Nov. 23, 1948. W. H. ROSS 2,454,342

DOOR CHIME CONTROL SWITCH

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Fig. 1.

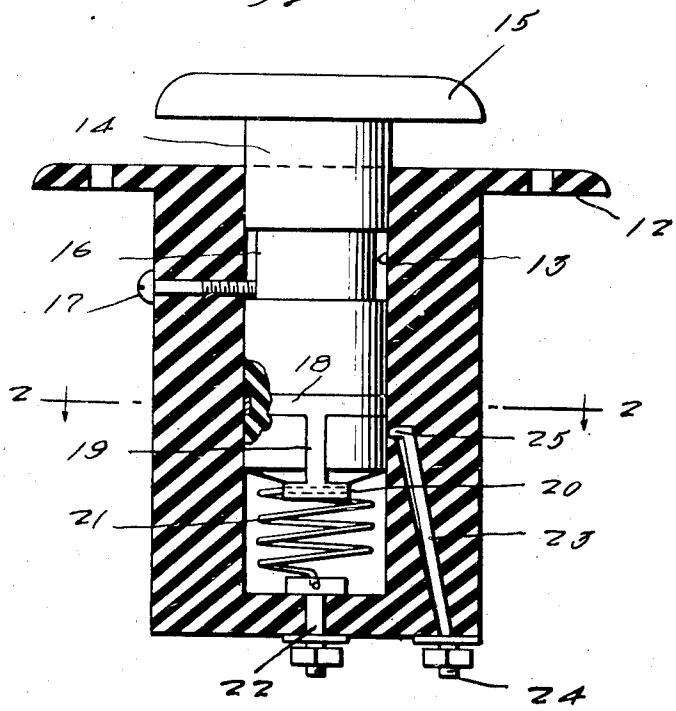
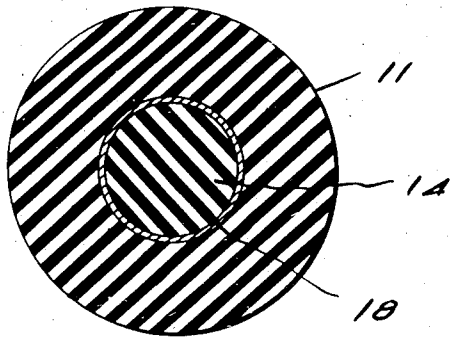


Fig. 2.



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DOOR CHIME CONTROL SWITCH

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1 Claim. (Cl. 200—159)

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This invention relates to push button switches, and more particularly to a push button switch device for use with door chimes to provide a momentary contact when the button is pushed inwardly, whereby the chime mechanism is momentarily energized, and to provide a second momentary energization of the chime mechanism when the button is released, whereby said mechanism is in a de-energized condition during the time that the button is held in depressed condition.

A main object of the invention is to provide a novel and improved double-acting door chime control device providing the action above described, said device being very simple in construction, easy to install and extending the life of the chime mechanism with which it is employed by preventing energization of said mechanism over excessive periods of time.

A further object of the invention is to provide an improved door chime push button control device which is compact in size, rugged in construction and inexpensive to manufacture, said device providing a timed double chime signal responsive to the act of pushing and then releasing the push button element thereof.

Further objects and advantages of the invention will be apparent from the following description and claim and from the accompanying drawings, wherein:

Figure 1 is a longitudinal cross-sectional view taken through a door chime control device constructed in accordance with the present invention,

Figure 2 is a cross-sectional view taken on line 2—2 of Figure 1.

Referring to the drawings, 11 designates a cylindrical casing formed with suitable insulating material, such as plastic or the like, the forward end of the casing 11 being provided with an annular flange 12 for securement of the casing in the door frame or other support adjacent the door with which the chime control device is to be used. Casing 11 is formed with a cylindrical bore 13 and axially slidable in said bore is a plunger 14 also of insulating material formed at its forward end with an enlarged head or button 15. Plunger 14 is formed with an annular groove 16 and projecting into said groove is the end of a stop screw 17 threaded through the wall of casing 11, said screw limiting axial movement of the plunger to movement between the dotted line position of button 15 and the full line position thereof shown in Figure 1.

Embedded in the lower portion of plunger 14

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and exposed at the surface thereof is a metal ring member 18 having an extension 19 terminating in a lug 20 positioned at the end of the plunger. Secured to lug 20 is one end of a coiled spring 21. The other end of spring 21 is secured to the head of a bolt 22 extending through the end wall of casing 11. Spring 21 therefore electrically connects lug 21 to bolt 22 as well as acts to bias plunger 14 outwardly to the full line position thereof shown in Figure 1.

Embedded in the casing 11 is a conductor 23 terminating at one end in a threaded stud 24 adjacent bolt 22 at the end of the casing and terminating at its other end in a contact element 25 flush with the surface of bore 13 and located substantially midway between the normal full line position of ring member 18, shown in Figure 1, and the innermost position assumed by said ring member when button 15 is pushed inwardly to its dotted line position.

Bolt 22 and stud 24 are connected in series with the energizing circuit for the door chime mechanism. When button 15 is pushed inwardly it causes ring member 18 to make momentary contact with element 25, closing the chime energizing circuit for a short period of time and causing a chime to be produced thereby. The circuit is broken as soon as ring member 18 moves past element 25 as it continues its inward movement. When button 15 is released, another chime is produced as ring member 18 moves past element 25 on its return path under the biasing action of spring 21.

As a result, it is almost impossible to cause the chime mechanism to be continuously energized, thereby extending the life of the mechanism and avoiding the annoyance of having the door chime mechanism operating continuously when the signal button is pressed inwardly and held for an excessive period of time.

While a specific embodiment of an improved door chime control device has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claim.

What is claimed is:

A momentary action electric switch, comprising a casing formed of insulating material and provided with a cylindrical bore and having an end, an axially shiftable cylindrical plunger mounted within the bore and provided near its longitudinal center with an annular groove form-

ing inner and outer stop shoulders, a stop secured to the casing and projecting into the groove and engageable by the shoulders to limit the inward and outward axial movement of the plunger, an annular conducting ring surrounding the plunger near its inner end and embedded in the plunger and flush with the periphery of the plunger, an axial conducting extension carried by the conducting ring and embedded in the plunger and extending axially inwardly to a point adjacent to the inner end of the plunger, a compressible conducting coil spring disposed within the bore inwardly of the plunger and having its outer end electrically connected to the axial extension and serving to bias the plunger outwardly, a terminal bolt mounted upon the end of the casing and extending into the bore and being electrically connected to the inner end of the spring, and a single generally axial conductor embedded in the wall of the casing and including a radial contact

element extending into the bore near the longitudinal center thereof for momentary engagement by the conducting ring when the plunger is shifted inwardly and outwardly, the generally axial conductor forming a second terminal bolt at the end of the casing, the casing wall completely enclosing the generally axial conductor so that no part thereof is exposed at the outer surface of the casing.

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