Feb. 21, 1939. W. B. RINER 2,148,323

HOLDER AND CIRCUIT OPENER FOR SAFETY WATER LIGHTS

Original Filed June 2, 1936

Fig. 1.

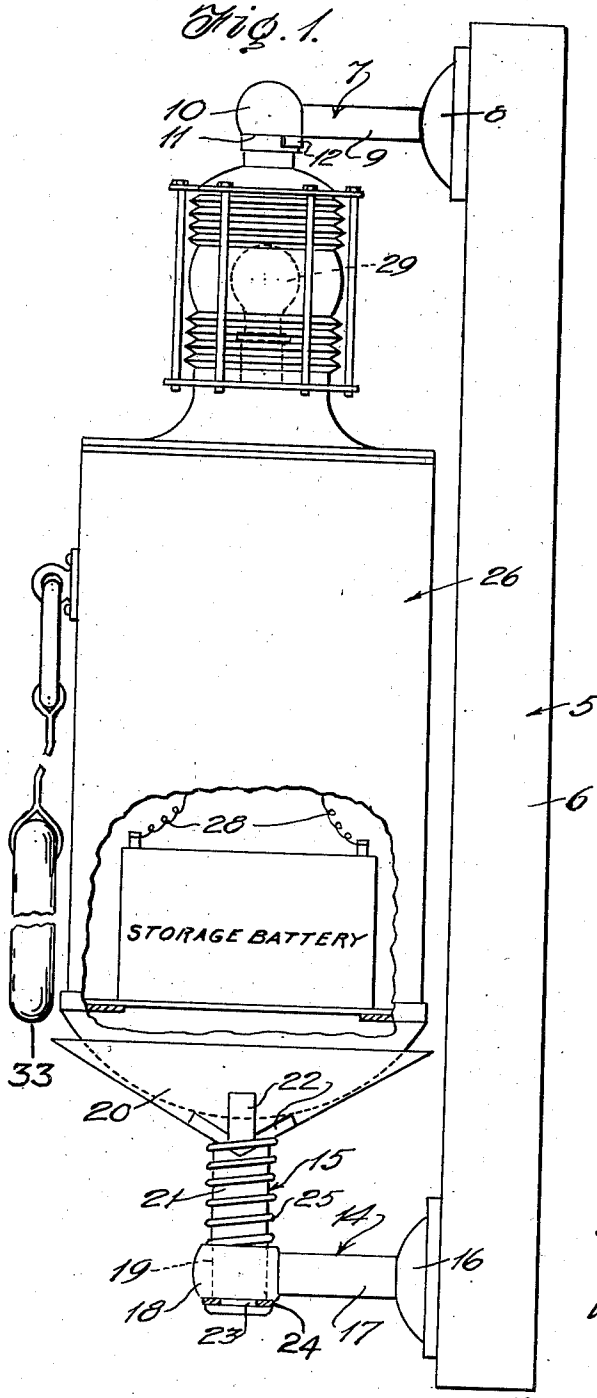


Fig. 2.

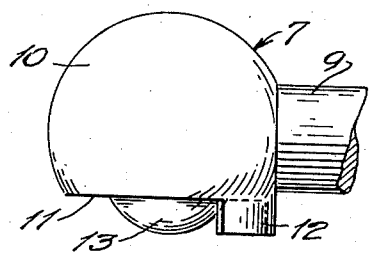


Fig. 3.

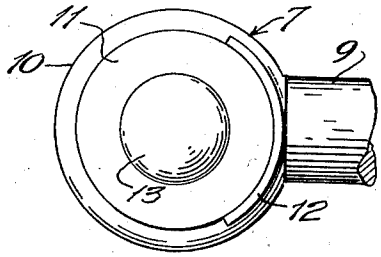
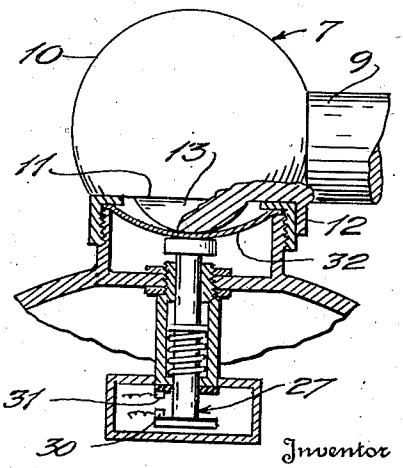


Fig. 4.



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HOLDER AND CIRCUIT OPENER FOR SAFETY WATER LIGHTS

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Continuation of application Serial No. 83,113, June 2, 1936, now Patent No. 2,104,762, dated January 11, 1938. This application September 13, 1937, Serial No. 163,701

5 Claims. (Cl. 177—329)

This invention relates to a combined circuit opener and holder structure for a safety water light of the electrical illuminable type and is a continuation of my application Serial No. 83,113 upon which Letters Patent No. 2,104,762 was granted January 11, 1938.

The invention has for its object to provide, in a manner as hereinafter set forth, a structure of the type referred to for releasably holding a safety water light when not in use and at the same time maintain the electrical lighting circuit of the water light open until the light is removed from the structure.

A further object of the invention is to provide, in a manner as hereinafter set forth, a structure for the purpose referred to, so constructed to permit of the water light being expeditiously removed therefrom when occasion requires.

A further object of the invention is to provide, in a manner as hereinafter set forth, a structure for the purpose referred to including a resilient seat and a circuit opening member coacting with the seat for latching a safety water light in circuit-opened position to the structure.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a structure for the purpose referred to which is simple in its construction and arrangement, strong, durable, compact, thoroughly efficient in its use, readily set up, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as will be more specifically referred to and as illustrated in the accompanying drawing wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawing:—

Figure 1 is an elevation of the combined circuit opening and holder structure in accordance with this invention, and showing the same in adaptation with respect to releasably holding a safety water light,

Figure 2 is a fragmentary view in side elevation illustrating the circuit opener of the structure,

Figure 3 is an inverted plan view showing the circuit opener, and

Figure 4 is a fragmentary view in side elevation and in section illustrating the circuit opener in active position.

Preferably the holder structure in accordance with this invention will be secured to the deck rail of a vessel for holding the safety water light in a convenient position so it can be readily removed when desired for use.

The combined circuit opener and holder structure is generally indicated at 5 and it includes a body part 6 in the form of an upright of the desired width and length. Fixedly or otherwise secured to the upright 6 in proximity to the upper end thereof is a laterally disposed circuit opener carrier 7 formed of an enlarged inner end portion 8, a reduced intermediate portion 9, and an outer head portion 10 of rounded contour having a portion of its bottom plane, as at 11 and a curved flange 12 depending from the inner side of the bottom of the head end constituting a stop. Disposed centrally of and depending from the bottom of the head 10 is a circuit opener 13 of segmental contour in cross section at any point thereof. The flange 12 depends below the circuit opener 13 and the latter is substantially of semi-globular contour. The carrier 7 and opener 13 may be set up from a one piece structure or a sectional unit, preferably, it will be a one piece structure and is so shown.

The structure 5 includes a lower carrier 14 for a vertically disposed resilient vertically movable support 15 which also functions as a latching member. Carrier 14 is secured to the body part 6 in proximity to the lower end of the latter and aligns with the carrier 7. Carrier 14 consists of an inner portion 16, an intermediate portion 17, and an outer portion or head 18 formed with a vertically disposed opening 19.

The support 15 includes a hollow seat 20 of inverted conoidal contour coupled to the upper end of the vertical stem 21 by the coupling pieces 22. The stem 21 extends through opening 19 and has a reduced portion 23 in proximity to its lower end. The latter is enlarged to provide a stop. Encompassing the reduced portion 23 is a washer 24 preferably of resilient material. Surrounding the stem 21 and interpositioned between the coupling pieces 22 and the top of head 18 is a coiled controlling spring 25 for the seat 20. The support 15 is vertically movable relative to carrier 14 and seat 20 is yieldable due to the disposition of the spring 25.

A safety water light is indicated at 26 and it is of the same form as the safety water light disclosed in my application aforesaid. The safety water light 26 includes a switching structure for the circuit 28 which leads to lamp 29. Switching structure 27 has as a part thereof a vertically movable spring controlled contact element 30

and a stationary contact element 31. Water light 26 has as part thereof a depressible member 32, which when depressed acts upon the element 30 for shifting it clear of element 31 whereby the circuit 28 will be opened. Member 32 is adapted to be depressed by the circuit opener 13 when the safety water light 26 is arranged between the carriers 7 and 14 of the structure 5, as is shown in Figure 1.

The upper end of the safety water light or buoyant unit 26 is in the form of a casing which provides a guard for an electric lamp 29 and the switching structure 27. The said casing is of the same form and arrangement as the casing illustrated and described by my patent aforesaid. The casing as is shown by said patent includes an annular glass body portion formed with spaced upper and lower circumferentially extending outer peripherally ribbed portions, a laterally flanged bottom, a laterally flanged top formed with an upstanding annular neck having threads on its outer periphery, an opening in said top of less diameter than and surrounded by the neck and an interiorly threaded annulus of angle-shape contour in vertical section. The patent aforesaid includes a circular depressible member seated on the neck aforesaid, and which is secured to the neck by the threaded annulus. This arrangement is disclosed in this application, but the depressible member is indicated at 32 and it is arranged over and normally spaced from the upper end of the control element 30 of the switching structure 27. The latter is of the same form and arrangement as the switching structure shown by my patent aforesaid.

The safety water light when held by the structure 5 has its lower end positioned in the seat 20 and its upper end engaged by the circuit opener 13 and when in such position it is releasably connected to the structure 5 due to the coaction of the support 15, head 10, and circuit opener 13.

When the light 26 is desired for use it is quickly removed from the structure 5 due to the fact that the seat 20 is yieldingly supported.

When placing the water light 26 into the position with respect to the carriers 7 and 14, the lower end of the light is mounted in the seat 20, and the person inserting the light will lower the seat 20 until the light is capable of being bodily shifted in a direction to vertically align with seat 20 and bottom 11 of head portion 10. When seat 20 is lowered the spring 25 will be compressed. After the light has been shifted to the position aforesaid, the spring 25 is released and the upper end of the light guided into the said bottom 11 until the annulus strikes the latter whereby the circuit opener 13 depresses member 32 to move the control element 30 to an extent and in a direction to open the circuit 28. The latter will be held open until the upper end of the light is moved clear of the said bottom 11 and the circuit opener 13.

As shown in Figure 1, the water light 26 carries a life preserver 33.

The carrier 14 may be formed of a plurality of sections or an integral unit, preferably the latter form, and is so shown.

The inner end portions 8 and 16 of the carriers 7 and 14 respectively are secured to the upright 6, in any suitable manner.

Since the holder structure will preferably be secured to the outside of a boat rail and the light secured to a ring buoy, even when the buoy is used by one unfamiliar with the use of the light or the connection of the light to the ring buoy, the force of the thrown or dropped buoy will be sufficient to remove the light from the holder structure.

What I claim is:—

1. In combination, a buoyant unit including an electrically illuminable element, a battery, a lighting circuit, a normally closed spring controlled switch interposed in said circuit for closing the latter and a normally inactive depressible member for opening the switch, a pair of holders for said unit, one of said holders being vertically movable and spring controlled, the other of said holders being stationary and provided with means for depressing said member to switch-opening position, said holders for bearing against the ends of said unit for latching the latter thereto and to provide for said spring controlled holder coacting with said means for depressing said member to make it active to open the switch.

2. In a means for removably supporting and for opening the lighting circuit of an electrically illuminable buoyant unit including a normally inactive normally extended depressible circuit opening device at one end, the combination of a support, a pair of spaced parallel carriers extended laterally from said support and between which said unit is adapted to be arranged and latched to, one of said carriers having its outer end terminal portion formed with a flat inner face for bearing against said end of said unit, a depressor extended from said face for extending into said end of said unit for depressing said device to circuit opening position, a positioning stop extended from said face for the said end of said unit, said stop disposed rearwardly of and spaced from said depressor, the other one of said carriers having its outer end terminal portion formed with an opening, and a spring controlled structure slidably mounted in said opening, connected to the said other carrier for receiving the other end of the unit and coacting with said depressor and said face for latching the unit to said carriers, said face being of circular contour, said depressor being in the form of a segment of a sphere and spaced inwardly from the marginal portion of said face, said stop being of arcuate contour, disposed on a part of said marginal portion and flush with the edge of said face.

3. In a means for removably supporting and for opening the lighting circuit of an electrically illuminable buoyant unit including a normally inactive normally extended depressible circuit opening device at one end, the combination of a support, a pair of spaced parallel carriers extended laterally from said support and between which said unit is adapted to be arranged and latched to, one of said carriers having its outer end terminal portion formed with a flat inner face for bearing against said end of said unit, a depressor extended from said face for extending into said end of said unit for depressing said device to circuit opening position, a positioning stop extended from said face for the said end of said unit, said stop disposed rearwardly of and spaced from said depressor, and the other of said carriers being resilient and provided with means for engaging the other end of the unit and coacting with said face and depressor for latching the unit to the carriers.

4. In a means for removably supporting an electrically illuminable buoyant unit having a normally closed depressible circuit opening device at one end and for opening said device, the combination of a support, a pair of spaced parallel carriers extending laterally from one side of the

support and between which said unit is adapted to be arranged and latched to, one of said carriers being formed with an enlarged outer end terminal portion in the form of a segment of a sphere to provide said terminal portion with a circular flat inner face adapted to bear against said end of the unit, the said carrier being provided with a depressor in the form of a segment of a sphere on said inner face for extending into said end for depressing said device to circuit opening position, said depressor being spaced throughout from the edge of said face, and the other one of said carriers having its outer end terminal portion provided with means for engaging the other end of the unit and coacting with said face and depressor for latching the unit to the carriers.

5. In combination, a unit including a battery, a lamp in circuit with the battery, a normally closed spring controlled switch interposed in said circuit, a buoyant supporting structure for the battery and provided at one end with a guard for the lamp and switch, said guard including a hollow body part having spaced ribbed portions, a pair of flanged members between which said body part is arranged, means connected to the flanges of said members for maintaining the latter against the ends of said body part and an upwardly projected threaded neck on one of said flanged members, said switch including a spring controlled circuit opening and closing element extending from said body part into said neck, a depressible element mounted on the top edge of and extending across said neck, said depressible element opposing the outer end of said circuit opening and closing element, a threaded annulus engaging with the neck for securing said depressible element against said edge, a stationary carrier formed with a flat face, a depressor on the latter and a stop rearwardly of the depressor, a second carrier spaced from and parallel to the other carrier, said second carrier formed of a stationary part and a slidable spring controlled holder mounted in said stationary part and aligned with said flat face, said holder bearing against the other end of said structure for forcing the annulus against said flat face whereby the depressor will depress the depressible element to engage the circuit opening and closing element and move the latter to an extent to open the switch.

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