Oct. 18, 1932. J. S. BELTZ 1,882,745

HEADLIGHT AND SWITCH

Filed July 1, 1930

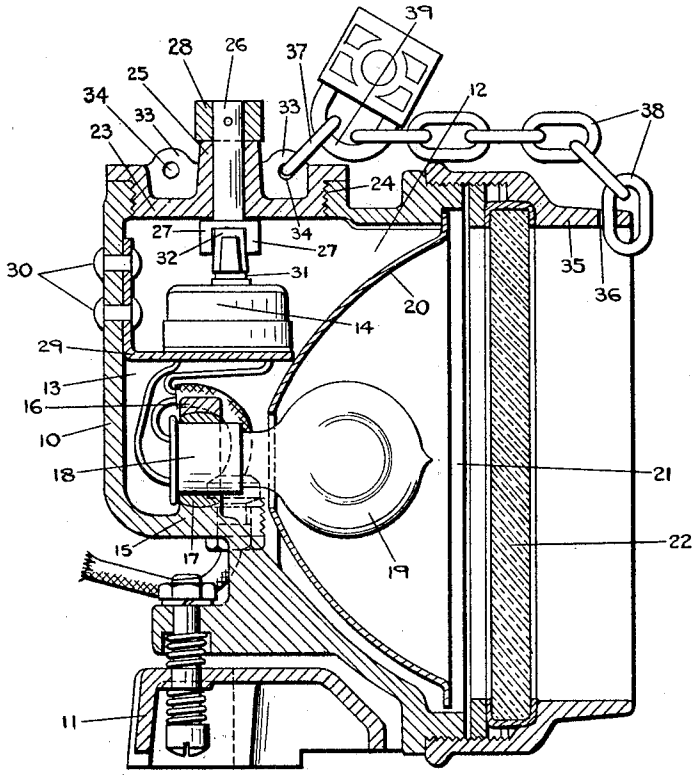


Fig. 1

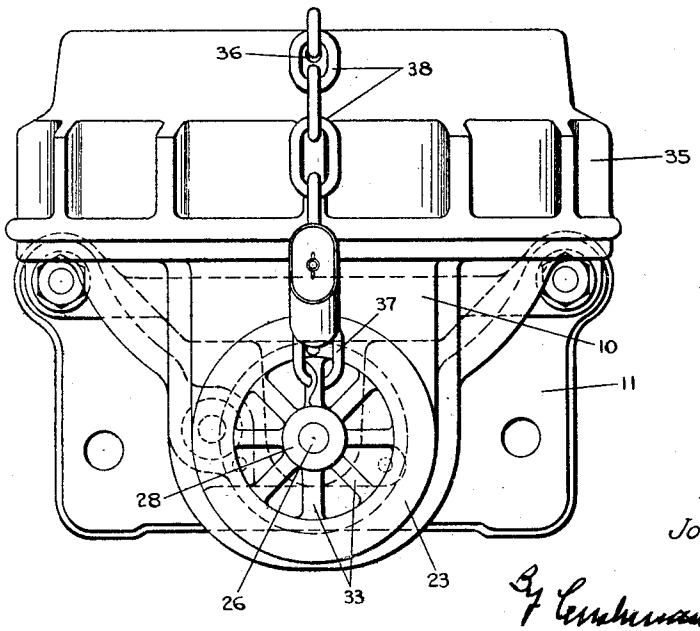


Fig. 2

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UNITED STATES PATENT OFFICE

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HEADLIGHT AND SWITCH

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In mine equipment of permissible type, all electrical apparatus must be positioned or housed within flame-proof compartments. In the arrangement of switches for the control of locomotive headlights, some difficulty has been experienced in the past in finding a place for the switch in which it would conform to the safety regulations and, at the same time, be within easy reach of the operator. Inasmuch as all headlight casings or housings must be flame-proof, I have found that, as a matter of convenience, safety, and economy, the switch may be most effectively disposed directly in such housing, and it is with this combination that the present invention is concerned.

In the accompanying drawing, which is illustrative of the invention:

Figure 1 is a sectional view of an explosion-proof housing equipped with illuminating means and a switch according to the present invention, and

Figure 2 is a plan view of the housing.

As a matter of convenience, I have chosen to illustrate the new combination in connection with the structure shown in United States Patent 1,662,118, Nils D. Levin, March 13, 1928. According to this patent, an auxiliary socket holder is provided. According to the present invention, this socket holder is omitted, and the space thus vacated is occupied by a switch and switch supporting means. In view of the disclosure of the patent, it will be unnecessary to describe specifically the general arrangement of parts.

Referring to the drawing of the present application, reference numeral 10 indicates generally a housing resiliently supported on a base 11. The housing 10 is provided with a reflector chamber 12, to the rear of which is a second chamber 13 adapted to receive the switch 14. A lug 15 and yoke 16, at the bottom of the chamber 13, clampingly receive a split ring 17, in which is engaged a socket 18, which supports a lamp 19 in proper relation to a reflector 20. Reflector 20 is mounted in a horizontally presented light opening 21 of housing 10, the opening being closed by a transparent closure element 22.

Chamber 13 is accessible through an opening which is normally closed by means of a circular closure element 23 disengageably threaded in a neck-portion 24 of the housing, the axis of closure element 23 being at substantially right angles to the axis of opening 21. Closure element 23 is provided with a central boss 25 provided with a bore in which is journaled a shaft 26 projecting exteriorly and interiorly of the housing, and provided at its inner end with prongs 27 and at its outer end with a knob 28. It will be noted that the inner end of shaft 26 is radially expanded, this expanded portion cooperating with knob 28 to prevent axial displacement of the shaft relative to closure element 23 while permitting rotative movements of the shaft.

Switch 14 may conveniently take the form of an ordinary snap-switch, and is mounted on a bracket 29 which is secured to the housing wall by means of rivets 30. Switch 14 comprises a rotatable element 31 surmounted by a button 32 having radial wings. Switch 14 is so arranged relative to shaft 26 as to position rotatable element 31 substantially coaxially with the latter, with the button engaged between prongs 27 when closure element 23 is screwed into closing position. Prongs 27 form a flexible coupling with button 32, which coupling is adapted to transmit rotative movements of shaft 26 to rotatable switch element 31 to operate the latter.

Closure element 23 is provided exteriorly with a number of radial ribs 33 provided with apertures 34. The transparent closure element is mounted in a sleeve 35 provided with a number of radial apertures 36. To ensure the housing against unauthorized opening links 37 and 38 are secured in adjacent apertures 34 and 36 at the top of the housing, which links are adapted to be connected by a padlock hasp 39, this single instrumentality serving to lock the closure elements to the housing.

It will be understood that, while I have shown and described a specific embodiment of my invention, I do not limit myself to structure except as in the following claims.

I claim:

1. The combination with a housing, of a

switch disposed within the housing, and an exteriorly and interiorly projecting switch operator mounted in a removable portion of the housing and removable therewith without disturbing the switch.

2. The combination with a housing, of a switch disposed within the housing and comprising a rotatable element, an operator for said rotatable element comprising an exteriorly and interiorly projecting rotatable shaft journaled in a removable portion of the housing and removable therewith, and disengageable means for coupling said shaft and rotatable element to transmit rotative movements of the former to the latter.

3. The combination with a housing, of a switch disposed within the housing and comprising a rotatable element, an operator for said rotatable element comprising an exteriorly and interiorly projecting rotatable shaft journaled in a removable portion of the housing and removable therewith, said shaft being substantially coaxial with said rotatable element, and means for coupling said shaft and rotatable element to transmit rotative movements of the former to the latter.

4. The combination with a housing, of a switch disposed within the housing and comprising a rotatable element, an operator for said rotatable element comprising an exteriorly and interiorly projecting rotatable shaft journaled in a removable portion of the housing and removable therewith, said shaft being substantially coaxial with said rotatable element, and means for flexibly coupling said shaft and rotatable element to transmit rotative movements of the former to the latter.

5. The combination with a housing, of a switch disposed within the housing and comprising a rotatable button, an exteriorly and interiorly projecting rotatable shaft journaled in a removable portion of the housing and removable therewith, said shaft being substantially coaxial with the axis of rotation of said button, and prongs on the interior end of said shaft engaging said button to transmit rotational movements of the shaft to the button.

6. In an explosion-proof housing for an electric lamp, said housing being provided with a pair of openings, transparent closure means for one of said openings and a circular closure element disengageably threaded in the other opening, the combination of a switch disposed within the housing, an operator for the switch supported by said circular closure element and manipulatable from the exterior of the casing, and a disengageable operating connection between the operator and switch.

7. In an explosion-proof housing for an electric lamp, said housing being provided with a pair of openings, transparent closure means for one of said openings and a circular closure element disengageably threaded in the other opening, the combination of a switch disposed with the housing and comprising a rotatable element coaxial with said circular opening, an exteriorly and interiorly projecting shaft journaled in said circular closure element in coaxial relation to said rotatable element, means retaining said shaft against axial displacement relative to said circular closure element, and disengageable means for coupling the inner end of the shaft and said rotatable element whereby rotation of the former may be transmitted to the latter.

8. The combination with a housing having a removable cover portion, of a switch disposed within the housing, and a switch operator carried by said cover portion in operative relation to the switch when the cover portion is operatively associated with the housing and removable with the cover portion without disturbing the switch.

In testimony whereof I have hereunto set my hand.

JOHN S. BELTZ.