COMBINED KEY CASE AND FLASHLIGHT
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The present invention relates to key cases of the type provided with a flashlight for the purpose of illuminating a keyhole prior to the insertion of a key thereinto.

The principal object of the present invention is to generally improve the construction of a key case of the type indicated.

Another object of the present invention is the provision of a suitable electric circuit in a key case of the type indicated, which circuit may be provided with a main switch, on disconnection of which the circuit may be rendered inoperative whereby the flashlight would remain inoperative, the condition when the key is used during the daytime when normally the keyhole does not require any illumination.

A still further object of the present invention is the provision of an auxiliary switch in connection with a key case of the type indicated, which switch may be normally open while the key remains in the slot for the purpose of preventing the flashlight to operate, but which is capable of closing instantly upon removing the key from the case for lighting the flashlight.

With the above general objects in view and others that will appear as the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawing and pointed out in the appended claims.

In the drawing forming a part of this application, and in which like designating characters refer to corresponding parts throughout the several views:

Fig. 1 is a face elevational view of the present key case;

Fig. 2 is a cross sectional view thereof;

Fig. 3 is a top elevational view of the key case;

Fig. 4 is a side elevational view of the key case;

Fig. 5 is a fragmentary transverse cross sectional view through the key case showing the details of the main switch, the view having been taken on line 5—5 of Fig. 1;

Fig. 6 is the cross sectional view through the case showing the main switch of a modified construction;

Fig. 7 is a cross sectional view through the key case illustrating the main switch of a modified construction, the view having been taken at the angle of 90 degrees from that of Fig. 6; and

Fig. 8 is a diagrammatical view illustrating the electric circuit.

Referring in detail to the present drawing there is shown a key casing composed of a pair of supplementary heart-shaped sections 10. Said sections 10 are cemented or otherwise joined together along line 11. Each of said sections 10 on its inner face is provided with a channel, the two of which in turn define a longitudinal round chamber 12 in an axial relation with the case. At the wider end of the case said chamber 12 communicates with a constricted bore 13, the body portion of the case therealong being threaded.

Receivable within said threaded bore 13 is the threaded seal ring 14 of electric bulb 15. The glass part of the electric bulb 15 reposes within a cavity made centrally of said case, the walls of said case adjacent said cavity being threaded as at 16 for the purpose of receiving and engaging the lateral threaded wall of cap 17 which is made of glass or plastic and is transparent. Said cap 17 acts as a guard for said bulb 15 for preventing breakage of the latter.

Core 18 of said bulb 15 extends into said chamber 12 and is in position to be contacted by pole 19 of the adjacent battery 20, one or more of which are insertable into said chamber 12 in a longitudinal relation through the open end of said chamber 12 at the narrow end of said case. Said open end of chamber 12 is threaded for receiving therewithin in a threaded relation plug 21 of stopper 22. Said plug 21 on its inner end is provided with a metallic leaf spring 23 for contacting with the adjacent smooth end of the nearest battery 20. Thus batteries 20 are maintained in position within chamber 12 in a longitudinally stacked position.

The inner faces of each section 10 adjacent the side edges thereof are filed off so that when said sections 10 are in a connected mutual position the filed off portions define a longitudinal slot 24 extending along each side edge of the case from the wider end thereof and terminate short of the lower narrower end thereof, as is seen in Fig. 4. Said slot 24 may be cast as uniform width throughout, or it may be at the wider end of the case narrower, as is seen in Fig. 4.

In a transverse relation with said slot 24 two sections 10 are further recessed to define recess 25, which is considerably wider than slot 24 and is substantially square on transverse cross section.

There is one of said recesses 25 adjacent each side edge of the case, as is seen in Fig. 2.

Affixed within each slot 24 adjacent the wider end of the case is chain 26 which is connected by one of its ends with pin 27 which is extended transversely through two sections 10 and said slot 24. The opposite end of said chain 26 connects with rod 28, which is passed through an oblong square block 29. Connecting with the opposite end of said rod 28 is swivel 30 with which key 31 is connected. Thus, two keys 31 may be held within the case. Normally, when the key is not being used, block 29 reposes within recess 25. The inner end of said block 29 is tapered and reduced as at 32, and contacts with switch plate 33. Said switch plate 33 is hingedly connected with the terminal 34, while the other free end of said switch plate 33 is capable of swinging motions to or away from another terminal 35. Said terminals 34 and 35 may be in any suitable manner supported within the case. In the back of said switch plate 33 there is a coil spring 36 bearing thereagainst by one of its ends, while the other inner end thereof is in any suitable manner embedded or otherwise affixed within the body of the case.

When said block 29 on either side of the case is withdrawn from recess 25 switch plate 33 springs in contact with terminal 35 for completing the circuit, as is indicated in Fig. 8 and for lighting bulb 15. Withdrawal of block 29 from recess 25 is made simultaneously with the withdrawal of key 31 from slot 24. The withdrawal automatically lights the bulb to assist a person to find the keyhole in the door or the like for insertion thereinto of the key. When the lock has been opened block 29 is inserted back into recess 25 wherein the same is frictionally held. The contact of the inner end of said block 29 with switch plate 33 swings back the latter from its contact with terminal 35 against the tension of spring 36 for breaking the electric circuit and thereby extinguishing the flashlight. The lighting of the flashlight on withdrawing of block 29 from recess 25 is of course conditioned on
the connection of the main switch presently described in the circuit.

Said main switch includes a pair of terminals 37 and 38 which are adapted for an intermittent bridging by means of switch plate 39 for the purpose of reconditioning the operation of the auxiliary switch which includes terminals 34 and 35 and switch plate 33.

Said main switch further includes knob 40 which connects with said switch plate 39 and extends through slot 41 made in the outer face of one of the two sections 10 of switch plate 39 and is shiftable within said slot 41 in either direction for the purpose of intermittently connecting or disconnecting terminals 37 and 38 by said switch plate 39. The face of section 10 at the opposite ends of slot 41 is provided with indicia "on" and "off" in order to indicate which direction of shifting of knob 40 within slot 41 establishes the electric circuit and which breaks the same.

Said terminals 37 and 38 and switch plate 39 are located within cavity 42 (Fig. 5) made within the body of that section 10 which carries said main switch.

Reverting now more particularly to the circuit shown in Fig. 8 the direct contact between bulb core 18 and the battery pole 19 is indicated by line 43. Wire 44 by one of its ends is embedded within the narrow end of one section 10 and is positioned therefrom to directly contact with the bottom of adjacent battery 20 as is indicated at 44 in Fig. 2. If preferred, plug 21 may be made of conducting material and the end of wire 44 extended through one section 10 to contact directly with said plug 21.

When the latter expedient is resorted to then the connection of the end of wire 44 with the adjacent end of battery 20 will be established through said plug 21 and leaf spring 23, the latter of course being presupposed as made of conducting material also.

The opposite end of said wire 44 connects with terminal 37 in the main switch. Link wire 45 connects the opposite terminal 38 of the main switch with terminal 35 of the auxiliary switch at one side edge of the key case. Terminal 34 of the same auxiliary switch is connected to one end of wire 46. The opposite end of said wire 46 is extended through the body portion of one of the two sections 10 of the case adjacent bore 13 to contact with the seal ring 14 when bulb 15 remains in an operative position within the case shown in Fig. 2.

From the hereinabove described circuit it will be seen that switch plate 39 of the main switch remains in contact with two terminals 37 and 38 of the main switch, and when the key has been withdrawn from slot 24 with block 29 withdrawn from recess 25 for closing auxiliary switch, including switch plate 33 coming in contact with terminal 35, the circuit will have been established with bulb 15 lit.

To render the circuit operative for the opposite side edge of the key case wire 47 is connected with link wire 45 and terminal 35 at said opposite side edge of the key case, while wire 48 connects terminal 34 with wire 46. Thus, when main switch is "on" withdrawal of key 31 from slot 24 and of block 29 from recess 25 at the either side edge of the key case will establish the electric circuit to light flash bulb 15.

The modified main switch, illustrated in Figs. 6 and 7, comprises a metallic and conducting ferrule 49 threaded both internally and externally to be threadedly engageable within the narrower end of the key case at the end of chamber 12 opposite from that wherein bulb 15 is fitted. Plug 21 carried by stopper 22 is threadedly engageable with said ferrule 49. Extending from the inner rim of said ferrule 49 is arm 50 which is provided upon its edges with tongues 51 bent over switch plate 39 for supporting the latter in its shifting movement permitting the same to selectively engage with or disengage from terminal 37.

Knob 40 engaging said switch plate 39 extends through slot 41 made in one section 10 is adapted to be manually engaged to shift said switch plate 39 in either direction.

Conditioned upon said plug 21 being made of non-conducting material, with spring 23 being made of a conducting material, short wire 52 connects said spring 23 with the end of wire 44. The opposite end of said wire is connected with terminal 37. One end of a link wire extends within the bore wherein said ferrule 49 is fitted so that said end of wire 45 may contact with said ferrule. At an intermediate point of said wire 45 wire 47 is of course connected as part of the circuit for the opposite auxiliary switch.

It is observed that all the wiring in the circuit illustrated in Fig. 8 and partially indicated in Fig. 7 should be firmly embedded within one or both of said sections 10 of the key case. The wires of the circuit are not being shown in all the figures of the drawing, because the particular position of the wires within sections 10 and their particular interconnection with the flashlight, batteries and the several switches is within the purview of mechanical skill rather than of the invention.

While there is described herein a preferred embodiment of the present invention, it is nevertheless to be understood that minor changes may be made therein without departing from the spirit and scope of the invention as claimed.

What I claim as new is:

1. A combined key case and flashlight comprising an electric circuit, said flashlight being in said electric circuit, a switch in said electric circuit, said key case being provided with a recess, a block for selective insertion into and withdrawal from said recess, said switch reposing within said recess in the path of movement of said block, said block actuating said switch for selective breaking or reestablishing of said electric circuit for selective rendering of said flashlight inoperative or for lighting the same, said key case being provided with a slot for reception of a key therewithin when said block reposes within said recess, and connecting means between said block and the key.

2. A combined key case and flashlight comprising an electric circuit, said flashlight being in said electric circuit, a switch including a switch plate in said electric circuit, said key case being adapted for receiving a key, a block carried by the key, the key being adapted for reception within said key case, said key case being provided with a recess, when the key remains within said key case said block reposing within said recess, said switch plate remaining within said recess, and tensioning means in contact with said switch plate, when in said recess said block being adapted to press upon said switch plate against the action of said tensioning means for breaking said electric circuit for maintaining said flashlight inoperative, on withdrawal of the key from said key case said block being adapted to be simultaneously withdrawn from said recess, on withdrawal of said block from said recess said tensioning means urging said switch plate into said electric circuit for lighting said flashlight.

3. A combined key case and flashlight comprising an electric circuit, said flashlight being in said electric circuit, a switch in said electric circuit, said switch including a pair of terminals and a switch plate, said switch plate being hingedly connected to one of said terminals, a coil spring in contact with one face of said switch plate for urging the latter into contact with the other of said terminals, said key case being provided with a recess, a block for selective insertion into and withdrawal from said recess, said switch plate being positioned in a transverse relation with said recess and in the path of movement of said block, when said block reposes within said recess the same being adapted to press said switch plate away from its contact with the other of said terminals against the action of said coil spring for maintaining said electric circuit broken and said flashlight inoperative, on withdrawal of said block from said recess said coil spring
being adapted to shift said switch plate in a contractual relation with said last named terminal for establishing said electric circuit for lighting said flashlight, said key case being provided with a slot for reception therewithin of a key when said block repose within said recess, a flexible connecting means between said block and the key, and a flexible connecting means between said key case and said block.