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ILLUMINATING ATTACHMENT FOR VEHICLE DOOR LOCKS

Filed Sept. 11, 1940

2 Sheets-Sheet 1

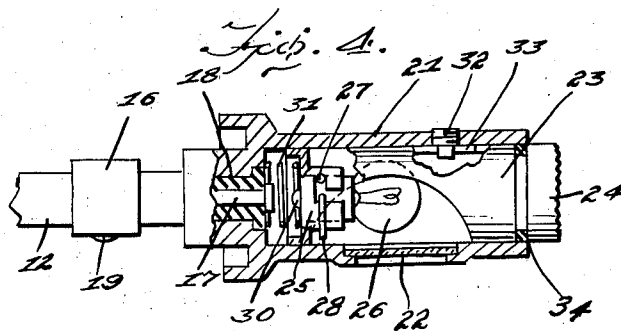
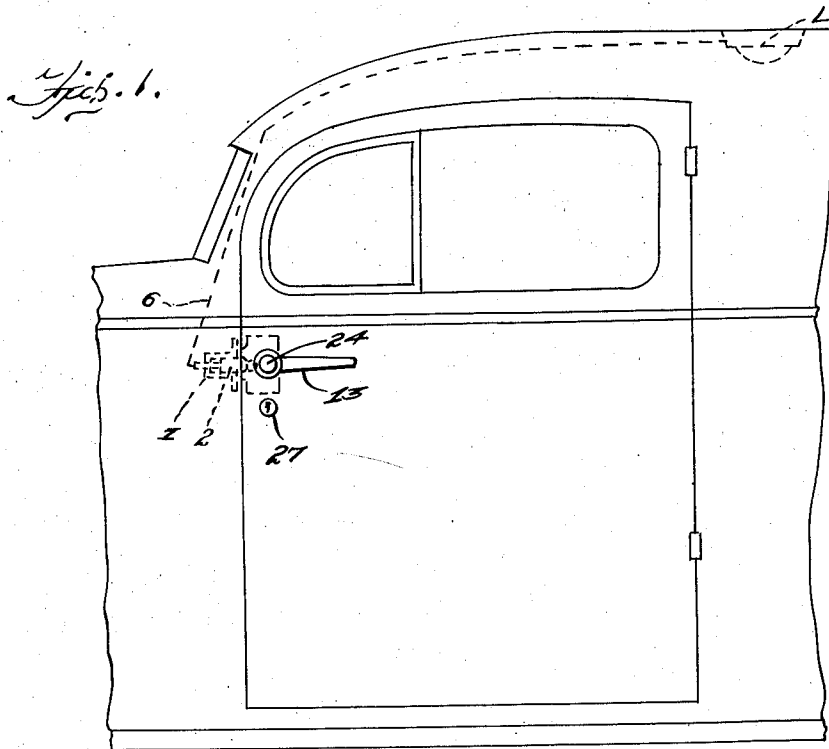


Fig. 5.



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2 Sheets-Sheet 2

Fig. 2.

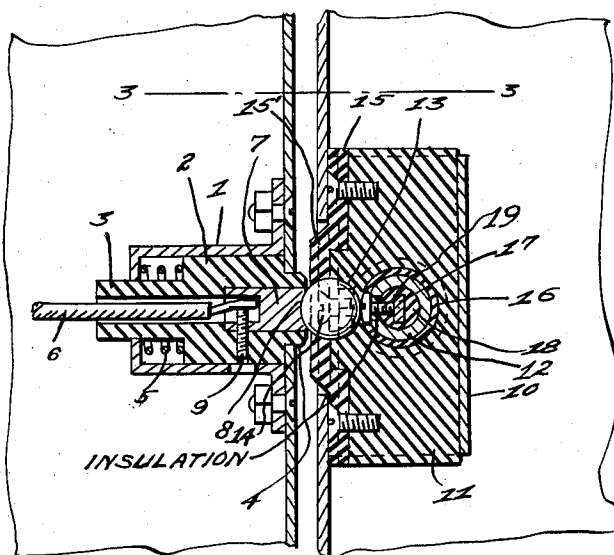
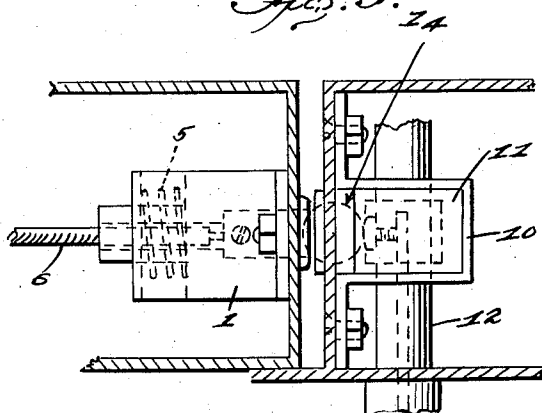


Fig. 3.



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UNITED STATES PATENT OFFICE

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ILLUMINATING ATTACHMENT FOR
VEHICLE DOOR LOCKS

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Application September 11, 1940, Serial No. 356,378

4 Claims. (Cl. 240—2.13)

This invention relates to illuminating means for the keyhole of a lock of a vehicle door, the present invention being an improvement over that forming the subject matter of an application filed by me on November 18, 1939, Serial No. 305,161, the general object of the present invention being to provide means for supplying current to a lamp carried by the door handle without the use of wires in the door and by means of a spherical member carried by the door and engaging a spring-pressed contact carried by the frame and connected by a single conductor with a live wire connected with the lighting system of the vehicle.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a fragmentary side view of a vehicle provided with the invention.

Figure 2 is a fragmentary longitudinal sectional view through the door and door frame showing the contact means between said door and frame.

Figure 3 is a section on the line 3—3 of Figure 2.

Figure 4 is a view partly in elevation and partly in section of the lamp arrangement in the door handle and showing a portion of the shaft connected with the handle and passing through the door for operating the latch means of the door.

Figure 5 is a view of the bail used for connecting the lamp bulb to the socket.

In these drawings, the numeral 1 indicates a small casing located in the door frame and bolted to the edge thereof and a plunger 2 of non-conducting material is slidably arranged in the casing and has a neck 3 passing through the inner end of the casing and a boss 4 is formed on the front end of the plunger and passes through a hole in the edge of the frame. A spring 5 located in the casing tends to hold the plunger in its forward or projected position with the boss extending through said hole in the edge of the frame. A conductor 6 has one end passing into the neck 3 and the other end is connected to live wire of the illuminating system of the vehicle, preferably to the wire which supplies current to the dome lamp L in the top of the vehicle. A contact member 7 is carried by the plunger 2 with one end passing into the boss 4 and this end having a recess 8 therein. The other end of the contact member is formed with a socket for receiving an end of the conductor

and this end of the conductor is held in the socket by a screw 9 passing through a threaded hole in the plunger 2.

A small casing 10 is attached to the inner part of the door at the free edge thereof and carries a block 11 of non-conducting material. The shaft 12 of the door handle 13 passes through this block and through the casing 10 and a substantially hemi-spherical recess 13 is formed in the block and has a part in communication with the opening through which the shaft 12 passes. A ball or spherical member 14 is located in the recess and a cap 15 of non-conducting material is fastened to the outer face of the block and has a raised portion 15' projecting through an opening in the free edge of the door and this cap has an opening therein through which a portion of the ball passes with a part of the ball projecting from the raised portion 15' for engaging the recess in the contact member 7 when the door is closed. The parts are so formed that when the door is being closed the ball will strike the boss 4 of the plunger 2 and press the plunger inwardly against the action of the spring 5 and then the ball will pass into the recess and the spring will force the plunger back so as to cause the recess part of the contact member 7 to firmly engage the projecting part of the ball.

A collar 16 of non-conducting material is placed on the shaft 12 and is located in the opening in the block 11 and a conductor rod 17 is located in a sleeve 18 of non-conducting material located in a part of the shaft 12. This sleeve insulates the conductor rod 17 from the shaft 12. A screw 19 passes through the collar into the shaft and contacts the rod 17. The screw is insulated from the shaft as shown in Figure 2. The head of the screw is located in a hole in the sleeve 16 and partly projects therefrom to engage the ball 14 when the parts are in a position with the handle of the door in position holding the door closed. However, when the handle is turned to open the door, the screw will turn with the shaft, thus turning the collar 16 so that the head of the screw will move out of engagement with the ball and the ball will only contact a part of the sleeve so that the circuit is broken between the rod 17 and the ball. Thus the circuit will be broken as soon as the handle is turned to unlatching position and even before the door is open and this breaking of the circuit by unlatching movement of the handle will tend to prevent the person grasping the handle from receiving a shock for the circuit is broken as soon as the handle is turned.

A small housing 21 forms the inner end of the handle and the outer end of the rod 17 extends into the bottom of the chamber formed by the housing and said housing has a window 22 in its under part. The outer end of the housing is open

and an elongated push button 23 is slidably arranged in the housing with its knurled end 24 projecting from the housing. The push button forms a casing which contains a socket 25 for a lamp bulb 26, the bulb being so positioned that its light will pass through the window 22 to illuminate the keyhole 27. The socket is provided with bayonet slots and the base of the lamp is formed with the pins 27 engaging these slots and said base also carries the bail 28 for manipulating the bulb into and out of the socket and also for holding the bulb in the socket. The center contact of the lamp projects through the inner end of the button so that when the button is pressed inwardly this center contact 30 will engage the rod 17 so as to complete the circuit to the bulb, the socket being grounded on the door. A spring 31 tends to hold the button with the lamp casing outwardly with the contact 30 spaced from the rod 17 as shown in Figure 4. A screw 32 is carried by the housing 21 and extends into a slot 33 formed in the lamp casing for limiting sliding movement of the button and a gasket 34 is carried by the button for forming a moisture proof connection between the button and the lamp housing.

Thus it will be seen that by pressing upon the button the circuit to the lamp will be closed through the contact 30 and the rod 17, the screw 19, ball 14, the contact 7 and the conductor 6. However, when the handle is turned to open the door the circuit will be broken by the screw 19 moving out of engagement with the ball 14.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts provided that such changes fall within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. An illuminating attachment for the keyhole of a door lock comprising a door handle including a housing and a shaft, said housing having a window therein for the passage of the light rays to the keyhole, the shaft being rotatably arranged in the door, a push button slidably arranged in the housing, a lamp carried by the button and the rays of which pass through the window, a spring actuated live contact in the door frame, a spherical member, a non-conducting part in the door carrying the spherical member with the member projecting therefrom and engaging the live contact when the door is closed, a contact rod in the shaft engaged by a part of the lamp when the push button is pressed inwardly, and means for connecting the spherical member to said rod contact when the handle is in latching position and said means moving out of contact with the spherical member when the handle is moved to unlatching position.
2. An illuminating attachment for the keyhole of a door lock comprising a door handle including a housing and a shaft, said housing having a window therein for the passage of the light rays to the keyhole, the shaft being rotatably arranged in the door, a push button slidably arranged in the housing, a lamp carried by the button and the rays of which pass through

the window, a spring actuated live contact in the door frame, a spherical member, a non-conducting part in the door carrying the spherical member with the member projecting therefrom and engaging the live contact when the door is closed, a contact rod in the shaft engaged by a part of the lamp when the push button is pressed inwardly, and means for connecting the spherical member to said rod contact when the handle is in latching position and said means moving out of contact with the spherical member when the handle is moved to unlatching position, said button being provided with gasket means for providing a fluid-tight joint between itself and the housing.

3. An illuminating attachment for the keyhole of a door lock comprising a door handle including a housing and a shaft, said housing having a window therein for the passage of the light rays to the keyhole, the shaft being rotatably arranged in the door, a push button slidably arranged in the housing, a lamp carried by the button and the rays of which pass through the window, a spring actuated live contact in the door frame, a spherical member, a non-conducting part in the door carrying the spherical member with the member projecting therefrom and engaging the live contact when the door is closed, a contact rod in the shaft engaged by a part of the lamp when the push button is pressed inwardly, and means for connecting the spherical member to said rod contact when the handle is in latching position and said means moving out of contact with the spherical member when the handle is moved to unlatching position, said lamp including a socket having a bayonet slot therein, and a bulb and base with a bail carried by the base for engaging the slot.

4. In combination with a door and its frame, a spring-actuated contact carried by the frame and projecting therefrom and having a substantially hemi-spherical recess in its outer end, a conductor connecting the contact with a source of supply, a block of non-conducting material in the door and having a part projecting therefrom, a spherical member movably carried by the block and having a part projecting from the projecting portion thereof for engaging the spring contact when the door is closed, a shaft rotatably arranged in the door and passing through the block, a sleeve of non-conducting material surrounding the shaft and having an opening therein, a contact rod carried by the shaft and insulated therefrom, a projection carried by the shaft and engaging the rod contact and having a part located in the opening of the sleeve for engaging the spherical member when the shaft is in one position and moving out of engagement with the spherical member when the shaft is in another position, a handle connected with the outer end of the shaft and including a casing into which the rod contact extends, a push button slidably arranged in the housing and provided with a lamp socket, a lamp carried by the socket and having a part for engaging the rod contact when the button is pushed inwardly, spring means for holding the push button in its projected position and a window in the housing for the passage of the light rays from the lamp for illuminating the keyhole of the door.

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