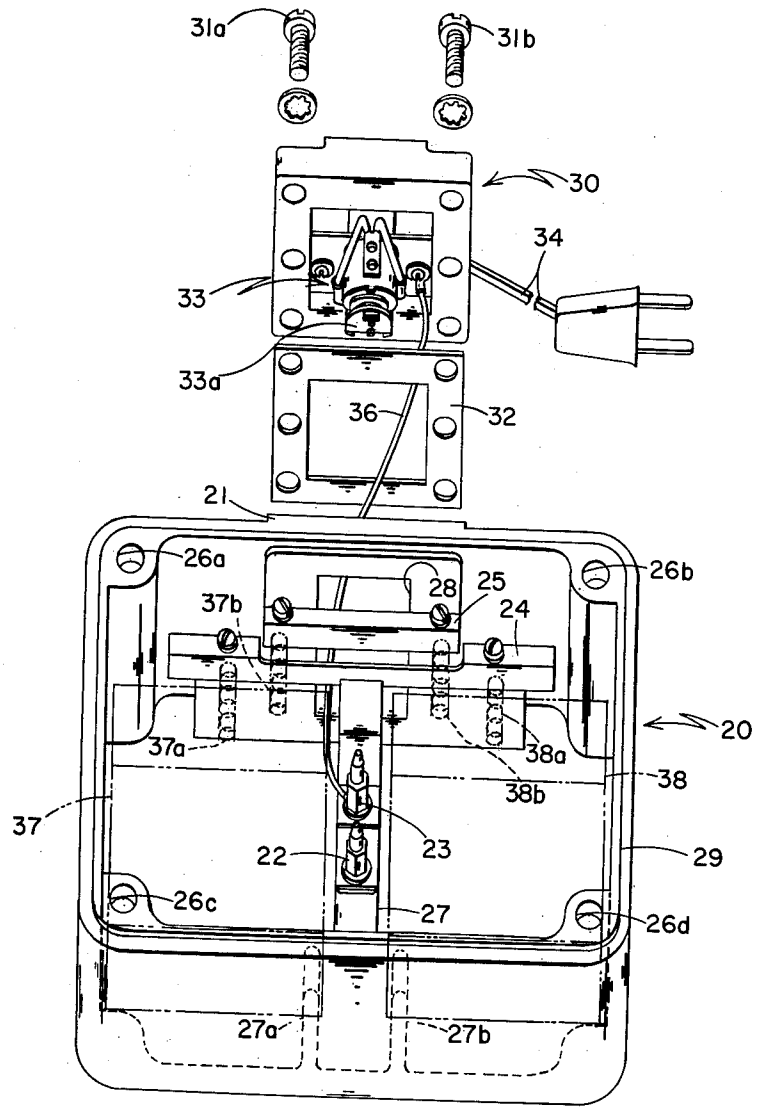


FIG. 3

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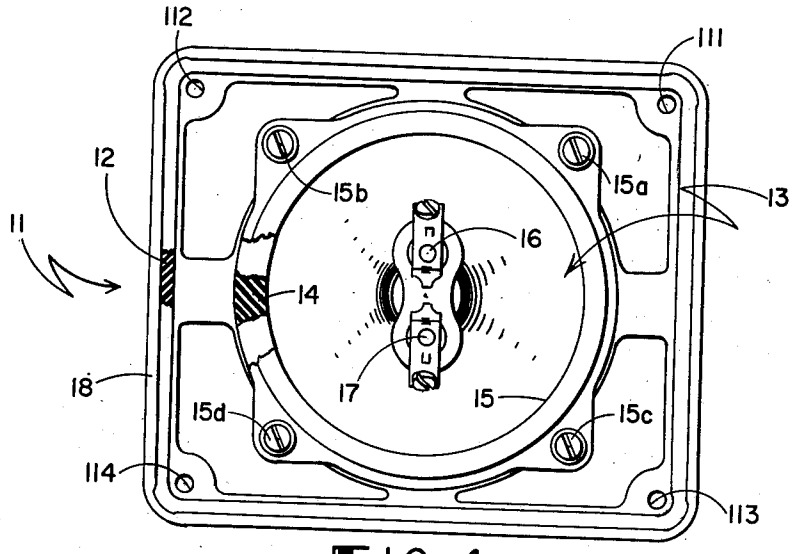


FIG. 4

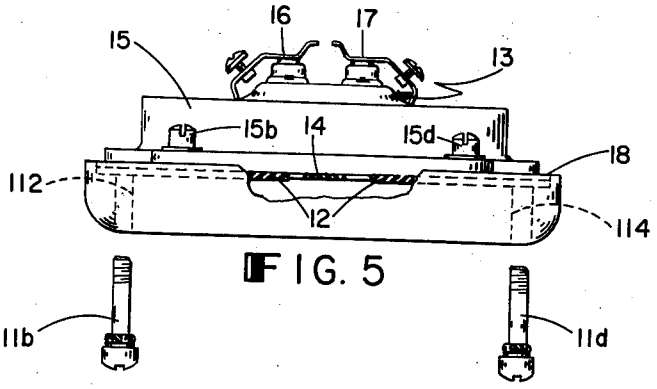


FIG. 5

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SAFETY LANTERN

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2 Claims. (Cl. 240—37.1)

This invention relates to a safety lantern. In particular it relates to such a lantern which is water and shock resistant and can provide automatic battery-operated illumination upon failure of normal electric supply.

Although automatic battery-operated emergency lanterns have been described in the past, these have generally been subject to a number of disadvantages which have limited their usefulness. Thus, for example, such previously described emergency lanterns are put out of operation by the heat of a fire or by the water of a flood or fireman's hose or by the impact of falling timbers and the like. To my knowledge, no emergency lantern has hitherto been proposed which is adequately resistant to the effects of high temperature, water or impact so as to have continuing usefulness during an emergency such as a fire, flood, hurricane or storm. In addition, many such prior emergency lanterns have proved to be inoperable after having been installed because of corrosion and microbial attack.

One object of this invention is to provide an emergency lantern which is resistant to the action of heat or water and has great shock resistance.

Further objects and advantages of this invention will be apparent from the following specification and claims and from the appended drawings in which:

FIGURE 1 is a front view of one embodiment of this invention.

FIGURE 2 is a side elevation.

FIGURE 3 is an exploded view looking into the rear and upper sections.

FIGURE 4 is an interior view of the rear of the front section.

FIGURE 5 is a side elevation of FIGURE 4 with screws removed.

The invention comprises in a general sense a plastic casing having detachable front and rear sections and a detachable top section. The front section holds the lamp which is also detachable. The rear section contains the batteries and circuit contacts for the lamps. The top section contains the relay switch for actuating the battery circuit and also the lead to the normal supply of electric current. Each of these sections, namely, the front, rear and top sections is preferably molded from a relatively impact-resistant thermoset plastic such as phenolic resin or alkyd resin. Both the front and rear sections have transverse channels at each corner in which gasketed corrosion-resistant bolts are threadable to engage the front and rear sections in fixed attachment. Channels are likewise provided in the top section for corrosion-resistant bolts to attach to the top of the rear section. Resilient gaskets having registering holes are provided between the front and rear sections and between the top and rear sections. The front section has a large central opening to accommodate the lamp, preferably of the sealed-beam type, which is held in position by a detachable rear collar and a gasket. The relay switch and associated circuitry are selected so that the switch forms part of the battery circuit and is held normally open by current from the regular electric service. The switch closes when the electric service is interrupted, thus actuating the battery circuit to the lamp. The molded casing preferably has pockets to accommodate the batteries that are used so that there is no looseness of fit.

Referring now to the drawings, the lantern **10** comprises a front housing section **11** and a rear housing section **20**. These two sections are connected to one another by gasketed screws **11***a*, **11***b*, **11***c* and **11***d* which go through registering channels **111**, **112**, **113** and **114** in the front section in conjunction with channels **26***a*, **26***b*, **26***c* and **26***d* in the rear section. A resilient sealing gasket **12** is provided between the front and rear section. The lamp **13** is of the sealed-beam type and is held against the edge of front opening **19** in the front section by a detachable lamp-holding collar **15** and a gasket **14**. The collar **15** is attached to the front section by screws **15***a*, **15***b*, **15***c* and **15***d*. The lamp terminals are designated as numerals **16** and **17**. The front section has a marginal ridge **18**.

The rear section **20** has an inner ridge **29**, a vertical ridge **27**, bottom ridges **27***a* and **27***b* and a top ridge **21**. It is closed in the rear but open in the front. Mounted in the rear frame is a ground spring contact **22** and a positive spring contact **23** which are engageable with the lamp terminals **16** and **17**. The positive spring contact **23** is electrically connected by wire **36** to a lower switch element **33***a* in relay **33** which in turn is connected through seal **35** to wire **34** in the top section **30**. The negative spring contact **22** is conductively connected to a metal plate **24** which in turn provides contact with negative terminals **37***a* and **38***a* of batteries **37** and **38** which are shown in phantom form.

The positive sides **37***b* and **38***b* of the batteries are engageable with metal plate **25** which is mounted across the top opening **28** in the rear section. When current from wire **34** to the relay **33** is interrupted the spring on the relay switch element **33***a* causes the element to make contact with plate **25** so that the battery circuit is operative to light the lamp.

The top section **30** comprises a cap member which is attachable through a gasket **32** to the top ridge **21** of the rear section by means of edge screws **31***a*, *b*, *c*, *d*, *e* and *f*.

I claim:

1. A safety lantern comprising in detachable assembly, a plastic casing having detachable front, rear and top sections; said front section and rear section having registering corner channel means, co-operable bolts for such channel means and gasket means between said sections; said top section being attachable to the top of said rear section by bolt and said gasket means; said front section having a rear opening and having a front opening against which a lamp is held by means including a gasket; said rear section having a front opening, a top opening, and space for insertion of a battery; said top section having a bottom opening and containing a relay switch connectible to an external source of current; circuit means being provided in conjunction with said relay switch to provide current from a battery to said lamp when there is no current in said external lead.

2. A safety lantern comprising a plastic casing having detachable front, rear and top sections, bolts for attachment of said front and rear sections, a gasket between said front and rear sections, bolts for attachment of said top section to said rear section and a gasket between said rear and top sections; said front section having a rear opening, transverse channels at each corner, a front opening and a sealed-beam lamp held against said opening by a gasket and a rear collar attached to said front section; said detachable rear section having front and top openings, transverse channels at each corner which are registerable with the channels of said front section, a pocket for housing a battery, two lamp contacts, a first battery contact plate electrically connected to the first of said lamp contacts, and a second battery contact plate adjacent said

top opening; said top section being mounted over said top opening of said rear section and containing a relay switch including a lower switch element and a lead connectible to a source of external current; a lead being provided from said second lamp contact to said lower switch element so that lowering of said switch element to said second battery contact plate causes electrical connection between said second battery contact plate and said second lamp contact.

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