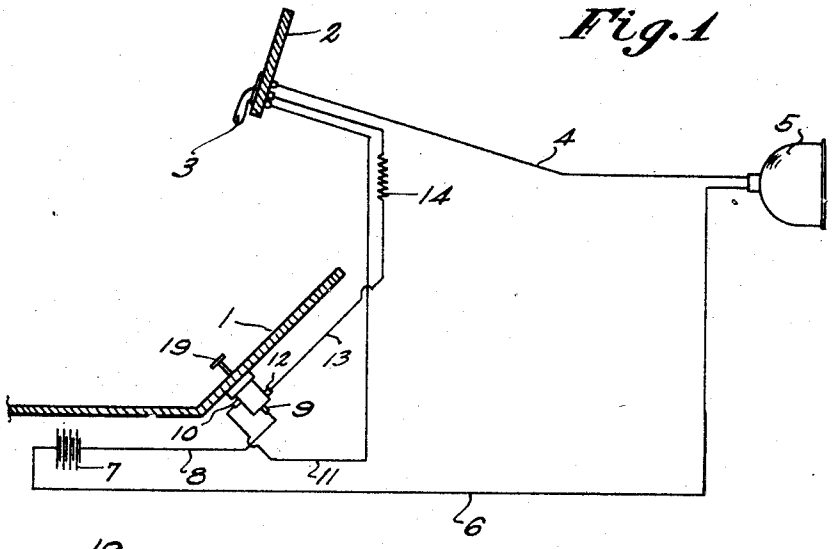
Jan. 4, 1927. 1,612,852

R. C. BOLTON

DIMMER SWITCH

Filed Dec. 5, 1924

Fig. 1



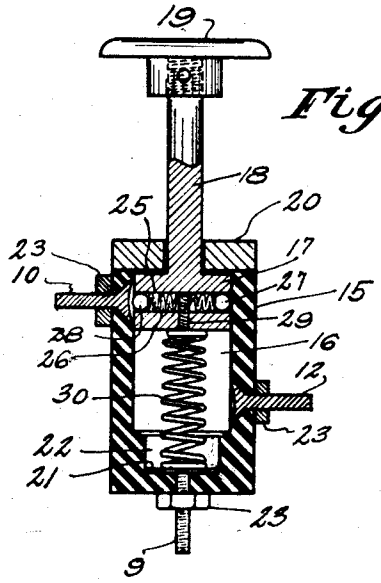


Fig. 2

Fig. 3

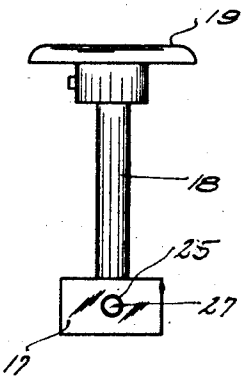
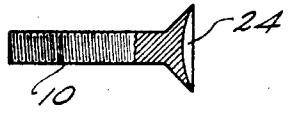


Fig. 4



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By

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Patented Jan. 4, 1927. 1,612,852

UNITED STATES PATENT OFFICE.

RAY C. BOLTON, OF BIRMINGHAM, ALABAMA.

DIMMER SWITCH.

Application filed December 5, 1924. Serial No. 754,205.

My invention relates to a new and improved electric dimming switch mechanism especially adapted for automobiles but which structurally embodies features of advantage for various other switch purposes.

My invention is more particularly concerned with the production of a spring returned foot operated switch adapted automatically to effect a change of circuits between a source of electrical supply and a lamp, headlight or the like, the switch comprising a plunger head containing spring-pressed balls with circuit connections leading through the plunger to the spring acting on the balls to hold them pressed outwardly against the walls of an insulating jacket which carries at different elevations termini for the distribution circuits, one of which includes a dimming resistance.

My invention also comprises the novel details of construction and arrangements of parts, which in their preferred embodiment only, are illustrated in the accompanying drawings which form a part of this specification, and in which:—

Fig. 1 is a diagrammatic layout of the circuits showing the switch associated with the foot board, dash and main electrical switch of an automobile.

Fig. 2 is a vertical sectional view through the switch body and partly through the plunger head.

Fig. 3 is an elevation of the plunger; and

Fig. 4 is a partial section and partial elevation of a typical screw terminal in the switch body.

Similar reference numerals refer to similar parts throughout the drawings.

In the embodiment of my invention illustrated in the drawings, I show partially an automobile foot board 1 and a dash 2, leaving the customary light control switch 3 and a circuit 4 leading from the switch to the headlights 5, and returning by circuit 6 to a battery or other source of current 7. From this point the circuit usually returns to the switch 3 and the latter usually controls a full light and a dim light, the latter not being shown, in order to change the headlights from full light to dim light.

According to the chief use contemplated for my invention, I interpose my improved type of switch in one of two distribution circuits between the battery and the dash switch 3, said circuits comprising a wire 8 along which current flows from the battery to the bottom terminal post 9 of the switch and there branches under control of the switch, and flows either from terminal 10 by circuit 11 or from terminal 12 by circuit 13 which latter includes a resistance element 14, to the switch 3. Thus the current supplied to the switch 3 through circuit 13 will act to dim the headlights, whereas the current flowing through circuit 11 will operate the headlights at full power.

The switch proper comprises a body 15 of any desirable insulating material, having therein a rectangular chamber 16 which receives the square cross head 17 at the lower end of a plunger 18 which carries at its upper end a foot pedal button 19. The switch body is closed overhead by a cap 20 having a circular opening for the plunger 18. The bottom terminal 9 is formed by a conducting screw which engages a metal washer 21 in the reduced lower end extension 22 of the chamber 16 and a nut 23 holds the terminal and washer in position on the switch body. The terminals 10 and 12 are formed by conducting screws having concave heads 24 set flush in the side walls of the chamber 16 at different levels. The squared head 17 on the plunger is transversely bored to form a spring chamber 25 which receives a coil spring 26 that bears at its ends against the balls 27 and 28 and presses them against the opposite walls of the chamber 16. A conducting screw 29 acts to connect the upper coil of a spring 30 with the plunger head 17 and its upper end is adapted to engage the spring 26. The spring 30 will rest upon the washer 21 and the circuit is maintained from the terminal 9 through washer 21, spring 30, screw 29, spring 26 to the balls 27 and 28. The spring normally holds the plunger raised and thus the circuit is closed through ball 28 to the terminal 10, as shown in Fig. 2, giving full light service, but when the plunger is depressed the circuit is closed through ball 27 to terminal 12 and will dim the lights.

Thus, in operation, without taking his eye from the wheel the driver can depress the plunger 19, throw the resistance 14 in circuit with the headlights and dim them momentarily for the convenience of a passing car, the plunger 19 being disposed in any position where it can be most conveniently operated by the desired foot of the driver, preferably by the foot controlling the clutch, as it will be more convenient to

dim with the latter foot than with the foot controlling the gas. I have shown no particular means for attaching the cap 20 to the switch body 15, it being obvious that any suitable means of attachment may be provided for these parts according to the particular application of the device.

Though I have described with great particularity the details of the embodiment of the invention herein shown, it is not to be construed that I am limited thereto, as changes in arrangement and substitution of equivalents may be made by those skilled in the art without departing from the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A switch of the character described, comprising a body of insulation having a chamber with a spring seat at one end and a removable cap at the other, a foot pedal plunger having its stem passing through the cap and having its head slidable in said chamber, means to prevent the rotation of said head in said chamber, a bottom terminal screw connected to a conductor forming a spring seat in the reduced end of said chamber, a coil spring resting on said conductor, a screw connecting the upper end of said spring to said plunger which has a transverse bore into which said screw projects, a coil spring mounted in said bore and engaged by said latter screw, balls seated in opposite ends of said spring in the head and pressed thereby against the chamber walls, and terminals having cupped heads set flush at different elevations in said chamber walls and projecting without for connection to distribution circuits, substantially as described.

2. A switch of the character described, comprising a body of insulation having a square chamber with a reduced spring seat at one end and a removable cap at the other, a foot pedal plunger having its stem passing through the cap and having a squared head slidable in said chamber, a bottom terminal screw connected to a conductor forming a spring seat in the reduced end of said chamber, a coil spring resting on said conductor, a screw connecting the upper end of said spring to said plunger which has a transverse bore into which said screw projects, a coil spring mounted in said bore and engaged by said latter screw, balls seated in opposite ends of said spring in the head and pressed thereby against the chamber walls, and screw terminals having cupped heads set flush at different elevations in said chamber walls and projecting without for connection to distribution circuits, substantially as described.

In testimony whereof I affix my signature.

RAY C. BOLTON.